GLOW Newsletter #70, Spring 2013
Edited by Marc Richards

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GLOW NEWSLETTER

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GLOW Newsletter & Conference Handbook

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INTRODUCTION

Welcome to the 70th GLOW Newsletter and Conference Handbook, and to the 36th GLOW Conference, taking place in Lund from the 2nd to the 6th of April, 2013.

As ever, the following pages contain all the information you'll need for getting yourself to and through this year's conference. The practical information begins on page 6, after a brief overview of the program; details of the selection procedure can then be found on pp. 9-10, with the full programs for the Colloquium (April 3-5) and the adjoining quartet of workshops (April 2 and 6) from page 11. The main bulk of the newsletter is taken up by this year's selected abstracts, starting on page 21. Having thrown off the shackles of paper and print to become an electronic-only publication last year, we've again been able to include the abstracts for every single (non-invited) presentation, both oral and mural – all 86 of them! That's a lot to read, so I'll let you get on with it… Enjoy!

Marc Richards

CHANGES TO THE BOARD

The current composition of the GLOW Board is given in the table below.

Congress President	Halldór Sigurðsson	2012-2013
Chairperson	Sjef Barbiers	2011-2013
Secretary	Jeroen van Craenenbroeck	2011-2013
Treasurer	Maaike Schoorlemmer	2011-2013
Newsletter Editor	Marc Richards	2012-2014
Journal Editor	Harry van der Hulst	
Website Manager	Pavel Iosad	2011-2012
Member A	Roberta D'Alessandro	2012-2014
Member B	Lida Veselovska	2011-2013
Member C	Viola Schmitt	2011-2013
Member D	Maria-Rosa Lloret	2012-2014
Advisory member 1	Henk van Riemsdijk	
Advisory member 2	Martin Everaert	
Co-opted member (Phonology)	Tobias Scheer	2011-2013

Every year, several positions come up for renewal. Nominations are normally sent directly to the Chair, who accepts until January 1st. The GLOW Board wishes to remind GLOW members to be thinking about who they would like to represent them on the board in the future, and to nominate those people in good time.

For the coming year, the Board has made or received the following nominations:

- Dany Jaspers (Congress President)
- Sjef Barbiers (re-election for Chairperson)
- Jeroen van Craenenbroeck (re-election for Secretary)
- Maaike Schoorlemmer (re-election for Treasurer)
- Alexis Dimitriadis (Website Manager)
- Mojmír Dočekal (Member B)
- Sarah Zobel (Member C)
- Tobias Scheer (re-election for Co-opted Member for Phonology)

Welcome to GLOW 36, Lund!

The 36th GLOW Colloquium is taking place in Lund, Sweden, from 3rd to 5th April 2013, at SOL, the Centre for Languages and Literature, Lund University. In addition to the Colloquium, there will be four thematic workshops taking place on Tuesday 2nd April and Saturday 6th April.

The event (Colloquium & workshops) is generously supported by:

The Birgit Rausing Language Programme
Stiftelsen Elisabeth Rausing minnesfond
Kungliga vetenskapssamfundet

OVERVIEW OF THE PROGRAM

April 2
Workshop 1: Biolinguistics
Organizers: GRIMM & Anna-Maria Di Sciullo (Université du Québec à Montréal)
Invited speakers: Robert Berwick (MIT), "Darwinian Linguistics"; Charles Yang (UPenn), "Tipping Points"

Workshop 2: Syntactic Variation and Change
Organizers: GRIMM & David Håkansson (Uppsala), Ida Larsson (Stockholm), Erik Magnusson Petzell (Stockholm)
Invited speaker: Marit Westergaard (Tromsø), "Microvariation as Diachrony"

April 3-5
GLOW Colloquium
Organizers: The GRIMM group at SOL
Keynote speaker: Anders Holmberg (Newcastle), "How to answer a negative question"

April 4
Conference Dinner, Grand Hotel (19:30)

April 6
Workshop 3: Diachronic Workings in Phonological Patterns
Organizers: GRIMM & Marc van Oostendorp (Leiden/Meertens Instituut), Tobias Scheer (Nice-Sophia Antipolis)
Invited speaker: Patrick Honeybone (Edinburgh), TBA

Workshop 4: Acquisition of Syntax in Close Varieties
Organizers: GRIMM & Petra Bernardini, Jonas Granfelt, Gisela Håkansson, Tanja Kupisch (all at SOL)
Invited speaker: Jason Rothman (Florida), "Comparative Structural Determinism and Cognitive Economy: Evidence from L3 Transfer in Closely Related Language Pairings"

PRACTICAL INFORMATION

CONFERENCE SITE

The Colloquium and the workshops will take place at the SOL campus, Centre for Languages and Literature, Lund University. Maps showing the location of SOL ("Språk och litteraturcentrum") within Lund and its layout are available on the GLOW 36 homepage: direct links here (Google map; click on tag A and zoom in) and here (plan of SOL).

TRAVEL INFORMATION

By plane

The easiest way to reach Lund by air is via Copenhagen International Airport, Kastrup (CPH). Regular trains (*Öresundståg*) for Malmö and Lund leave from the airport every twenty minutes. All trains from the airport to Sweden (with various destinations, such as Göteborg, Kalmar, and Kristianstad) stop in Lund, are direct (no change needed), take 32-34 minutes, and stop at three stations (all in Malmö) on their way to Lund.

Tickets can be purchased at the airport (a one-way ticket for Lund costs approximately €15). Make sure to buy your ticket before you enter the train, since tickets cannot be bought on board. Alternatively, you might want to buy train tickets over the internet, via this link.

By train

From Copenhagen/Malmö: Regular trains (*Öresundståg*) leave for Malmö and Lund every twenty minutes. From Copenhagen central station, the trip to Lund takes approximately 45 minutes (a quarter of an hour from Malmö). A one-way ticket for Lund costs approximately €15 (from Malmö approx. €5). Make sure to buy tickets for the entire journey to Lund before you enter the train, since tickets cannot be bought on board.

From Stockholm: High-speed trains leave for Malmö/Copenhagen a dozen times a day. The trip from Stockholm takes approximately four hours. Tickets can be bought via www.sj.se. It is also possible to travel by night train; see www.sj.se for tickets and more information.

From Gothenburg: Some of the trains for Malmö/Copenhagen take up to six hours, while others take three hours, so make sure you get the right ticket.

By car

From the South, follow the E22 from Malmö. From the North, follow the E20/E6 (from Gothenburg or Stockholm) or the E22 (from Kalmar). Travel instructions can be easily retrieved via Google Maps.

Taxi

As public transportation in Southern Sweden and Denmark is highly effective (notwithstanding common complaints by the locals), taking a taxi is generally not recommended. However, if you do, you should ask about the price in advance.

When in Lund / Tourist information

Lund is a small city and everything is relatively close. A walk from the central station to SOL takes 10-15 minutes. Wikitravel provides basic tourist information about Lund. However, as is always the case with wikis, we cannot guarantee that all information is entirely correct. Wikipedia also has an informative page on Lund.

REGISTRATION

Everybody attending GLOW 36 (including presenters) must be a paid-up member of GLOW. Information on how to join is available on the GLOW homepage. We will also provide an option to join at the on-site registration desk during the Colloquium.

Additionally, attendees are also required to register for the conference. There will be an on-site registration desk, but we encourage everybody to register online to take advantage of a lower registration fee. Information about online registration can be found here on the GLOW 36 homepage.

Early registration will finish on Wednesday, March 27.

REGISTRATION FEES

	Early registration (until March 27)	Late registration (on site)	Conference dinner
Faculty including faculty poster presenters and faculty workshop speakers*	SEK 600	SEK 750	SEK 250
Students including student poster presenters and student workshop speakers*	SEK 400	SEK 500	SEK 250
Colloquium speakers	*free*	*free*	SEK 250
*Participants who only attend one of the workshops pay a 50% (late) registration fee of 100 SEK ≈ 16 USD, 12 EUR			

REIMBURSEMENT AND WAIVERS

The registration fee is waived for Colloquium speakers only; this doesn't include workshop speakers or poster presenters. Colloquium speakers will also be partially reimbursed for travel and accommodation expenses, to the following amounts:

Europe, Faculty	€ 200
Europe, Students	€ 250
Overseas, Faculty	€ 350
Overseas, Students	€ 450

BUSINESS MEETING

The GLOW Business Meeting will take place after the talks on Thursday 4th April, 18:00-19:00.

CONFERENCE DINNER

This year's conference dinner will take place after the GLOW Business Meeting on Thursday 4th April, starting at 19:30. The location is the Grand Hotel, only a three-minute walk from the Central Station and 10-15 minutes' walk from the conference site on the SOL campus. We subsidize the dinner substantially so we would obviously like to see as many of you there as possible. The more of you who pre-register, the happier we will be!

ACCOMMODATION

Lund is a relatively small city or town with a big university so the hotel situation is a bit difficult. We therefore urge you to make your hotel booking **as soon as possible**. If you have trouble finding suitable accommodation in Lund you might look for accommodation in Malmö instead (a 10-to-15-minute train ride from central station to central station).

We have booked 25 single rooms and 25 double rooms at **Hotell Sparta** for our GLOW guests. These rooms cost SEK 778/950 per night (a very good price for Lund). When you book these rooms, please let the hotel know that you are GLOW 36 participants.

We have also booked 35 single rooms and 27 double rooms at **Hotell Concordia** (SEK 1185/1380). When you book these rooms, please let the hotel know that you are GLOW 36 participants.

In order to get one of these rooms at the right price, please make sure that you make your bookings before **1 March**.

Here again are the links to those hotels:

http://www.spartahotell.se/e/index.html
http://www.concordia.se/start_en.asp

Various other hotels in the city of Lund and their web sites:

Lilla hotellet: http://www.lillahotellet.com/
Hotell Ahlström: http://eng.graddhyllan.dana1.se/default.asp?ID=216&pID=201
Hotell Oskar: http://www.hotelloskar.se/en
StayAt Lund: http://www.stayat.se/en/
Hotel Duxiana: http://www.lund.hotelduxiana.com/?s=inenglish&lang=eng
Hotel Lundia: http://www.lundia.se/?sid=211
Grand Hotel: http://grandilund.com/

We would also like you to be aware of the following two websites, intended to help people find hotel rooms in Lund and Malmö:

http://www.lund.se/Besokare/Bo/Hotell/
http://www.booking.com/city/se/malmo.en.html

SELECTION PROCEDURE

A total of 152 abstracts were submitted for the Main Colloquium (not counting the workshops). From these, twenty were selected for oral presentation, plus two alternates. The acceptance rate for oral presentations is thus 13.2% (not including the alternates). In addition, however, eighteen abstracts (including the two oral alternates) were selected for the poster sessions, so the overall acceptance rate is 25%.

Each of the 152 abstracts was sent to up to six external reviewers, most commonly four or five. The reviewers did not include local organizers or GLOW Board members. The reviews were returned before December 15, 2012. The 152 abstracts were ranked by the grades given by the reviewers (using EasyChair), the 61 highest ranked ones being selected for further consideration and evaluation by a selection committee consisting of two representatives of the GLOW Board and three representatives of the local organizers. On a meeting in Lund on 15th January 2013, the selection committee considered and discussed in detail the highest-ranked 61 abstracts, with a special focus on (a) those abstracts that got the fewest external reviews, (b) those abstracts for which the grades given by the external reviewers diverged substantially and, furthermore, (c) any of the 61 abstracts a selection committee member wanted to be discussed. The abstracts were discussed one by one. On the basis of the reviewers' rankings and comments and the assessments by the five committee members, twenty abstracts were identified for presentation at the Colloquium, and eighteen additional abstracts were selected for poster presentations. Of the latter, two were also selected as alternate presentations for the Colloquium.

STATISTICS BY COUNTRY

Country	*Authors*	*Submitted*	*Accepted*	*Acceptance rate*
Austria	2	2.00	0.00	
Belgium	1	1.50	0.00	
Brazil	1	1.00	0.00	
Canada	8	6.00	2.50	42%
China	1	0.50	0.00	
Czech Republic	2	1.00	0.00	
Finland	1	1.00	0.00	
France	6	5.50	2.00	36%
Germany	28	21.33	2.00	9%
Greece	1	0.33	0.00	
Hong Kong	3	2.00	0.00	
Iceland	1	0.50	0.00	
Iran, Islamic Republic of	1	1.00	0.00	
Israel	4	1.75	0.00	
Italy	7	4.00	0.00	
Japan	13	10.50	0.00	
Korea, Republic of	3	3.00	0.00	
Netherlands	17	8.00	2.00	25%
Norway	9	10.00	3.00	30%
Poland	4	2.50	1.00	40%
Portugal	1	1.00	0.00	
Serbia	1	1.00	0.00	
Spain	10	9.50	0.00	
Switzerland	4	1.50	0.00	
United Kingdom	11	8.50	1.50	13%
United States	59	47.08	6.00	13%
Totals	199	152	20.00	

GLOW 36 COLLOQUIUM PROGRAM: April 3-5, Lund University

Wednesday April 3

09:00-09:15 *Welcome and announcements*

09:15-10:15 **Eric Reuland and Anna Volkova (Utrecht)**
Reflexivity without reflexives

10:15-11:15 **Philipp Weisser, Timo Klein, Doreen Georgi, and Anke Assmann (Leipzig)**
Possessor case in Udmurt: A local reanalysis as fusional case stacking

11:15-11:30 *Coffee break*

11:30-12:15 *Poster Session 1*
Rajesh Bhatt and Stefan Keine (UMass, Amherst): Verb Clusters and the Semantics of Head Movement [*ALTERNATE 1*]
Dalina Kallulli (Vienna): More on strategies of relativization: CP-extraction feeding complementizer agreement
Bradley Larson (Maryland): Conditions on Sprouting
Haoze Li and Hoi Ki Law (Chinese Univ. of Hong Kong): Who triggers focus intervention effects?
Peter Smith (UConn): Endoclisis (only) by Phonological Means
Doreen Georgi (Leipzig): Opaque interaction of Merge and Agree: on two types of Internal Merge
Maziar Toosarvandani and Coppe van Urk (MIT): The directionality of agreement and nominal concord in Zazaki
Txuss Martin and Wolfram Hinzen (Durham): The grammar of the essential indexical

[***Posters removed at 18:00***]

12:15-13:45 *Lunch break*

13:45-14:45 **Sandhya Sundaresan (CASTL, Tromsø)**
A syntactic treatment of logophoricity and anaphoricity: Evidence from verbal agreement

14:45-15:45 **Stefan Keine (UMass, Amherst)**
Long-Distance Agreement, Improper Movement and the Locality of Agree

15:45-16:00 *Coffee break*

16:00-17:00 **Christopher Spahr (Toronto)**
A contrastive hierarchical account of positional neutralization

17:00-18:00 **Gillian Ramchand (CASTL, Tromsø)**
Paths

18:15-18:30 *Break*

18:30-19:30 *Invited speaker*
Anders Holmberg (Newcastle)
How to answer a negative question

Thursday April 4

09:15-10:15 **Norvin Richards and Coppe van Urk (MIT)**
Dinka and the architecture of long-distance extraction

10:15-11:15 **Maia Duguine (Nantes)**
Pro-drop as ellipsis: evidence from the interpretation of null arguments

11:15-11:30 *Coffee break*

11:30-12:15 *Poster Session 2*
David Potter, Michael Frazier and Masaya Yoshida (Northwestern): A Dual-Source Analysis of Gapping [*ALTERNATE 2*]
Mojmír Dočekal and Hana Strachoňová (Brno): Don't scope your universal quantifier over negation!
Sabina Matyiku (Yale): Motivating Head Movement: The Case of Negative Inversion in West Texas English
Cherlon Ussery (Carleton): Agreement vs Concord in Icelandic
Nobu Goto (Mie): Deletion by Phase: A Case Study of Gapping
Konstantin Sachs (Tübingen): The Semantics of Hindi Multi-Head Correlatives
Asad Sayeed and Vera Demberg (Saarland): Covert without overt: QR for movementless parsing frameworks
Yuni Kim (Manchester): Marginal contrast, categorical allophony, and the Contrastivist Hypothesis
Fabienne Martin (Stuttgart): Non-counterfactual past subjunctive conditionals in French

Ivona Kučerová (McMaster): Long-Distance Agreement in Icelandic revisited: An interplay of locality and semantics

[***Posters removed at 18:00***]

12:15-13:45 *Lunch break*

13:45-14:45 **Gary Thoms (Edinburgh)**
Anti-reconstruction, anti-agreement and the dynamics of A-movement

14:45-15:45 **Gabriela Alboiu (York) and Virginia Hill (New Brunswick–Saint John)**
Raising to Object from finite CPs: dual A/A-bar and MCC

15:45-16:00 *Coffee break*

16:00-17:00 **Beata Moskal (UConn)**
Limits on Noun-suppletion

17:00-18:00 **Peter Svenonius and Gillian Ramchand (CASTL, Tromsø)**
Deriving the Functional Hierarchy

18:00-19:00 *GLOW Business Meeting*

from 19:30 *Conference Dinner, Grand Hotel*

Friday April 5

09:15-10:15 **Gertjan Postma (Meertens)**
Constraining Local Dislocation dialect-geographically: V-T-AGR versus V-AGR-T in Dutch dialects

10:15-11:15 **Jacek Witkoś and Sylwiusz Żychliński (Adam Mickiewicz)**
Visser's Generalization and the c-command condition on Control

11:15-11:30 *Coffee break*

11:30-12:30 **Ricardo Etxepare (CNRS) and William Haddican (CUNY)**
Repairing Final-Over-Final Constraint Violations: Evidence from Basque Verb Clusters

12:30-14:00 *Lunch break*

14:00-15:00 **Adam Albright (MIT) and Giorgio Magri (CNRS)**
Perceptually Motivated Epenthesis Asymmetries in the Acquisition of Clusters

15:00-16:00 **Masaya Yoshida (Northwestern), Tim Hunter (Cornell) and Michael Frazier (Northwestern)**
Parasitic Gaps Licensed by Elided Syntactic Structure

16:00-16:15 *Coffee break*

16:15-17:15 **Bronwyn M. Bjorkman (Toronto)**
Accounting for the absence of coreferential subjects in TP coordination

17:15-18:15 **Patrick Grosz (Tübingen) and Pritty Patel-Grosz (MIT)**
Structural Asymmetries - The View from Kutchi Gujarati and Marwari

18:15-19:15 **Maria Polinsky (Harvard) and Eric Potsdam (Florida)**
Anaphoric dependencies in real time: The processing of Russian numerical constructions

Alternates:

1 **Rajesh Bhatt and Stefan Keine (UMass, Amherst)**
Verb Clusters and the Semantics of Head Movement

2 **David Potter, Michael Frazier and Masaya Yoshida (Northwestern)**
A Dual-Source Analysis of Gapping

GLOW 36 WORKSHOP PROGRAM I:

Biolinguistics

Tuesday 2 April

09:00-09:15 *Welcome and announcements*

09:15-10:15 *Invited speaker*
Robert Berwick (MIT)
Darwinian Linguistics

10:15-10:45 **Theresa Biberauer (Cambridge/Stellenbosch), Ian Roberts (Cambridge), Michelle Sheehan (Cambridge)**
On the 'Mafioso Effect' in Grammar

10:45- 11:15 **Aritz Irurtzun (CNRS-IKER)**
Some Maladaptive Traits of Natural Language

11:15-11:30 *Coffee break*

11:30-12:15 *Poster session 1* [*SEE LIST BELOW*]

12:15-14:00 *Lunch break*

14:00-14:30 **Andreas Trotzke (Konstanz) and Markus Bader (Frankfurt)**
Against usage-based approaches to recursion:The grammar-performance distinction in a biolinguistic perspective

14:30-15:00 **Wolfram Hinzen and Txuss Martin (Durham)**
From infant pointing to the phase: Grammaticalizing deictic reference

15:00-15:30 **Norbert Corver (Utrecht)**
Colorful spleeny ideas speak furiously

15:30-16:00 *Coffee break*

16:00-16:30 **Koji Fujita (Kyoto)**
In Defense of the Merge-Only Hypothesis

16:30-17:00 **Cristina Guardiano (Modena e Reggio Emilia), Giuseppe Longobardi (York), Luca Bortolussi (Trieste), Andrea Sgarro (Trieste), Giuseppina Sivestri (Trieste/Pisa) and Andrea Ceolin (Trieste)**
The historical reality of biolinguistic diversity

17:00-17:30 **Anna Maria Di Sciullo (Québec à Montréal)**
Language Faculty, Complexity Reduction and Symmetry Breaking

17:30-18:15 *Poster session 2* [*SEE LIST BELOW*]

18:15-18:30 *Break*

18:30-19:30 *Invited speaker*
Charles Yang (University of Pennsylvania)
Tipping Points

Posters:

Cedric Boeckx (ICREA & Barcelona) and Anna Martínez-Álvarez (Barcelona): A multi-step algorithm for serial order: Converging evidence from Linguistics and Neuroscience

Evelina Leivada and Pedro Tiago Martins (Barcelona): (Biolinguistic) Primitives Lost in Translation

Jordi Fortuny and Adriana Fasanella (CLT-UAB): Reducing linguistic variation to Third Factor mechanisms

Rita Manzini (Firenze): Variation and the architecture of grammar. Where are parameters? Where is lexicalization?

Evelina Leivada (Barcelona): The emergent nature of parametric variation

Cristiano Chesi and Andrea Moro (Pavia): Hierarchy and Recursion in the Brain

Silvia Albertini (Pavia), Marco Tettamanti (Milan) and Andrea Moro (Pavia): The impossible chaos: When the mind cannot eliminate language structure

Michelle Sheehan (Cambridge): A parameter hierarchy approach to alignment

Joana Rosselló (Barcelona): What a syllable can tell us about language

Cedric Boeckx (ICREA & Barcelona), Wolfram Hinzen (Durham) and Antonio Benitez-Burraco (Huelva): Prospects for a comparative biolinguistics

Timothy Bazalgette (Cambridge): An algorithm for lexicocentric parameter acquisition

Elisa Di Domenico (Perugia): Setting the elements of syntactic variation in L2 acquisition: On the English *'s* morpheme

Dany Jaspers (Brussels/Leuven): Constraints on Concept Formation

Ana M. Suárez Sándalo (Madrid): Concepts, Language, and Human Brain

Jason Overfelt (Amass, Amherst): Unbounded Successive-Cyclic Rightward Movement

Pilar Barbosa (Minho): *pro* as a minimal NP: towards a unified theory of *pro*-drop

GLOW 36 WORKSHOP PROGRAM II:

Syntactic Variation and Change

Tuesday 2 April

8.45–9.00 *Welcome and announcements*

9.00–10.00 *Keynote speaker*
Marit Westergaard (University of Tromsø)
Microvariation as Diachrony

10.00–10.20 *Coffee break*

10.20–11.00 **Maria Luisa Zubizarreta (University of Southern California)**
Stages of grammaticalization of the assertion structure in Spanish varieties

11.00–11.40 **Theresa Biberauer and Ian Roberts (Cambridge University)**
Size Matters: on Diachronic Stability and Parameter Size

11.40–11.50 *Short break*

11.50–12.30 **Jan Don, Paula Fenger and Olaf Koeneman (Amsterdam)**
Restricting language change through micro-comparative analysis

12.30–13.50 *Lunch break*

13.50–14.30 **Jeroen van Craenenbroeck (Hogeschool-Universiteit Brussel) and Marjo van Koppen (Utrecht University)**
Lexical items merged in functional heads: The grammaticalization path of ECM-verbs in Dutch dialects

14.30–15.10 **Will Oxford (University of Toronto)**
'Same', 'different', 'other', and the historical microsyntax of the Degree Phrase

15.10–15.30 *Coffee break*

15.30–16.10 **Elizabeth Cowper (University of Toronto) and Daniel Hall (Saint Mary's University)**
A neoparametric approach to variation and change in English modals

16.10–16.50 **Peter Svenonius (University of Tromsø)**
Licensing of Dative Case in Four Nordic Languages

16.50–17.00 *Short break*

17.00–17.40 **Jacopo Garzonio (Venice) and Cecilia Poletto (Frankfurt)**
Bare quantifiers and the like: analyzing the internal structure of functional words

17.40–18.00 *Concluding remarks*

GLOW 36 WORKSHOP PROGRAM III:

Diachronic Workings in Phonological Patterns

Saturday 6 April

9.45–10.30 **Daniel Silverman (SJSU)**
On the evolution of heterophony: lexical semantic pressures on phonological alternations

10.30–10.45 *Coffee break*

10.45–11.30 **Sam Steddy (MIT)**
Palatalisation Across the Italian Lexicon

11.30–12.15 **Laurence Voeltzel (Nantes)**
Geminates: from Old Norse to Scandinavian Languages

12.15–14.00 *Lunch break*

14.00–15.00 *Invited speaker*
Patrick Honeybone (Edinburgh)
TBA

15.00–15.15 *Coffee break*

15.15–16.00 **Brandaõ de Carvailho (Paris 8) and Ali Tifrit (Nantes)**
Velar/coronal asymmetry in phonemic patterns and change: a unified account

16.00–16.45 **Elan Dresher, Christopher Harvey and Will Oxford (Toronto)**
Synchronic Systems in Diachronic Change: The Role of Contrast

GLOW 36 WORKSHOP PROGRAM IV:

Acquisition of Syntax in Close Varieties

Saturday 6 April

9:30-10:00	**Anna Cardinaletti and Anna Fabris (Venice)** On the bilingual acquisition of Italian and Venetan dialects: A focus on subject and object clitic pronouns
10:00-10:30	**Marit Westergaard and Merete Anderssen (Tromsø)** Word order and definiteness in the Norwegian DP: Complexity, frequency and structural similarity in bilingual acquisition and attrition
10:30-11:00	*Coffee break*
11:00-11:30	**Kristine Bentzen (Tromsø)** Cross-linguistic influence and structural overlap affecting English verb placement
11:30-12:00	**Susan Sayehli (Lund)** Morpho-syntactic transfer in L3 acquisition
12:00-13:30	*Lunch break*
13:30-14:00	**Artemis Alexiadou and Katerina Zombolou (Stuttgart)** The acquisition of reflexives and anticausatives by young heritage bilingual German-Turkish and German-Russian children
14:00-14:30	**Margreet von Koert, Olaf Koeneman, Fred Weerman and Aafke Hulk (Amsterdam)** The quantification asymmetry as a language-specific phenomenon
14:30-15:00	*Coffee break*
15:00-15:30	**Öner Özçelik (Indiana)** Selectivity in L3 transfer: effects of typological and linguistic similarity in the L3 Turkish of Uzbek-Russian bilinguals
15:30-16:00	**Oksana Laleko (State Universiy of New York) and Maria Polinsky (Harvard)** Topic vs. case marking in Japanese and Korean: Comparing heritage speakers and second language learners

16:00-16:30 *Coffee break*

16:30-18:00 *Keynote speaker*

Jason Rothman (Florida)

Comparative Structural Determinism and Cognitive Economy: Evidence from L3 Transfer in closely-related language pairings

The impossible chaos: When the mind cannot eliminate language structure.

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A long-standing linguistic hypothesis holds that words sequences are assembled into complex hierarchical recursive structures, i.e. constituents, rather than being linearly organized [1,2]. Yet, a surprisingly limited amount of empirical evidence is available to demonstrate the psychological reality of constituent structures: the investigation of the subjective location of clicks heard during speech perception suggested that constituents function as perceptual units [3], whereas the investigation of sentence learning indicated that constituents represent the encoding units underlying recall processes [4]. In more recent years, neuroimaging studies have complemented this limited behavioral literature, by effectively demonstrating the neurobiological salience of the constituent structure. Studies on constituent structure have traditionally been based on testing the reaction of subjects to artificially generated linguistic stimuli [5,6]. Different experimental strategies have been employed to measure the neural correlates of syntactic processes with such stimuli: either the reaction to syntactic manipulations [7,8], or to syntactic errors [9-11], or the acquisition of syntactic rules that do or do not conform to human language universals [12-16]. Although suggestive of a neurobiological basis of constituent structure, the neuroimaging evidence collected so far is not entirely conclusive, as the existence of phrase structure was modelled somewhat a priori in the experimental paradigms, instead of being deduced in an unbiased manner as an emergent property of the data.

Here we support the neuropsychological reality of phrase structures by adopting a new methodology that is less prone to experimental biases: we asked the subjects to freely turn well-formed sequences of words into a disordered structure. The participants read printed sentences or noun phrases aloud, one at a time. All the stimuli contained 6 words, arranged in different constituent structures. Immediately after reading one stimulus, the sentence was hidden, and the subjects were instructed to repeat the same words as in the stimulus but in a different and completely arbitrary order. No constraints on the execution of this task nor any examples or other hints were provided to the subjects. Responses were considered as correct if they contained all and only the words presented in the stimulus, though arranged in a different order. An example of one stimulus and of a representative correct response is given in (1 a,b):

(1 a) Stimulus: *A thief has stolen the purses*
(1 b) Response: *Purses the a thief stolen has*

This free distortion task involves processes of parsing, coding and storage in working memory of the printed word sequence [17], recall from memory, and executive processes to monitor for word order, for the words already spoken, and for those yet to be uttered during response. We hypothesized that, in order to comply with the memory load task requirements, the participants would adopt a computationally more economical strategy than processing each word separately, namely using familiar word chunks. Word chunking is thought to occur at the stage of encoding and storage of the linguistic stimuli [18,19], determining a recall facilitation for the units thus formed [20].We therefore identified preserved word sequences as an index of persistence of phrase structure to word order distortion, by means of a metric that measured the amount of disorder and allowed us to test whether any regularities emerged

from the participants' responses. A Transitional Change Index (TCI) was assigned to each Word Boundary (WB) between consecutive words in the stimulus. We scored a TCI = 1, when two adjacent words in the stimulus were placed in non-adjacent positions in the response; a TCI = 0, when adjacency was maintained, irrespective of mutual word order.

In a first experiment, in which we presented well-formed sentences in Italian, we expected a higher mean TCI proportion in WBs between constituents than in WBs within constituents, suggesting that subjects were unconsciously sensitive to the underlying phrase structure of the stimuli, and that they tended to preserve it in their responses. This experiment alone, however, would not allow for a straightfoward interpretation of phrase structure persistence, since word chunking may not be (solely) driven by morpho-syntactic factors (e.g., agreement), but rather by lexical-semantic factors (e.g. semantic coherence, co-occurrence frequency).

In a second experiment, we therefore disentangled these two possibilities, by replacing open class word roots with pseudo-word roots [11,12] in a subset of the stimuli used in the first experiment, thus reducing the lexical-semantic sentence content, while keeping the syntactic constituent structure intact. The use of pseudo-word roots constitutes an optimal control for both semantic coherence and co-occurrence frequency, which in pseudo-word stimuli is close to zero [21]. In Experiment 2, we expected to replicate the results of Experiment 1, as an indication that the regularity patterns unconsciously produced by the subjects were not due to either lexical-semantics biases or the relative frequency of co-occurrence of the words constituting each sentence, but rather to genuine syntactic factors.

The results showed that the subjects could not get rid of the underlying phrase structure, albeit unconsciously. Although prompted to recombine words at random, our subjects consistently produced recombination specific patterns depending on the type of input phrase structure. Moreover, the irrelevance of lexical-semantics biases and of the frequency of word co-occurrence was demonstrated by comparing stimuli formed by actual words with stimuli formed by invented words. We propose that the original methodology presented here highlights the role of the implicit syntactic knowledge that normal human subjects are unconsciously endowed with. Such spontaneous and unbiased constraints confirm the neurobehavioral substance of phrases in a novel manner and may lead to a deeper comprehension of the neural processes underlying phrase structure syntactic processing.

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Raising to Object from finite CPs: dual A/A-bar and MCC

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Issue. In colloquial Romanian (Rom) verbs expressing knowledge from reasoning (e.g. *cunosc, ştiu* 'know') or inference (e.g. *văd* 'see/realize', *aud* 'hear/find out') allow for the thematic subject of their embedded clause to surface either in the finite indicative complement CP, with NOM spell-out, see (1a), or, in the matrix clause, with ACC spell-out, see (1b). Both (1a) and (1b) have evidential readings.

(1) a. Am văzut [că **Ion$_k$/el$_k$** e$_k$ pompier / lăcomeşte$_k$ la mâncare].
AUX.1 seen that Ion/ he.**NOM** is firefighter / is.greedy at food
'I/We saw (= realized) that Ion is a fire-fighter / greedy with food.'

b. **L$_k$**-am văzut **pe Ion$_k$** [că (*e$_k$ pompier) / lăcomeşte$_k$ la mâncare].
CL.3SGM.**ACC**-AUX.1 seen PRT Ion that (is firefighter) / is.greedy.3SG at food
'I/We saw Ion being (*a firefighter) / greedy with food.'

The evidential nature of perception verbs is not surprising, but the following facts might be: (i) Subject raising changes evidentiality: in (1a), there is inference of a fact, while in (1b), the raised subject is evaluated by the speaker, thus ruling out individual-level predicates. Specifically, there is a shift in speaker commitment, so a shift in 'evidence type' (Rooryck 2001) with raising: either from indirect to direct/attested evidentiality (in the sense of Willett 1988), or within indirect evidentiality, from hearsay/reportative to inferential. (ii) While Su-to-Su raising is known to trigger evidential meanings (Ruwet 1972, Rooryck 2001), Su-to-***Obj*** raising has not thus been analysed. (iii) Su raising is out of a finite, Case-licensing CP, so the trigger for this DP movement must be accounted for independently of Case requirements.

Objective. We argue for the following: (i) The derivation in (1b) arises from Raising to Object (RtoO)/ECM, across the phasal indicative CP; (ii) RtoO in Rom is both A-bar and A-movement; (iii) The trigger for movement is an [**Eval**(uative)] feature grammaticized onto the inherently evidential main clause predicate with shifted evidentiality.

Background. Formal analyses of constructions similar to (1b) show a split between: (i) a cross-clausal movement analysis, where the DP moves from a non-finite complement clause to a matrix Case position (i.e. standard ECM), e.g. Bošković (2007), Bowers (2002), Johnson (1991); or (ii) an external Merge/proleptic construction, where the DP (or associated clitic) is base-generated in the matrix clause for discourse requirements, and is chain related to an A or A-bar position in the complement clause which, cross-linguistically, could be finite or non-finite (e.g. Bruening 2001, Davies 2005, Massam 1985).

Properties. First, matrix base-generation cannot be assumed for Rom, on several grounds: (i) Evaluative/evidential Vs disallow the CAUSE+HAVE/LOCATION analysis of ditransitives (Harley 2002) and are exclusively mono-transitive; (ii) The relevant DP disallows resumptive pronouns in the embedded clause, whereas object control constructions, which are di-transitive, allow them: compare (2a) to control (2b); (iii) A relative clause analysis is ruled out due to lack of adjacency: see (3) with the intervening matrix subject intervening. Hence, in both (1a) & (1b), the matrix verb selects only the obligatorily indicative CP complement.

(2) a. **Îl$_k$** ştiu **pe Rareş$_k$** [că e (***el$_k$**) om bun (***el$_k$**).
CL.3SG.M.**ACC** know.1SG PRT Rares [that is 3SG.M.**NOM** man good 3SG.M.**NOM**
'I know Rares to be a good man.'

b. **L$_k$**-am convins (**pe Ion$_k$**) [să plătească (**el$_k$**) lumina].
3CL.SG.M.**ACC**-AUX.1 convinced (PRT Ion) [SUBJ pay.subj.3 3SG.M.**NOM** light
'I/We convinced Ion to pay the hydro bill.'

(3) b. **Îl** ştia **pe Ion** ***toată lumea*** [că era om bun].
him knew DOM Ion all world.the that was man good
'Everybody knew Ion to be a good man.'

Second, tests replicated from Bruening (2001), Bošković (2007), and Davies (2005), show that movement/RtoO across the embedded CP is involved. These include: (i) CP constituency tests (substitution & fronting), which fail when the DP is in the matrix; (ii) sensitivity to islands (complex NP, see (4); coordination); and (iii) reconstruction into the embedded clause. Crucially, the RtoO DP cannot be assumed to be in an A-bar CP internal position (as in Massam 1985, Rafel 2000), since it can precede the matrix subject: see (3). We conclude that the DP landing site in Rom RtoO is in the matrix v*P domain, given ACC spell-out.

(4) a. Ion mirosise [faptul [că **Maria** îşi aranja plecarea]].
Ion smelled fact-the [that Maria CL.REFL.3.DAT arrangedeparture-the
'Ion smelled/figured out the fact that Maria was preparing her exit.'

b. *Ion **o$_k$** mirosise **pe Maria$_k$** [faptul [că-şi aranja plecarea]].
Ion CL.3SG.F.**ACC** smelled PRT Maria fact-the [that-CL.REFL arrange departure-the

c. Ion **o$_k$** mirosise **pe Maria$_k$** [că-şi aranja plecarea.]
Ion CL.3SG.F.**ACC** smelled PRT Maria [that-CL.REFL. arrangedeparture-the
'Ion figured out that Maria was arranging her exit.'

Analysis. First, RtoO DP, unlike ECM, shows A-bar properties: (i) bare quantifiers are disallowed (5); and (ii) concurrent wh-movement to the matrix is barred (6).

(5) **Îl$_k$** ştim **pe Ion$_k$/(*pe cineva)** [că nu gustă teatru].
3CL.3SG.M.**ACC** know.1PL PRT Ion PRT someone [that not tastes theatre]
'We know that Ion doesn't like the theatre.'

(6) ***Ce*-l$_k$** ştim **pe Ion$_k$** [că nu gustă]?
what-3CL.3SG.M.**ACC** know.1PL PRT Ion [that not tastes]

These facts indicate that Rom evidential driven RtoO is successive-cyclic A-bar movement via embedded Spec,CP. Second, we discuss DP ACC lexicalization. The embedded indicative clause is finite, has independent tense, and [$_C$ *că*] 'that' is a phasal head. Assuming that structural Case is a property of the Phase (Chomsky 2008), NOM Case valuation is available in both (1a) and (1b) for the embedded subject DP. This strengthens the claim that RtoO is **not** Case driven (as in standard ECM). Given its interpretive effects, in Rom RtoO the matrix v* has an [Eval] property with an EF (Edge Feature, Chomsky 2008) alongside its [uϕ/ACC]. *Maximize match* guarantees checking of both by the embedded subject (defined hierarchically). Since, following Gallego (2011), type of movement is defined by the probe, not configurationally, with A-bar movement triggered by EF and A-movement triggered by ϕ features, RtoO is expected to show dual properties, given the simultaneity of both probes. Indeed, A-movement effects, such as reversal of binding possibilities, see (7), and passivization, are also noted. Lastly, as in Chomsky's (2008) account of *Who saw John*, where the base-generated copy of ~~*who*~~ is engaged separately by T and by C, we propose that the embedded subject establishes 2 chains in (1b): one with embedded T *and* the other with matrix v* via Spec,CP. This is supported by the exclusively post-verbal position of floated quantifiers, see (8), and accounts for multiple Case checking (i.e. 'MCC', à la Bejar/Massam 1999) effects, which we also discuss.

(7) **O** văd [pe fiecare mamă]$_k$ copiii ei$_{k/j}$ [că munceşte mult].
CL.3SG.F.**ACC** see.3PL PRT each mother children her that works hard
'Her children see each mother working hard.'

(8) **I**$_k$-am văzut eu **pe studenţi$_k$** [că (*cam toţi) ezită (**cam toţi$_k$**)[să voteze]].
CL.3PL.M.A**CC**-AUX.1 seen I PRT students [that (most all) hesitate (most all)[SUBJ vote]]
'I noticed that most all students are hesitant to vote.'

Conclusions. This paper argues for dual A/A-bar movement in Rom RtoO, thus challenging the notion that movement is uniformly of one type or the other. It contributes to a sharper understanding of issues at the syntax-semantics interface and supports availability of MCC.

PERCEPTUALLY MOTIVATED EPENTHESIS ASYMMETRIES IN THE ACQUISITION OF CLUSTERS

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A growing body of evidence supports the view that children's phonological patterns are shaped not only by child-specific performance pressures (Kiparsky and Menn 1977; McAllister Byun 2011), but also by the universal forces that define adult grammars (Fikkert 1994; Gnanadesikan 2004). For many processes of child phonology, both explanations are plausible. For example, epenthesis into consonant clusters (/CCV/ $\rightarrow$ [C**V**CV]) may be motivated by a strong articulatory preference in children for mandibular oscillation, favoring CV sequences (MacNeilage 1998), or it may be motivated by the same phonological constraints that derive epenthesis in adult phonologies. In this talk, we provide evidence that epenthesis in child English is not merely a result of articulatory pressures, but is shaped by the same set of perceptually motivated constraints that govern epenthesis in adult phonologies. In adult systems, converging evidence from reduplication, infixation, loanword adaptation, alliteration, and puns shows that epenthesis is preferred in stop+liquid clusters (/pra/ $\rightarrow$ [p**V**ra]), relative to s+stop clusters (/sta/ $\rightarrow$ [s**V**ta]) (§1). Fleischhacker (2001, 2005) attributes this to the greater perceptual similarity of [pra] $\sim$ [p**V**ra], and the lesser similarity of [sta] $\sim$ [s**V**ta]. Based on data from over 550 children in the *Iowa-Nebraska Articulation Norms Project* (INANP) database (Smit *et al*. 1990), we show that children are subject to the very same set of asymmetries (§2). This finding supports the strong *continuity hypothesis* that children possess the same set of representations and constraints as adults. Furthermore, it leads to a new solution for the long-standing puzzle posed by children that produce s+stop before stop+sonorant clusters (Barlow 2001), despite the fact that the latter cluster type is generally thought to be less-marked due to its rising sonority (§3).

§**1 - Asymmetries in adult epenthesis.** The splittability of a cluster through vowel epenthesis or infixation depends on the cluster type: s+stop clusters are least splittable while stop+sonorant clusters are most splittable, with a whole continuum in between, schematized in (1).

(1) s+stop $<$ s+nasals $<$ s+liquids $<$ s+glide; stop+r $<$ stop+l $<$ stop+glide

For instance, Broselow (1987, 1992, 1992) and Fleischhacker (2001, 2005) look at cluster simplification in loans and L2 errors, and report that a vowel is preferably epenthesized *into* a stop+sonorant cluster (*anaptyxis*: CCV $\rightarrow$ C**V**.CV) but *before* an s+stop cluster (*prothesis*: CCV $\rightarrow$ **V**C. CV), with s+sonorant clusters displaying variation both across and within languages. Another source of evidence comes from corpus frequencies: Zuraw (2007) collects a corpus of cluster initial loans from English and Spanish into Tagalog, and notes that infixation splits the onset cluster more frequently in the case of stop+glide than stop+liquid clusters. Furthermore, Zuraw reports that in a production task, the frequency of infixation by Tagalog speakers into the cluster is smallest for s+stop clusters, larger for s+liquid clusters and largest for s+glide clusters. Similar asymmetries are found in word games: Pierrehumbert and Nair (1995) report that English speakers infix more often into stop+l than stop+r clusters, and Fleischhacker (2001) reports similar results from puns. Fleischhacker shows that this asymmetry is rooted in perceptual similarity: epenthesis in rising sonority clusters (/pr/) is less salient than in shallow sonority clusters (/st/), and is therefore hypothesized to be less severely penalized by faithfulness constraints, under Steriade's (2001) *P-Map* hypothesis.

§**2 - Analogous asymmetries in child epenthesis.** This talk provides evidence that the asymmetries in adult epenthesis in (1) carry over from adult to child phonology. We have looked at onset consonant cluster simplification in 555 children from the INANP database. The database provides transcribed elicited child productions for all singleton codas and onsets, as well as for the most common bi- (25 targets) and tri- (5 targets) consonantal clusters. **¶2.1** The **relative frequencies** reported in (2a) show that epenthesis into s+stop clusters is clearly dispreferred relative to stop+sonorant clusters. Within fricative+C clusters and within stop+sonorant clusters, observed frequencies (2b) and (2c) of child epenthesis into the cluster closely match the adult hierarchy (1), with the exception of C+glide clusters. For adults, epenthesis into C+glide

clusters is reported to be preferred over epenthesis into C+liquid clusters, both when C is a sibilant and a stop. The frequencies in (2b) and (2c) instead drop for C+glide clusters.

(2) a.

ST:	0.78%
TL DL TR DR TW:	2.96%

b.

ST:	0.78%
SN:	1.56%
FR:	3.24%
FL:	3.78%
SW:	2.34%

c.

TR:	1.5%
DR:	2.79%
TL:	3.24%
DL:	5.94%
TW:	2.7%

Legend: **ST** = /sp sk st/; **SN** = /sm sn sn/; **FR** = /θr fr/; **FL** = /fl sl/; **SW** = /sw/; **TR** = /kr tr pr/; **DR** = /gr dr br br/; **TL** = /kl kl pl/; **DL** = /gl bl/; **TW** = /tw kw/.

Finally, the relative splittability of stop+sonorant clusters in (2c) depends not only on the sonorant (l, r, glide) but also on voicing of the stop. Although this asymmetry has not been investigated in adult phonology, it is plausibly consistent with Fleischhacker's perceptual approach, since voiceless stops devoice a following sonorant, so epenthesis would yield an additional voicing difference on the liquid. **¶2.1** Further evidence for the role of the hierarchy (1) in the child INANP database comes from the **conditional probabilities** in (3). To illustrate, here is how the entry 40% has been computed for row cluster type s+stop (ST) and column cluster type stop+liquid (TR, TL, DR, DL) in (3a). For each s+stop cluster x and each stop+liquid cluster y, we have computed the ratio between the number of children who perform epenthesis in both x and y divided by the number of children who perform epenthesis in x. This ratio thus represents the empirical conditional probability that a child performing epenthesis into cluster x also performs epenthesis into cluster y: the closest the ratio is to 1, the strongest is the conditioning effect. By averaging over all s+stop and stop+liquid clusters, we get 0.4, i.e. 40%.

(3) a.

	ST	TR TL DR DR
ST	**46**	40
TR TL	11	**25**
DR DR		

b.

	ST	SN	SL	FR
ST	**46**	59	70	38
SN	30	**33**	56	34
SL	20	28	**36**	32
FR	12	12	26	**18**

c.

	TR	TL	DR	DL	TW
TR	**31**	21	30	29	17
TL	15	**41**	21	43	17
DR	20	24	**24**	31	20
DL	10	24	15	**39**	9
TW	23	29	28	28	36

Thus, (3) quantifies the strength with which epenthesis in the row cluster type conditions epenthesis in the column cluster type. Crucially, the entry above the diagonal is always larger than the corresponding entry below the diagonal, matching the order in (1). For instance, the difference 40% vs 11% in (3a) shows that epenthesis into ST clusters conditions epenthesis into stop+liquid clusters, not vice versa. Again, stop+glide clusters in (3c) behave exceptionally.

§**3 - Implications.** The findings reported in §2 have two theoretical implications. **¶3.1** Fleishhacker and Zuraw develop an account of the epenthesis hierarchy (1) based on *perceptual similarity*. They provide experimental evidence that speakers judge the pair /CC/ → [C**V**C] most dissimilar when CC is an s+stop cluster and least dissimilar when it is a stop+sonorant cluster, with a whole range in between. They propose that adult phonology encodes this perceptual similarity through Steriade's (2001) *P-Map*, whereby DEP[V]/S_T is ranked higher than DEP[V]/T_R. Under this interpretation, our findings provide evidence that child phonology has access to P-Map motivated rankings among faithfulness constraints. **¶3.2** Children that acquire s+stop clusters before other cluster types (Barlow 2001, Fikkert 1994) pose a long standing problem: s+stop clusters are marked and are thus expected to be acquired later. Approaches that posit a special status for the initial /s/ are unable to account for children that acquire s+stop clusters before other sC clusters. Our findings pave the way for a new approach. As recalled in §1, epenthesis into s+stop clusters is heavily dispreferred in adult phonology. Also deletion has been reported to be dispreferred in the case of s+stop clusters (Fleischhacker 2005). Our findings in §2 show that (at least some of) these dis-preferences for certain repair strategies for certain cluster types carry over to child phonology. This suggests the following approach to the precocious acquisition of s+stop clusters in certain developmental paths: they are acquired early despite their marked status because they are "harder to simplify", i.e. epenthesis and deletion incur a higher cost (say, a violation of a higher ranked faithfulness constraint).

The acquisition of reflexives and anticausatives by young heritage bilingual German-Turkish and German-Russian children

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There is much discussion in the literature about whether cross-linguistic transfer due to typological/structural similarities and/or differences occurs in bilingual acquisition (for an overview see, Serratrice et al. 2012). However, it is not always clear-cut how to measure typological/structural similarity as opposed to distinctness. While certainly membership to the same language family plays a role, often languages show typological similarities even if they are not members of the same language group. Thus one additional value that could be used to measure similarity is that of the containment of identical structures.

A case in point is German versus Turkish/Russian as far as the syntax of their respective reflexives and anticausatives is concerned. On the one hand, the two groups of languages are typologically/structurally similar because (a) they morphologically mark reflexives and anticausatives (the anaphor *sich* in German, the suffixes *-(i)n/l* and *–sja* (and *–s'*) in Turkish and Russian respectively), (b) reflexives and anticausatives are syncretic and, (c) they show two types of anticausatives, those which are not marked (anticausatives I) and those which are by the aforementioned markers (anticausatives II). On the other hand, German differs from both Turkish and Russian in that (a) German forms reflexives and anticausatives II by a SE-anaphor, i.e. *sich* carries an independent theta-role and case whereas the Turkish and Russian reflexive suffixes do not; this results to a different syntactic structure: German unlike Turkish/Russian reflexives and anticausatives II are syntactically transitive structures. (b) Although reflexives and anticausatives are morphologically marked in all three languages, they are not always equally distributed, in the sense that there are verbal items which are morphologically marked for reflexives (e.g. *sich waschen* 'wash oneself') and anticausatives (e.g. *verbrennen* 'burn') in German and Turkish/Russian whereas others are marked in German but not in Turkish/Russian (e.g. *sich rasieren* 'shave oneself' & *zerbrechen* 'break'), and vice versa.

We investigated the acquisition of reflexives and anticausatives by bilingual German-Turkish and German-Russian children and raised the question whether these typological/structural similarities but also differences between the two languages influence the bilingual acquisition, as compared to L1-German acquisition. More specifically, we tested sequential bilingual typically developing German-Turkish (n=6) and German-Russian (n=6) children, aged 3;1-4;7 (av. 4;0) and 3;10-4;9 (av. 4;0) respectively, with regard to the acquisition of reflexives (n=8), anticausatives I (n=8) and anticausatives II (n=5) in an elicited production experiment. All tested children grow up with Turkish and Russian at home respectively. Both parents are native speakers of Turkish and Russian and communicate with and address the children in Turkish and Russian respectively. The children came to contact with German mainly when they went to the kindergarten (main time of exposure to German: 2;3-3;3 (av. 2;8) for the German-Turkish children, and 2;0-4;1 (av. 2;6) for the German-Russian children. The same experiment we run with thirteen monolingual typically developing German speaking children aged 3;0-4;3 (av. 3;6).

The results showed that (a) 92% of the German-Russian and 94% of the German-Turkish children omitted the reflexive anaphor *sich* with the reflexive verbs (1a) or they avoided to use the reflexive anaphor *sich* by producing an external object when this was possible (1b). (b) 100% of the German-Russian and 97% of the German-Turkish children omitted the reflexive anaphor *sich* with anticausatives II (1c), or they produced synonym verbs which do not require the reflexive anaphor *sich* (1d). (c) None of the bilingual children produced pleonastically the anaphor *sich* with anticausatives I, i.e. structures as in (1e) did not

occur (cf. figure 1). Similar performance was shown by the L1-German children, as illustrated in figure 2.

(1) a. *Versteckt (= sie versteckt sich) '(She) hides herself'
b. Kämt ihr Haar (= sie kämt ihr Haar) '(She) combs her hair'
c. *Drehen (= sie dreht sich) '(It) turns'
d. Die Tür geht zu (instead of *schließt sich*) 'The door closes'
e. *Das Eis schmelzt sich 'The ice-cream melts'

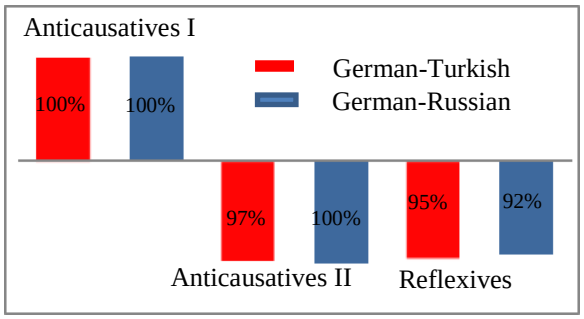

Figure 1: German-Turkish/Russian results

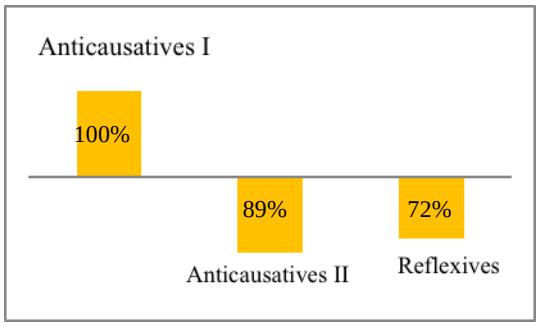

Figure 2: L1-German results

The monolinguals and bilinguals showed the same performance in (a) omitting the anaphor *sich* with reflexives and anticausatives II, (b) not overusing the anaphor *sich* with anticausatives I and, (c) scoring better with reflexives than anticausatives II. The points in (a)-(c) suggest that the monolinguals and bilinguals follow the same path of development in acquiring reflexives and anticausatives in German. We explained this performance in terms of complexity of syntactic computation (Alexiadou 2010; Jakubowicz & Nash 2001), for both monolinguals and bilinguals.

However, although it is true that the bilinguals performed qualitatively similarly to their monolingual peers, the former group performed quantitatively worse than the latter (cf. figures 1 and 2). Trying to explain this quantitative difference we first excluded language transfer from Turkish/Russian to German. If transfer would occur, different patterns of production should occur due to typological/structural similarities/differences mentioned above. We explained this quantitative difference on the basis of input. The tested children are sequential bilinguals who are exposed to German later than their L1 peers. Such age-of-onset effects are often associated with restricted input and, of course, less amounts of input as compared to their L1 peers (Nicoladis et al. 2012, and references therein).

In conclusion, our results suggest that the specific test-setting in our experiment, i.e. age of testing (av. 4;0), age-of-onset (av. 2;6-2;8), time of exposure to German until the testing time (av. 1;2-1;4 years) and complex structures such as Voice, which are shown to be acquired late in life anyway (Borer & Wexler 1987; cf. very high target-deviant scores also by L1s) are responsible for the quantitative difference between bilinguals and monolinguals, rather than typological/structural similarities/differences.

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pro as a minimal NP: towards a unified theory of _pro_-drop

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In recent years, there has been a return to Perlmutter's (l971) insight that the implicit subject in the Null Subject Languages (NSL) is a fully specified pronoun that is deleted in PF (cf. Holmberg 2005 and Roberts 2010). This view has been motivated by the observation that the classic GB theory of *pro* according to which *pro* is a minimally specified nominal whose features are supplied by Infl is incompatible with the approach to feature theory developed in the Minimalist Program. In this framework, the φ -features in T are assumed to be uninterpretable, hence unvalued. This raises a problem for the idea that subject *pro* is inherently unspecified for φ-features. The PF deletion analysis circumvents this problem. Concomitantly, recent theories of the nature of pronouns (Elbourne 2005) have posited a phonologically null NP as a complement of D in every pronoun (an NP affected by deletion, in the case of E-type pronouns, or $[_{NP}\ e]$, an index, in the case of regular pronouns). This proposal reintroduces the need to posit a null, minimally specified NP in the grammar, thus reopening the issue of whether *pro* can be reduced to an instance of $[_{NP}\ e]$. Here we offer a unified analysis of different types of *pro*-drop based on the hypothesis that *pro*=$[_{NP}\ e]$.

It is possible to isolate at least four typological patterns of NSL: **1.** Languages with rich subject agreement morphology (*consistent* NSLs), such as Italian. **2.** Languages that have agreement and referential null subjects whose distribution is restricted (*partial* NSLs), such as Hebrew, Finnish, Marathi, Russian, colloquial Brazilian Portuguese (BP). **3.** Languages that lack agreement, such as Chinese or Japanese, which have been described as topic-oriented languages and allow for any argument to be dropped (*discourse pro*-drop languages). **4.** Languages that only have impersonal and expletive NSs (semi *pro*-drop): a range of Creoles, Icelandic.

One key property that distinguishes Type 2 from Type 1 NSLs (Holmberg 2005) is that a 3P subject can have a generic interpretation equivalent to English 'one' (which may include the speaker and the addressee) in Type 2, whereas the languages of Type 1 must resort to some overt strategy in order to convey this reading. So as to capture this difference, Holmberg (2005) proposes that the distinctive property of the consistent NSLs as opposed to the other types of NSL is that T has a D-feature encoding definiteness. In Holmberg's system, positing this feature has an impact on the interpretation of the NS, but has no consequences on the syntax of overt pre-verbal subjects: in all of these cases, they are assumed to raise to Spec-TP and check the EPP. However, the languages of Type 2 differ from the languages of Type 1 with regard to the distribution and interpretation of **overt** subjects. Consider the following Portuguese examples:

(1) O João disse que ele comprou um computador.
the João said that he bought a computer

In the European variety of Portuguese, a Type 1 NSL, the embedded pronoun in (1) is preferably interpreted as non-co-referential with the matrix subject. For co-reference, the NS option is used (the so-called Avoid Pronoun Principle). In BP, however, the overt pronoun in (1) may be co-referent with the matrix subject (similar facts obtain in all the other partial NSLs). Since, under the pronoun deletion analyses, the presence of the D-feature in T has no impact on the status of overt preverbal subject pronouns, these facts are left unaccounted for. One alternative analysis of Type 1 languages is that the +D φ-feature specification in T is interpretable (cf. Barbosa l995, Alexiadou and Anagnostopoulou l998, a. o.). One of the corollaries of this approach is that pre-verbal (non-quantified) subjects are Clitic Left Dislocated (CLLD). Viewed in this light, the Avoid Pronoun Principle simply reduces to the preference for not merging a pronoun as a CLLDed Topic unless it is required to signal topic switch or for emphasis/empathy. In a partial NSL, by contrast, the overt pronoun is a genuine

argument that raises to pre-verbal position and so we see no effect of topic switch. Secondly, since the *phi*-features in T are interpretable in a consistent NSL, 3Person morphology entails reference to an entity that excludes the speaker or the hearer; this is why some overt strategy must be used in order to convey the generic inclusive reading.

The availability of a generic (inclusive) reading for the 3rd person NS is a feature that is shared by Type 2 and Type 3 languages. Among the analyses that have been proposed in the literature on discourse *pro*-drop is the hypothesis that it reduces to *null-NP anaphora* (Tomioka 2003). Tomioka observes that all of the languages that allow discourse *pro*-drop allow (robust) bare NP arguments. He shows that the interpretation of full-fledged NPs in Japanese is derived from one basic meaning, property anaphora (type <e,t>) ant that their differences are the result of two independently needed semantic operations: Existential Closure and Type Shifting to an individual. He argues that the semantic tools used to interpret full NPs are used to interpret *pro* in Japanese and proposes that what underlies discourse *pro*-drop is the fact that languages (almost) universally allow phonologically null NP anaphora. In a language that lacks determiners, this operation will give rise to phonologically unrealized arguments. In languages in which DPs are necessarily projected, a remnant D will always show up and so this process will never give rise to a silent argument.

Barbosa (2010) proposes to extend this approach to Type 2 NSLs. In effect, Finnish, Russian and Marathi lack articles, and BP as well as Hebrew allow bare nouns in argument position (cf. Doron 2003, Schmidt & Munn l999). These languages have (definite) object drop. Rodrigues (2004), Holmberg (2005) observe that in Finnish as well as BP the generic NS stays *in situ*; the definite interpretation is available just in case the NS raises to a high position. Holmberg and Nikane (2002) show that the same position that hosts the definite NS can host other categories besides subjects and is associated with topics (Finnish being a Topic Prominent Language). Similarly Modesto (2008) argues that the definite NS in BP is a null topic. On the assumption that the NS is a minimally specified NP then the different interpretations available would follow from the configurations that serve as input to semantics: the impersonal/generic interpretation arises when the null NP within VP is interpreted by Existential Closure (falling under the scope of a Gen operator in generic sentences); the anaphoric, definite interpretation arises when the null NP is a Topic (see Portner and Yabushita l998 for the claim that topics denote individuals that the sentence as a whole is 'about').

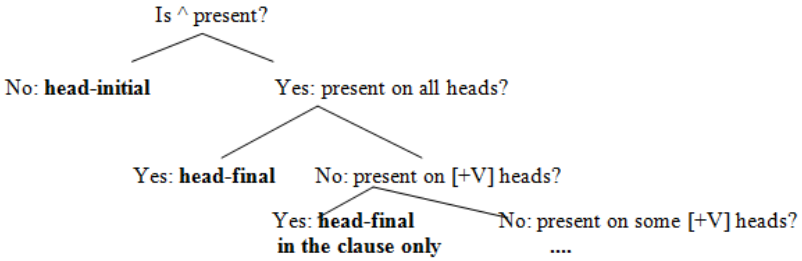
In Hebrew, present tense inflection lacks person marking and a definite NS is never allowed in this tense whereas the impersonal/generic NS is. Incidentally, Borer and Roy (2007) observe that a bare singular noun can only have a specific (non-generic) interpretation in Hebrew iff marked by a specificity marker. Ritter (l995) suggests that person agreement in past and future tenses is a definiteness marker, i.e., belongs to the category D. Building up on these findings, we suggest that Type Shifting to an individual is only available to the null NP in Hebrew when D-agreement is present. Curiously, the pattern of subject drop found in Hebrew present tense is that of Type 4 languages, such as Cape-Verdian creole or Papiamentu. These languages have bare nouns (cf. Baptista and Guéron 2009) as arguments. Icelandic lacks an indefinite article. We propose that Semi *pro*-drop should be viewed as an instance of a null NP that can only be interpreted under Existential Closure.

Coming back to the consistent NSLs, one issue raised by the claim that T hosts a D feature and an interpretable set of φ-features is the status of the argument (first merge) position of the silent subject. We argue that it is conceivable that the thematic position is filled by the very same phonologically null NP that has been posited to occur as a complement of D in pronouns (cf. Elbourne 2005), in which case *pro* is a null NP in the four different types of NSL.

An algorithm for lexicocentric parameter acquisition.

Under the lexicocentric view of syntax (c.f. Baker 2008's "Borer-Chomsky conjecture"), parametric variation is viewed as simply involving differences in the features of lexical items, with the properties of FLN (e.g. Merge, Agree) being invariant. This is an attractively minimalist perspective, but as Roberts and Holmberg (2010) note, it predicts unconstrained microvariation of a multitude of independent parameters, making it difficult to explain e.g. diachronic stability of macroparameters, and implicational relationships between parameters, as well as placing a large burden on the acquirer. Following Roberts (2007), they propose this tension between descriptive and explanatory adequacy may be resolved using the notion of generalisation of the input – the learner systematically tries to quantify features over the largest possible class of heads, leading to emergent hierarchies of microparameters of the following form, which can also be viewed as learning pathways (see also Roberts 2012; in this particular hierarchy "^" is an abstract feature leading to head-finality):

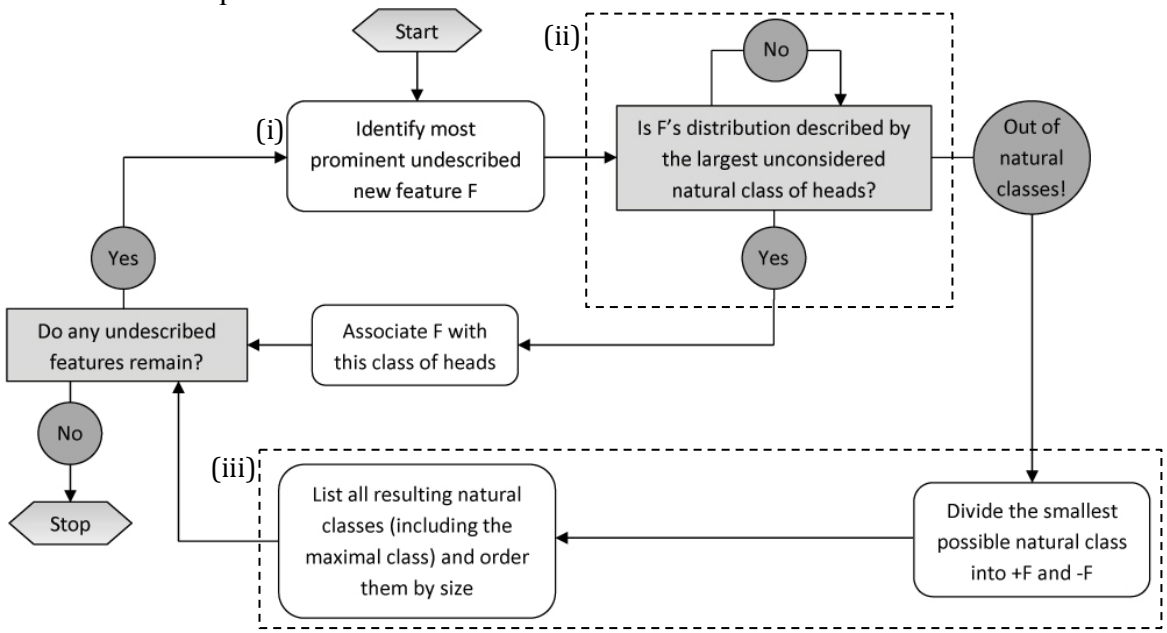
(1)



While this goes some way towards resolving the tension, Biberauer (2011) and Branigan (2012) both note that the top-down nature of the resulting hierarchies is susceptible to superset traps (c.f. Berwick 1985), and suggest a potential resolution: categories are not necessarily pre-given by UG, meaning that at different stages of development, different sets of categories are available to quantify over.

The below algorithm provides a computational model that interprets both of these insights from a radically minimalist perspective, providing a general system that could underlie featural acquisition:

(2)



In (i), a specific feature attested in the data is chosen to be described. Process (ii) then attempts to assign this feature to a natural class that is already in the system, working through them from largest to smallest – it is this step that generates the hierarchies of the kind seen in (1). If, however, no natural classes match the distribution of the feature in question, then

process (iii) creates new natural classes to describe the featural distribution seen, which can in turn be made reference to in process (ii) in subsequent loops of the algorithm.

This has the overall effect of taking a multiset of items, each of which has a number of associated properties (the characterisation of the linguistic input), and from this constructing a categorial system that provides a structured representation of these properties, with non-category-defining properties being represented as features associated with natural classes.

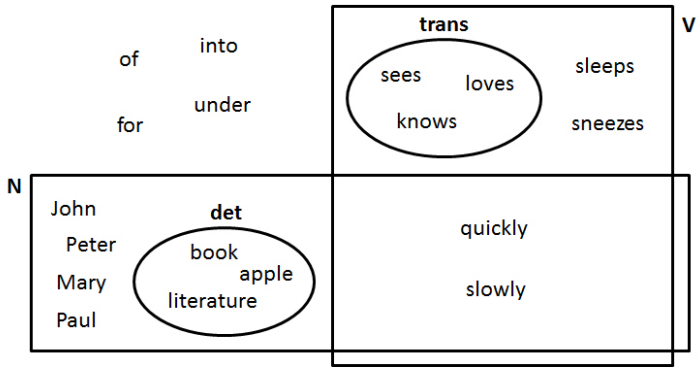
Thus when additionally given a sequential order of features to acquire (presumably resulting from a combination of cognitive biases and overtness in the data; see e.g. Gentner 1982, and Harley and Ritter 2000 for evidence of sequential categorial and featural acquisition) the algorithm deterministically results in a structure, which can be demonstrated using a toy fragment of English:

Items: John, Mary, Peter, Paul, book, apple, literature, sees, loves, knows, sneezes, sleeps, slowly, quickly, of, under, for, into

Features (in order of prominence): N, V, case-assigner, "free"-adjoiner, pied-piping possible, transitive, can take a determiner, proper noun

Supposing (for expositional simplicity, rather than theoretical validity) the distinctive featural category system of Chomsky (1981), the algorithm gives the following output:

(3)



[-N] are case-assigners

[-N,-V] allow pied-piping

[+N,+V] are "freely" adjoining

[+N,-V,-det] are proper nouns

Though much of this example is overly simplistic, the toy grammar nonetheless demonstrates some key properties of the algorithm:

- Where possible, it assigns features to existing natural classes, which reduces the complexity of the system, and may be why many syntactic features (e.g. uCase, vPhi, EPP etc.) seem to be privative rather than distinctive. Such privative features do not create new categorial distinctions, and so hierarchies of the type in (1) are predicted not to interact with one another.
- Features assigned by process (iii) do make categorial distinctions, and so here the order of prominence may affect the output, potentially underlying e.g. microvariation in lexical meanings, with cognitive biases perhaps preventing such variation in syntactic acquisition.
- When categories do need to be distinguished, sub-categories are preferred over top-level ones, which considerably reduces computational load, and also may explain e.g. syntactic sub-categories and potentially feature-geometric structures.
- Distinction of new high-level categories is especially dispreferred late in the acquisition pathway, as this creates even more complexity, which may underlie linguistic tendencies to regularise.

More generally, the advantages associated with the hierarchies in (1) also apply here, meaning that the algorithm can be seen to underlie a wide range of known properties of syntactic variation and change. Furthermore, it is equally applicable to phonological data (e.g. Ito and Mester's 1994 phonotactic analysis of Japanese can be readily adapted to this approach), yielding further insights, and even to non-linguistic forms of categorisation, and so is a plausible candidate for a naturally-selected cognitive process that is nonetheless a crucial part of FLB – in the sense of Chomsky (2005), a third factor.

Cross-linguistic influence and structural overlap affecting English verb placement

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It is well-known that although bilingual children clearly separate their languages from very early on (cf. e.g. Genesee 1989, Meisel 1989), cross-linguistic influence between the child's languages is a fairly common phenomenon. Various proposals have been put forward to account for the source and nature of such cross-linguistic influence. In the last decade, a particularly influential approach has explored the relevance of linguistic interfaces in bilingual language acquisition (see e.g. Hulk & Müller 2000, Müller & Hulk 2001, Sorace & Filiaci 2006, and numerous subsequent studies). In their seminal work on this topic, Hulk and Müller argue that two conditions must be met in order for cross-linguistic influence to occur: (i) the two languages must display (superficial) structural similarities with respect to the phenomenon in question, and (ii) the phenomenon involves the syntax-pragmatics interface.

In this paper, we present data from a balanced Norwegian-English bilingual girl, Emma, aged 2;7-2;10, who appears to transfer V2 from Norwegian into English. V2 in Norwegian matrix clauses is not a phenomenon that depends on discourse or pragmatic factors; rather is seems to be part of core syntax. Thus, this kind of transfer suggests that cross-linguistic influence is not restricted to the syntax-pragmatics interface. Rather, we argue that structural overlap between the two languages, in combination with complexity, is the central cause for this type of influence.

Norwegian is a V2 language and generally displays V-to-C movement in main clauses. Consequently, all finite verbs move across negation and other adverbs in subject-initial matrix clauses, and invert with the subject in non-subject initial matrix clauses, as well as in *yes/no*- and *wh*-questions. Monolingual Norwegian children have been found to acquire V2 very early in all of these contexts (cf. Westergaard 2009). English, on the other hand, is a *residual V2* language, in which only auxiliaries and the copula undergo verb movement, and only in certain context. Thus, in parallel with Norwegian, English displays movement of finite auxiliaries across negation, as well as subject-verb inversion with these verbs in questions. However, in non-subject initial clauses, there is no verb movement. Moreover, finite main verbs never undergo verb movement. Although monolingual English-speaking children occasionally fail to move finite auxiliaries in the relevant contexts, overgeneralized movement of finite main verbs is hardly ever attested.

The bilingual child investigated in this study appears to master V2 in Norwegian at the same level of competence as her monolingual Norwegian peers. However, in Emma's English, we see verb movement patterns that are not attested in monolingual English acquisition. First of all, in non-subject initial matrix clauses, she produces subject-verb inversion 26.3% of the time (in 20/76 instances), resulting in constructions like (1):

(1) Now **throw I** it (Emma 2;8.5)
Target: 'Now I throw it'/'Now I'm throwing it'

Secondly, we also find deviant verb movement in negated clauses. Emma does not master *do*-insertion yet at this age. While most of her negated clauses display the typical pattern found in monolingual English-speaking children at this point of development, (2a), she also produces verb movement across negation, as in (2b) in as much as 21.8% of her negated clauses:

(2) a. Mommy **not know** that (Emma 2;8.5)
Target: 'Mommy doesn't know that.'

b. I **hurt not** this knee now (Emma 2;8.5)
Target: 'I'm not hurting this knee now.'

In addition, Emma moves the auxiliary *gonna* across negation (in 15 out of 16 cases):

(3) The teletubby **gonna not** sleep in there more (Emma 2;8.5)
Target: 'The teletubby is not gonna sleep in there anymore.'

Thirdly, we also find subject-verb inversion with finite main verbs in *yes/no*-questions. In 10 out the 12 *yes/no*-question contexts requiring *do*-insertion in the corpus the finite main verb has moved across the subject, as in (4):

(4) **Drive daddy** me to barnehage? (Emma 2;7.14)
Target: 'Will daddy drive me to the kindergarten?'

As these types of patterns are hardly ever attested in monolingual English-speaking children, it seems clear that they are the result of transfer from Norwegian into English. At first sight, this type of transfer might seem surprising. Emma appears to be transferring a less economical construction (i.e. V2) into a language that displays a more economical option (no verb movement). However, we argue that various factors make such transfer plausible and even economical. First of all, according to Henry and Tangney (1999) a language in which all verbs undergo verb movement is 'simpler' than a language in which some verbs move and some do not. Thus, one could claim that the verb movement pattern in Norwegian should be easier than that of English, since all verbs behave the same way syntactically. Although the 'inconsistency' in English does not appear to cause problems for monolingual English-speaking children, in a bilingual context, this area of grammar may become vulnerable. Moreover, as described above, English and Norwegian display certain superficial structural similarities with respect to verb placement of auxiliaries. Hence, we argue that the strong cues for generalized main clause verb movement in Norwegian enhance the cues for verb movement in English in the bilingual context, and causes occasional transfer of Norwegian verb movement patterns into English.

Thus, the results of this study suggest that cross-linguistic influence in bilingual language acquisition is facilitated in situations where there is superficial structural overlap between the two languages. The English system in itself presents ambiguous cues concerning verb placement, while the cues in Norwegian are very consistent. The child therefore partially and temporarily 'borrows' full V2 from Norwegian as a *relief strategy* (Müller 1998) at a stage when the complete pattern of English verb placement (including *do*-support) is not yet acquired.

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Darwinian Linguistics

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Famously, in *The Descent of Man*, Charles Darwin extended his theory of evolution to human language. First, Darwin speculated that language emerged through sexual selection: "some early progenitor of man, probably used his voice largely … in singing"; and "this power would have been especially exerted during the courtship of the sexes" (1871,56). Second, Darwin pictured organism and language "family trees" – phylogenetics – as essentially one and the same (1871, 60). How well do Darwin's proposals hold up in light of modern comparative biology and linguistics? In this talk, we demonstrate that one should not over-inflate Darwin's metaphor. Language's origin and then its change over time cannot be exactly equated to biological evolution, because linguistic principles and parameters are not precisely equivalent to genes or DNA, and language inheritance is *not* equivalent to biological inheritance. As a result, any facile 'lifting' of techniques originally applied to biological evolution may be plagued by false equivalences. Biological methods make particular assumptions about how evolution works that are not met in the case of language, particularly with respect to genes, inheritance, and genetic variation, the basic 'fuel' that evolution burns. Unlike biological evolution, where mutations in DNA boost variation and lead to new genes, duplicated whole genes or genomes, novel traits, and new species, so far as we know the human-specific shared genetic endowment for language has been frozen since its emergence. The implications of these differences is illustrated by several recent analyses of language geographic flow and language phylogenetics that have conflated Darwinian biological evolution with language evolution, and so arrive at doubtful conclusions.

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Verb Clusters and the Semantics of Head Movement

Background: Bobaljik & Wurmbrand (2005) argue for an analysis of German long passives according to which the embedded object undergoes raising to the matrix clause to receive case from matrix T. The crucial piece of evidence in support of this view is the emergence of obligatory wide scope of the object in this configuration. Under B&W's analysis, the embedded clause in (1a) is a *v*P and the object receives accusative case inside it. It may hence have low scope with regard to the matrix verb. In the long passive in (1b), by contrast, the embedded clause is a VP and the object must move to the matrix clause to get case. B&W correlate this obligatory case-driven raising with wide scope.

(1) a. weil **alle Fenster** zu öffnen vergessen wurde
since all windows.ACC to open forgotten was
'since it was forgotten to open all the windows' [*forget* ≫ ∀]
b. weil **alle Fenster** zu öffnen vergessen wurden
since all windows.NOM to open forgotten were
'since it was forgotten to open all the windows' [**forget* ≫ ∀; ∀ ≫ *forget*]

The pervasiveness of matrix scope: Closer scrutiny reveals that wide scope in long passives is much more widespread. The contrast in (2) demonstrates that the indirect object *allen Studenten* 'all students.DAT' can have low scope if the direct object receives accusative (in (2a)) but invariably takes scope over *vergessen* 'forget' if the direct object receives nominative (in (2b)).

(2) a. weil den Fritz **allen Studenten** vorzustellen vergessen wurde
since the.NOM Fritz all.DAT students.DAT to.introduce forgotten was
'since it was forgotten to introduce Fritz to all students' [*forget* ≫ ∀]
b. weil der Fritz **allen Studenten** vorzustellen vergessen wurde
since the.NOM Fritz all.DAT students.DAT to.introduce forgotten was
'since it was forgotten to introduce Fritz to all students' [**forget* ≫ ∀; ∀ ≫ *forget*]

This pattern even generalizes to adjuncts. The scope of *in jedem Zimmer* 'in every room' correlates with the case of the embedded object (indicated by agreement):

(3) a. weil **in jedem Zimmer** Äpfel zu essen vergessen wurde
since in every room apples.ACC to eat forgotten was
'since it was forgotten to eat apples in every room' [*forget* ≫ ∀]
b. weil **in jedem Zimmer** Äpfel zu essen vergessen wurden
since in every room apples.NOM to eat forgotten were
'since it was forgotten to eat apples in every room' [**forget* ≫ ∀; ∀ ≫ *forget*]

Thus, *every* element of the embedded clause takes wide scope in long passives. B&W's analysis is unable to capture the contrasts in (2) and (3) precisely because it attributes the wide scope in (1b) to case-driven raising. Neither the indirect object nor adjuncts depend on case-assignment from the matrix clause. We conclude that the wide scope in long passives is not due to case.

Adjacency and scope: Not all instances of long passives lead to wide scope of embedded quantifiers. In particular, it only does if the two main verbs are adjacent to each other, as they are in (1)–(3). If the infinitival verb is topicalized, low scope is possible. Extraposition patterns in the same way.

(4) [Allen Studenten vorzustellen] wurde der Fritz schon wieder vergessen
all.DAT students to.introduce was the.NOM Fritz yet again forgotten
'it was yet again forgotten to introduce Fritz to all the students' [*forget* ≫ ∀]

All the data discussed so far can be summarized in terms of the generalization in (5).

(5) In long passives with adjacent main verbs, no element takes scope below the matrix verb.

Background: We follow Wurmbrand (2001) and B&W in assuming that the embedded clause in the (a) sentences in (1)–(3) contains a *v* head that assigns accusative case. This head is absent in the (b) sentences, which hence contain a VP embedded directly under another VP.
Verb unification: The generalization (5) is accounted for if the (b) sentences in (1)–(3) involve semantically contentful verb cluster formation. In particular, we propose that the embedded verb incorporates into the higher verb, a process we will call *verb unification* (VU). VU is strictly local and applies only if two verbs are in the same phase domain, i.e., if no phase head intervenes. We take this to follow from a general prohibition against two lexical heads within the same phase. In this configuration, the structure is rescued by creating a single, more complex head.

(6) **Verb unification**
$[_{\text{phase}} \ldots \text{V}_1\ \text{V}_2] \Rightarrow [_{\text{phase}} \ldots \text{t}_1\ [_{\text{V}}\ \text{V}_1\ \text{V}_2]]$

By hypothesis, VU applies at LF. It may hence be bled by syntactic movement. If the embedded verb is topicalized, as in (4), the two verbs are separated by the matrix *v* and C phase boundaries and VU is blocked. The same holds for the (a) sentences in (1)–(3), where the embedded *v* intervenes. In all of these cases, low scope is possible because VU does not take place.
The semantics of VU: The denotation of complex heads results from combining the denotations of its members via *function composition* (Jacobson 1990, see also *c-locality* in Lidz & Williams 2002). As has been frequently noted, head movement does not extend the phrase marker. We adopt the movement analysis of Heim & Kratzer (1998), according to which a λ-operator binding a variable in the launching site is generated immediately below the landing site of movement. In the case of head movement, this has a surprising effect. The only viable place for inserting the operator is right below the complex head. As a consequence, *the entire complex head will be interpreted in the launching site.* Metaphorically speaking, raising of one verb to another pulls both of them down semantically. As a consequence of this, everything projected above the lower verb will semantically take scope over the higher verb as well. This is schematized in (7):

(7) $[\text{X}^\circ\ [_{\text{YP}} \ldots \text{Y}^\circ]] \Rightarrow [[_{\text{X}^\circ} \text{Y}^\circ \circ \text{X}^\circ]\ \ \lambda Q\ \ [_{\text{YP}} \ldots Q]]$

Application: Consider the structure of (2b). Here the lower clause consists of a VP and an ApplP introducing the indirect object but no *v*P. VU unifies both lexical verbs and must also include Appl because of the Head Movement Constraint. The result is the complex head $[_{\text{V}}\ [_{\text{Appl}}$ introduce Appl] forget]. This head and its parts are interpreted as in (8):

(8) a. $[\![\text{introduce}]\!] = \lambda x_{\langle e\rangle} \lambda e_{\langle s\rangle} [\text{introduce}'(e) \wedge \text{theme}'(e) = x]$
b. $[\![\text{Appl}]\!] = \lambda P_{\langle st\rangle} \lambda y_{\langle e\rangle} \lambda e_{\langle s\rangle} [P(e) \wedge \text{goal}'(e) = y]$
c. $[\![\text{forget}]\!] = \lambda P_{\langle st\rangle} \lambda e_{\langle s\rangle} [\text{forget}'(e) \wedge \text{theme}'(e) = P]$
d. $[\![\text{Appl}]\!] \circ [\![\text{introduce}]\!] = \lambda x \lambda y \lambda e [\text{introduce}'(e) \wedge \text{theme}'(e) = x \wedge \text{goal}'(e) = y]$
e. $[\![\text{forget}]\!] \circ [\![\text{Appl}]\!] \circ [\![\text{introduce}]\!] =$
$\lambda x \lambda y \lambda e [\text{forget}'(e) \wedge \text{theme}'(e) = \lambda e' [\text{introduce}'(e') \wedge \text{theme}'(e') = x \wedge \text{goal}'(e') = y]]$
('$\circ$' is generalized function composition allowing both for $(B \to C) \circ (A \to B) = (A \to C)$ and $(C \to D) \circ (A \to (B \to C)) = (A \to (B \to D))$)

By (7), (8e) will combine with the rest of the tree in the base generation site of *introduce*. It follows that every quantifier in the embedded clause (and outside of it) will have scope over it and its parts including *forget*. This derives the otherwise mysterious wide scope in (b) of (1)–(3).
Consequences: Our account provides evidence that head movement is not always semantically inert (also see Lechner 2007): it is semantically contentful when it involves combination of more than one lexical item as in VU. The result follows from standard assumptions about movement and the curious non-extension property of head movement.

SIZE MATTERS: ON DIACHRONIC STABILITY AND PARAMETER SIZE

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The focus of diachronic syntax has been on documenting and analyzing recorded instances of change. In a parametric model, this means trying to observe, describe and explain cases of parametric change. However, if change is viewed as abductive reanalysis of the PLD in language acquisition (Lightfoot 1979, 1991, 1999), we expect acquisition mostly to be convergent and, thus, that little will change. This is Keenan's (1994/2002) Inertia Principle, which we can phrase in parametric terms as:

(1) Most of the time, most parameter values don't change.

In order to seriously understand both change and the nature of parameters, we need to qualify both occurrences of *most*. In other words, which parameters change and when? Are certain parameters more amenable to change than others? If so, what can we learn about parameters more generally from these changes? These are the questions this paper investigates. As we shall see, cases where a parameter does **not** change can be as revealing as those where it does.

In this connection, consider the following cases of long-term historical conservation of known parametrically variant properties:

(2) a. (Multiple) Incorporation in the Algonquian languages (Branigan 2012)
b. Harmonic head-final order in Dravidian (Seever 1998:31) and Japanese/Korean
c. "Radical pro-drop" in Chinese and Japanese

Goddard (1994) observes that Proto-Algonquian was spoken 2000-3000 years ago, with numerous structural, lexical and phonological features having changed since then, but incorporation having remained a "signature" property. Assuming for concreteness that a new generation of native speakers emerges every 25 years, in 3000 years we have 120 iterations of the learning cycle. Proto-Dravidian is dated by Seever (1998) to 4000BC, i.e. 6000 years ago, so this parameter has remained constant over roughly 240 iterations of the learning cycle. Similarly, the oldest texts in Japanese date from around 700-800AD, and so are over 1000 years old, again showing conservation of head-finality and radical pro-drop over 40 iterations. We observe, then, three cases, each independently thought to be macroparameters, which are conserved for millennia. Macroparameters affect all relevant categories in a uniform way.

On the other hand, it is easy to observe examples of relatively short-lived parameter settings. Assuming that the class of English modals emerged through grammaticalisation in roughly the 16th century, we can see in contemporary English, less than 500 years later, that many of the modals are moribund: this is true in most varieties for *need* and *dare*, and in US English for *must* and *may*. Moreover, individual modals differ in the naturalness of inversion: in contemporary UK English for all uses of *may* and deontic *might* and in US English for all uses of *might*. Here, then, the relevant parameters concerning attraction of T by interrogative C have become relativised to individual lexical items (the restrictions on "conditional inversion" in contemporary English show that irrealis C interacts with a different set of lexical items). This is a clear case of microparametric change, a change affecting individual lexical items, possibly just one, in relation to a specific feature property of a functional head. The class of modals seems to have started to change in this way in the 18th century, 200 years, a mere 8 iterations of the learning cycle, after its creation through grammaticalisation. Another example of the same kind in a different domain concerns the subject-clitic systems of North-Western Romance (including "advanced" varieties of French – Zribi-Hertz 1994): here we see synchronically a range of systems featuring extreme microparametric variation concerning which clitics have reanalysed from their earlier pronominal status as functional heads in T- and C-systems (on Northern Italian dialects, see Poletto 2000, Manzini&Savoia 2005). Again, these systems appear to have emerged quite recently: Poletto (1995) observes that 16th-century Veneto did not have subject clitics, and conservative varieties of contemporary French also do not. "Jespersen's Cycle" represents a further instance of the same phenomenon. To summarise, we observe values of macroparameters

affecting large classes of categories being conserved over millennia, in contrast to values of microparameters, affecting very small classes of or maybe even individual lexical items, undergoing rather frequent change. Note that the same formal operations are involved in each case: head-movement (incorporation, T-to-C) and licensing null arguments (radical pro-drop, subject clitics).

Finally, there are "intermediate" cases which we dub mesoparametric change. Mesoparameters concern entire syntactic categories and, as such, are "smaller" than macroparameters (which concern all categories relevant to the feature in question), but "larger" than microparameters (which affect (subclasses of) lexical items). An example is the null-subject parameter in Latin and Romance. This parameter involves T licensing null subjects, and has been stable from Latin through most of the recorded histories of Italian, Spanish and European Portuguese. It has, however, changed in French and Northern Italo-Romance, presumably under contact influence from Germanic, and also, strikingly, in the heavily contact-influenced "Romania Nova" varieties. Another likely case is (root) V2 in Germanic: although its diachrony is obscure, it has remained remarkably stable across nearly all North and West Germanic varieties. English is, of course, an exception, and, again, contact may explain why this language diverges (Kroch&Taylor 1997). In the domain of word order, the West Germanic pattern whereby all categories in the extended projection of V (except C) are head-final is an example. This pattern is stable across West Germanic, and has been for at least a millennium; again, it changed in English, arguably under contact with VO North Germanic (Trips 2000) and also Norman French. It has also changed in Yiddish at the T-level, although VP remains variable (Wallenberg 2009; see Biberauer, Holmberg & Roberts 2007,2012 on the constraint dictating this "downward propagation" of word-order change).

We conclude that three classes of parameter are identifiable: macro, meso and micro. Macroparameters concern large, featurally simple classes of heads, and are diachronically very stable. Mesoparameters concern individual syntactic categories (T, V, etc) and are diachronically stable, but subject to change through contact. Finally, microparameters concern small numbers of lexical items and are quite prone to change (unless the lexical elements are high-frequency elements). Grammaticalisation, as it affects individual lexical items, is microparametric in nature. To the extent that grammaticalisation can be endogenous, microparametric change can be.

In line with the abductive reanalysis view of parametric change, macroparameters must be "easily" set; hence they resist reanalysis and are therefore strongly conserved. Meso- and microparameters are correspondingly less salient in the PLD. This view is consistent with the view of parametric hierarchies put forward in Roberts (2011): macroparameters represent the higher parts of a hierarchy, microparameters the lowest and mesoparameters an intermediate position. Importantly, this view does not imply that UG prespecifies the parameter types: the hierarchies emerge thanks to third-factor motivated acquisition strategies, possibly acting on minimal UG-specified content, possibly along the lines of the schema-based model suggested by Gianollo, Guardiano & Longobardi (2008). Macroparameters may be set at an acquisitional stage at which categorial distinctions are yet to be acquired, and thus their nature may be due to the learner's "ignorance" (Branigan 2012). As categorial distinctions emerge, mesoparameters become available, refining the early minimal category-based system. As the idiosyncratic properties of individual members of syntactic classes emerge, microparameters become possible. This view then explains how "superset" parameters can be set early without a "superset trap" arising; hence it is consistent with the Subset Principle (Berwick 1985). Finally, it is important to note that we are not proposing that macroparameters cannot change (this view would be incompatible with the principle of connectivity). Presumably, sufficiently intensive contact can lead to change in these parameters too: the evidence of head-initial to head-final change in the Southern Semitic languages under intensive contact with Cushitic may be an example (cf. Leslau 1945).

ON THE 'MAFIOSO EFFECT' IN GRAMMAR

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There is an obvious tension in the Minimalist Program between the desire to posit a minimally genetically specified syntactic component whilst maintaining the empirical insights of the GB era, notably the fact that variation is constrained and structured (in that certain logically possible options are simply never attested). In this talk, we address this challenge, building on Chomsky (2005) by proposing that this 'structured variation' emerges because of UG-external forces such as (i) the nature of the PLD, (ii) system-internal pressure, (iii) acquisition biases and (iv) processing pressures. Our central proposal is that these forces trigger 'Mafioso Effects' whereby only one of the options associated with a given (emergent) parameter is ever actually attested, i.e. this option is effectively one that cannot be refused. As such, certain GB principles can be rethought as 'no-choice parameters', with crosslinguistic gaps and skewings resulting from certain parameter settings being strongly preferred/dispreferred as a result of (i)-(iv).

Take, for example, Kayne's (1994) Linear Correspondence Axiom (LCA). While the numerous left-right asymmetries of natural language (Greenberg's Universal 20, the ban on rightwards *wh*-movement, the Final-over-Final Constraint; see Cinque 2007, Kayne 2012) are manifest, the correct explanation for them remains controversial. One oft raised objection to LCA-based explanations is that there is no deep reason why asymmetric c-command should map to precedence rather than subsequence. On the Mafioso approach, however, the LCA is simply a linearization parameter, with the subsequence/precedence option requiring setting during acquisition. That precedence always emerges as the selected option is the consequence of the processing-shaped PLD, with processing pressures of the type discussed by Neeleman & van de Koot (2002) and others, notably filler-gap relations, being crucial here. As such, the LCA can be considered an emergent property of language: linearization must rely on independently attested syntactic relations of the relevant (asymmetric) kind (Kayne 1994), and this asymmetric relation is mapped to precedence for syntax-external reasons. Moreover, the precedence setting implies that all movement is leftward, including cases where processing cannot explain the leftward preference (e.g. VP-remnant topicalisation in German, where leftward movement arguably *introduces* processing challenges; Den Besten & Webelhuth 1989), and also that first-merged specifiers will be leftward, which does not follow directly from the processing account. Clearly, then, structural precedence phenomena cannot just be reduced to the effects of processing.

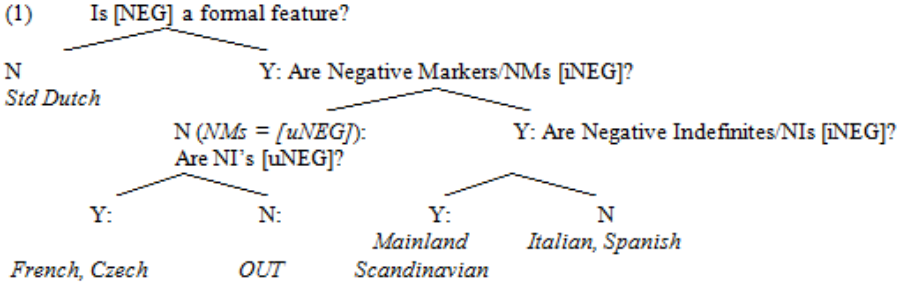
This account of the LCA implicitly assumes that all languages have filler-gap relations, i.e. movement. While the basic combinatorial operation (Merge) makes internal merge available in all languages, its actual application in a given context, we assume, results from the presence of a UG-given movement diacritic ^ which may be variously associated with a given feature/head. As the presence of ^ is in principle optional, it remains unclear why all languages should have to employ it. We propose that this too is a Mafioso Effect. Consider for example Alexiadou & Anagnostopoulou's (2001) observation that either the external or the internal argument must vacate vP. Chomsky's (2013) account of this effect is that it is forced by the interface-driven need for labels: *X* in [$_X$EA [v VP]] requires a label; as, by assumption, discontinuous elements cannot supply a label, EA-movement will eliminate EA as a potential label for *X*, with IA- and, we argue, "VOS"-style VP-movement (Massam 2001), similarly facilitating labelling. The precise location in the higher phase of ^ is, as noted above, a parametric option, conventionally fixed via exposure to the PLD, but the need for at least one ^ is a universal property of linguistic systems which is not UG-specified, but rather forced by system-internal pressures.

We also see more sophisticated Mafioso Effects of this kind in Case/alignment contexts. According to Aldridge (2004, 2008), syntactic ergativity results where a v assigning theta-related ERG Case to its specifier also bears ^ triggering object movement past the subject, thus ruling out A-bar

extraction of DP_{ERG}. In morphologically ergative languages like Basque, unergative v also assigns ERG, yielding a morphologically ergative split-S (or "stative-active") system. What appears to be ruled out, though, is a *syntactically* ergative split-S system (Deal 2012). In our terms, this too is a Mafioso Effect. In cases where unergative v assigns ERG and all ERG-assigning heads are associated with ^, the result is a derivation which can never converge (there is no XP which can raise to satisfy v's ^).

Following Gianollo et al. (2008), we assume acquisition to entail i.a. the determination of which features are grammaticalised (participate in Probe/Goal relations) in a given language, and how these formal features interact with ^. The 'sequence' in which these facts are established is guided by restricted UG-specified elements (the availability of a [uF]/[iF] distinction, ^, the operations Merge and Agree) and 3rd factor-imposed acquisition strategies, including a version of Feature Economy/FE and Input Generalization/IG (Roberts & Roussou 2003, Roberts 2007). By the former, acquirers posit as few formal features as possible; by the latter, they assume the minimum number of distinct elements/operations compatible with the PLD, maximally generalising input patterns. The nature of the PLD, though, excludes certain potential parametric options. Consider the case of negation. In terms of the system in Biberauer & Zeijlstra (2012), the child must establish whether negation is grammaticalised, which classes of negative elements are specified [iNEG] and [uNEG], and whether an abstract [iNEG]-encoding negative operator is required (Ladusaw 1992). Assuming the child to follow the "learning path" given by the emergent parametric hierarchy in (1), this being determined by the interaction of the minimally specified UG proposed above and what is independently known about the salience of different types of negation elements (Klima & Bellugi 1966 *et seq.*), a further Mafioso choice emerges:

(1)



Here languages with [uNEG] NMs, but [iNEG] NIs are ruled out as there is no unambiguous input leading to the postulation of this system-type (Double Negation structures only unambiguously signal [iNEG] in all-[iNEG] systems of the Mainland Scandinavian type; DeSwart & Sag 2002), and credible 3rd factor motivations (FE, IG, and the general biases discussed by Pearl (2012)) also work against it: everything, then, pushes the acquirer towards extending the previously established [uNEG] analysis of NMs to NIs, leading to the seemingly correct prediction that mixed negation systems with [uNEG] NMs and [iNEG] NIs cannot exist.

We also discuss cases where two emergent choices produce superficially identical outputs that cannot be distinguished, with implications for the synchrony and diachrony of verb-movement, and, more generally, the nature of choices located at the "bottom" of the learning path-defining parametric hierarchies resulting from the interplay of the minimal UG we assume, the processing-shaped PLD, and the partially 3rd factor regulated acquisition biases of learners. What emerges from the discussion as a whole is that "emergent" parameter hierarchies are restricted by a range of 1st, 2nd and acquisitional and computational 3rd factor considerations. In short, there will be many parametric "offers that cannot be refused", a state of affairs that enhances the explanatory power of a model of the proposed type, while minimising, but crucially not eliminating, the role of UG.

The absence of coreferential subjects in TP coordination

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Since Ross (1967) much work on the syntax of coordination has been concerned with the conditions governing optionally "shared" material between two conjuncts. Much less attention has been given, however, to cases in which such sharing is obligatory. This paper investigates a requirement of this kind, previously undiscussed in the literature, governing the availability of coreferential subjects in coordinated clauses. I argue that this requirement arises due to conditions governing the linearization of multidominant structures for coordination.

Puzzle: As (1a) shows, English generally allows coordinated clauses to have coreferential subjects, though coordination below a single subject, as in (1b), is sometimes preferred.

(1) a. [Alice$_i$ always wanted a car] and [she$_i$ finally bought one last year.]
b. Alice [always wanted a car] and [finally bought one last year.]

Strikingly, such coreferential subjects become ungrammatical no longer available in a question is formed by Across-the-Board (ATB) *Wh*-movement, as in (2a). Coordination of a smaller constituent, as in (2b), becomes the only available structure.

(2) a. *What$_k$ did [Alice$_i$ always want t_k] and [she$_i$ finally buy t_k last year]? (*cf. (1a)*)
b. What$_k$ did Alice [always want t_k] and [finally buy t_k last year]? (*cf. (1b)*)

We find the same ban on coreferential subjects in coordination embedded below an obligatory complementizer, as in (3), demonstrating that this restriction cannot be attributed simply to properties of ATB movement. The embedding environment allows us to see also, moreover, that though coreferential subjects are excluded below a single shared complementizer in (3a), they are once more possible when the complementizer is also repeated, as in (3c).

(3) The TSA asks...
a. * that [passengers$_i$ remove their shoes] and [they$_i$ move quickly through security].
b. that passengers [remove their shoes] and [move quickly through security].
c. [that passengers$_i$ remove their shoes] and [that they$_i$ move quickly through security].

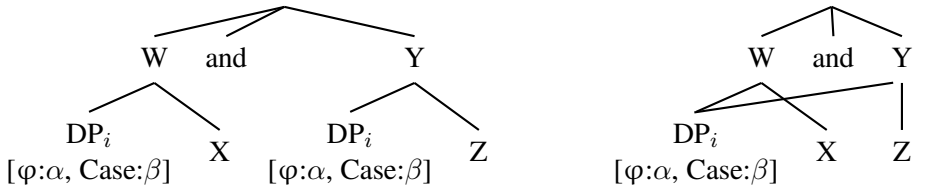
These data cannot be accounted for by a general requirement that conjuncts be as small as possible: such a restriction would be unable to account for the grammaticality of either (1a) or (3c), in which both conjuncts contain identical or coreferential material at their left edge. What unifies the ungrammatical sentences in (2a) and (3a) is that both exhibit coreferential subjects below a single shared element in C^0 (an inverted auxiliary in (2a), and *that* in (3a)). In other words, it is the subjects of coordinated **TPs** that cannot corefer.

Proposal: I argue that this restriction on coreference can be accounted for by independent conditions on linearization, specifically the linearization of multidominant structures. The limitation of the ban to TP conjuncts, meanwhile, can be attributed to the cyclic nature of linearization (Fox and Pesetsky, 2005, a.o.).

First, the ban on coreference itself. Multidominant representations, in which a single constituent occupies two (or more) distinct syntactic positions, neither of which c-commands the other, have been argued to exist in coordinate structures at least since Moltmann (1992). **?** proposes that multidominant representations are constrained, however, by whether they can be linearized. More specifically, Citko proposes that a multiply-dominated element cannot be linearized *in situ*, and thus is only grammatical when it undergoes subsequent movement to some higher position – as in ATB *Wh*-movement.

The ungrammaticality of (2a) and (3a), can be explained by Citko's proposal, if we make the single assumption that coreferential subject DPs in coordinated clauses are representationally equivalent to a single multiply-dominated subject DP. In other words, the process of linearization cannot distinguish the representation in (4a) from the representation in (4b):

(4) a. b.



If coreferential subjects in coordinated clauses are representationally equivalent to a single multiply-dominated DP, it follows that they, like other multiply-dominated constituents, will be unlinearizable. This idea recalls proposals made by Alexiadou and Anagnostopoulou (2001) and Richards (2001), independently investigating cases in which more than one DP cannot occurring within a single local domain. Richards, in particular, proposes that such bans arise from the impossibility of linearizing two DPs that are not distinguished by Case features.

If it is the unlinearizability of coreferential subjects that accounts for the ungrammaticality of sentences such as (2a) and (3a), what remains is to account for the converse grammaticality of sentences such as (1a) and (3c), where coreferential subjects are licit. I argue that the possibility of coreference in these examples should be attributed to the larger size of these conjuncts – CPs, rather than TPs – and to the status of CPs as phases (Chomsky, 2001, et seq.). Fox and Pesetsky (2005) propose that linearization is a component of cyclic spell-out, occurring phase by phase. In their approach, sub-constituents of an already-spelled-out domain are not directly referenced by later linearization statements. That is, once the terminals of a phase XP have undergone linearization, subsequent spell-out will linearize only XP as a whole, not subconstituents of XP.

CP conjuncts, as phases, will therefore have undergone linearization before entering a coordinated structure. Because subject DPs would therefore already have been linearized, they will be insulated from the consequences of the problematic equivalence in (4). Assuming that (1a) can be parsed as CP coordination, we can therefore account for the availability of coreferential subject DPs in both (1a) and (3c) – and, indeed, the status of *v*P as a phase similarly accounts for the grammaticality of coreferential object DPs in both sentences in (1). It is only in TP coordination, when a coordinate structure is created from two constituents that contain not-yet-linearized DPs, that a problematic representation is created.

Conclusions and Implication: According the the analysis developed in this paper, the previously unnoticed restriction on coreferential subjects in coordinated clauses not only provides an argument for the availability of multidominant representations in syntax, but also for a cyclic view of linearization. The analysis furthermore suggests extension to other cases in which subjects are obligatorily elided in coordination, as in so-called SLF Coordination in German, where a post-verbal subject in a first conjunct apparently corresponds to a gap in a verb-initial second conjunct (Höhle, 1983, et seq.). SLF Coordination has presented a paradox, in how to make the two conjuncts large enough to contain two fronted verbs, but small enough to exclude the subject (Heycock and Kroch, 1994; Johnson, 2002, among many others). This paper proposal here casts new light on this paradox, suggesting instead that single pronunciation of a shared DP subject may instead provide a repair strategy for an otherwise unlinearizable structure.

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PROSPECTS FOR A COMPARATIVE BIOLINGUISTICS

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Variation thoroughly pervades language. The human faculty for language FL (i.e. our capacity for acquiring and using a language) manifests itself in the form of many different languages, which are in turn slightly diverse across diverse social groups, interactional contexts, geographical areas, and so on. Ultimately, differences can be found from one person to another, and even regarding the same person, for instance, when confronted with different scenarios. Moreover, the same faculty seems to be also diverse in different individuals. While pathological conditions plausibly represent a breakdown of the faculty, psycholinguistic measures are still varied across the normal population, suggesting the existence of deeper layers of variation, plausibly concerning its biological substrate (see, e.g., Kos *et al.* 2012; Le Floch *et al*. 2012)

Current psycholinguistic, neurobiological and genetic research casts significant doubts on the purportedly homogeneous nature of FL. For instance, psycholinguistic measures are variable across the normal population, suggesting a variable competence/performance within it. At the brain level the boundaries of the 'language areas' are rather changeable among the diverse individuals, but also across development. Moreover, many genes contribute to regulate the development (and the functioning) of this neural substrate, but they are (highly) polymorphic, with some variants giving rise to pathological conditions, but with others (perhaps endowed with slightly different functional properties) being present as well within the unaffected population. This seems to challenge the longstanding assumption that the *linguistic genotype* is going to be "uniform across the species (in the absence of a fairly severe and specific pathology)" (Anderson and Lightfoot, 1999).

In this presentation we will specifically discuss whether (and to which extent) this genetic diversity can actually be reconciled with the widespread view of FL as one component of the human mind, qualitatively equal in all human beings. In trying to resolve this conundrum, we will appeal to, and explore the implications of, some fresh hypotheses posited by evolutionary developmental biology (Evo-Devo). In particular, we will argue that developmental dynamics (and hence, an assorted set of regulatory factors) strongly canalizes variation, to the extent that the same phenotype can robustly emerge at the term of growth from (slightly) diverse genotypes. Moreover, we will hypothesise that language disorders could be construed as conditions for which canalization has been unable to achieve particular stages/levels/degrees of (linguistic) development. Importantly, the achievement of a (functional) FL is always attempted, this implying that impaired systems are still adaptive. Simultaneously, compensations (and breakdowns) do not occur randomly, clearly because adaptability is always constrained, but plausibly also because certain cognitive processes (or even specific components of competence) are more vulnerable than others to damage or to developmental disturbances. Crucially, these impaired, delayed, or deviant FLs are yet recognizable as (anomalous) variants of the same (normal) FL. Eventually, even though any of its biological components can be regarded as specifically linguistic, FL itself can actually be characterised as a cognitive faculty or organ, almost certainly because of that pervasive tendency of their components to interface whenever growth takes place in the presence of a suitable amount of linguistic stimuli.

This talk offers a case study of the *genetic variation for UG* in our species, allowing for a unique window, we argue, into a cognitive sub-type that is not organized grammatically: the thought-disordered mind, and at the same time offering a concrete example of what comparative biolinguistics could focus on.

A symptom of schizophrenia, formal thought disorder (TD) is found in a sub-group of the schizophrenia population and manifest in disorders of language. Nonetheless, from its inception, schizophrenia has been considered a *Geisteskrankheit* rather than language disorder, illustrating the fact that since Descartes and the Port Royal tradition (Chomsky, 1966), language has never been conceived as the fundamental organizational principle of the mind, leaving the latter to a 'Language of Thought' (LOT) ungoverned by UG, in the sense of Fodor (2008). If no such LOT exists, as suggested in Chomsky (2007) and the 'Un-Cartesian' model of UG of Hinzen (2006, 2012), and traditional evidence for 'modularity' is highly questionable (see e.g. Brock, 2007, on Williams syndrome), UG should be pursued *as* the theory of a cognitive type identifying a single hominid species (Crow, 2002). In this regard, the Un-Cartesian hypothesis (Hinzen & Sheehan, 2013) makes specific predictions for *how* thought should be disordered if grammar is. We argue that available data confirm these predictions.

Specifically, it has been argued that TD, if a disorder of language at all, is primarily one of 'expressive semantics' (McKenna and Oh, 2003). And according to Marini et al. (2008:145), 'at the level of *syntactic* processing, schizophrenic patients' speech is usually normal, with no relevant aberrations'. We argue that the relevant notions of 'syntax' and 'semantics' beg all questions. In particular, the 'semantic' abnormalities in question only arise at a *grammatical* level, and *increase* as grammatical complexity arguably does, as in the case of pronominal reference, which is distinctly impaired in schizophrenia (Watson et al., 2012), and governed by the topology of the 'high' left edge of the nominal phase according to Martin & Hinzen (2012). More generally, they are centrally associated with the *referential-deictic* function of language, which the Un-Cartesian model of UG argues is the sole contribution of grammar to meaning. Independently, it is clear that grammar (and no other known system) organizes the *truth conditional content* of utterances – a content on which patients with TD and controls plainly do not seem to agree, failing to inhabit the same shared conceptual space that allows normal communication in healthy controls. Longer speech pauses compared to controls at clause boundaries (Barch & Berenbaum, 1997, a.o.), too, in TD, indicates particular difficulties in forming the 'thought units' that are the smallest units of grammatical organization according to the Un-Cartesian model.

TD, then, as a case study, illustrates prospects for a comparative biolinguistics: the study of UG *as* the study of the cognitive mind, with variation in the cognitive type observed as there is variation in UG, with no variation in cognitive type observed where UG is not disturbed, as in Broca's aphasics, whose thought is as normal as is their genetic specification for UG.

In sum, assimilating lessons from evo-devo leads us to expect variation inside UG, and requires us to understand the robustness of the emergence of the language organ in ways that depart from the standard view of the linguistic phenotype.

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A multi-step algorithm for serial order:
Converging evidence from Linguistics and Neuroscience

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The present contribution aims to explore how serial order is computed in the human mind/brain from a biolinguistic perspective (Lenneberg 1967; Chomsky 2005; Di Sciullo et al 2010). To do so, the process of linearization is decomposed into three different computational mechanisms described in a way that allows their implementation in the human brain. Departing from a subdividision of Broca's area into three different areas: pars opercularis, pars triangularis and frontal operculum (Friederici *et al.* 2003). The present work claims that these three brain areas play an important role in Language and, in particular, in the process of linearization converging with DM.

As Lashley 1951 pointed out, "the problems raised by the organization of language seem to me to be characteristic of almost all other cerebral activity. There is a series of hierarchies of organization; the order of vocal movements in pronouncing the word, the order of words in the sentence, in a discourse. Not only speech, but all skilled acts seem to involve the same problems of serial ordering". Lashley´s concern with serial order was also shared by Richard Kayne. Approaching serialization of hierarchical organization from a linguistic prespective, Kayne (1994) proposed that linearization is a one-step process, that is, hierarchical relations give rise to linear order directly, via is Linear Correspondence Axiom.

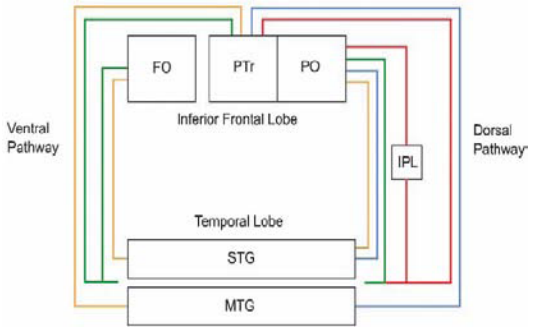
The theoretical framework of Distributed Morphology (DM) assumes that syntax itself generates and manipulates an unordered hierarchy of abstract syntactic features devoid of phonological content, the so-called "morphemes" (Halle and Marantz 1993). The phonological content of a morpheme is inserted postsyntactically. Unlike for Kayne, in DM linearization would consist of a series of processes that realize the phonological content of a hierarchical representation. Following the tenets of DM, Idsardi and Raimy (in press) offer a decomposition of the process of linearization into three different operations, as shown in (1):

(1) Linearization processes

Module	Characteristics
Narrow syntax	hierarchy, no linear order, no phonological content
LINEARIZATION-1 = **Immobilization**	
Morphosyntax	hierarchy, adjacency, no phonological content
LINEARIZATION-2 = **Spell-out**	
Morphophonology	no hierarchy, directed graph, phonological content
LINEARIZATION-3 = **Serialization**	
Phonology	no hierarchy, linear order, phonological string

In parallel to this development in linguistics, the functional role of Broca's area has been a focus of debate in the neurolinguistic field since a very long time (Grodzinsky and Santi 2008; Rogalsky & Hickok 2011; a.o.). With the spread of neuroimaging techniques, advances regarding Broca's area have been made in the neuroscientific field. Broca's area constists of three different areas, namely pars triangularis (BA 44), pars triangularis (BA45) and the adjacent frontal operculum. The neural connectivity between Broca's areas and the temporal lobe is recently summarized in Rogalsky and Hickok (2011) and shown in (2):

(2)



Following the lines of current neurocognitive models of language processing (Friederici 2011) which assume fronto-temporal networks supporting different syntactic and semantic aspects during language processing, the present contribution is based on three distinct networks shown in (2) implicated in three linguistically-established computational subroutines, as shown in (1). The multi-step algorithm for serial order skecthed so far is not only "theoretically motivated" and "computationally explicit" (Poeppel and Embick 2008) but also "biologically grounded". More specifically, (i) the dorsal pathway connecting PO and the temporal lobe is implicated in linearization process 1 (immobilization), (ii) the ventral pathway running from PTr to the temporal lobe is involved in linearization process 2 (spell-out), and (iii) the ventral pathway relating FO with the temporal lobe is associated to linearization process 3 (serialization).

If this contribution is on the right track, functionally and anatomically different pathways subserve specific types of computations. Different cortical areas are thus specialized for performing distinct types of computations, some of which are necessary for language operations (in this case, types of linearization), but also for other cognitive functions. This perspective contributes to a further understanding of linguistic phenomena such as linearization and sheds some light to the study of the Language Faculty implemented in the human brain.

This study also highlights the need to decompose Broca's areas and the linearization algorithm in parallel, a significant departure from standard practice in both linguistics and neuroscience.

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Velar/coronal asymmetry in phonemic patterns and historical change: a unified account

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The three major classes of consonants as regards the place of articulation – labials, coronals and dorsals – exhibit asymmetrical behaviour both in phonemic inventories (§ 1) and in historical changes (§ 2). It will be argued that both facts receive a straightforward and unified account (i) by replacing the features [velar/dorsal] and [coronal] with elements characterised by resonant cavity and aperture, and (ii) by assuming that these elements are hierarchically ordered, so that pharyngeal elements dominate oral and nasal elements (§ 3).

1 (Velar) dorsals, (anterior) coronals and labials show a decreasing capacity to interact with the three basic vowel elements: I (front), A (low-/RTRness) and U (rounded). For example, velar assimilation before front vowels is universal; coronal or labial palatalization is not (Hardcastle & Hewlett 1999). In a language without phonological rising diphthongs like Portuguese, the only cases of stable [wV] sequences are those associated with velars: *quando*, *guarda*, etc. (Câmara Jr. 1970: 56). Generally speaking, while velars are easily coarticulated with I, A and U, coronals readily interact with I and A only, and labials with U.

Not surprisingly, this affects the shape of phonemic inventories. Let us assume that dorso-palatals, labio-velars and uvulars are composed as in (1).

(1) a. /k/ + I = /c/
b. /k/ + U = /k^{w}/
c. /k/ + A = /q/

We will make the hypotheses in (2) on the typology of such consonants.

(2) In a given system,
a. if there is only one type of labialized consonant, it is a labio-velar;
b. if there is only one type of 'emphatic' consonant, it is a uvular.

In other words, the existence of /k^{w}/ or /q/ in a given language does not imply that of U- or A-based *correlations* respectively for all places of articulation, that is /p^{w}, t^{w}…/ or /p^{ˤ}, t^{ˤ}…/, whereas the reverse is supposed to be true. While waiting for the confrontation of these predictions with the highest possible number of languages, it will be shown that they are supported by the 'borderline' case of Kabardian.

2 As noted by Trigo (1988: 53), nasal codas are typically homorganic to a following consonant if there is one, but, if there is none, then coronal and velar nasals alternate according to the language or dialect, as if both coronals and velars were 'default' places. Moreover, as shown by the Spanish data under (3) (Lapesa 1967: 319, 416), it is the coronal (cf. Latin *pane*) that may shift to a velar.

(3) a. *ca*[mp]*o* 'field'
ca[nt]*o* 'I sing'
ba[ŋk]*o* 'bank'
b. *pa*[n], *pa*[ŋ] 'bread'

This shift parallels several similar changes concerning not only codas but also onsets – e.g., [r] > [ʀ] (> [ʁ]) in French, German, some Dutch and Portuguese, as well as [l] > [ɬ] (> /w/) in Polish and Old Portuguese –, and not only sonorants but also any consonant – e.g. /t/ > /k/ in Hawaiian, Leuangiua (Polynesian), Chipewyan and Apache (Athapaskan), among others (Rice 1996: 527-528). We have no knowledge of spontaneous velar to coronal changes.

3 If coronals are presumed to be placeless (cf. Paradis & Prunet 1991, 1994: 101, Kean 1975, Mohanan 1993, Hume 1996 and Wilson 2001), then there is all the more reason to think that this is particularly true for velars, especially as: (i) they are the most vowel-friendly consonants within phonemic systems, as if they had more empty place where the vocalic elements can fit in ; (ii) velar to coronal changes seem unattested, as if coronal to velar shifts resulted from feature loss. Assuming, however, that there are good reasons to think that both coronals and velars are underspecified, how can they contrast if both are placeless?

We propose that there is a velar/pharyngeal relation within consonants which patterns with the one between the high/ATR vowel [ɯ] and the low/RTR vowel [ɑ] in element theory. From this perspective, 'velarity' is nothing but an element **K** containing the features {spread pharynx} and opposed to an element ʕ representing {constricted pharynx}. It will be seen: (i) how this is supported by widespread phenomena, from German to Bantu and Austronesian languages; (ii) how this allows to characterise the whole set of attested contrasts among 'back' consonants, from dorso-palatals to pharyngeals/epiglottals, in the world languages.

Thereby, also, coronality becomes the sole basic lingual gesture within the oral cavity. Hence, no articulator-based feature is required for coronals either, as they result from the default articulation of the tongue in the superior cavities (SC): 'coronality' (**T**) is simply {constricted SC}, opposed to {spread SC} = 'nasality' (**N**). Only labials require a specified articulator.

Let us assume a hierarchical structure where **T** and **N** are dominated by the pharyngeal elements **K** and ʕ: both velars and coronals contain **K**; in addition, coronals have **T**; coronals and velars are, thus, in a privative opposition. Hence, (a) lacking supra-pharyngeal elements, velars are the most 'colourable' segments, as they have place to host the oral elements **I** or **U**; (b) **T** may be deleted while **K** is preserved, while the reverse is false: therefore, coronals may shift to velars, while the reverse is unattested. Finally, a paradox is explained: coronals and velars are both 'placeless' and contrastive.

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On the bilingual acquisition of Italian and Venetan dialects:
A focus on subject and object clitic pronouns

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1. In this talk, we present data from the bilingual first language acquisition of an Italian child acquiring Italian and a variety of Venetan, the Rosà dialect. His spontaneous productions from the age of 2;0.17 to the age of 3;00 will be compared to the monolingual first language acquisition of a child acquiring another variety of Venetan, the Cassola dialect (age 2;8-3;4), and children acquiring Italian, data coming from corpora collected by our research group and from previous literature. We discuss both code-mixing and the syntactic emergence of subject and object pronouns.
2. We first show how the two languages develop in the bilingual child in terms of the MLU values of monolingual (both Italian and dialect) and mixed utterances. Until the age of 2;4.19, the dialect is the dominant language in both types of utterances. Afterwards, Italian becomes the dominant language. The bilingual child's code-mixing data are analysed following Bernardini and Schlyter's (2004) Ivy Hypothesis. Most of the examples of code-mixing in the corpus can be accounted for under this hypothesis; some unexpected examples (mainly concerning unaccusatives verbs) will be presented as well.
3. A comparison between the bilingual child and the monolingual children with respect to the acquisition of object clitics is undertaken.

In the bilingual child, object clitic pronouns emerge roughly at the same time in Italian and the dialect, and omissions stop at the same time in the two languages (at 2;3.14; see age 2;4 in Müller et al. 2006). In the monolingual Cassola dialect child, object clitics are omitted at a much higher rate and longer. They are still omitted 50% of the time at the age of 3, and omissions continue until the last recording. These data might be due to individual differences between the two children, as found in previous works and other languages. They might however also be attributed to the beneficial effect, on the bilingual child, of exposure of two close languages with clitic pronouns, Italian and the dialect.

Similar tendencies characterize the acquisition of Italian and dialectal object clitics. Comparing proclisis to enclisis, proclisis is in general more largely employed than enclisis; omissions are also more frequent in proclisis than in enclisis, although some opposite pattern is also found. The data are compared with previous studies on clitics acquisition in Italian and other Romance languages (Schaeffer 2000; Wexler et al. 2004; Müller et al. 2006, Costa et al. 2008, Caprin and Guasti 2009, Tuller et al. 2011 among many others).
4. Since the Venetan Dialects display subject clitics, this paper also reports on the acquisition of subject clitics in northern Italian dialects. We discuss the acquisition of subject clitics in the different contexts in which they occur (declarative, interrogative, negative).

Subject and object clitics emerge roughly at the same time (they are already present in the first recording of the bilingual child, at 2;0.17), subject clitics are however omitted at a much higher rate than object clitics. In declarative contexts, omissions of subject clitics tend to be more numerous than their productions, and they are still found in the last recording of the monolingual Cassola dialect child (at 3;4).

Subject omissions could be analysed as the influence of Italian on the acquisition of the dialect. There are however data that speak against this hypothesis. Comparing our data with other child languages which also present two classes of subject pronouns, tonic and deficient, we observe that the acquisition of the Venetan dialects is similar to the acquisition of Swahili (Deen 2012) and differs from the acquisition of French (see Hamann and Belletti 2008 for an overview). If frequent structures in the input were acquired earlier than rare structures, frequency considerations should predict the acquisition of subject clitics before object clitics. The prediction seems to be correct for

French, but it is not correct for Veneto dialects and Swahili. The analysis will take into account the difference between weak and clitic pronouns (Cardinaletti and Starke 1999; Hamann et al. 1996, Hamann and Belletti 2008), and the partial pro-drop status of northern Italian dialects (Cardinaletti and Repetti 2010). In Child Venetan (as in Swahili), pronominal subjects are true clitics, as in the adult language, while they are weak pronouns in French. Null subjects in child Venetan (a non full pro-drop language like adult Venetan) must be analysed as root null subjects as in Rizzi (1993/94), (2000). Support for this hypothesis comes from the observation that subject clitics are less omitted in interrogative sentences than in declarative sentences, and more in negative than in positive declaratives.

5. In conclusion, converging evidence from two close languages seems to speed up the acquisition of object clitics. When the two languages differ, however, as in the subject system, children succeed in keeping apart the properties of the two languages, not analysing the dialect as a full pro-drop language under the influence of Italian, but assuming the truncation option available in non-pro-drop languages.

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Hierarchy and Recursion in the Brain.

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1. Syntax in the brain.

Neuroimaging techniques has offered interesting opportunities to deepen our understanding of the relationship between syntax and the brain (Cappa 2012). Two issues appear to be well-established: first, syntactic computation activates a dedicated network (Embick et al. 2000, Moro et al. 2001); second, the format of rules cannot be traced to arbitrary, cultural or conventional facts but it reflects the neuropsychological architecture of the brain circuitry (Tettamanti et al. 2002, Musso et al. 2003, Tettamanti et al. 2008). In this paper we address a specific issue that raises from these studies on a computational perspective: the core result of the last three experiments mentioned is that the theoretical distinction between grammatical vs. non-grammatical rules is reflected in the brain activity. More specifically, the activity of (a deep component of) Broca's area within a more complex network including subcortical elements such as the left nucleus caudatus appears to be sensitive to this distinction (structure-dependent vs. position-dependent) as the BOLD signal is increased in this area only when the subjects increase their performance in manipulating grammatical (i.e. structure-dependent) rules. Here we want to discuss how this result relate to the nature of recursion and hierarchy in linguistic processing (Chomsky 1995, Berwick & Chomsky 2001).

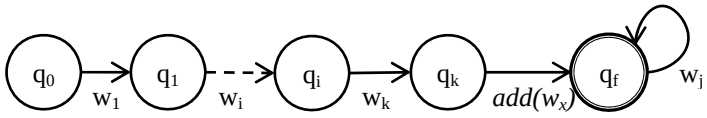
2. Disentangling hierarchy from recursion: a computational complexity perspective

Although there are subtle discrepancies looking at reaction times, there is surely complete convergence with respect to performance: all subjects rapidly acquire the same capability to manipulate both grammatical (e.g. passive construction, Musso et al. 2003) vs. non-grammatical rules (article, Tettamanti et al. 2002, or negation, Musso et al. 2003, placement in a fixed-position; question formation by complete word-sequence inversion, Musso et al. 2003). This fact already constitutes a puzzle, since the broad distinction between hierarchical (grammatical) vs. non-hierarchical (non-grammatical, e.g. sequential) rules correspond to a different degree of complexity: assuming that each rule can be expressed as a set of (computational) states traversals, being the number of states to be explored somehow proportional to the memory required to perform a certain computation, hierarchical rules are less memory demanding than sequential rules, since in the vast majority of contexts, hierarchical rules can deal with lexical clusters rather than single items, then operating only on the relevant chunk(s) level. If the hierarchical rules are also recursive (e.g. $X \rightarrow aXb$) the very same state can be re-used more times, inducing extra memory saving. Similar considerations on complexity also extend to non-hierarchical, non-recursive rules, that, in this sense are more "expensive". To explain this we must preliminarily define, from a computational perspective, the typology of (non-)recursive/(non-)hierarchical rules. Here we assume that the rules/computations are subsumed by different automata.

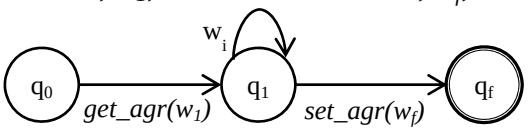
3. Ranking complexities

The (computational) complexity of a task is measured in terms of resources (memory and time) used by a computation while attempting to complete that task. This definition of complexity requires a precise formalization of the computation in order to understand the amount of resources used by the task we want to analyze. Assuming that the rules are computed by a simple Push-Down Automata (i. e. a "PDA", a Finite State Automata endowed with a Last In First Out memory buffer), we could characterize the rule typology as follows:

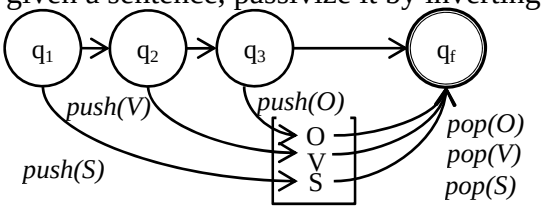
1. rule (1) *(non-recursive, non-hierarchical*):
   insert a word w_x at k^{th} position



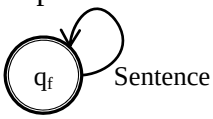
2. rule (2) (*recursive, non-hierarchical*):
   the first, w_1, and the last element, w_f, in the string should agree



3. rule (3) (*non-recursive, hierarchical*)
   given a sentence, passivize it by inverting the subject and the object



4. rule (4) (*recursive, hierarchical*)
   expand a sentence with another sentence by complementation



The prediction is that (4), once a sentence is recognized/expected, is the simplest computation, while (2) is generally simpler (it requires 3 states) than (1) (this requires *k+1* states). On the other hand, (3) is generally simpler than (1), in terms of state traversal numbers, but since it uses the memory buffer, we need a more articulated complexity cost function: if we assume that adding an extra state has a linear cost and that using an extra slot in the memory buffer has an exponential cost (cf. Gibson 1998), (3) will be harder than (2) and, in most cases, also harder than (1). What is interesting, is that these distinctions do not (yet) correlate in terms of brain activity nor behavioral measures.

4. Complexity, recursion and the brain

The scenario discussed here raises at least two delicate questions that should be put on the agenda for those who study the biological foundations of language, and syntax in particular. The first one amounts to explain how there are no significant behavioral different outcomes in achieving tasks when manipulating recursive vs. non-recursive rules tout court. The second one, on the other hand, raises a deep methodological issue: being able to measure the complexity of all typologies of rules (§3) with simple computational models (PDAs as baseline), this allows us to provide precise and comparable complexity metrics. Since all the sentences we can test are finite, it is logically impossible to test recursion directly: what we should aim at verifying, then, is whether the complexity reduction we expect with recursive and/or hierarchical rules, and the cost of using devices like memory buffers, is proportional to the behavioral/learning data. Since now we have a reliable brain signature of linguistic rules usage, we think we are ready to deepen our understanding of hierarchy and recursion in a rather new way, reconciling grammar with processing models (Sprouse et al. 2012).

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Colorful spleeny ideas speak furiously. **Norbert Corver (Utrecht university)**

1. Introduction. "Ideation reigns supreme in language, […] volition and emotion come in as distinctly secondary factors." With these words, Edward Sapir (1921:217) claimed that language is primarily a tool for the expression of thought (ideas). The expression of affect is only secondary. This secondary role is reflected in the form of language: "[T]he emotional aspect of our psychic life is but meagerly expressed in the build of language;" (Sapir *ibidem*). Roman Jakobson (1960) acknowledges the supremacy of the expression of thought but emphasizes "[...] that this supremacy does not authorize linguistics to disregard the 'secondary factors'." Jakobson argues that "[I]f we analyze language from the standpoint of the information it carries, we cannot restrict the notion of information to the cognitive aspect of language."

The aim of this talk is to examine the "meager" formal expression of affective information in the build of human language by closely considering and analyzing a number of affect-related formal properties that are manifest in varieties of Dutch and languages closely related to Dutch. At a more descriptive level, these formal strategies of encoding affective information can be characterized as being augmentative: they make the structure 'bigger' and effectuate a concomitant intensifying meaning. Three types of augmentative strategies will be considered: (i) augmentation by local dislocation; (ii) augmentation by "information spreading" (affective concord); (iii) augmentation by coordination.

2. Augmentation by local dislocation. Starting from Pos's (1933/34:328) intuition that the expression of affect involves the "inverse use" of functional material ("Mais la fonction logique des particules n'est pas la seule qui leur appartienne. Elles ont un autre emploi qui suit un sense inverse: l'usage émotif et affectif."), I will propose an analysis in which this "inverse use of functional information" is implemented by means of the displacement property. Crucially, this affect-related displacement is not operative *in* (narrow) syntax but *after* syntax, in the sense of Embick and Noyer (2001). More specifically, I will argue that functional material (e.g., the categories D or Deg) is reordered by means of *Local Dislocation*, a morphological merger operation that operates on a linear string and inverts the order of two adjacent elements: i.e., [X * [Z * Y]] is changed into [[$_Z{}^o$ Z+X] * Y]. Inversion yields a "structurally augmented" head (i.e., Z is turned into [$_Z{}^o$ Z+X]). As we will show, in many varieties of Dutch, the augmenting affix surfaces phonologically as the sound 'schwa', which may be considered a 'default/dummy sound' which spells out the augmentative part Z.

As an illustration of this linguistic encoding ("packaging") of affective information, consider the data in (1), drawn from Katwijk Dutch (Overdiep 1937; Corver 2004). As indicated, the quantity designating noun in pseudopartitive constructions can be augmented by means of *e* (schwa), yielding an affective "color" (suprise, astonishment).

(1) a. Toe krege we *'n hoop waeter,* en toe riep de skipper... (neutral)
then got we a lot water, and then shouted the boatsman ...

b. Toe krege we-n-om 'n uur of drie toch *'n hoop**e** waeter,* man! (affective)
then got we-*n* around an hour or three PRT a lot-E water, man
'Oh man, around three o'clock we really got a lot of water in our boat!'

It will be argued that the augmented form *hoope* results from displacement (Local Dislocation) of the functional category D onto the measure noun *hoop*, yielding the augmented head [N+D], which spells out as *hoop+e*. It will further be shown that this strategy of augmentation is attested in different structural environments in varieties of Dutch: e.g., (i) pronominals (*ik* 'I', *ikk**e***, I+-e), (ii) proper names (*de Miel*, the + Miel; *de Miel**e***), (iii) *die* ('that', referential use) *den diej**e*** ('that', affective use), (iv) degree adverbs (*verdomd duur* 'damned expensive'; *verdomd**e** duur*), and (v) attributive adjectives (Afrikaans: *'n mooi konyn* 'a beautiful rabbit' (neutral reading), *'n mooi**e** konyn* (affective reading).

3. Augmentation by spreading. Another phenomenon that relates to the linguistic encoding of affect may be neutrally labeled as "spreading". In colloquial Dutch, certain degree adverbs can "inherit" the adjectival inflectional morphology that is associated with the attributive adjectival head modified by the degree adverb. For example, besides *een (heel) erg dur**e** fiets* (a (so) terribly expensive-INFL bike) we find *een (heel) erg**e** dur**e** fiets*; and we even find: *een hel**e** erg**e** dur**e** fiets*. This spreading of inflectional morphology affectively "colors" the complex adjectival expression. Importantly, spreading seems to be subject to an adjacency requirement: if a PP intervenes, spreading is blocked. Compare: *een erg(*__e__) [$_{PP}$ daarvan] afhankelijk__e__ man* (a very(*-INFL) thereupon dependent-INFL man) versus *een [$_{PP}$ daarvan] erg(-__e__) afhankelijk__e__ man*. An analysis will be given in which the phi-features associated with the attributive head can spread onto a left-adjacent degree adverb by means of (leftward) Local Dislocation. From there it can spread further onto the next adjacent degree element.

3. Augmentation by coordination. In the final part of the paper, I will discuss certain properties of Dutch curse expressions that can also be characterized as being "augmentative". Structural augmentation can first of all be realized by means of the computational procedure (Merge). An increasingly heightened emotional state can be expressed by an increasingly more complex curse expression: For example, besides the simplex curse expression *godver* (goddamit!), we also find more complex (i.e. augmented) ones such as *godver de ju*, *godver de sakker de ju*, and *godver de sakker de non de ju*. An analysis will be proposed according to which the augmented curse expressions involve coordination; more specifically coordination of roots (√*godver*, √*sakker*, etc.), which is permitted given the category-less nature of Conj. The linking element *de* will be decomposed into two items: *d* and *e*. The former will be analyzed as an augmentative paragogic dental obstruent that gets attached to the curse atom ending in *er* (e.g., *godver+d*), the latter will be analyzed as an augmentative sound 'schwa' that externalizes the Conj-head of the coordinate structure, yielding, for example, [$_{ConjP}$ godver+d [$_{Conj'}$ -e [ju]]].

4. The language-emotion interface. A core question in the Minimalist study of human language is whether it is well designed for the interaction with other systems that are internal to the mind. One of those systems, arguably, is the emotion system, which, just like language, is a biological system (Damasio 1999:51). In *Cartesian linguistics* (1966; 2009:78), Chomsky explicitly mentions the expression of feelings through language: "We have observed that the study of the creative aspect of language use develops from the assumption that linguistic and mental processes are virtually identical, language providing the primary means for the free expression of **thought and feeling**, [..]" (boldface NC). The primacy of thought over feeling is clear from Chomsky's claim that "[...] language evolved, and is designed, primarily as an instrument of thought;" (Chomsky 2009:29). According to Sapir, this asymmetry between thought and emotion/feeling is reflected in the build of human language. In line with Pos (1933/34), this paper implements the secondary role of affect in terms of the secondary (inverse) use and externalization of functional material (e.g., functional categories, inflection) at the Syntax-PF interface. Such an approach is in line with Chomsky's (2009:386) recent characterization of externalization as a secondary process.

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A neoparametric approach to variation and change in English modals

Elizabeth Cowper & Daniel Currie Hall

Theoretical background How can syntactic structures vary from one language to another, or from one stage to another in the history of a single language? The strongest version of the cartographic approach to syntax says, in effect, that they cannot: "if some language provides evidence for [...] a particular functional head [...], then that head [...] must be present in every other language, whether the language offers overt evidence for it or not" (Cinque & Rizzi 2008: 45). Under this view, all surface syntactic variation arises through movement, and any seemingly absent head is merely syntactically and phonologically inert (attracting no specifier and having no over spellout). In principle, this is a strong claim about the universality of functional structure, but it is not easy to test: to falsify it, one must show not just that language Y shows no sign of a projection XP known to exist in language Z, but that Y *cannot* be analyzed as having XP.

In contrast to this view, we pursue what we will call a neoparametric approach—one that admits of variation in how formal features are grouped into projections, while still holding to the Borer–Chomsky conjecture that the lexicon is the source of variability (Borer 1984; Chomsky 1995; Baker 2008) rather than positing parameters in the older sense of Chomsky (1981). This position follows from Chomsky's (2000: 100) assumption that each language selects a subset [F] of the universal set of features, making a one-time assembly of the elements of [F] into a lexicon. As Cowper (2005) points out, intrinsic semantic entailments between features restrict both their combination into lexical items and the selectional requirements of those lexical items. Bobaljik & Thráinsson (1998) offer evidence for the neoparametric approach from variation: several correlated typological properties of Germanic languages follow from differences in the number of projections in the Infl system. Cowper & Hall (2011) make a similar case based on diachronic changes in English voice and aspect, showing that the replacement of the passival by the progressive passive (among other changes) is most elegantly explained by positing a reorganization of features from one head to two. In this paper, we show that the neoparametric approach also offers an elegant account of the diachronic development of the English modals.

The data Until the end of the Middle English period, English modals were essentially ordinary verbs that happened to have modal meanings (Lightfoot 1979; Roberts 1985; others). They could take nominal arguments (1; 3a), and they had infinitive (2) and participial (3) forms. As Lightfoot (1979) has pointed out, they belonged to the morphological class of preterite-present verbs, which did not take the regular 3SG.PRES. suffix *-þ/-s,* but they were otherwise unremarkable.

(1) *Ic* ***sculde*** *tyn þusend punda.*
I should ten thousand pounds
'I had to pay £10 000.'

(2) *I shall not* ***konne*** *answere.*
I shall not can answer
'I won't be able to answer.'

(3) a. ***cynnyng*** *no recour*
can+ing no recourse
'knowing no recourse'

b. *if he had* ***wolde***
if he had will+en
'if he had wanted to'

In Present-Day English, modals cannot take DP objects (**I should £10 000, *I can no recourse*), and they lack non-finite forms (**I won't can answer, *She is canning do that, *if he had would*).

What happened What changed, we claim, is that the feature MODALITY was added to the English T head, and the modal verbs were reanalyzed as T instead of V.

Our MODALITY is essentially equivalent to the feature IRREALIS proposed by Cowper (2005) to characterize both English modals and the future and conditional tenses of languages such as Spanish and French. This feature is semantically dependent on DEIXIS, which in turn is a dependent of FINITE. Semantically, DEIXIS indicates that the proposition expressed by the clause is anchored to the deictic centre of the utterance: its time, place, and world are to be evaluated relative to the time, place, and world of the (implied) speaker at the moment of speech. In the absence of further specification, the relation is simply one of identity or inclusion, and the

proposition is thus asserted to be true in the real world at the moment of speech, or, if the past-tense feature PRECEDENCE is added, at some time before the moment of speech. The addition of MODALITY creates a more marked relation between the clause and its deictic anchor, in the spirit of Kratzer's (2012) semantics of modals. The proposition denoted by the clause is asserted either to follow from (in the case of necessity modals) or to be compatible with (in the case of possibility modals) the (relevant subset of the) set of propositions characterizing the situation in the real world at the moment of speech (or before it, with PRECEDENCE), rather than simply to belong to it. Because MODALITY is dependent on FINITE, there are no infinitival or participial forms of the future or conditional in French and Spanish—nor of modals in Modern English.

The reanalysis of the modals was triggered by a combination of factors: (i) As the loss of inflectional morphology during ME made the subjunctive (characterized in our system by the absence of DEIXIS) less distinguishable from the indicative, there was a rise in the periphrastic use of the (pre-)modals to express non-realis meanings (Fischer 1992). (ii) Non-modal preterite-present verbs were either lost or regularized, making the modals morphologically distinct (Lightfoot 1979). (iii) English lost V-to-T movement. Following Bjorkman (2011), we assume that even auxiliary *have* and *be* do not move from V to T, but that they are instead inserted in T to provide morphological support for inflectional features. These three factors combined to make the modals a morphologically and semantically identifiable category of items in T, to all appearances indigenous to that projection and quite distinct from V. Having been reanalyzed as spelling out MODALITY in T, the English modals took on the functions of future and conditional tenses in other languages, *will* (and formerly *shall*) being now the default expression of future time reference, and *would* (and formerly *should*) of counterfactuality.

This account of the English modals depends on the assumption that it is possible for the featural content of T to change over time (and thus, by implication, to vary from one language to another). In the absence of MODALITY, the indicative was not contrastively realis, and present and past indicatives were standardly used to express future and conditional meanings (respectively). If the development of the modals involved not only the reanalysis of those individual words, but also the addition of a new feature to T, then the concomitant shift in the range of meanings of the indicative follows elegantly from this change.

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Lexical items merged in functional heads
The grammaticalization path of ECM-verbs in Dutch dialects

Jeroen van Craenenbroeck & Marjo van Koppen

SUMMARY This paper focuses on a hitherto undiscussed case of object agreement found on certain ECM-imperatives in Dutch dialects. We argue that this construction represents an intermediate stage on the grammaticalization path of these verbs between on the one hand their use as full-fledged lexical verbs and on the other their use as discourse particles. Following Cardinaletti & Giusti (2001), we take these three cases to represent the following three theoretical options: (a) lexical items merged in lexical positions (ECM-verbs in their regular use), (b) lexical items merged in functional positions (inflected imperatives of ECM-verbs), and (c) functional items merged in functional positions (ECM-verbs as discourse particles).

THE DATA As is well-known, there is no object agreement in Dutch (dialects). A hitherto unnoticed exception to this generalization, however, concerns examples such as that in (1) from Rotterdam Dutch.

(1) *Kijk-e die koeie es gek doen!*
look-PL those cows PRT crazy do
'Look at those cows going crazy!'

In this example the ECM-verb *kijk* 'look' agrees with the subject of the embedded infinitival to which it normally assigns (object) accusative case. Changing the number of that DP leads to the obligatory absence of the agreement ending:

(2) *Kijk(*-e) die koe es gek doen!*
look-PL that cow PRT crazy do
'Look at that cow going crazy!'

In what follows we show that this construction has both functional and lexical properties.

FUNCTIONAL PROPERTIES **(i) closed class of verbs:** the pattern in (1) is only found with *kijken* 'look', *horen* 'hear' and *laten* 'let'. No other verb can agree with its object:

(3) **Vertel-e die verhalen es!*
tell-PL those stories PRT

(ii) morphological defectiveness: the object agreement pattern only occurs in the imperative:

(4) **Ik kijk-e die koeie es gek doen.*
I look-PL those cows PRT crazy do

(iii) no arguments: the imperative verb does not take any arguments of its own, i.e. there is no *pro*-subject in (1). This is supported by the fact (a) that anaphor binding is impossible in inflected imperatives (cf. (5)) and (b) that subject-oriented purpose clauses are similarly ruled out (shown in (6)).

(5) *Kijk(*-e) jezelf es gek doen!*
look-PL yourself PRT crazy do

(6) *Laat(*-e) die kinderen es ophouden door ze te slaan!*
let-PL those children PRT stop by them to hit
'Make those children stop by hitting them!'

(iv) bleached, adhortative meaning: the construction in (1) has no real imperative force: it is infelicitous in true imperative contexts as in (7) and cannot be coordinated with true imperatives, cf. (8).

(7) *Ik beveel je: laat(*-e) deze mensen naar binnen gaan!*
I order you let-pl these people to inside go
'I order you: let these people go inside!'

(8) *Laat(*-e) die kinderen ophouden en stop ze in hun bed!*
let-pl those children stop and put them in their bed

LEXICAL PROPERTIES **(i) basic lexical semantics:** in spite of the bleached semantics of (1), the verb *kijk* 'look' still retains its basic semantics of using one's vision. As such it contrasts with the use of *kijk* as a discourse particle:

(9) *Kijk, je moet dat doen zonder te kijken.*
look you must that do without to look
'Look, you have to do that without looking.'

(ii) secondary theta-role: while *kijk* 'look' does not assign a theta-role of its own, it does impose secondary theta-restrictions on the DP it agrees with. In particular, this DP has to be agentive:

(10) *Kijk-e die mensen / *die tafels es in de weg staan!*
look-PL those people / those tables PRT in the way stand
'Look at those people/*tables standing in the way!'

THE ANALYSIS This specific mix of functional and lexical properties is mirrored almost exactly in Cardinaletti & Giusti's (2001) discussion of semi-lexical motion verbs in Germanic and Romance. They focus on the construction illustrated in the following Sicilian example:

(11) *Vaju a pigghiu u pani.*
go.1sg to fetch.1sg the bread
'I go fetch the bread.'

As pointed out by C&G, the motion verbs found in this construction (i) belong to a closed class, (ii) are morphologically defective, and (iii) take no arguments or adjuncts, while at the same time (i) they retain their basic motional meaning, and (ii) they assign a secondary (agentive) theta-role to their subject. We take this parallelism to be non-accidental and apply the basic insight of C&G's analysis to our data. They propose that the motion verb *vaju* 'go.1sg' is merged in the first functional head higher than the position occupied by *a pigghiu* 'to fetch.1sg', i.e. this is an instance of a lexical vocabulary item that is merged in a functional head position. We propose the same analysis for the inflected imperative in (1) and can even use the presence of the agreement ending as a way to pinpoint where exactly the verb is merged. In particular, the dialects under consideration here all display so-called complementizer agreement, whereby the complementizer of a finite embedded clause can agree with the subject of the clause it introduces, as in (12).

(12) *Ik vind dat-e we toffe jongens zijn.*
I find that-PL we fun guys are
'I think we're fun guys.'

As argued by Van Craenenbroeck & Van Koppen (2012) (among others), comp-agreement originates on a low CP-head, say Fin^{o}. The fact that the exact same agreement shows up in (1) then suggests that the verb *kijk* is base-generated in this position as well. Given that there is no *pro*-subject in this construction, there is also no accusative case (Burzio's generalization) and as a result, the embedded ECM-subject has to raise to specTP to receive nominative case. It is in this configuration that the phi-features of Fin^{o} get valued and spelled out on *kijk*.

More generally, the picture sketched here is one in which three main stages of grammaticalization can be discerned: in the first one, the lexical verbs are simply inserted in their lexical position (cf. *Ik kijk televisie.* 'I'm watching television.); in the second, the lexical verb is merged in a functional position (Fin^{o} to be precise); and in the third, we are dealing with a fully functional element merged in a functional position (cf. the particle in (9)). We have argued that the microvarational data from Dutch provides crucial insight into the middle stage of this development.

Setting the elements of syntactic variation in L2 acquisition: On the English *'s* morpheme

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If parameters are located in the functional lexicon (Borer 1983, Rizzi 2011 a.o.) and the triggers are vocabulary items with their idiosyncratic properties, then acquiring a second language (L2A) is to be thought of as very similar to first language acquisition (L1A). The L2 learner is faced with new words/morphemes (or with their apparent absence) whose syntactic properties have to be discovered (through UG) and, ideally, there is nothing to be reset and everything to be set. The literature has however brought to light many differences between L1A and L2A, and among them many can be explained assuming parameter resetting. My aim here is not to deny these results, but just to explore the idea that the L2 learner is faced with new vocabulary items whose syntactic properties have to be discovered through a specific instance, the English *–s* morpheme, which I find particularly interesting because its morpho-phonological opacity makes it a potentially ambiguous trigger.

In this work I analyse data collected through a written task from 50 Italian L2 learners of English (beginners or near beginners) aged 10 to 12. We chose two uses of the *–s* morpheme which are homophonic and homographic: the case in which *'s* is a contracted form of BE and the case in which it is a genitive. Subjects were presented a list of sentences (well formed and non – ambiguous) corresponding to 5 different patterns (see Table 1). They had to decide whether the value of *'s* in each item was BE or genitive and indicate it to the right of the item. Two testing sessions were realized, one soon after students were taught BE simple present and *'s* –genitive and one five months later. Results indicate: a) a similar percentage of target and non-target decisions across items in the two sessions (Table 2). b) an equal ranking of the various patterns in the two sessions (Table 3 and Figure 1). c) a statistically significant difference between Pattern 2 and Pattern 3 in both sessions (Figure 1).

a)indicates that it is really a problem to decide what is *'s*, and the problem persists over time. b) and c) show that this decision is not equally difficult and the difficulty is structure dependent. We interpret the results in the following way. Learners not only find *'s* ambiguous, but they parse the sentences they are presented with, assuming the hypothesis in (1):

(1) *Is* and *'s* are allomorphs of a general agreement morpheme
input driven part UG driven part

In Pattern 2, but not in Pattern 3, *'s* is placed at a choice point (Fodor 1998), i.e. a point in which it can be attached within the constituent currently being parsed (the DP) following Late Closure, or projecting the CP node (coherently with Minimal Attachment). Hence the significantly higher number of non –target decisions. (1) is also confirmed by some elicited production errors like (2) and (3):

(2) Q. What does Jane want?
A. Bag is Mary

(3) Q. Where are the belts?
A. The belt is Brom is on the table. The belt is Katrina is on the chair

which reveal that the boundaries of what is known as 'BE overgeneration' (Ionin and Wexler 2002),when BE is third person singular, go beyond the clause and include the DP as well. And if 'BE overgeneration' is a hallmark of L2 acquisition (Paradis *et al*. 2008) we can restate our introductory issue. An L2 learner, like an L1 learner, tries to discover the properties of *'s*, but, differently from the latter, the former starts building hypotheses with an already matured structure (perhaps in the form of 'treelets' as proposed by Fodor 1998).

Table 1

Value of *'s*	Pattern	Example
1. BE	Common noun + 's + PP	My bike's in the garage
2.BE	Proper name + 's +PP	Jodie's in the garden
3.GV	IS + subj+ Poss simpleNP +'s +N	Is this Jack's tracksuit?
4.GV	IS + subj+ Poss conjoinedNP +'s +N	Is this Tom and Jenny's car?
5.GV	PossNP + 's + NP + BE + AP	Rosie's dog is very friendly

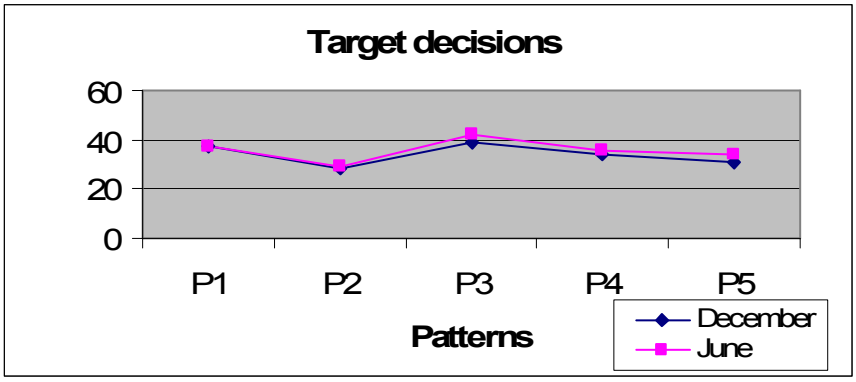
Table 2. Total % of target decisions

Session	Target decisions
December	67.6%
June	71.2%

Table 3 Patterns ranking for target decisions

Session	Ranking
December	P3>P1>P4>P5>P2
June	P3>P1>P4>P5>P2

Figure 1.



December: There is a statistically significant difference between Pattern 2 and Pattern 3 (χ^2=5. 4726 p=.05; with Yates correction χ^2= 4.5228 p=.05).
June: There is a statistically significant difference between Pattern 2 and Pattern 3 (χ^2= 8.2079 p=.05 (significant also at p=.01 and at p=.001); with Yates correction χ^2= 6.9937 p=.05 (significant also at p=.01).

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Language Faculty, Complexity Reduction and Symmetry Breaking

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1. I assume that the Language Faculty is stable, it does not vary though time and space, and that language development requires experience (Chomsky 1995, 2005, 2011). I develop the view that language evolutionary development is the result of the interaction of the language faculty + experience with factors reducing complexity (Third Factor).

2. The relation between the language faculty and principles reducing complexity has been part of the research agenda in the generative enterprise since the 50's. Framed within Biolinguistics, the principles of efficient computation can be thought of as being natural laws affecting the computations of the Language Faculty (No Tampering Condition, Derivation by Phase, Minimal Search, Pronounce the Minimum, a.o.). Other complexity-reducing factors include the mechanisms restricting the set of possible acquirable grammars (Yang 2002, Niyogi 2006, Niyogi and Berwick 2009). Yet other such factors may come from natural processes, such as symmetry breaking (Di Sciullo 2011, 2012). Symmetry breaking is a process that brings a system from a symmetric state ($\forall$a,b $\in$ X, aRb $\Rightarrow$bRa) to an asymmetric state ($\forall$a,b $\in$ X, aRb $\Rightarrow\neg$ bRa), and which has been argued to affect syntactic derivations in Moro (2000).

3. Several works in evolutionary developmental biology provide evidence that variation in biology is symmetry breaking (Graham, Freeman and Emlen 1993; Lowentin 2000, 2006; Palmer 2004, 2008; Palmer and Lowentin 2004). Symmetry breaking is part of the processes affecting the shape of biological organisms. Palmer identifies phylogenic patterns of variance in the evolution of bilateral asymmetric species. Namely, the fact that Fluctuating Asymmetry, i.e., the random left or right prominence, precedes Directional Asymmetry, i.e., the clear, exclusive left or right prominence of bipartite organisms. This pattern of variance on the shape of biological organisms is an effect of external factors on these organisms. Symmetry breaking in the computational procedure of the language faculty may find its origin in the natural processes affecting the evolution of the shape of biological organisms. Seen as a natural process external to the Language Faculty, symmetry breaking may contribute to our understanding of language development.

4. A striking fact in the development of the nominal extended projection in Indo-European languages is that while pre and post nominal positions for a functional category are possible in earlier stages of the languages, only one position is available in later stages. This phenomenon is neither language specific nor category specific, as it can be observed in the development of prepositions in the Indo-European languages, the definite determiner from Old to Modern Romanian, the possessive adjectives from Ancient to Modern Greek and from Latin to the Romance languages. I raise the question of why this is the case.

5. I argue that this phenomenon is the consequence of the Head Initial/Final Constraint, (1), which I propose to be an evolutionary developmental universal.

(1) *The Head Initial/Final Constraint* (HI/FC)
The choice between the initial and the final position for a functional head in the same extended projection is eliminated in the evolution of languages.

The HI/FC is an instance of the Directional Asymmetry principle, (2), that may find its source in the biological evolutionary development of bipartite organisms where the following historical evolutionary path is observed: fluctuating asymmetry > directional asymmetry. In the fluctuating asymmetry stage either one or the other side of a bipartite organism can be prominent, whereas in the directional asymmetry stage, only one is.

(2) *Directional Asymmetry* (DA)
Language evolutionary development is symmetry breaking.

While there is nothing like language, language remains an object of the natural world, and thus, it is subject to natural processes. Drawing a parallel with functional projections, it is possible to

associate the fluctuating asymmetry stage to the stage where a complement may occur to the right or to the left of a functional head, and the directional asymmetry stage to the stage where only the right or only the left position remains available.

I discuss the prediction of the DA-HI/FC for Indo-European languages, focusing on the order of the complements with respect to heads in the extended nominal domain, and I show that such evolutionary developmental constraint contributes to the reduction of derivational complexity, measured in terms of length of the derivations.

6. The DA-HI/FC expresses a characteristic of languages as they evolve through time. Such universal is not coextensive with Greenberg's (1966) absolute and implicational universals. Current works on language variation aim to derive language universals from more basic properties of the language faculty. The DA-HI/FC is an evolutionary developmental universal whose predictions do not follow directly from cartographic (Cinque 2005), antisymmetric (Kayne 2011), or other configurational constraints (Biberauer, Holmberg & Roberts 2010). However, it is compatible with these constraints.

7. I discuss the case of languages where there is no robust evidence for DA-HI/FC. For example, Turkish is by and large postpositional, as it is the case for other languages, including Finnish, Hindi, Korean, and Hungarian. I raise the question why this is the case. According to Greenberg's universals no. 3 and no. 4, the availability of prepositions or postpositions is related to broader typological properties, (3). SOV languages (Japanese, Mongolian, Basque, Turkish, Korean, a. o.) are postpositional and VSO languages (Welsh, Classical Arabic, Tagalog, a. o.) are prepositional.

(3) a. Languages with dominant VSO order are always prepositional. (no. 3)
b. With overwhelmingly greater than chance frequency, languages with normal SOV order are postpositional. (no. 4)

I argue that the absence of prepositions in some languages, and the absence of postpositions in other languages can be derived from the properties of the computational system, given parallel (harmonic) functional projections chains, including verbs (v) and prepositions (P), on the one hand, and differences in the feature values of P, on the other. I also consider the case of languages such as Mandarin Chinese, where prepositions and postpositions are observed through the language evolutionary development (Djamouri, Waltraud and Whitman 2011). I argue that ad-positions did not evolve from different categories, but rather are an instantiation of the path shell with direction and location heads.

8. It is generally assumed that locality conditions, such as Derivation by Phase and the Minimal Search Condition limit computational complexity. Derivational complexity may also be reduced by the effect of evolutionary developmental processes on the generative procedure of the Language Faculty and the DA-HI/HF may find an explanation in the natural development of biological systems.

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Don't scope your universal quantifier over negation!

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There has been a lot of attention in the literature given to the factors which decide the relative scope of logical operators in the interpretation of sentences. One of the crucial factors was claimed to be information structure (Jackendoff 1972, Hajičová 1975, Büring 1997, a.o.). One of the most important cases discussed in the literature is the scopal interpretation of negative sentence containing universal quantifier which is assumed to be disambiguated by intonation pattern in English and German even by Kadmon (2001). We present an argument that the apparent wide scope of the universal quantifier over negation is a result of scope illusion as argued independently for definite NPs and negation in Beck (2001). This opens a possibility that the scope of universal quantifier is always below negation. The crucial evidence comes from an extensive corpus study of the interpretation of Czech universal quantifier *všechno* 'all' (2000 sentences from the SYN2010, representative corpus of contemporary Czech, was parsed; the relative scope of negation and $\forall$ for each sentence was decided by paraphrasing the sentence meaning into the sentence with unambiguous scope and judging the plausibility of such paraphrase). We found that 89 % of negated sentences with unmodified subject NP containing *všechno* is interpreted with the relative scope $\neg > \forall$ (1). The remaining 11 % of unmodified subject NP is interpreted with the opposite scope. This holds irrespective of the linearization – both S neg-V and neg-V S linear order show nearly the same percentage of relative scopes (notice that Czech is a language with relative free word order, the changes in linearizatione were claimed to be linked to information structure by many, see Kučerová 2012 a.o.). But surprisingly the interpretation totally reverses when we consider modified universal subject NPs: 87 % of sentences is interpreted with the scope $\forall > \neg$ (2) and only 13 % has the interpretation with the opposite scope. We argue that the interpretation $\forall > \neg$ is just illusion of scope similar to apparent wide scope of conjunction over negation in languages like Hungarian (Szabolcsi & Haddican, 2004).

(1) a. Myslím, že všechny mrtvoly se ještě neobjevily.
Think.1sg that all corpses SE still NEG-appear.3pl
'I think that all corpses didn't appear still.'
b. Všichni pacienti si ale látky nevytvářejí.
All patients SI though matters NEG-develop.3pl
'All patients don't develop antibody.'

(2) Všechny ty škody neměly jiný účel než nadělat co nejvíc
all the damages NEG-have.3pl other purpose than make as much
hluku.
noise
'The purpose of all the damages was to make as much noise as possible.'

Proposal: We argue that the fixed scope between universal quantifier and negation is the result of competition in grammar, namely reference set competition (Reinhart, 2006; Percus, 2006), see also blocking (Horn, 1989). The reason why the scope $\forall > \neg$ is never realized by the sequence *všechno ... ne* is that there is a strictly simpler realization of the same semantic information, namely a single lexical item *žádný* 'no'. We argue that the existence of this lexical item blocks the scope reversal structure. We argue further, that the illusion of scope $\forall > \neg$ in examples like (2) arises as the result of negation applied to the definite (maximal) plurality, as introduced in Beck (2001), and called

homogeneity presupposition (3) by her. The core idea of the homogeneity presupposition is to distribute the pluralized property P to all atoms in the denotation of A; in case of negated sentences (3-b) this leads to apparent scope of A over negation. The homogeneity presupposition is used by Beck to explain the strong interpretation of sentences like *The children are not asleep* where negation and the definite NP appear and where the weak reading ($\neg > \delta(CHILDREN)$) isn't grammatical. We follow Beck (2001) in this respect and argue that the apparent wide scope of universal quantifier over negation in examples like (2) is the result of the distribution of negative property to all atoms constituting the maximal plurality denoted by the universal NP, not a result of QR or any semantic transformation which would scope $\forall$ over $\neg$.

(3) *P(A)

a. =1 iff $\forall x[x \in A \rightarrow P(x)]$

b. =0 iff $\forall x[x \in A \rightarrow \neg P(x)]$; undefined otherwise

Predictions: our proposal makes three following predictions. **First**, we predict that whenever the illusion of $\forall > \neg$ arises, the universal NP should be definite (in the sense of restriction of the quantificational domain by such means as relative clauses, presuppositional collective modifiers, demonstratives, ...). Our corpus study shows that this prediction is born out. **Second** prediction, because universal quantifer and conjunction are logically equivalent (in finite domains), we expect that the conjunction of two definite NPs in negated Czech sentences should produce apparent 'wide scope of conjunction' over negation reading. The second observation is demonstrated in (4) which (unlike its English translation) is interpreted only as conjunction of two negated statements ($\neg p \wedge \neg q$). This is not the case for indefinite NPs where both scopes are possible. **Third** prediction: we predict that change in the word order typically associated with a change in the information structure should have no effect on the scope of *all* and negation. Notice that in Czech negation is realized as a bound morpheme on the finite verb. We predict that both SV (i.e., *all* neg-V) and VS (i.e., neg-V *all*) orders should yield the same intepretation, namely, $\neg > \forall$. This is exactly what we found in the corpus. The decisive factor is the definite interpretation of universal NP as discussed above. The last prediction supports the traditional view of the architecture of language faculty (Chomsky, 1995) where the information structure doesn't intervene with the semantic part of the derivation.

(4) Petr nepřečetl Meditace a Babičku.
Petr NEG-read.3sg Meditations and Grandmother
'Petr didn't read Meditations and The Grandmother.' $\neg p \vee \neg q$ in English

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Restricting language change through micro-comparative analysis

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1. Introduction Although the variation pertaining to subject verb agreement in dialects of Dutch is quite bewildering (cf. SAND atlas, Barbiers et al 2005), four exceptionless generalizations on paradigm structure can be formulated.

(1) *Generalization 1*
If in the inversion order an affix appears that is not present in the straight order of that dialect, this affix is invariably a null form.

(2) *Generalization 2*
The affixes associated with 3SG and 3PL contexts in the straight order are never replaced by another affix or reduced to zero in the inversion order, in contrast to affixes associated with 1st and 2nd person contexts, singular or plural. (for the zero patterns, cf. (6a)-(6c)).

(3) *Generalization 3*
Although the affix associated with 3SG can never be dropped in the inversion order, it is dropped without exception in past tense contexts.

(4) *Generalization 4*
If in 1sg/2sg contexts inversion morphology occurs, the inversion morpheme is never syncretic with the 3sg morpheme.

We propose that these should be interpreted as restrictions on language change that are induced by the language learner. The rationale is as follows. It is fairly well established that the variation we now observe among Dutch dialects is an inter-play of phonological erosion processes and reanalyses of subject clitics into agreement affixes. Since in principle any agreement ending in the paradigm slot can be the result of phonological erosion or reanalysis, these processes themselves can at most account for the variation but not for the restrictions we observe, especially not when these restrictions pertain to paradigm structure and not to the concrete morphological shape of the affixes. The restrictions must be a consequence of the fact that, at any synchronic point in time, the language acquirer has to map the phonological endings in the input onto a concrete morphological subject agreement paradigm. If so, the restrictions on language change are a consequence of the fact that in this mapping procedure not every possibility is readily entertained by the child. In this paper, we explore the theoretical consequences of this rationale for the analysis of Dutch morpho-syntax.

2. Standard Dutch The consequence of this rationale is that any analysis of a particular variety, such as Standard Dutch, must now be compatible with the intra-paradigmatic restrictions we observe, thereby restricting the analytical possibilities. This is a welcome result, since a multitude of analyses has been proposed, using different spell out rules, different sets and types of features and different defaults. A morphological analysis of the present tense agreement paradigm of Standard Dutch (cf. 6a) must capture two facts. First, it contains three affixes occurring in different environments: the -ø affix occurs in 1sg contexts, the *–t* affix occurs in 2sg and 3sg contexts, and *–en* occurs in the plural. Second, the *–t* affix disappears in 2sg inversion orders, i.e. when the subject follows the verb (*loop jij* instead of *loopt jij*). Such inversion morphology has been analyzed as evidence for a double paradigm (Bennis & MacLean 2006), and as evidence for impoverishment rules that are activated in the inversion order (Ackema & Neeleman 2003, 2012). It has proven very hard to empirically decide what the best analysis is for these data, but with (1)–(4) we can make a new step.

An analysis in which V-SU orders trigger particular impoverishment operations à la Ackema & Neeleman readily captures generalization 1. The fact that no new affixes make

their appearance in the inversion order is because inflection in the inversion order is an 'impoverished' version of the straight word order paradigm. Hence, impoverishment leads to insertion of a less specific affix, or no affix if no realization rule can apply anymore. The double paradigm theory does not exclude the appearance of new overt affixes in inversion orders and since this never occurs, we abandon this option.

The impoverishment theory, however, has little to say about Generalizations 2-4, although the fact that 3sg *–t* never disappears in inversion can in principle be captured by saying that *–t* is a default. Since a default does not spell out a feature, there is no feature that can be impoverished in inversion order which subsequently blocks *–t* insertion. However, we think this is the wrong move for three reasons: (i) It means that 2sg *–t* must be a different *–t* in Standard Dutch as 2sg *–t does* drop in inversion, which is unelegant; (ii) If 3sg *–t* never disappears in inversion because it is a default (Generalization 2), why can it never show up in 3sg past contexts (Generalization 3)?; (iii) If *–t* is a default, why does it never spread to 1sg and 2sg contexts in inversion after impoverishment of features in those contexts (Generalization 4)? Hence, *–t* must be a default (given its permanence in inversion contexts) and cannot be a default (given the past tense facts). This paradox must be solved.

3. The proposal We propose that all four generalizations are respected with the following analysis of Standard Dutch: -ø spells out [speaker], *–en* affix [plural] and *–t* is an expletive morpheme, inserted simply because the verb needs an affix. We formulate this meta-paradigmatic constraint as in (5):

(5) Finite verb: stem +affix^{n} ($n \geq 1$)

In the inversion order, this *–t* is not needed in 2sg because the 2sg post-verbal subject is interpreted as a 'potential affix', making insertion of expletive *–t* redundant. To be considered a 'potential affix', a constituent must appear to the right of the verbal stem because Dutch has suffixes, not prefixes. Hence, subject pronouns can only satisfy (5) in inversion order. Second, a constituent must *always* appear there because subject agreement in Dutch is obligatory. Now, 1st and 2nd person pronouns will always appear to the right of the verb in inversion order, but 3rd person pronouns are always in complementary distribution with lexical DPs and therefore do not qualify as constituents that can satisfy (5). This derives Generalization 2 since only in 1st and 2nd person contexts is the affix not needed. It also derives Generalization 3: *–t* can never be inserted in past tense contexts because (5) is already satisfied by the past tense affix, which renders *–t* insertion superfluous. Lastly, Generalization 4 is derived: since in 1st and 2nd person contexts subject pronouns satisfy (5), *–t* never spread to these contexts. What was possible in a default analysis of *–t* is correctly blocked in the expletive analysis.

One interesting prediction follows. In dialects in which the *–t* affix is more prominently used in the straight order, namely also in plural contexts, this *–t* is now naturally analyzed as an expletive affix inserted to satisfy (5). We expect that this *–t* can now be subsequently dropped in inversion contexts but limited to 1st and 2nd person. This is exactly what we find: The patterns in (6c-d) are readily attested but a dialect in which the *–t* is dropped in any of the 3rd person contexts is not.

(6)

Variety	**a. Standard Dutch**		**b. Gistel**		**c. Zuid-Sleen**		**d. Enter**	
Order	SU-V	V-SU	SU-V	V-SU	SU-V	V-SU	SU-V	V-SU
1sg	-ø	-ø	**-en**	**-ø**	-ø	-ø	-e	-e
2sg	**-t**	**-ø**	-t	-ø	-t	-ø	-t	-ø
3sg	-t	-t	-t	-t	-t	-t	-t	-t
1pl	-en	-en	-en	-ø	**-t**	**-ø**	-t	-ø
2pl	-en	-en	-t	-ø	**-t**	**-ø**	-t	-ø
3pl	-en	-en	-en	en	-t	-t	-t	-t

4. Conclusion This micro-comparative analysis (i) brings us closer to a realistic algorithm children use to acquire morpho-syntactic paradigms, in turn restricting language change (ii) restricts the number of possible analyses for any synchronic variety, such as Standard Dutch. Time remaining, we will discuss the notion of a 'potential affix' in more detail and suggest ways in which this can be understood and motivated, synchronically and diachronically.

Synchronic Systems in Diachronic Change: The Role of Contrast

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Our paper addresses a question raised in the workshop prospectus, namely 'how innovation comes into being and, once it has occurred, enters the synchronic computational system'. As suggested there, our account involves the relation between the phonological grammar and 'non- (or pre-) grammatical phonetic variation'; however, we wish to address a different aspect of this relationship, which leads us to rethink the connection between synchrony and diachrony more generally.

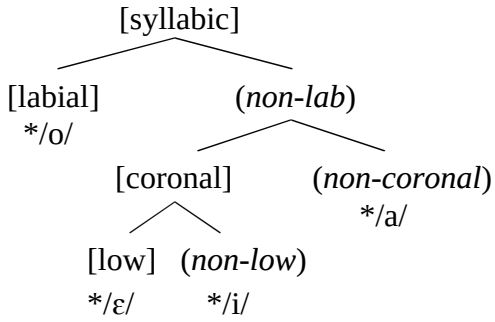
Following the reorientation of linguistic theory toward synchronic systems in the wake of Saussure, the relationship between synchrony and diachrony became unclear. In pre-generative structuralist theories, synchronic grammars were composed of contrasting elements locked into systems of oppositions. If one takes too literally Saussure's (1972 [1916]: 166) dictum that 'dans la langue il n'y a que des différences . . . sans termes positifs', then grammars become incommensurable, and one has no way to relate successive stages of a language, or even closely related dialects (Moulton 1960). Generative grammar (Chomsky & Halle 1968) solves this problem by construing a phonological grammar as a system of rules that mediate between underlying (lexical) and surface (phonetic) forms. Now, grammar change takes the form of the addition. loss, reordering, or restructuring of rules. Kiparsky (1965) demonstrated that a series of changes in Armenian dialects can be understood in terms of the spreading of three rules; furthermore, his analysis 'highlights the pointlessness of a structural dialectology that...distinguishes dialects according to points of structural difference rather than according to the innovations through which they diverged'.

We think that generative grammar went overboard in jettisoning the structuralist notion of language-particular contrast, and that contrast plays a crucial role in synchronic phonology as well as in diachrony. In particular, we argue that *contrast shift*, a change in the contrastive organization of the phonemic inventory of a language, is an important type of phonological change. The insight that phonological change may involve a reorganization of the phonemes of a language goes back to Jakobson (1931); to the extent that phonemes are contrastive units, contrast shift can be viewed as an inevitable consequence of a structuralist/ generative approach to phonology. However, Jakobson's program for a truly structuralist approach to change was never implemented. We argue that the true dimensions of contrast shift are revealed when we embed the hypotheses in (1) into a generative grammar:

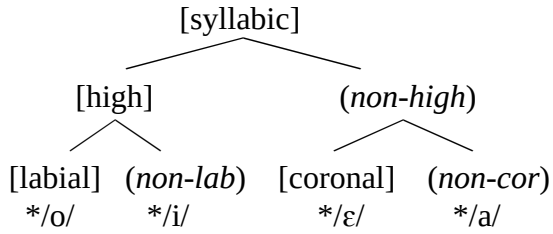
1. Hypotheses about contrastive features
   a. *The Contrastivist Hypothesis* (Hall 2007): Only contrastive features are active in the phonology.
   b. *The Contrastive Feature Hierarchy* (Dresher 2009): Contrastive features are assigned by language-particular feature hierarchies.
   c. Feature hierarchies are subject to diachronic change: features may be reordered, or contrasts may be reinterpreted over time.

The hypotheses in (1) predict that contrast shifts will have observable consequences for synchronic patterns of phonological activity. This prediction is dramatically confirmed in a survey of diachronic changes in the vowel systems of Algonquian languages by Oxford (2012). Oxford proposes that Central Algonquian has the vowel feature hierarchy in (2), which continues the Proto-Algonquian (PA) system. Oxford observes that two groups of changes are particularly common in Central Algonquian (3); these changes are consistent with (2) on the assumptions that (a) contrastive sisters are the most likely merger partners, and (b) palatalization is triggered by a contrastive feature, here [coronal].

2. Central Algonquian feature hierarchy:
[labial] > [coronal] > [low]



4. Eastern Algonquian feature hierarchy:
[high] > [labial] > [coronal]



3. Mergers and palatalizations characteristic of the Central Algonquian languages
   a. */ɛ/ regularly merges with */i/: Partial or complete mergers of short */ɛ/ > /i/ occur in Fox, Shawnee, Miami-Illinois, Ojibwe-Potawatomi, and Cree-Montagnais-Naskapi. Long */ɛː/ completely merges with /iː/ in Woods Cree and Northern Plains Cree.
   b. Palatalization always includes */i/ as a trigger: PA */t, θ/-palatalization is triggered by */i, iː/; Montagnais */k/-palatalization is triggered by */i, iː, ɛː/; Betsiamites Montagnais /t/-palatalization is triggered by /iː/.

Oxford (2012) proposes that in Eastern Algonquian (EA) the feature [low] was reanalyzed as [high] and promoted to the top of the hierarchy (4). The new order leads to dramatically different patterns of merger and palatalization (5):

5. Mergers and palatalizations characteristic of the Eastern Algonquian languages
   a. */ɛ/ merges with or shifts to */a/: Partial or complete mergers of PA short */ɛ/ or its PEA reflex */ə/ with */a/ occur in Abenaki, Mahican, Mi'kmaq, and Maliseet-Passamaquoddy; PEA long */ɛː/ shifts to /aː/ in Massachusett and merges with */a/ in Western Abenaki; long and short */ɛ(ː)/ shift to /a(ː)/ in Cheyenne; and vowel harmony involves */ɛ(ː)/ and */a(ː)/ in Arapaho.
   b. Palatalization is triggered by */ɛ(ː)/ but *excludes* */i/: in Massachusett */k/-palatalization is triggered by PEA */ɛː/ but not /iː/; Cheyenne "yodation" (*/k/ > /kj/) is triggered by */ɛ(ː)/ only.

More radical contrast shifts occur in the development of the Mansi and Khanty vowel systems from Proto-Ob-Ugric. Harvey (2012) shows that one can make sense of these changes by keeping track of the changes in their contrastive hierarchies, as revealed by inventories and patterns of activity. He argues that contrast shifts describe phonological events that can be shared and borrowed by neighbouring speech communities, and plotted as isoglosses. For example, front-back ([coronal] vowel harmony is retained in some Mansi and Khanty languages and lost in others. Harvey shows that harmony is lost in dialects where the ranking of [coronal] is lowered to the bottom of the feature hierarchy, and that this change appears to have originated in Northern Mansi and spread along the major regional rivers to both Mansi and Khanty dialects (which excludes the possibility of this being a genetic change).

We will also show examples of how changes in contrastive feature specifications correlate with subtle changes in the phonetic realizations of phonemes. For example, once /ɛ/ loses its [low] feature, it is potentially free to become a non-low vowel; this kind of phonetic drift may in turn provoke a reanalysis of the governing contrasts by a new generation of learners. As the Algonquian and Ob-Ugric examples show, viewing phonological change in terms of contrast shift accounts for large-scale typological patterns that are hard to explain any other way. These developments in turn lend support to language-particular contrastive feature hierarchies as an organizing principle of individual phonological systems.

Pro-drop as ellipsis: evidence from the interpretation of null arguments

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GOAL. In this talk, I defend a DP/NP-ellipsis (DPE) analysis of pro-drop cross-linguistically.

1 PRO-DROP AS DPE. The standard view is that there are different types of pro-drop phenomena across languages (*cf.* recently Holmberg 2010); *e.g.* DPE is at play in Japanese-like languages (*cf.* Kim 1999, Saito 2007, Takahashi 2008), while agreement is what licenses/identifies null arguments in Spanish-like languages (*cf.* Rizzi 1986, Barbosa 1995, 2009).

1.1 Occam's razor. Unless proven wrong, a unified theory of pro-drop should be favored over one that appeals to different accounts for different languages. While it is difficult to reduce pro-drop in agreement-less languages like Japanese to an agreement-related phenomenon, reducing pro-drop in Spanish-like languages to ellipsis makes sense, in particular given that ellipsis is independently attested in the grammar and universally available in principle.

1.2 Evidence. The main argument in favor of not reducing pro-drop in Spanish-like languages to DPE is that, as assumed since Oku (1998), unlike in e.g. Japanese (1), in Spanish (2) null subjects cannot be interpreted as lexical DPs (*i.e.* they do not allow a sloppy reading (SR)) (*cf.* also Saito 2007, Takahashi 2007). Contradicting this generalization, I present novel data from Spanish, where null subjects allow SR (3), showing that a DPE analysis is indeed possible for this type of language (SR is not available with an overt subject).

(1) A. Mary-wa [zibun-no teian-ga saiyo-sare-ru-to] omotteiru. *Japanese*
Mary-TOP self-GEN proposal-NOM accept-PASS-PRS-that think (Oku 1998: 165)
'*Lit*. Mary thinks that self's proposal will be accepted.'

B. John-mo [[e] saiyo-sare-ru-to] omotteiru.
John-also accept-PASS-PRS-that think
'*Lit*. John also thinks that {it(*i.e.* her proposal)/his proposal}will be accepted.'

(2) A: María cree que [su propuesta será aceptada]. *Spanish*
Maria believes that her proposal will.be accepted (Oku 1998: 165)

B: Juan también cree que [[e]será aceptada].
Juan also believes that will.be accepted
'Juan also believes that {it (*i.e.* her proposal)/*his proposal} will be accepted.'

(3) A: El primer año de tesis, mi director me trató muy bien.
the first year of thesis my director cl.1sg(DAT) treat very well.

B: Pues, ¡a mi [e] no me hizo caso!
well to me NEG cl.1sg(DAT) made attention
Lit. 'Well, to me, {he (*i.e.* your director)/my director} didn't pay attention!'

1.3 Accounting for the 'exception'. I argue that (2) can be accounted for independently, in terms of binding. The SR results from the elided constituent containing a bound variable pronoun (BV) (as opposed to a referential one) (Lasnik 1976, Reinhart 1983, Fox 2000). Assuming that binding relations reduce to local Agree operations (Reuland 2005, 2011, Gallego 2010), I argue that the contrast in (2)-(3) is explained as follows: (i) a BV is only possible in constructions in which it can Agree locally (with the object clitic in (3)); (ii) in cases like (2) it cannot Agree locally, and thus the pronoun can only be referential (coreferential with, but not bound by, the antecedent), as a result of which the SR is not available. Regarding the availability of the SR in (1), I argue that it cannot be accounted for by the absence of agreement morphology, since many languages without subject-agreement do not allow SRs in contexts like (1) (Chinese (Takahashi 2007), Malayalam (Takahashi 2012), and Colloquial Singapore English (Sato 2012)). Concluding from this that the

availability of the SR reading in (1) is to be accounted for in terms of language-specific properties, I propose to adopt the analysis whereby Japanese zibun can undergo LF movement to a higher clause and be locally bound there (Pica 1991, Hestvik 1992, Ishino & Ura 2012).

2 Identity condition. If null arguments result from DPE, we expect this operation to be subject to the same conditions on the identity with a discourse antecedent as for instance VPE or sluicing. I show that the conditions under which DPE is licensed are the same as those under which a DP can be part of a larger elided constituent.

2.1 A coherent behavior. Fox (2000) proposes the following principle which summarizes the conditions under which a DP can be elided if it is part of a constituent targeted by ellipsis:

(4) *DP Parallelism condition on ellipsis* (adapted from Fox 2000: 117)
DPs in the elided constituent and its antecedent must either
a. have the same referential value (Referential Parallelism), or
b. be bound in identical dependencies (Structural Parallelism).

This accounts for the availability of both strict and sloppy readings in examples like (5): the pronoun in (5b) satisfies (4a) and the one in (5c) satisfies (4b).

(5) a. John thinks he will win, and Bill does, too.
b. John$_i$ thinks he$_i$ will win, and Bill$_j$ does <think that he$_i$ will win>, too. *Ref. Par.*
c. John thinks he will win, and Bill does <think that he will win>, too. *Str. Par.*

Crucially, the same is observed in the realm of pro-drop: under the strict reading, the null subject in (3B) has a coreferential antecedent ('her proposal'), and under the SR, it is bound in a dependency which is identical to the dependency in which the subject in (3A) is involved. Other (non-ambiguous) cases are also accounted for: the subject in (6) satisfies (4a) and the anaphoric null object in (7) (in the null object language Japanese) satisfies (4b):

(6) Juan$_i$ está aquí. [e]$_i$ quiere hablar contigo. *Spanish*
Juan is here wants talk with.you
'Juan is here. He wants to talk to you.'

(7) Taroo$_i$-wa zibun$_i$-o semeta-ga, Ken$_j$-wa [e]$_j$ kabatta. *Japanese*
Taroo-TOP self-ACC blamed-while Ken-TOP defended (Takahashi 2010)
'While Taroo blamed himself, Ken defended himself.'

2.2 Testing predictions. Anaphors are not referential, and are necessarily BVs, as in (7) (Reinhart 1983, Büring 2005). If pro-drop is to be accounted for under (4), we predict that null anaphors will not be licensed when the discourse context does not provide another anaphor bound in an identical dependency. This is borne out: in (8), although the anaphor has a coreferential antecedent, it cannot be elided, since ellipsis of anaphors can only be licensed via (4b). I show that the results are the same in languages with object-agreement like Basque.

(8) John$_i$-ga zibun$_i$-o /#[e]$_i$ nagusameta (koto). *Japanese*
John-NOM self-ACC consoled (Hoji 1998: 130)
'John consoled himself.'

I also test predictions relative to MaxElide effects (Takahashi & Fox 2005, Merchant 2008).

3 In sum, after defending that pro-drop boils down to DPE across all pro-drop languages, I push this result to its limits, by exploring the consequences for the theory of the licensing of ellipsis. I show that DPs are subject to the same identity condition on ellipsis both when they are part of a larger elided constituent and when they are the bare target of ellipsis.

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Repairing Final-Over-Final Constraint Violations: Evidence from Basque Verb Clusters

Ricardo Etxepare and Bill Haddican

This paper discusses some implications of Basque for recent approaches to Final-Over-Final Constraint (FOFC) effects (Biberauer et al., to appear, henceforth "BHR"). We present evidence suggesting that FOFC violations are reparable by copy deletion, and that FOFC-violating structures are therefore derivable in the narrow syntax, contra BHR.

BHR state FOFC as in (1), summarizing their generalization that a phrase αP, ordered head-complement, cannot appear to the left of its selecting head (unless αP is A-bar moved). In approaches assuming a head-directonality parameter, this means that a left-headed phrase cannot be the complement of a right-headed phrase. On LCA-based approaches, this will mean that an XP cannot raise to a non-A-bar position, unless its complement has raised to its spec. Assuming the LCA, BHR propose that FOFC reflects constraints on the spreading of a feature, "^" which drives roll-up movement. BHR assume that ^ can spread up a spine, but never skip a head. The assumption of such monotonic spreading thus excludes unattested start-stop-start roll-up patterns that will produce FOFC violations as in (2). Importantly, on BHR's approach, FOFC effects are a narrow syntactic phenomenon, a suprprising result from the perspective of work that takes linearization to be interface driven (Nunes 2004).

(1) *[βP [αP α γP] β] (2) *[X^ [Y [Z^]]]

Below, we present evidence from Basque verb clusters suggesting that FOFC-violating structures are reparable by copy deletion, and hence derivable by merge, contra BHR. We focus on the word order variation in (3), where a non-finite complement of a modal can appear either to the left of the modal-auxiliary sequence as in (3a) or to the right as in (3b).

(3) a.Horrelakoak maiz-ago ikusi nahi nituzke b.Nahi nuke horrelakoak maiz-ago ikusi
like.that.PL often-more see want AUX.3PL want AUX.3S like.that.PL often-more see
'I'd like to see things like that more often.'(Etxepare and Uribe-Etxebarria 2009)

Etxepare and Uribe-Etxebarria (2009, henceforth "EU") argue that this word order variation is sensitive to the size of the non-finite constituent: when the infinitive appears to the left of the modal, as in (3a) it can be no bigger than vP; when it appears to the right as in (3b), however, it can be a TP or bigger. One kind of evidence to this effect comes from temporal modification. In (4a), the non-finite constituent contains *gaur* 'today' whose temporal value differs from that of the modal, and the result is poor. This temporal difference is fine in the (4b) word order. EU infer that the temporal independence of (4b) but not (4a) is attributable to the presence of a null tense head in the former but not the latter.

(4) a. *Jonek [(gaur) atzo egon] behar zuen (gaur) etxe-a-n
Jon-ERG today yesterday be need AUX today house-DEF-in
b. Jon-ek atzo behar zuen [gaur etxe-a-n egon.]
Jon-ERG yesterday need AUX today house-DEF-in be
'Yesterday Jon needed to be home today.' (EU)

Rightward infinitivals also block auxiliary agreement with the object (3b), obligatory in (3a).

We propose that the structure-sensitivity of this word order variation is a FOFC effect following BHR. Basque is a "mixed-head" language: heads in the clausal spine below T appear to the right of their complements, while heads above T, including Focus, and Neg/Σ appear to the left of their complements (de Rijk 1969, Ortiz de Urbina 1989, Laka 1990, Elordieta 2001). Authors assuming a head directionality parameter have traditionally taken T to be right-headed in Basque given that, in affirmative sentences, the complement verbal shell appears to the left of the auxiliary as in (5). In negative sentences, the negative morpheme *ez* appears left-adjacent to the auxiliary, and the VP appears to the right of the auxiliary as in (6). Laka (1990) and Elordieta (2001) propose that in negative sentences like (6), the auxiliary head raises and right-adjoins to Neg, which takes TP as a sister to its right, as in (7).

(5) Miren-ek Jon ikusi du. (6) Miren-ek ez du Jon ikusi.

Miren-ERG Jon.ABS see AUX Miren-ERG not AUX Jon.ABS see
'Miren has seen Jon.' 'Miren hasn't seen Jon.'

(7) [$_{XP}$ Mirenek [$_{NegP}$ ez-du [$_{TP}$ [$_{AspP}$ Jon ikusi] <du>]]]

An antisymmetric approach requires a different approach to the polarity-sensitive word order variation in (5) and (6). In particular, following Haddican (2001, 2004, 2005, 2008) we propose that the relative order of the verb, verbal dependents and modals is derived via roll-up. We further assume a FinP projection, with an EPP feature which attracts the negative morpheme *ez* in negative sentences. In neutral affirmatives, the complement of the auxiliary raises to this position, yielding the VP-Aux word order. From this perspective, TP is a left-headed projection that does not participate in roll-up movement; that is, the complement of T does not move to its spec:

(8) ***a. Affirmative orders*** ***b. Negative orders***

[$_{FinP}$ [$_{XP}$ Complement of T] Fin$_{[EPP]}$[$_{TP}$ T <XP>]] [$_{FinP}$ *ez* Fin$_{[EPP]}$ [$_{TP}$ T <*ez*> [$_{vP}$ …]]]

Assuming that non-finite T is like finite T in not participating in roll-up movement, the structure sensitivity of the word order variation in (3) is explained as a vanilla FOFC effect: what rules out a non-finite TP-layer in the (3a) order (infinitive - modal) is the presence of a head-complement structure in the spec of the modal head, in violation of (1). Specifically, the complement of the non-finite T head is not in the spec of the non-finite T, but rather the sister of T. The infinitival T itself then moves to the spec of the modal projection in violation of (1), as illustrated in (9a). In contrast, vP-sized infinitives will not run afoul of (1), since v's complement raises to its spec, as in (9b). The structure-sensitivity of the alternation in (3) is therefore straightforwardly predicted as a FOFC-effect on LCA approaches to Basque.

(9) a. ***FOFC-violating TP-raising*** ***b. FOFC-compliant vP-raising***

*[$_{ModalP}$ [$_{TP}$ T XP] Modal <TP>] [$_{ModalP}$ [$_{vP}$ XP [$_{v'}$ v <XP>]] Modal <vP>]

Unaddressed so far is why TP-sized modal complements are licit when they appear to the right of the modal as in (3b). The approach in (8) leads us to expect movement of the Modal phrase to its usual landing site in affirmative sentences, spec, FinP. In the (3b) order, the FOFC-offending infinitival TP then subextracts to a Focus phrase, followed by remnant topicalization. This yields an order in which the modal+Aux precedes the non-finite complement as in (10). Crucially, because the TP in (10) targets an A-bar position, this movement step is FOFC-exempt. (See BHR for discussion.)

(10) [[$_{FinP}$ nahi nuke] Top [$_{FocP}$ [$_{TP}$ horrelakoak maizago ikusi] Foc
<[$_{FinP}$<horrelakoak…>nahi nuke]> …]

Independent evidence that the modal in (3b) sits in a derived position comes from complex functional sequences preceding the non-finite constituent that cannot be generated in-situ:

(11) Nahi izan du beranduago etorri.
Want PERF AUX later come
'She/he has wanted to come earlier.'

In (11), the perfect head follows the modal, which it selects, and precedes the auxiliary, which in turn precedes the non-finite verb. The hierarchical relations among the different components of the sequence can be represented in terms of either a head final structure or roll-up movement, but the relative ordering of that sequence and the non-finite verb cannot: the modal verb selects the non-finite TP, but the two elements appear on opposite sides of the sequence, and separated by other clausal heads. Remnant movement provides a simple rationale for this ordering, and is well attested in other Basque focal constructions (EU).

To summarize, the analysis entails: (i) that FOFC-violating structures are indeed generable by the narrow syntax contra BHR; and (ii) that FOFC violations are reparable by subsequent movement. PF deletion of the intermediate copy of the infinitival TP in its FOFC-violating position in spec, ModalP rescues the derivation. This suggests that FOFC effects are

a PF interface phenomenon as proposed elsewhere for linearization constraints generally (Nunes 2004, Boeckx 2008).

Reducing linguistic variation to Third Factor mechanisms

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The objective of our study is to develop a model of morphophonological analysis that enables the learner to infer high-order properties of the target language. Our first step is to express in a parametric way part of the mechanism of data analysis used by the Language Acquisition Device (LAD) in order to attain a morphological analysis of its Primary Linguistic Data (PLD). The second step is to explore how these analyses can be used by the learner to deduce classical patterns of morphosyntactic variation. With this approach we show a path to reduce the problem of what is the permissible format of language variation to the Third Factor mechanisms (Chomsky 2005) responsible for language acquisition.

The starting intuition is that all languages share the same class of grammatical features but differ as to how they realize them morphophonologically (Cinque 1999). We consider the minimal morphological category, which we will call *morph* or *head*, as a primitive of the proposed procedure, which can be detected on the PLD:

Definition. A linguistic form α, viewed as a string of phonemes, is a morph or head iff it is meaningful and does not contain any meaningful non-empty proper substring.

The properties to be set by the mechanism of data analysis under consideration are the following:

1) A head is *bound* if it is phonologically dependent of other heads and *unbound* otherwise.

2) A head is *synthetic* if it conveys more than one morpheme and *non-synthetic* if it conveys only one morpheme.

Property 1) is fixed by the learner by inspecting the string of heads. Whether a head is bound or not is arguably determined on the basis of phonological cues in the acoustic signal, such as pauses. Language-specific cues may also play a role, such as word level stress patterns, phonotactic regularities and allophonic variation. Property 2) is fixed by inspecting how a head is related to grammatical categories provided by Universal Grammar (UG), henceforth *morphemes*. More precisely, the mechanism should inspect how a head is related to morphemes, whether it conveys a sole morpheme or more. Here not only mechanisms of speech segmentation are involved, but the set of grammatical categories provided by UG and a theory of paradigmatic relations (Pinker 1984) must also be taken into consideration.

We call the morphophonological analysis mechanism we want to explore *Chunking Procedure*, and we understood it as follows:

3) **Chunking Procedure**. Given a head *H*, the learner determines whether *H* is phonologically dependent of other heads ([+bound]) or not ([-bound]); and whether *H* conveys only one morpheme ([-synthetic]) or more ([+synthetic]).

Once this morphological analysis is attained, we investigate the existence of bootstrapping mechanisms that use its results to specify higher order syntactic properties of the target language, namely those properties that traditional parameters range over. We capitalize on the observation that there exist general correlations between abstract syntactic patterns and the morphophonological analysis obtained by the Chunking Procedure. We shall directly formulate these correlations as bootstrapping mechanisms:

4) **Bootstrapping mechanisms tiggered by the Chunking Procedure**

(a) Once the learner has determined that there is a [+bound] head instantiating a feature *F*, then he can infer that the maximal projection instantiating *F* in the target language has a free distribution, and can be omitted.

(b) Once the learner has determined that there is a [+bound] head conveying *case* or *number* on pronouns, then he can infer that any argument of the verb can be omitted in the target language.

(c) Once the learner has determined that there is a [-bound] or a [+bound, -synthetic] head expressing *path*, then he can infer that multiple constructions that are related with the separate lexicalization of this head are available in the target language.

We shall sketch how the Chunking Procedure may be used to shed light on the problem of how the LAD infers syntactic properties of the target language from a morphophonological analysis in three selected case studies.

I. *Baker's (1996) Polysynthesis Parameter*. Assume that, given an amount of linguistic input, the Chunking Procedure has determined that there is a [+bound] head H_1 that instantiates a particular θ-role θ_1. The LAD should be able to determine on independent grounds whether H_1 is an incorporated noun or an affix agreing with a DP; if H_1 can also appear without being incorporated and as a fragment, then it will be a noun, whereas if H_1 is always bound (i.e., it cannot appear freely or as a fragment), then it will be an affix. Consider now the latter situation, in which H_1 is an affix agreeing with a maximal projection. In virtue of the bootstrapping mechanism (4.a), it follows that the maximal projection which the affix agrees with can be omitted and has a relatively free distribution.

II. *Neeleman & Szendrői (2007)'s strong prediction on radical pro-drop*. Assume the LAD has detected in the linguistic input that there is a head H_1 instantiating the category of *case* or *number* analyzed as [+bound] with respect to pronouns. At this moment, the LAD follows the bootstrapping mechanism formulated in (4.b) and infers that the target language allows radical pro-drop, in which case verbal arguments and possessors can be omitted.

III. *Satellite-framed languages and related constructions (Talmy 1985)*. Assume that the Chunking Procedure has detected a H_1 expressing solely *path*; then there are two subcases: H_1 is [-bound] if the target language is a strong satellite-framed language, like English, or H_1 is [+bound, -synthetic] if the target language is a weak satellite-framed language, like Latin. In both cases, given the bootstrapping mechanism defined in (4.c), the LAD infers the availability of the relevant set of constructions (complex directed motions, unselected objects, complex effected objects, etc.).

Our approach consists, therefore, in coding parameters in mechanisms of morphological data analysis and deriving syntactic variation from the value attained by those mechanisms. This move suggest that Greenberg's problem (what the nature and format of permissible linguistic variation is) may be reduced to Plato's problem (how natural languages are learned). By using this methodology, linguistic variation is examined in the very same terms as those used by the LAD when analyzing the PLD and, consequently, morphosyntactic variation is constrained by mechanisms of data analysis active during the process of language acquisition. Furthermore, provided that procedures of data analysis are considered to be elements of Third Factor, this proposal leads to the appealing conclusion that by defining data analyzers in a parametric fashion, linguistic variation could be embodied in certain Third Factor mechanisms.

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In Defense of the Merge-Only Hypothesis

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In this presentation I defend and further consolidate the "Merge-only" hypothesis of current minimalism (Chomsky 2008, 2010, Berwick 2011, Berwick & Chomsky 2011, inter alia) by proposing a theory of language evolution according to which it was Merge that gave rise to other major components of the human language faculty.

Chomsky's (2010) Strong Minimalist Thesis (*Interfaces* + *Merge* = *Language*) is the most elegant (and controversial) claim that biolinguistic minimalism makes with respect to the formation of human language, and yet it ignores certain fundamental issues. Most notably, it leaves open the questions of the evolutionary origins of (i) Merge, (ii) the interfaces, and (iii) other essential components of language such as the lexicon and the C-I and S-M systems. It has often been assumed in the literature that the minimal design specification of the Merge-based computational system is "externally" motivated, in the sense that it is optimized for interfacing with the two interpretive systems. The assumption that the computational system is perfect for satisfying the interface conditions is easily coupled with the evolutionary scenario of Merge arising in order to connect the already existing C-I/S-M systems.

I first reject this teleological scenario. Evolution is a blind process without any foresight, and one cannot say that syntax (or language, for that matter) evolved for such and such a purpose. Furthermore, this scenario is based on the unjustified supposition that the C-I/S-M systems were already in place in the present forms before the advent of syntax, which very likely contradicts another important minimalist view that it is syntax that sends an instruction to the interpretive systems and not vice versa. It ignores the effect that syntax may have had on the formation of the interpretive systems.

I believe the problem largely comes from a simplistic interpretation of the FLN/FLB dichotomy by Hauser et al. (2002). Their proposal is important in further motivating a comparative approach to the studies of language evolution, but it fails to capture two crucial facts: (i) Recursion (more concretely, recursive Merge) also has some continuity with other human and nonhuman capacities, and in this broad sense recursion does not strictly belong to FLN, and (ii) the interpretive systems are shared by other animals to some extent but still there is a remarkable difference between the human and the nonhuman systems, and in this narrow sense they belong to FLN. In short, the terms FLN/FLB are not used consistently when it is claimed that only recursion belongs to FLN.

The correct picture must be this: Every component of human language is unique to it but still they are all continuous with other capacities, and this continuity is a key to understanding how these unique components came into existence and were clustered into this complex biological trait we call language.

In line with this general picture, I advance the hypothesis that language emerged in the following steps. Firstly, Merge evolved from the recursive motor control capacity for hierarchical and sequential object combination as typically observed in tool making and using. The evolutionary and/or developmental relations between tools and language have long been recognized, but it is important to note that this is the first attempt made by generative linguistics to find an evolutionary precursor to syntax (instead of language as a whole) in a distant, non-linguistic capacity (Fujita 2009), in sharp contrast to the general agreement in minimalism that Merge emerged in saltation.

Chomsky (2008: 137) speculates that Merge arose from "a slight mutation rewiring the brain." By connecting motor control and Merge, we can turn this speculation into a testable hypothesis. Recent progress in cognitive and neuro-archaeology focuses on the evolution of stone tool making and its implications for the evolution of our ancestors' cognitive faculties and the relevant neural substrates. Faisal et al. (2010) report that left ventral premotor cortex (BA6) is uniformly activated when subjects make stone tools using Oldowan and Acheulean technologies. I suggest that the rewiring in question is a functional expansion from BA6 to BA44/45, from motor recursion to

cognitive recursion (including Merge).

It is safe to assume that before this rewiring took place our ancestors already had a lexicon and C-I/S-M systems in a very rudimentary form (protolanguage, in a loose sense). But as I will claim, it was Merge that converted this language-like system into the full human language faculty with all of its generative power. Consider the lexicon as an example. Studies of animal cognition have shown that animals have word-like signals (such as alarm calls) that associate particular sounds with particular situations, and it has been reported that some of them can learn hundreds of human words. And yet we can detect a huge gap between human words and animal "words" in their creative richness and abstractness.

This gap reflects the fact that human words are formed by Merge combining conceptual and phonetic units into more and more complex amalgam. That word formation takes place only (post-)syntactically and there is no word before syntax has become a popular theoretical insight (distributed morphology, nanosyntax, etc.), and this insight serves as a productive research guideline for evolutionary biolinguistics. Importantly, to the extent that Merge forms words, we can explain why there are certain impossible words by the principle of minimal computation (the third factor). It has long been taken for granted that syntax and the lexicon are two independent modules of grammar, but the present study questions the validity of this supposition at least with respect to language evolution. I claim that syntax and the lexicon are the two faces of the same coin of Merge. This is a good illustration of how theoretical and evolutionary studies of language can inform each other and progress in tandem.

I will show that similar considerations will naturally lead to the conclusion that not only the lexicon but other major components of language, in particular the C-I system and the C-I interface, were made possible by Merge. Berwick (2011: 99) correctly remarks: "Once Merge arose, the stage for human language was set. There was no turning back." But the power of Merge was probably far more drastic and pervasive in the evolution of language than he actually suggests.

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Bare quantifiers and the like: analyzing the internal structure of functional words

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1. *Wh*-items are known to have a different distribution according to whether they are bare or they contain a lexical restrictor. To mention only some cases, Pesetsky (1987) already noted that complex *wh*-phrases *in situ* receive scope without LF movement. Ambar (1988) for Portuguese, Munaro (1999) for Northern Italian dialects show that also within the Romance domain there is a clear split between *wh*-phrases and bare *wh*-words in terms of position. More recently Rizzi (2004) on standard Italian and Grewendorf (2012) on Bavarian have proposed that this distinction is a function of the internal structure of the *wh*-item: complex *wh*-phrases are topic-like as they contain a lexical restrictor, while bare *wh*-words are "pure operators". In this work, observing mainly the variation in the Italo-Romance domain, we intend to show that the same split is also found when bare quantifiers and complex quantified expressions are taken into account and that the split is also a function of an internal layering of projections, not of the morphosyntactic "weakness" of bare quantifiers. Furthermore, on the basis of crosslinguistic morphological evidence, we will argue that bare quantifiers and *wh*-words have part of the internal structure in common.

2. It is well known that languages like French allow for a pre-participial position of bare quantifiers like *rien* 'nothing', *tout* 'everything', etc., while this is not possible with complex quantified expression. The same split is found in a VO German dialect, Cimbrian (spoken in the province of Trento, among Italian dialects), where only bare Qs can occur in OV order before the past participle, while complex QPs are located in the same position as DPs, i.e. after the past participle:

(1) a. I hon niamat gesek.
I have noone seen
b. *I hon kummane sbemm gesek.
I have no mushrooms seen
c. I hon gesek kummane sbemm.
I have seen no mushrooms

Old Italian also provides the same dichotomy, as bare Qs like *tutto* 'everything', *tutti* 'everybody', *molto* 'much', *molti* 'many', etc., are always located in preparticipial position, while complex QPs have the same distribution of DPs (i.e. either pre- or postparticipial depending on information structural conditions). The *OVI* corpus does not contain any occurrence of bare *tutto* after the past participles:

(2) a. Ànne tutto paghato. (B. Bencivenni, 1296)
(they) have everything paid
b. da che ebbe tutto Egitto vinto. (B. Giamboni, before 1292)
since (he) had all Egypt conquered
c. questi m'ànno venduto tutto i loro podere (Anonym., circa 1290)
these to.me have sold all the their farm

Old Italian clearly shows that this split cannot be due to a supposed weakness (in the terms of Cardinaletti and Starke (1999)) of the bare Q, as it could be the case for French or Cimbrian, as bare Qs are always preparticipial also when they are paired with a preposition:

(3) s'i' mi fosse al tutto a tte gradato (Dante, *Fiore*)
if I me were to everything to you adapted
'If I adapted to you in everything'

We argue that the reason of this split is indeed a different internal structure of the Q, which does not contain a lexical restrictor, but a [+/-human] classifier-like functional item, which

can be null, or lexically realized, as in English *every-thing*, *every-body*. Southern Italian dialects provide a clear case of this as they have two variants: Sicilian displays for instance both *tuttu* and *tutticuosi*. The bare form can be used as a floating Q, the complex one cannot, and *tutti* and *cuosi* cannot be separated.

(4) a. n'a sta casa è tuttu prontu.
in this home is everything ready
b. n'a sta casa su (*tutticuosi) pronti tutticuosi.
in this home are all-things ready all-things
c. *n'a sta casa su tutti pronti cuosi.

Similar facts are found in Old Italian, where the two forms *niente* and *neuna cosa*, both meaning 'nothing', alternate in a way which is very similar to the one described by Rizzi (2004) for bare and complex *wh*-items.

3. The internal structure of a bare Q is thus not identical to the one of a Q which is paired to an entire DP, or found in adjectival position inside the DP itself, (see Giusti-Leko (2005) on a dicussion about the two types of Qs), because it contains a classifier-like element as illustrated in (5):

(5) a. [Q [Class]]
b. [Q [DP]

To explain why the classifier is sometimes lexically present and sometimes not, we propose an analysis of the alternation illustrated in (5) in a Kaynian framework that allows for Ns to be null if they are located at the edge of a phase, while they have to be spelled out if they are not on a phase edge. Hence, preparticipial bare Qs do not contain an overt classifier because this is licensed by the fact that the element reaches the edge of the *v*P phase, while this is not the case when the bare Q is found in postparticipial position, or in subject position (for the case of *neuna cosa*). In the talk we will discuss further cases in which an alternation between a null and a lexical classifier depends on the position of the bare Q and why systems like standard Italian display *qualchecosa* for 'something' but not *tutte cose* for 'everything'.

On this basis we interpret cases where the same lexical item is used to express the *wh*-item and the corresponding bare Q like German *was, wer, wo*, which mean respectively both 'what/something' 'who/someone' and 'where/somewhere' or ambiguities like Italian *cosa*, meaning 'thing' or 'what' as something more than a morphological accident. The deeper reason behind these homophonies is the parallel between the internal structure of bare *wh*-items and bare Qs. Bare *wh*-items/Qs have a different internal structure which is not simply a reduced (or complete but lexically empty) version of a nominal expression with a Q/*wh* on top. Their internal articulation contains something more, namely a classifier-like element which can be lexically realized or null depending on the position of the Q/*wh* itself. In the talk, we will try to derive well known distributional distinctions between *wh*-words and *wh*-phrases on the one hand and bare Qs and quantified expression in languages like Italian on the basis of their different internal structure.

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Opaque interaction of Merge and Agree: on two types of Internal Merge

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Claim I present a new empirical argument for a strictly derivational syntax based on timing of operations. The evidence comes from opacity effects which show that internal Merge (IM) is not a uniform operation. Rather, it must be split into IM triggered by edge features and IM triggered by other features (wh-feature on C, the EPP on T, etc). The split is empirically motivated by the observation that when both types of IM are triggered by the same head H, they apply at different points in the derivation. This becomes visible once they interact with Agree: In some languages, non-edge feature-driven IM feeds/bleeds Agree initiated by H, whereas IM triggered by edge features counter-feeds/counter-bleeds Agree. This is formally derived by ordering of elementary operations: One type of IM applies before and the other after Agree. Finally, I present a specificity-based account of the absence of a pattern that the account predicts to exist.

Background In recent minimalism, some functional heads trigger more than one operation (v triggers Agree and Merge). If only a single operation can apply at once, the operation-inducing features on such heads must be ordered. I assume that this order is free, determined language-specifically. In this paper, I look at heads that trigger both Agree and IM. In some languages, IM is not strictly ordered before or after Agree. Rather, edge feature-driven IM applies after and IM triggered by other features applies before Agree because they interact differently with Agree: Whereas the latter IM type feeds or bleeds Agree relations, the former IM type has the opposite effect, it thus counter-feeds or counter-bleeds Agree, i.e., the interaction is opaque. Opaque rule interactions are intransparent: When looking at the output of an opaque interaction, it is unclear (a) why an operation has not applied although its context is given (counter-feeding) or (b) why an operation has applied although its context is not given (counter-bleeding) (Kiparsky 1973). The cases at hand are opaque because internally merged XPs land in the same position SpecH, whether IM is driven by edge features or by other features on H; nevertheless, the two types of IM have different consequences for Agree. The effect is modeled by ordering of operations: IM type A applies ***after*** Agree and IM type B applies ***before*** Agree. Consequence: IM type A applies ***too late*** to change possible Agree relations (the DP that is to be internally merged is still in its base position when Agree applies); IM type B changes structural relations ***before*** Agree applies and can thus feed or bleed Agree relations (depending on the input). Opacity effects of this abstract pattern can be found on every functional head along the clausal spine.

Assumptions Syntactic structure unfolds step by step in a bottom-up fashion (Chomsky 1995 et seq.). Agree is triggered by probe features [$*$F$*$], Merge by structure-building features [•F•] (Sternefeld 2006). Intermediate movement to phase edges is triggered by edge features [•X•] (Chomsky 2000, 2001). Agree applies under c-command. If a probe does not find a goal, a default value is inserted on the probe (Béjar 2003, Preminger 2011). Traces left by movement are not visible for Agree. Clause structure: [$_{CP}$ C [$_{TP}$ T [$_{vP}$ DP$_{ext}$ [$_{v'}$ v [$_{VP}$ V DP$_{int}$]]]]].

Data 1. ANTI-AGREEMENT EFFECT (AAE): In AAE languages (e.g. Berber, Welsh), the verb shows default 3sg(Masc) agreement if the subject is Ā-moved to SpecC of the minimal CP (short Ā-extraction). If, however, the subject is Ā-moved from an embedded clause into a higher clause (long Ā-extraction), the verb in the embedded clause shows full agreement with the subject as it does when the subject is not extracted at all (cf. (1); 'PART' is invariable). This is opaque: Short Ā-movement to SpecC bleeds ϕ-Agree between C and the Ā-moved subject; long extraction of the subject must also make a stop-over in the embedded SpecC (CP is a phase) and it should thus also bleed Agree, but it does not (counter-bleeding). Analysis: The ϕ-probe is located on C (cf. Ouali 2008, Henderson 2009). Short Ā-movement, triggered by [•WH•] on C, applies ***before*** ϕ-Agree initiated by C. After this movement step, the subject DP is not in the c-command domain of the ϕ-probe anymore, hence the probe gets a default value (cf. (3)). Ā-movement to the embedded SpecC (an intermediate landing site for long Ā-movement) is triggered by an edge

feature on C and applies ***after*** Agree; when C starts probing, the subject is still in the c-command domain of C and C finds a goal (cf. (2)). Order of features on C: $\{[\bullet\text{WH}\bullet] \succ [*\phi*] \succ [\bullet\text{X}\bullet]\}$.

(1)a. man tamghart ay y-zri-n M.
which woman C 3sg.M-see-PRT M.
'Which woman saw Mohand?'

b. *man tamghart ay t-zra M.
which woman C 3SG.FEM-saw M.
'Which woman saw Mohand?'

c. man tamghart ay nna-n qa
which woman C said-3PL that
t-zra Mohand?
3SG.FEM-saw Mohand
'Which woman did they say saw Mohand?'

(***AAE in Berber (Ouhalla 1993)***)

(2)$[_{CP}\ \text{C}_{\{[*\phi*]\succ[\bullet\text{X}\bullet]\}}\ [_{TP}\ \text{DP}\ [\text{T}'\ \ldots\ ]]]$
└── ✓Agree ──┘

(3)$[_{CP}\ \text{DP}\ \text{C}_{\{[\bullet\text{WH}\bullet]\succ[*\phi*]\}}\ [_{TP}\ \text{t}_{DP}\ [\text{T}'\ \ldots\ ]]]$
└ *Agree ┘

2. DEFECTIVE INTERVENTION: Icelandic shows opacity on T: ϕ-Agree between T and the subject of an embedded infinitive is blocked if an experiencer (Exp) intervenes. In dialect B (Holmberg & Hroarsdottir 2003), EPP-movement of Exp to SpecT feeds Agree between T and the subject, whereas a wh-moved Exp blocks Agree, as if Exp is not moved at all. Assume that wh-movement to SpecC makes a stop-over in SpecT (cf. e.g. Chomsky 2004, Richards 2011). Since EPP-movement of Exp to this position feeds Agree, we expect feeding with wh-movement as well, but that does not occur (counter-feeding). Analysis: EPP-driven IM of Exp to SpecT applies ***before*** Agree, hence Exp does not intervene anymore when T probes (cf. (5)). Edge feature-driven IM of the wh-Exp to SpecT (intermediate landing site) applies ***after*** Agree, hence Exp still intervenes when T probes (cf. (4)). Order of features on T: $\{[\bullet\text{D}\bullet] \succ [*\phi*] \succ [\bullet\text{X}\bullet]\}$.

(4)$[_{TP}\ \text{T}_{\{[*\phi*]\succ[\bullet\text{X}\bullet]\}}\ ..\ \text{Exp}_{wh}\ ..\ [_{vP}\ \text{DP}\ [_{v'}\ ]]]$
└── *Agree ──┘

(5)$[_{TP}\ \text{Exp}\ [_{T'}\ \text{T}_{\{[\bullet\text{D}\bullet]\succ[*\phi*]\}}\ ..\ \text{t}_{Exp}\ ..\ [_{vP}\ \text{DP}\ [_{v'}\ ]]]]$
└── ✓Agree ──┘

Note: The result would be the same if Exp_{wh} moved directly from its base position to SpecC, without a stop-over in SpecT: Since C has not yet been merged when T starts probing, Exp_{wh} in situ still intervenes for Agree. However, in Romance languages both EPP- and wh-movement feed Agree (Anagnostopoulou 2003). In this case, it is necessary that Exp_{wh} stops in SpecT (***before*** T initiates Agree), otherwise it would be unclear why it does not intervene for Agree; movement of Exp to SpecC comes too late, C is merged after T has probed. This is an argument for the phase status of T; hence, the Icelandic data are indeed opaque: the wh- and EPP-moved Exps go through the same position SpecT but have different consequences for Agree. Further opaque data of the same abstract pattern will be provided (TAM marking in Hausa, spell-out of C in Haitian Creole, possessor case/agreement in Uralic, topicalization in Mayan).

Generalization Four permutations of probe and IM-triggering features are expected: P1. both types of IM apply before Agree, P2. both types of IM apply after Agree; P3. non-edge feature-driven IM applies before Agree which applies before edge feature-driven IM. P4. edge feature-driven IM applies before Agree, the other type of IM applies after Agree. However, P4 is not attested for any of the studied phenomena (= 3/4 pattern). Variation in AAE: In Trentino (Brandi & Cordin 1989), both short and long Ā-movement bleeds full agreement (=P1), in French neither of them bleeds Agree (=P2). Variation in intervention: In Romance and Greek, both an EPP- and a wh-moved experiencer feeds Agree (=P1), in Icelandic dialect C (Sigurðsson & Holmberg 2008) neither movement type feeds Agree (=P2). Proposal: The absence of P4 is due to specificity (see e.g. Pullum 1979 and Lahne 2012 for application of specificity in syntax): The more specific IM-triggering feature is discharged first. IM-triggers like [•WH•], [•D•] (=the EPP) are more specific because they attract elements with a certain categorial or interpretive feature. Edge features, however, are underspecified structure-building features, attracting an element regardless of its properties. Thus, P4 with the edge feature discharged before e.g. [•WH•] is excluded.

Conclusion A number of superficially different phenomena are shown to be the result of opaque interaction of Agree and IM. Since the present analysis crucially relies on timing of elementary

operations, it provides an argument for a strictly derivational syntax (cf. Řezač 2004, Heck & Müller 2007). The Romance intervention facts are evidence for uniform paths (contra Abels 2003): T is a phase head just as C, v, and D. The absence of P4 is accounted for by specificity.

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Deletion by Phase: A Case Study of Gapping

[Introduction] This paper aims to propose a new analysis of Gapping under Chomsky's (2000:MI) Cyclic Spell-Out (hereon CSO). I claim: [1] Deletion as a consequence of CSO can optionally apply phase by phase: whether a Spell-Out domain is pronounced or deleted is determined upon Spell-Out, [2] [1] makes it possible to derive Gapping without appealing to the movement of the remnant assumed in Johnson (2009) and Coppock (2001).

[Cyclic Spell-Out] Since MI, it has been assumed that syntactic derivation proceeds phase by phase, and Spell-Out takes place cyclically to send the complement of a phase to the PF and LF interfaces. One immediate consequence of CSO for the operation Delete at the PF is that only complements of phase heads can undergo deletion (Takahashi 2002, a.o.):

(1) John bought something, but I don't know [$_{CP}$ what$_i$ C [$_{TP}$ ~~John bought t_i~~]] (phase head = C)

Since Delete is, by definition, an optional operation, the elements inside the Spell-Out domain may not be deleted; rather they are freely pronounced in it:

(2) John bought something, but I don't know [$_{CP}$ what$_i$ C [$_{TP}$ John bought t_i]]

[Proposal] One unclear issue of the phase-based approach to deletion is when Delete is applied under CSO. I thus put forward the *DELETION BY PHASE HYPOTHESIS (DBPH)* (3), which is originally suggested by Goto (2012), and propose to implement it under the mechanism of (4), which is developed by Abe & Tancredi (2012) in terms of the DBPH:

(3) Whether a Spell-Out domain is pronounced or deleted is determined upon Spell-Out.

(4) At a phase level, the phase head assigns a [+Delete] feature to its domain upon Spell-Out.
   a. At the PF side: all the elements inside a [+Delete]-marked phrase get deleted.
   b. At the LF side: the whole phrase must be properly identified as GIVEN (Rooth 1992).

One striking consequence of the DBPH is that a "gap" is nothing but a result of deletion by phase: non-constituent deletion is obtained by optionally applying Delete phase by phase, as schematically shown in (5) (the box indicates Spell-Out, and strike-through deletion):

(5) … [W [$_{ZP}$ … [$_{Z'}$ Z] [$_{YP[+Delete]}$ ~~… [$_{Y'}$ Y~~] [$_{XP}$ … X]]]]] (phase head = W/Z/Y)

In (5) the complement of Y (XP) is spelled-out and pronounced; the complement of Z (YP) is spelled-out and deleted through [+Delete]-assignment; and the complement of W (ZP) is spelled-out and pronounced. Obviously, what we do in (5) is just constituent deletion at each phase level; hence apparent non-constituent deletion can be regarded as an illusion.

[Gapping] Importantly, the DBPH allows us to yield elliptical constructions *in situ*: we do not have to apply movement operations in the course of derivation to derive them. This is in fact a significant departure from the previous approaches to Gapping, for example:

(6) Some had ordered mussels, and others swordfish.

There has been much controversy whether (6) involves the across-the-board (ATB) VP-movement, as in (7) (Johnson 2009, a.o.) or VP-ellipsis, as in (8) (Coppock 2001, a.o.) (see Johnson 2009 for arguments for the *v*P-coordination approach to Gapping):

(7) Some$_i$ had [$_{Pred}$ [$_{VP}$ ordered t_j] [$_{vP}$ t_i [$_{VP}$ t_{VP} mussels$_j$]]], and [$_{vP}$ others [$_{VP}$ t_{VP} swordfish$_j$]]

(8) Some$_i$ had [$_{vP}$ t_i [$_{VP}$ [$_{VP}$ ordered t_j] mussels$_j$]], and [$_{vP}$ others [$_{VP}$ ~~[$_{VP}$ ordered t_k]~~ swordfish$_k$]]

Irrespective of the meaningful difference between them, both approaches similarly and crucially stipulate movement of remnants to VP: Prior to the ATB movement or VP-ellipsis, the remnant *swordfish* and the correlate *mussels* have raised rightward from their respective VPs. Apparently, there is no motivation for this movement except that it feeds a constituent movement/deletion, and hence it would be better to dispense with it. Worse, the movement of the remnant gives rise to "word-order problems." As Johnson (2009) states, examples like (9) cannot be derived by both approaches: the ATB movement approach requires a complex suite of movements to derive (9a), while the VP-ellipsis approach ends up allowing ungrammatical examples like (9b), contrary to fact.

(9) a. Ice cream gives me brain-freeze and beans ~~give me~~ indigestion.
   b. *Ice cream gives me in the morning brain-breeze.

As Johnson confesses, the main culprit for this problem is the movement of the remnant.

[Analysis] Since it is a common observation that the remnants in Gapping contrast with their correlates in the first coordinate, I assume following Abe & Tancredi (2012) that [+F] is assigned to any phrase in the course of a derivation, and at the PF side, a phrase marked with [+F] instantiates its effect by accenting it or a certain word included in it (cf. the nuclear stress rule); and at the LF side, it undergoes a focus interpretation a la Rooth's (1992) alternative semantics of focus. Under this assumption and the DBPH, therefore, Gapping can be derived as follows (I adopt the *v*P-coordination approach to derive certain properties of Gapping; see Johnson 2009 and Toosarvandani 2012 for discussion of the unique properties of Gapping):

(10) a. [$_{n\text{P}}$ *n* [$_{\text{DP[+F]}}$ swordfish]] (Spell-Out of DP with [+F]-assignment)
b. [$_{v\text{P}}$ *v* [$_{\text{VP[+Delete]}}$ ~~ordered *n*P~~]] (Spell-Out of VP with [+Delete]-assignment)
c. [$_{\&\text{P}}$ & [$_{v\text{P[+F]}}$ others *v*]] (Spell-Out of *v*P with [+F]-assignment)

First, at the *n*P phase level (Chomsky 2007), the complement of *n* (DP) is spelled-out with [+F]-assignment. Second, at the *v*P phase level, the complement of *v* (VP) is spelled-out with [+Delete]-assignment. Lastly, at the &P phase level (Kitada 2007), the complement of & (*v*P) is spelled-out with [+F]-assignment. As a result, Gapping is derived without appealing to the movement of the remnant. In the same way, (9a) can be easily accommodated in the DBPH:

(11) … [$_{\&\text{P}}$ & [$_{v\text{P[+F]}}$ beans [$_{\text{VP[+Delete]}}$ ~~give me~~ [$_{\text{DP[+F]}}$ indigestion]]]]

In our analysis, the word-order in the phrase with the gap is just the same as would arise if there were no gap; hence the word-order problem does not arise to begin with.

[Consequences] The DBPH-based analysis of Gapping straightforwardly explains why Gapping is insensitive to Left Branch Condition (LBC) that is imposed on movement:

(12) I make too strong an espresso, and Fred too weak.

That is, Gapping is insensitive to the LBC, because the remnant does not move, period. Moreover, adopting an economy condition like (14), which has been suggested in various forms (den Dikken et al. 2000, a.o.), locality effects in Gapping (Neijt 1979), as exemplified in (13), can be explained as a consequence of derivational economy:

(13) *Max said that you should buy bread and Peter ~~said that you should buy~~ wine.
(14) *[$_{\text{XP[+Delete]}}$ … [$_{\text{YP[+Delete]}}$ …] …] where YP cannot be assigned [+Delete] if the larger phrase XP that contains YP is assigned this feature.

If (14) is applied to (13), it follows that [$_{\text{CP}}$ that], [$_{\text{TP}}$ you should], and [$_{\text{VP}}$ buy] cannot be assigned [+Delete] since the larger phrase [$_{\text{VP}}$ said] that contain them is assigned this feature:

(15) … [$_{\&\text{P}}$ & [$_{v\text{P[+F]}}$ Peter *v* [$_{\text{VP[+Delete]}}$ said [$_{\text{CP}}$ that [$_{\text{TP}}$ you should [$_{\text{VP}}$ buy [$_{\text{DP[+F]}}$ wine]]]]]]]

Here, it is important to notice that while the economy condition dictates that the effect of Delete is to be maximized, CSO regardlessly proceeds to reduce memory load in computation. Hence it is too late to apply Delete to the elements inside the previously Spelled-Out domains:

(16) … [$_{\&\text{P}}$ & [$_{v\text{P[+F]}}$ Peter *v* [$_{\text{VP[+Delete]}}$ ~~said~~ [$_{\text{CP}}$ that [$_{\text{TP}}$ you should [$_{\text{VP}}$ buy [$_{\text{DP[+F]}}$ wine]]]]]]]

As predicted from (16), (13) is improved if only the verb inside the VP$_{\text{[+Delete]}}$ is deleted:

(17) Max said that you should buy bread and Peter ~~said~~ that you should buy wine.

All relevant constraints on Gapping like "islands" can be explained in the same way.

[Conclusion] Given the DBPH, what is deleted or what is pronounced can be determined upon Spell-Out at each phase level. To explain elliptical constructions, all we have to do is Spell-Out. The DBPH can give rise to a particular formalization of non-constituent deletion.

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Structural Asymmetries – The View from Kutchi Gujarati and Marwari

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Background: Indo-Aryan languages exhibit a split in their case and/or agreement pattern that correlates with aspect. This is illustrated for Standard Gujarati in (1) (from Mistry 1976, DeLancey 1981:628-629). In the perfective, (1a), the subject combines with an ergative case marker *-e* and the verb agrees with the direct object; in the imperfective, (1b), the subject is unmarked and the verb agrees with the subject. In both cases, we are dealing with gender/number agreement, which is cross-linguistically typical for *participle agreement*.

(1) a. Ramesh-e **pen** khərid-y-**i**. *Standard Gujarati*
Ramesh.m-erg pen.f buy-pfv-f ‘Ramesh bought the pen.’
b. **Ramesh** pen khərid-t-**o** hə-t-**o**
Ramesh.m pen.f buy-ipfv-m aux-ipfv-m ‘Ramesh was buying the pen.’

To derive the case split in such constructions, Coon & Preminger (2011) (*C&P*) and Coon (2012) argue that perfectives, (1a), are less complex than imperfectives, (1b). The ergative marking in (1a) arises when subject and direct object are in the same case domain, (2a). Contrastively, an additional functional projection introduces a domain boundary in (1b), the *FP* in (2b), separating the case domains; this gives rise to unmarked subjects and objects.

(2) a. Perfective: $[_{TP}$ *Ramesh-**e*** $[_{T'}$ T^0 $[_{vP}$ v^0 $[_{VP}$ *pen khərid-y-i*]]]]
b. Imperfective: $[_{TP}$ *Ramesh* $[_{T'}$ T^0 **[FP** $[_{vP}$ v^0 $[_{VP}$ *pen khərid-t-o*]] *hə-t-o***]**]]

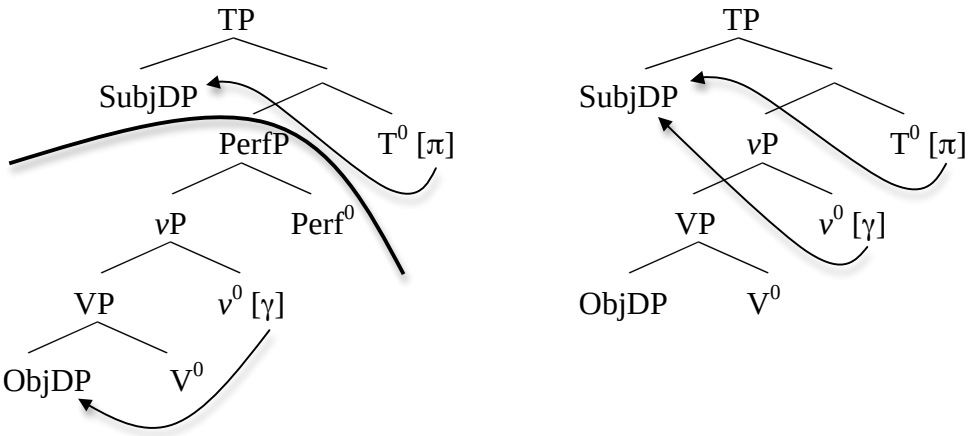
While C&P focus on case marking, it is generally assumed that agreement tracks case, i.e. object agreement in (1a) may arise as a consequence of the subject’s ergative marking.

Puzzle: We focus on the closely related Indo-Aryan languages Kutchi Gujarati and Marwari. In Kutchi Gujarati (and Marwari, cf. Magier 1983) we find the same agreement split as in Standard Gujarati, but without the case split. In the perfective, (3a), the verb agrees with the direct object; in the imperfective, it agrees with the subject, (3b). The subject is always unmarked and the direct object can carry the differential object marker *-ne*. Our core aim is to derive the pattern in (3) and develop a uniform analysis for agreement in (1) and (3).

(3) a. Reena **Khimji-ne** ad-y-**o**. *Kutchi Gujarati*
Reena Khimji-DOM touch-pfv-m ‘Reena touched Khimji.’
b. **Reena** Khimji-ne ad-th-**i** t-**i**.
Reena Khimji-DOM touch-ipfv-f aux.past-f ‘Reena was touching Khimji.’

Proposal: Our core claims are illustrated by (4) and can be stated as follows: (**C1**) case is irrelevant for agreement in Kutchi Gujarati; (**C2**) there are two agreement probes (a person/number probe π on T^0 and a gender/number probe γ on v^0), only one of which (namely γ) has an overt reflex in (3); (**C3**) perfective clauses, (4a), are more complex than imperfective clauses, (4b); (**C4**) the additional *Perf* head in perfective clauses introduces a domain boundary for agreement, giving rise to the split that we observe. In brief, the perfective/imperfective asymmetry that we posit is exactly the opposite from C&P’s in (2).

(4) a. Perfective pattern b. Imperfective pattern



Learning from the Future: Our proposal is motivated by the pattern that arises in the future tense in Western Indo-Aryan languages such as Kutchi Gujarati, (5), and Marwari. Here, we also find split agreement in the gender/number domain: The main verb (*joya / jothi*) agrees with the direct object in the perfective, (5a), and with the subject in the imperfective, (5b). Nevertheless, we always find subject agreement in person/number on the future auxiliary.

(5) a. Hu chokra-ne jo-y-**a** ha-**is**. *Kutchi Gujarati*
I boys-acc see-pfv-pl aux-fut.1sg 'I will have seen the boys.'

b. Hu chokra-ne jo-th-**i** ha-**is**.
I boys-acc see-ipfv-f.sg aux-fut.1sg 'I*(female)* will see the boys.'

To our knowledge, such patterns have gone largely unnoticed in theoretical analyses of Indo-Aryan, with the exception of Magier (1983), who documents identical patterns for the present perfect in Marwari. We argue that (5) only differs from (3) in that (5) exhibits an overt reflex of both π-agreement and γ-agreement, whereas (3) lacks an overt reflex of π-agreement.

On the Irrelevance of Case (C1): It follows directly from (5a) that object agreement in the perfective cannot be attributed to a (phonologically null) ergative case marking on the subject. If the subject in the perfective was unavailable for agreement, we should not encounter subject agreement on the future tense auxiliary. Conversely, we argue that the split in the agreement system is also not related to any properties of the direct object that involve abstract case or morphological case. To show this, we focus on the construction in (6), where the subject carries inherent/lexical dative marking (*-ne*). We argue that (6) is monoclausal, i.e. *par* 'have to' is a modal auxiliary and not a main verb, based on evidence that *par* 'have to' (in contrast to the main verb *gam* 'like (to do)') (i) does not require its dative subject to be animate, and (ii) cannot combine with any aspectual light verbs, and that (iii) the VP that *par* 'have to' combines with does not behave like an infinitival *complement.*

(6) a. Khimji-ne **Reena-ne** jo-v-**i** par-t-**i** th-**i**.
Khimji.m-dat Reena.f-DOM see-inf-f have.to-ipfv-f aux.past-f

b. Khimji-ne **Reena-ne** jo-v-**i** par-**i**.
Khimji.m-dat Reena.f-DOM see-inf-f have.to-pfv.f
'Khimji used to have to watch Reena.' / 'Khimji had to watch Reena.'

We then observe that the direct object does not show any asymmetrical behavior as soon as the subject is truly unavailable for agreement; it can always occur with the differential object marker *-ne* and it triggers agreement in both the imperfective, (6a), and the perfective, (6b).

On the Direction of the Asymmetry (C2-C4): Agreement is split in (5a), but converges on the subject in (5b); this indicates that the perfective is more complex than the imperfective (**C3**), and that the perfective involves an additional domain boundary (**C4**) that gives rise to overt reflexes of both probes (**C2**). Contrastively, a system that assumes the opposite asymmetry (e.g. C&P) cannot straightforwardly derive the pattern in (5). On the one hand, if there was only one agreement probe, it is unclear why we would ever find (5a). On the other hand, if we assume two agreement probes, a C&P style system does not straightforwardly derive that the two probes diverge in the (purportedly) simpler structure (5a) (which would not contain a domain boundary), but converge in the more complex structure (5b) (which would contain a domain boundary). We conclude that (4) is more explanatory than (2).

Conclusion: Based on observations from Kutchi Gujarati and Marwari, we have argued that Indo-Aryan split-agreement derives from perfectives that are more complex than imperfectives as opposed to imperfectives that are more complex than perfectives (C&P).

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FROM INFANT POINTING TO THE PHASE: GRAMMATICALIZING DEICTIC REFERENCE

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Colourless green ideas sleep furiously differs from *Furiously sleep ideas green colourless* not merely in grammaticality, but also in meaning. No grammatical expression is meaningless. How we should characterize the kind of meaning that necessarily goes with grammar is an open question. A novel foundational idea maintains that 'UG primarily constrains the "language of thought" (Chomsky 2007:22), which entails that no independent generative system, like the 'Language of Thought' (LOT, Fodor, 2008) exists that could provide for the structure and content of thought. The evolution of language, therefore, is the evolution of a sapiens-specific mode of thought, an idea supported by evidence that no such mode pre-existed the arrival of full language and our species, and is absent in any other living species today (Penn et al., 2008). There is, then, no 'semantic component' located on the nonlinguistic side of an 'interface' to which the organization of grammar is 'answerable'. Grammar transforms the space of meanings available, and pre-linguistic Conceptual-Intentional systems (C-I), confronted with the outputs of grammar, would simply not be able to 'read' them (Hinzen, 2009). Berwick & Chomsky (2011) even suggest that lexical atoms do not pre-exist our species. In short, the organization of grammar, intrinsically, is the organization of the meaning that corresponds to the contents of sapiens-specific thoughts. The 'Strong Minimalist Thesis' is thus true but trivially so: for there is no interface. A novel argument for innateness follows, too: it is conceptually coherent that languages are learned; but not that thought is. There is a field of language acquisition, but not of thought acquisition. If grammar is thought, grammar is not learned.

But how will grammar create a novel thought system: how could it, if it reduces to Merge? There has only been one solution so far: grammar makes thought productive and systematic by making it compositional. Yet semantic compositionality (Heim & Kratzer, 1998) precisely deprives grammar of playing an explanatory role in the genesis of propositional meaning: if meaning is compositional in the standard sense, all content is ultimately lexical content, and grammar/Merge merely combines it. Lexical content, however, makes no predictions for how such content will be used referentially: MAN, as a lexical concept, cannot refer to a particular man, several specific men, manhood, mankind, man-meat, etc. – leaving reference, aside from the lexical content that enters any act of reference, undecided. Nor does reference arise from composing lexical contents: man-hunter, stir-fry, etc., remain generic and incapable for objectual and specific reference (di Sciullo, 2005).

(Intentional) reference, rather, arises uniquely where grammar is involved, turning grammar into a unique device for reference that no other known device in either humans or non-humans matches. Ants performing computations over complex mental representations do not refer to objects as falling under some concept that, unlike percepts, these referents do not determine. They do not and need not think, forming beliefs about what path they compute, which are true or false (Davidson, 2004). This answers our initial question: the essence of grammatical meaning is not computation or representation, but reference, based on concepts. Grammar mediates the conversion of a lexical content into an act of reference, and no complete grammatical derivation is ever doing anything else.

Such a conversion is first manifest in declarative pointing, which is specific to humans that are genetically normal in regards to UG, disturbed in autism (Liebal et al., 2008) and schizophrenia (McKenna & Oh, 2003), both of which centrally involve language abnormalities, and not found among non-linguistic beings (Tomasello, 2008). Unlike any

non-human communication, which remains dyadic, declarative pointing is triadic even in pre-linguistic infants, communicating propositional information based on a shared concept: say, that there is an airplane there, which is seen jointly with the adult (Tomasello, 2008:114; Csibra & Gergely 2009). No speech act is ever free of pointing in this sense: speakers do not speak 'in the abstract', but point to objects, properties, facts, or propositions. Grammar not only regulates reference, but also this formal ontology of semantics. Specifically, the smallest meaningful units of grammatical organization is the cycle/phase, and the three phases commonly assumed carve out the basic formal-ontological triad of objects (first phase = 'DP'), events (second phase = 'vP'), and propositions (third phase = 'CP'), with finer formal-ontological distinctions depending on the internal make-up of the phases. Each of these is thus a unit of referential-deictic significance (Arsenijevic & Hinzen, 2012), and they all instantiate a single template that is first visible in infant pointing:**[EDGE ☞ [INT AIRPLANE]].**

Longobardi (2005) proposes that the forms of reference are mapped 'topologically' from this template: specifically, object-reference iff movement to the edge/expletive-associate CHAIN, as seen in overt N-to-D movement/CHAIN in Italian and its covert parallel in Germanic. Sheehan & Hinzen (2012) identify the topological principle as one of 'moving towards the edge' as referentiality and extensionality in the forms of reference increase, from purely predicative nominals that require no edge, to scope-taking nominals that require the edge filled, to rigid nominals (names) requiring movement by substitution of N to D/CHAIN. They then extend this topology to the reference of clauses, where the exact same forms of reference are found, governed by the same principle (T-to-C movement/ CHAIN): purely predicative (nonreferential) TPs denote propositions, referential ones denote facts, rigid ones in matrix positions denote truths. These two proposals cover the forms of reference up to the point of 3rd-person propositional reference, but do not cover the case of 1st and 2nd person reference – i.e. the 'pure' or 'essential' indexicals (Kaplan, 1977; Perry, 1993). Martin & Hinzen (2012) extend the extended topology by reference to the Romance clitic system, demonstrating that the source of essential indexicality is purely grammatical rather than lexical or semantic, and that the personal pronouns are the most grammaticalized and hence least lexical forms of reference to which the grammatical reference-system stretches. Our approach therefore shows how UG is or becomes a new 'Language of Thought'. The grammaticalization of lexical content, first visible in infant pointing, leads to the world whose formal ontology, which is purely grammatical, standard semantic theory (mis-) describes in semantic or metaphysical terms. If the grammaticalization of our mind changes the mind's metaphysics and reformats its representations, giving rise to an infinite deictic space marked by a novel formal ontology, talk of a 'C-I-interface' must give way in favor of a conception of gramar as a device of extended deixis.

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Some Maladaptive Traits of Natural Language

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One of the biggest issues in current biolinguistics concerns the discussion of the putative adaptive nature of human language. Thus, a range of authors defend the view that language is an eminently adaptive tool that evolved for communication purposes (*cf.* Pinker and Bloom (1990); Pinker and Jackendoff (2005); Givón (2009), and, basically, any major work of any functionalist trend), whereas on the opposite view, there is also a number of researchers who are sceptical to the adaptationist view and who defend an exaptationist origin of natural language (*cf.* Piattelli-Palmarini (1989); Uriagereka (1998); Hauser *et al.* (2002); Boeckx and Piattelli-Palmarini (2005); Chomsky (2005); Fitch *et al.* (2005)).

In this talk, I provide a number of arguments in favour of the exaptationist view by discussing the dysfunctional nature of some well-known features of natural language. The main goal will not be just to point towards some traits that have no clear evolutionary history but rather, to argue that, teleonomically, all these traits should be considered as maladaptive traits, given that they do not lead to the highest relative fitness among the possible candidates. In other words, they actually make language a *worse* tool for communication.

The traits that I will discuss include 'universal' features such as (i) the filler-gap dependencies generated by displacements, (ii) the movement of superfluous material, (iii) the ban on particular clitic or agreement clusters (the so-called Person Case Constraint), (iv) the morphological lacuna of verbal *Wh*-words, as well as some language-particular features. Due to space limitations, here I will only comment the four I just mentioned.

- *Displacement & Filler-Gap Dependencies*: As Chomsky and others have argued, the linearization 'dilemma' of displacement structures is resolved by a deletion of all but the highest copies, however, deletion of lower copies generates filler-gap dependencies and parsing difficulties. Here, we would have a scenario with a conflict between computational efficiency (remerge) and communicative efficiency (fully specified chains), the former being the one that is guaranteed to the detriment of communicative efficiency. This, I will argue, is a signature of the fact that language did not evolve for externalization and communication.

- *Generalized Pied-Piping*: Displacement affects more material than the specific target for the movement. A *Wh*-feature on *e.g.* an element can trigger the movement of the whole DP containing it, and in some languages like Basque it can even trigger the movement of CPs. This feature extends to answers, which have to match the *Wh*-phrase in the question in syntactic type, as can be seen in 1. Here, too, computational efficiency is guaranteed (attracting the closest element with the *Wh*/focus feature (after percolation)), not communicative efficiency (expressing just the sufficient information to identify the variable in the *Wh*-question).

(1) A. Which girl came late? (in a situation where we have to decide between a girl with a red coat and a girl with a blue coat)
B. *Red./✓The girl with a red coat.

- *The lack of verbal Wh-words*: All natural languages appear to have *Wh*-words for arguments (*who, what*) and adjuncts (*where, why*). However, crosslinguistically, we find no purely monomorphemic verbal *Wh*-words like 2. This restricts the range of possible expressions of natural languages. Again, no clear functionalist scenario can be imagined for the development of such a lacuna; I will argue that it is due to a general formal requirement for DPs to get -roles.

  (2) Whxyzed Brutus Caesar?
  Wh.VERB Brutus Caesar
  What type of event has Brutus as the subject and Caesar as the object?

- *The Person Case Constraint*: In languages with agreement morphology or clitics, the combination of dative agreement/clitic with 1st or 2nd person accusative agreement/clitic is banned (3) (*cf.* Bonet (1994)). Again, this restriction on what are the possible expressions of natural languages has no possible communicative origin but a plausible computatinal one (*cf.* Ormazabal (2000)).

  (3) *Pedro le me envía.
  Pedro cl.3D cl.1A send
  Pedro sends me to him/her/it

The corollary of my presentation will be that there is a wide range of features of natural language that are maladaptive *stricto sensu* (*cf.* Crespi (2000)), and hence, natural language cannot be considered a tool evolved under communicative pressures, but rather the product of a complex emergence with exapted traits.

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Constraints on Concept Formation

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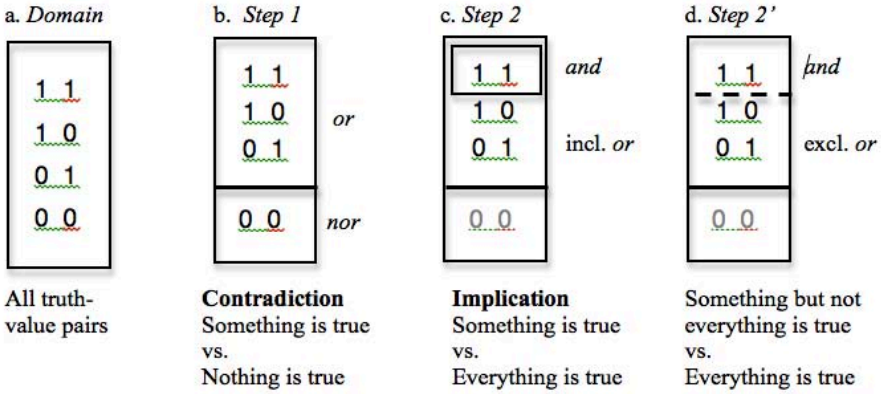
1. Introduction

A limitation on natural concept formation and lexicalisation in natural language has hitherto gone unobserved. To bring it to light and show its relevance to biolinguistics, I will first characterize the nature of this Concept Formation Constraint (CFC) by illustrating its operation in the lexical domain of logical operators. Secondly, I will extend the constraint to a wide range of other lexical domains. Third, a proposal will be made about the origin of this constraint by proving the existence of a surprising homology between logical concepts on the one hand and the system of primary (*RGB*) and secondary (*YMC*) colour percepts on the other. This colour-logic homology suggests that basic conceptual oppositions are innate patterns deeply rooted in the physiological structure of human cognition, somehow linked to the system of trichromatic vision that generates the colour oppositions.

2. The Concept Formation Constraint for logical operators

In the realm of propositional operator concepts, a set of four natural operators is generated by making subtractions from a fixed domain space of values via a series of two successive binary divisions. There is an initial exhaustive division between the contradictories NOR and OR (1b); within the remaining non-NOR space of values, we can either carve out the subset AND, leaving inclusive OR as superset space (1c), or we can divide the inclusive OR space exclusively into AND and exclusive OR (1d).

(1)

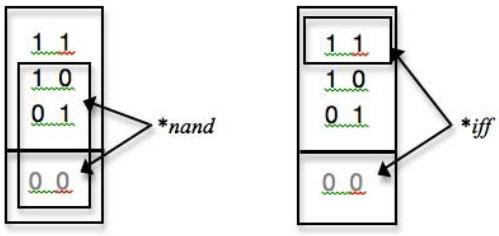


Natural logical terms are lexicalisations of concepts that match and respect these two natural binary divisions of the concept space. This results in a set of four naturally lexicalized concepts that can be summarized by means of the following XP-like structure in labeled bracketing format:

(2) [$_{D}$ *nor* [$_{or\text{-inclusive}}$ *or*-exclusive *and*]].

Of these four, three are contrary concepts (NOR, OR-excl, AND), while the fourth, OR-incl, is a subspace of the original domain D and denotes the union of the two contraries *and* and *or*-exclusive. One can of course freely decide to violate the CFC and create concepts which are non-congruent with the natural binary divisions. That will however systematically result in notions which never arise naturally in normal natural language acquisition. Thus in the realm of propositional operators one can cut across the basic NOR-OR division (1b) to create the two well-known but nonnatural operators **nand* and **iff*.

(3) a. *Illicit Term* b. *Illicit Term*



Similar considerations apply in the realm of quantifiers, for which the natural pattern and the two nonnatural operators which straddle the fence of the opposition of step 1 are given in (4):

(4) [$_{D}$ *no* [$_{\textit{some maybe all}}$ *some-but-not-all all*]]; **nall* (= NO + SOME-BUT-NOT-ALL) (Horn 2012) and *allno (= NO + ALL) (Jaspers 2012)

3. The Concept Formation Constraint in other lexical domains

Further data indicate that the incremental binary CFC is extremely general in functional lexis, witness the following examples from the realms of different kinds of deixis (with – deictic/+deictic as foundational opposition), which are just a tiny selection of the patterns that will be presented:

(5) [$_{D}$ *what* [$_{\textit{THAT}}$ *this that*]]; **thatwhat* and **whis*

(6) [$_{D}$ *where* [$_{\textit{THERE}}$ *here there*]]; **therewhere* and **wh-here*

(7) [$_{D}$ 3rd PERSON SING [$_{\text{2nd PERSON-inclusive}}$ 2nd PERSON SG-excl 1st PERSON SG]]; **s/heI*(=3SG+1SG) and **s/heyou*(=3SG+2SG)

Note that the intermediate subspace term is often reused for one of the new concepts that arise in step 2. This corresponds to what is known about colour terms, which often develop an additional narrower denotation as a new category carves out part of their original denotation (Berlin & Kay 1969).

4. The Logic-Colour Homology

Looking at the lexis for the primary (RGB) and secondary (YMC) colours of the additive colour system, we observe once more that the three primaries and one secondary colour (Y) have natural lexicalisations, while the names *magenta* and *cyan* are crafted terms. Moreover, of the four natural terms, Y is the one that denotes an additive mix of two primaries (R and G), i.e. it denotes a percept resulting from the combined activation of the two cone types that separately generate R and G percepts. This results in a pattern of percept relations that is identical in its structure to that of all the XP-representations above. And once again there are two perfectly logical perceptual mixes M and C which however get nonnatural lexicalisations.

(8) [$_{\text{WHITE}}$ BLUE [$_{\text{YELLOW}}$ GREEN RED]]; *M (= R+B) and *C (=G+B)

Their special linguistic status matches a perceptual asymmetry between the colour mixes Y and CM: Y is perceived as a *unary* colour, not as reddish-green, while C and M are perceived as combinations: bluish-green and reddish-blue. Note also that the initial domain colour WHITE is (like Y) perceived as a unary colour rather than as bluish-yellow. All of this is widely taken in colour vision science to mean that the trichromatic RGB base has superimposed on it a pair of binary oppositions (Hering 1964/1920). Combining this idea with the fact that trichromacy appears to have arisen in primates from a dichromat state by development of a novel M/L photopigment (Jacobs 2009) – i.e., elaboration at the Y pole, we are driven to conclude that the R – G opposition is a binary division within the Y percept space of the basic B – Y opposition as in (8), which yields precisely the familiar XP-like structure also typical of CFC. The biolinguistic relevance of this isomophism is expressed in the final sentence of the introduction.

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More on strategies of relativization: CP-extraction feeding complementizer agreement

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Klima (1964) took relative and sentential *that* to be the same element, namely a complementizer rather than a relative pronoun, a view that has recently been extended to (simplex) *wh*-elements (Pesetsky & Torrego 2006 for English/Dutch, Bayer & Brandner 2008 for German, cf. also Kayne 1976). Under an alternative construal, sentential complements are relative clauses (Manzini & Savoia 2003, Kayne 2008). Taking my cue from Bavarian German (henceforth: BG), this paper provides novel arguments for the former view.

1. Phenomenon: Felix (1985) draws attention to a peculiar construction in BG illustrated in (1), which is ungrammatical in Standard German (SG).

(1) Das ist der Kerl$_i$ den$_i$ wenn ich e_i erwisch, erschlag ich e_i (BG)
this is the guy$_i$ who$_i$ if I e_i catch beat I e_i
'This is the guy who I will beat (up) if I catch him'

The construction in (1) has three mutually dependent properties: (i) the embedded *if*-clause immediately follows the *wh*-pronoun, a property that above all marks the construction as dialectal; (ii) the verb of the final clause precedes its subject, which as shown in (2) vs. (3) is not the regular word order in neither BG nor SG relative clauses; (iii) there are two empty categories in (1), both co-indexed with the relative pronoun.

(2) das ist der Kerl$_i$ den$_i$ ich e_i erschlag **vs.** (3) *das ist der Kerl$_i$ den$_i$ erschlag ich e_i
this is the guy who I e_i beat this is the guy$_i$ who$_i$ beat I e_i

Felix (1985) analyses (1) as a parasitic gap (PG) construction. Specifically, he argues that *den* in (1) is extracted from the adjunct clause, with the empty category in the final clause being a PG. As evidence for his view that the *wh*-phrase has been extracted from the *if*-clause rather than from the final CP, Felix brings in: (i) the existence of sentences in which there is only one gap from which the *wh*-phrase could have been extracted, (4), and (ii) the fact that there are sentences in which the verbs in the two clauses assign different morphological cases, (5):

(4) Das ist der Wein$_i$ den$_i$ wenn ich e_i trink, krieg ich Kopfweh
this is the wine$_i$ which$_i$ if I e_i drink get I headache

(5) Das ist der Kerl$_i$ den$_i$ / *dem$_i$ wenn ich e_i treff, werd ich e_i helfen
this is the guy$_i$ whom$_i$ (acc) / whom$_i$ (dat) if I e_i meet will I e_i help

2. Problems with Felix (1985): In addition to theoretical problems bearing on extraction out of a strong island and others, there are also a number of empirical problems with Felix' analysis. First, extraction from strong islands is disallowed in another, similar parasitic gap construction in BG, namely the one that arguably feeds on the phenomenon of "Emphatic Topicalization" (cf. in particular Bayer 2001, Lutz 1997, 2004 *i.a.*):

(6) a. Den, wann i *e* derwisch, derschlog i *e*.
him if I *e* catch slay I *e*
'If I catch him, I slay him'

b. *Den Peter$_i$ / *Wen$_i$ ärgert sich Hans, wenn er t$_i$ sieht?
the$_{ACC}$ Peter / who annoys REFL Hans if he sees

c. *Koa Mensch, wenn t$_i$ b'suffa is, foit eam$_i$ was g'scheids ei.
no man if drunk is falls him something useful in

Under Felix' analysis, if *den* in (1) leaves the island, this means among other things that it can reach a position from where it may c-command into the host CP, thereby licensing a parasitic gap in it. In addition to theory-internal problems, Felix' analysis predicts that the relative pronoun should be able to cyclically move higher up, producing examples like (7):

(7) *Das ist der Kerl den ich erwarte (dass) wenn ich erwisch, erschlag ich.
this is the guy who I expect (that) if I catch slay I

However, the very fact that the relative pronoun in (1) must appear in the left edge of the (leftward-moved) island (see next section) suggests that the pronoun never leaves this island. This is indeed what I propose. The crucial ingredients of my analysis are given in section 3.

3. Proposal: The central claims that I put forward are: (i) BG but not SG has a recursive CP, (8), where the (VP-adjoined) *if*-clause has moved to the specifier of the final CP, thereby triggering inversion (i.e. verb movement to C^0), much like in English (cf. Emonds 1969) – e.g. *Up to the parliament marched thousands of demonstrators*; (ii) the so-called 'relative pronoun' in sentences like (1) is in fact an agreeing complementizer, or at most a (PF-)merger of the complementizer *dass* 'that' and a clitic, analogous to the (dialectal) Italian *che l'* in (9) and the French *qui* in (10) – cf. Rooryck (2000), who analyzes *qui* as a complex of *que* and a clitic (cf. also Kayne 1976); (iii) the 'parasitic gap' in (1) is a null resumptive, i.e. *pro* (Cinque 1990), analogous to (11a) in Italian (compare (11a) to the rest of the paradigm).

(8) Das ist der Kerl [CP den_j [CP [Spec,CP wenn ich e_j erwisch]$_i$ erschlag ich t_i e_j]]

(9) e una cosa ***che l'***ha detto il ministro (Fiorentino 2007)
is a thing **that it$_{CL}$**-has said the minister
(standard = **che** ha detto **0** il ministro)
that has said **0** the minister

(10) je voudrais un renseignement: c'est à propos de ma femme ***qu'elle*** a été opérée y a deux mois
I'd like to have some information: it regards my wife **that she** has been operated 2 months ago
(standard = ***qui*** 'who')

(11) a. Questo è l'uomo$_i$ che se vedo e_i faccio morire e_i.
this is the man that if see-I make-I die
b. Questo è l'uomo$_i$ che se lo$_i$ vedo, faccio morire e_i.
this is the man that if him$_{cl}$ see-I make-I die
c. ?/%Questo è l'uomo, che se lo vedo, lo faccio morire.
this is the man that if him$_{cl}$ see-I him$_{cl}$ make-I die
d. *Questo è l'uomo, che se vedo, lo faccio morire.
this is the man that if see-I him$_{cl}$ make-I die

The fact that neither Weak (and, in particular) nor Strong Crossover effects arise in BG in the relevant construction, (12) and (13), testifies to the correctness of this analysis; recall that resumption systematically gives rise to WCO obviation (cf. Demirdache 1991 and McCloskey 1990, who assign a bi-clausal structure to constructions containing resumptive pronouns, which for all intents and purposes, has the effects of the CP-recursion structure in (8) above):

(12) Wea is da Bua$_i$ den$_i$ waun sei$_i$ Muatta e_i dawascht, daschlogt-s(-n$_i$)/e_i?
who is the guy whom if his mother e_i catches slays-she(-him)/e_i

(13) [Wöches Büdl vom Hauns$_i$]$_j$, des waun a_i in da Zeitung e_j siagt, wü a_i e_j himochn?
Which picture of Hans which if he$_i$ in the paper e_j sees will he e_j destroy

In turn, the fact that BG but not SG violates the Doubly Filled Complementizer Filter (Bayer 1984, 2001) directly motivates my idea that CP-recursion is possible in BG but not in SG:

(14) I woaß ned **wer daß** des doa hat.
I know not **who that** this done has

As mentioned, the idea that 'relative pronouns' are (inflected) complementizers has been independently argued for a.o. by Pesetsky & Torrego (2006) for Dutch (on top of English): "The Dutch counterpart to English finite *who* and *which* relatives […] displays a form that starts with *d-*, just like demonstratives and just like the normal declarative complementizer *dat*. […] We suspect that the presence of *d-* rather than *w-* is significant. The [...] elements *die* and *dat* are agreeing complementizers, not *wh*-phrases […]."

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Long-Distance Agreement, Improper Movement and the Locality of Agree

Background: As is well-known, Hindi allows for long-distance agreement (LDA) between a matrix verb and the direct object of an embedded infinitival verb (see Bhatt 2005 and references cited there). LDA is generally optional and alternates with M.SG default agreement:

(1) Raam-ne roṭii khaa-**nii** caah-**ii** / khaa-**naa** caah-**aa**
Ram-ERG bread.F eat-INF.F.SG want-PFV.F.SG / eat-INF.M.SG want-PFV.M.SG
'Ram wanted to eat bread.'

The agreement/A-movement correlation: I present novel evidence showing that the optionality of LDA is only apparent. LDA correlates with whether or not A-subextraction takes place. Hindi uses both A- and Ā-scrambling, which are subject to different locality conditions. Moreover, Ā-scrambling, but not A-scrambling, is subject to weak crossover (Mahajan 1990). In (2) the direct object *har billii* 'every cat' is scrambled above the matrix subject *us-ke malik-ne* 'its owner', a movement step that could be either A- or Ā-scrambling. LDA is not affected and remains optional. In (3) the object is likewise scrambled but here the pronoun embedded inside the matrix subject is coindexed with it. This movement must be A-movement as Ā-movement would incur a crossover violation. In contrast to (2), LDA becomes obligatory in (3).

(2) har billii$_1$ us-ke$_2$ malik-ne t$_1$ ghumaa-**nii** caah-**ii** / ghumaa-**naa** caah-**aa**
every cat.F its owner-ERG walk-INF.F.SG want-PFV.F.SG / walk-INF.M.SG want-PFV.M.SG
'Its$_1$ owner wanted to walk every cat$_2$.'

(3) har billii$_1$ us-ke$_1$ malik-ne t$_1$ ghumaa-**nii** caah-**ii** / *ghumaa-**naa**
every cat.F its owner-ERG walk-INF.F.SG want-PFV.F.SG / walk-INF.M.SG
caah-**aa**
want-PFV.M.SG
'For every cat *x*, *x*'s owner wanted to walk *x*.'

This pattern generalizes. In (4) and (5) it is the indirect object that is scrambled above the matrix subject. If it is not coindexed with the pronoun inside the subject DP, as in (4), LDA is optional. (5), by contrast, contains a coindexed pronoun and LDA becomes obligatory.

(4) har bacce-ko$_1$ us-kii$_2$ mãã-ne t$_1$ **film** dikhaa-**nii** caah-**ii** /
every child-DAT his mother-ERG movie.F show-INF.F.SG want-PFV.F.SG /
dikhaa-**naa** caah-**aa**
show-INF.M.SG want-PFV.M.SG
'His$_2$ mother wanted to show a movie to every child$_1$.'

(5) har bacce-ko$_1$ us-kii$_1$ mãã-ne t$_1$ **film** dikhaa-**nii** caah-**ii** /
every child-DAT his mother-ERG movie.F show-INF.F.SG want-PFV.F.SG /
*dikhaa-**naa** caah-**aa**
show-INF.M.SG want-PFV.M.SG
'For every child *x*, *x*'s mother wanted to show a movie to *x*.'

In both examples, the LDA controller *film* 'movie' remains in its base position and may receive an interpretation as a weak indefinite. This strongly suggests that LDA is not correlated with A-movement of the direct object *per se.* Rather, LDA is obligatory if *any* DP A-moves out of the embedded clause. Conversely, finite clauses, which are islands for A-scrambling but do allow Ā-extraction are also opaque for LDA. This motivates the new empirical generalization in (6).

(6) **Generalization**
a. If *any* element is A-moved out of the embedded clause, LDA is obligatory.
b. Clauses that are opaque for A-extraction are also opaque for LDA.

Improper movement and improper agreement: (6) suggests a correlation between movement and agreement that is not straightforwardly accounted for: If a clause allows A-movement out of it, it also allows ϕ-Agree into it. If it disallows such movement, it is likewise opaque for ϕ-Agree. Partial opacity for A-movement but not Ā-movement is generally subsumed under an effect of a constraint against *improper movement.* Despite the variety of accounts of improper movement (e.g., May 1979, Müller & Sternefeld 1993, Abels 2008), none of them (with the notable exception of Williams 2003) generalizes to the movement–agreement correlation because they are formulated as constraints on movement and hence do not generalize to the operation Agree. Under virtually all analyses of improper movement, then, the agreement restriction would have to be stated separately from the movement restriction, clearly missing a generalization.
Proposal: Given the presence of agreement morphology in the embedded clause, I assume that these clauses are at least TPs and that the verbal ϕ-probe is located on T. Following the literature on restructuring, I will treat the embedded clause as ambiguous between being a TP or an AspP, where Asp is higher than T. The movement–agreement link embodied in (6) receives a principled account once improper movement is treated as resulting from a general locality constraint on Agree rather than Move. I adopt Chomsky's (2000) view that movement is feature-driven and requires prior Agree between the moving element and the head projecting the landing site. In analogy to *wh*-movement, I will treat scrambling as triggered by a [Σ] feature, which may in principle be present on various heads. Assuming that binding configurations are cyclically read off TPs, A-scrambling reduces to movement to TP, while Ā-scrambling is scrambling to any head higher than T. Against this background, I suggest that Agree is subject to the following locality condition:

(7) Given a functional sequence *fseq* $\langle X_1 \succ X_2 \succ \ldots \succ X_n \rangle$,
Agree of X_k across X_m is impossible if $\langle \ldots \succ X_m \succ \ldots \succ X_k \succ \ldots \rangle$

(7) states that any given head may not probe across a projection that is 'larger' than itself in terms of *fseq*. The locality of Agree is thus relativized. AspP, for instance, is opaque for a probing T head but transparent for probes located on Asp and C. (7) furthermore derives a generalized ban on improper movement, i.e., movement from one projection to a projection lower in *fseq*, since such movement would require an Agree relation that (7) rules out.
Application: If the embedded clause is a TP, it is transparent for the probes on matrix T and, consequently, both a [Σ]- and a [ϕ]-probe on T can probe into it. As a consequence, A-scrambling out of the embedded clause is possible and so is ϕ-Agree into it. If there is a potential target in the infinitival clause, LDA is obligatory. If, on the other hand, the embedded clause is larger than a TP (AspP or CP), it is opaque for T-probing. Both LDA and A-scrambling are hence impossible. Because of the relativized character of (7), AspPs and CPs are still transparent for probes located on C. Ā-scrambling, i.e., [Σ]-probing by C followed by Move, is thus still possible. The sentences in (3) and (5) are necessarily TPs (because they allow A-subextraction) and LDA is obligatory. Finite clauses are necessarily CP and LDA is ruled out. Finally, the sentences in (1), (2) and (4) are ambiguous between a TP and an AspP structure and LDA is hence optional.
Extensions: A system based on (7), while deriving the movement–agreement correlation in (6), is still flexible enough to yield a typology of LDA. The locus of the relevant variation is the placement of the ϕ-probes. If they are located on T, the Hindi pattern results. If they are located on, e.g., a Top head, LDA is possible into finite clauses but not across a Force head. Under the assumption that Force hosts complementizers and interrogative force, we can follow the analysis laid out in Bošković (2007) for Tsez: Interrogative embedded clauses and those containing a complementizer block LDA in Tsez. Finally, if the relevant ϕ-probe is located on Force, every embedded clause will be penetrable for LDA. Chukchee provides an example of this.

Marginal contrast, categorical allophony, and the Contrastivist Hypothesis

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Recent work in phonology has reinvigorated debates on the classic issue of the relationship between phonemic contrast, representational feature specifications, and phonological activity. The Contrastivist Hypothesis (Hall 2007, Dresher 2009) states that only contrastive values of a feature are visible to phonological computation. On the other hand, Nevins (2010) argues that phonological processes can be parametrized to refer to marked but non-contrastive feature values. At stake is whether phonological representations of segments are constrained by the inventories within which they occur, or to what extent representations can be determined by principles external to the fact of language-specific phonemic opposition.

Nevins (2010: 214) cites Huave, a language isolate of Mexico, as problematic for the Contrastivist Hypothesis: Huave vowels in the San Francisco del Mar dialect must be specified for [+round] due to a process of labial dissimilation (Kim 2008), yet [+round] is not contrastive within the 5-vowel inventory /i e a o u/. However, Dresher (2011) reanalyzes such cases with the Successive Division Algorithm, arguing that contrast is defined not by minimal phonemic distinction, but by the structure of oppositions within the inventory. Under this analysis, [+round] *is* contrastive on an adequately nuanced analysis of the Huave vowel system, and the Contrastivist Hypothesis still holds.

In this paper, I claim that Huave in fact represents a third type of possibility: that the set of phonologically active features can include non-contrastive features (in this case [+round]) whose presence in representations is nevertheless still motivated system-internally, specifically by their role in categorical allophony. This entails two arguments: first, that categorical allophony exists in Huave and must be represented in the phonology; and second, that [+round] is the feature distinguishing the allophones.

The relevant phenomenon involves a case of "sub-allophony" among diphthongs within an allophonic monophthong-diphthong alternation. In San Francisco del Mar Huave, underlying /i/ surfaces unchanged only in open syllables (1a) or before a palatalized coda consonant (1b).

(1) a. /pi/ → [pi] 'chicken' b. /ɲic/ → [ɲic] 'palm (tree)'

Before plain (i.e. non-palatalized) coda consonants, /i/ diphthongizes to [jə] or [jʊ]. The distribution of these diphthongs is allophonic: [jʊ] appears before fricatives (2a-c), and [jə] appears before all other plain codas (2d-f). That these are phonological diphthongs, as opposed to coarticulatory artifacts, is suggested by the robust presence of two steady states in the diphthongs' formant trajectories.

(2)

a.	/ciht/	→	[c**j**ʊht]	'road'	d.	/cicim/	→	[cic**j**əm] 'beans'
b.	/kis/	→	[k**j**ʊs]	'dog'	e.	/a-cits/	→	[ac**j**ət**s**] 'think', 3sg.
c.	/a-ciɸ/	→	[ac**j**ʊɸ]	'eat', 3pl.	f.	/cik/	→	[c**j**ək] 'hill'

Based on original field data, I argue that the [jə]/[jʊ] alternation – despite being noncontrastive – belongs to phonological computation and is not a matter of phonetic implementation. Acoustic analysis of 50 diphthong tokens before plosives, nasals, and fricatives from one speaker reveals no overlap in F1 values of [ʊ] and [ə]: before bilabials, all pre-fricative F1 values are under 430Hz, while pre-plosive and pre-nasal F1 values overlap significantly and are all over 430Hz; before coronals, a similar clean break obtains at 450Hz.

Importantly, while there are plausible diachronic motivations for pre-fricative vowel raising, I argue that neither aerodynamic nor acoustic factors can account for the categorical nature of the synchronic pattern, nor do they explain phonological constraints on its occurrence. In particular, acoustic analysis (n=31) of the phonetically similar vowel [o] shows no evidence of raising before fricatives.

Crucially, pre-fricative raising overapplies in the context of /h/-deletion before sonorant codas (3). Here the process cannot be phonetically conditioned, since the phonetic conditions are not present; acoustic evidence again confirms the patterning of these vowels with pre-fricative tokens. Huave thus presents a notable case of opaque allophony.

(3) a. /pih-t/ → [pjʊht] 'lie down', 3sg. completive diminutive
b. /pi**h**-m/ → [pjʊm] 'lie down', 3sg. subordinate diminutive

Thus it appears that diphthongization creates vocalic elements, namely [ə] and [ʊ], that are not present in the Huave phonemic inventory but must still have unique feature specifications since they arise in the phonological component. The proposed representations make some correct predictions regarding the behavior of these vowels, and eliminate an apparent instance of underapplication opacity.

Following Kim (2008), [ə] is analyzed as receiving [+back] from the following consonant, but possessing no other features. Here I propose that pre-fricative raising to [ʊ] is represented with the addition of a [+high] feature. Neither [ə] nor [ʊ] ever acquires [+round], despite the frequency of rounded realizations phonetically similar to [o] and [u]. The lack of [+round] correctly predicts the underapplication of labial dissimilation with diphthongs without the need for an opaque rule ordering where dissimilation precedes diphthongization; such an ordering is also independently problematic for morphophonological reasons.

The analysis gives rise to a situation in which [u] is [+back], [+high], and [+round], while [ʊ] is [+back] and [+high]. On this analysis the feature [+round] is needed to distinguish these two vocalic elements, whose distinct phonological behavior is shown by the underapplication of dissimilation with [ʊ]. However, despite the derived contrast in (3b), Nevins's (2010:70) strict definition of contrast is not met because [ʊ] occurs only as the second half of a diphthong and not as a stand-alone vocalic nucleus.

Consequently, [+round] is best regarded as necessary for distinguishing allophones rather than phonemes: in a sense it is motivated by contrast, and hence available for phonological manipulation, but the overall argument is that previous notions of the system-internal motivation of feature specifications and potential for phonological activity have been too narrow. The Huave case suggests, first of all and contrary to recent trends, that not all cases of allophony reduce upon experimental observation to phonology-external mechanisms; and secondly and relatedly, that the phonological representation of non-contrastive yet categorically distinct entities must be taken seriously, with consequences for phonological theory.

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The quantificational asymmetry as a language-specific phenomenon

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Dutch and English are two closely related languages of the Germanic family, yet the acquisition of the Dutch binding principles by Dutch monolingual and Turkish-Dutch bilingual children is different from the acquisition of the English binding principles by English monolingual and Turkish-English bilingual children.
We compared the comprehension of Dutch reflexives (*zichzelf* 'SE-self') and pronouns (*hem* 'him') by Dutch monolingual (n=29) and Turkish-Dutch bilingual children (n=33). We used a Picture Verification Task (van der Lely, 1997) where children judged whether the sentence matched the picture. Items were of the type [NP says [NP V NP]], where the embedded subject could be a referential NP (*the rabbit*) or a QP (*every rabbit*), and the embedded object a pronoun or a reflexive. When we compared our results to Marinis & Chondrogianni's study (2011) into English monolingual (n=33) and Turkish-English bilingual children (n=39), – who used the same task – we discovered differences between Dutch and English, but not between the monolinguals and the bilinguals. The differences were found in these mismatch conditions (where test sentences did not match the picture):

	Test sentence	*Picture*
(1)	[the horse says [the rabbit V pronoun]]	(rabbit scratching himself)
(2)	[the horse says [every rabbit V pronoun]]	(rabbits scratching themselves)
(3)	[the horse says [every rabbit V reflexive]]	(rabbits scratching horse)

The differences:

(A) Although both Dutch- and English-speaking children erroneously accept a local antecedent for a pronoun in (1) (presumably because they mistakenly have them co-refer in the discourse, cf. Chien & Wexler (1990)), only English-speaking children reject this when the embedded subject is a QP, as in (2). In other words, only they show the Quantificational Asymmetry (i.e. children perform better on QP-antecedents than on NP-antecedents when the object is a pronoun).

(B) For (3), English-speaking children score 50% but Dutch-speaking children 90% correct.

We hypothesise that both contrasts have the same source: the stronger preference for the distributive reading in Dutch-speaking children (cf. Drozd & van Loosbroek, 2006). Under a distributive reading, each agent is paired to an object (i.e. rabbit-1→ him, rabbit-2 → him, rabbit-3 → him) and the interpretation of (2) becomes similar to that of (1), due to a coreference strategy. Hence, no Quantificational Asymmetry arises. Under the collective reading (cf. Novogrodsky, Roeper, Yamakoshi, 2012) the singular pronoun cannot take the embedded subject as antecedent and the sentence is correctly rejected. This causes a Quantificational Asymmetry in English. Moreover, in (3) the collective interpretation for *every* clashes with a singular reflexive: after all, one cannot collectively perform a reflexive action on a single entity. As a consequence, English-speaking children interpret *himself*, an ambiguous anaphor, as a pronoun *him* plus a focus marker *self*, so that it can legitimately take the main clause subject as its antecedent. Children therefore erroneously accept the sentence-picture pair in (3).

This hypothesis makes two predictions: (i) in Dutch, (3) should yield a better performance than in English, because the distributive reading and the unambiguous reflexive *zichzelf* lead children to reject the sentence-picture pair; (ii) in English, [the horse says [the rabbit V reflexive]] should yield better results than (3), because the embedded subject is not a QP triggering a collective reading and can thus be the antecedent for the reflexive. This is exactly what the data show (van Koert, Koeneman, Weerman & Hulk, submitted). So, the language-specific properties of the languages involved cause differences in the acquisition of the binding principles, even where two closely related languages, such as Dutch and English, are concerned.

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Long-Distance Agreement in Icelandic revisited: An interplay of locality and semantics

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We argue that instances of long-distance agreement (LDA) with Nominative objects (NOM) in Icelandic are fully reducible to a strictly local operation of Agree with v acting as a single probe. This type of analysis has been refuted in the past because of non-trivial interactions with Dative interveners (DAT) that seem to involve intricate combinations of ϕ-features (Holmberg and Hróarsdóttir, 2003; Sigurðsson and Holmberg, 2008). We argue that the ϕ-feature-based characterization of the pattern is accidental and does not extend beyond a limited set of data. Instead, we propose that v successfully probes NOM only if there is no DAT intervener within the probing domain of v. Such a configuration arises either if there is no DAT to start with, or if DAT underwent an independently motivated movement to Spec,vP. The empirical support for the analysis comes from data involving Object Shift and Quantifier movement, and from d-linked vs. non-d-linked wh-movement.

Puzzle: While agreement with NOM is obligatory in a mono-clausal environment and no intervention effects are attested, (1-a), agreement in a bi-clausal environment is optional, (1-b), and can be blocked by an intervening DAT, (1-c), (Watanabe, 1993; Schütze, 1997):

(1) a. Það ***var/voru** konugi gefnar ambáttir í vettur.
EXPL was.sg/were.pl king.Dat given slaves.Nom in winter
'A king was given female slaves in winter.'

b. Einhverjum stúdent **finnst/finnast** tölvurnar ljótar.
some student.Dat finds.sg/find.pl the-computers.Nom ugly.Nom
'Some student finds the computers ugly.'

c. Það **virðist/*virðast** einhverjum manni hestarnir vera seinir.
EXPL seems.sg/seem.pl some man.Dat the-horses.Nom be slow.Nom
'A man finds the horses slow.'

Holmberg and Hróarsdóttir (2003) observed, however, that some DATs are transparent to agreement, (2). They proposed that DAT intervenes only if the ϕ-features of the intervener and the goal don't match (3PL+3PL in (2) but 3PL+3SG in (1-c)).

(2) a. Það finnst mörgum stúdentum tölvurnar ljótar.
EXPL finds.sg **many** **students.Dat** the-computers.Nom ugly.NOm

b. Það finnast mörgum stúdentum tölvurnar ljótar.
EXPL find.pl **many** **students.Dat** the-computers.Nom ugly.Nom
'Many students find the computers ugly.'

LDA can then be formalized as parasitic on DAT (cf. Hiraiwa 2005). Such an analysis assumes non-trivial differences between local agreement and LDA which may yield parallel probing of features originating on a single head (Sigurðsson and Holmberg, 2008). Even though parallel probing and feature valuation have been proposed for Reverse Agree (Adger, 2003; Baker, 2008; Haegeman and Lohndal, 2010; Wurmbrand, 2012, among others), parallel valuation in Reverse Agree differ in its directionality. To our knowledge, the pattern proposed for Icelandic LDA is unprecedented.

Proposal: As observed in Kučerová (2007), the ϕ-feature generalization does not extend to other DPs with the same ϕ-feature properties. She proposed that LDA obtains only if DAT can independently undergo Object Shift (Holmberg, 1986) (OS) to Spec,vP. If OS takes place, v is free to probe NOM. Since adverbs don't block OS (Holmberg, 1999), the correlation can be shown on the word order with respect to adverbs: if DAT precedes a VP adverb, i.e., it underwent OS, the finite verb must agree with NOM . In contrast, if DAT follows such an adverb, agreement with NOM blocked. This pattern is entirely unexpected under Holmberg and Hróarsdóttir's analysis.

(3) a. Það finnst alltaf þremur börnum tölvurnar ljótar.
EXPL find.sg. ALWAYS three children.Dat.pl. computer.D.Nom.pl ugly
b. Það finnast (*alltaf) þremur börnum tölvurnar ljótar.
EXPL find.pl. ALWAYS three children.Dat.pl. computer.D.Nom.pl ugly
'Three children always find the computers ugly.'

We argue that Kučerová's generalization extends to other cases as well, i.e., LDA takes place only if DAT undergoes independently motivated movement to the edge of vP. There are three cases to consider: OS (above), Quantifier movement, and wh-movement. [The data were collected from Icelanders in late 20s and early 30s, originally from Reykjavík. Only data from speakers who shared the judgements reported in Holmberg and Hróarsdóttir (2003) and Kučerová (2007) were considered. Since the data are highly sensitive to semantic distinctions, they were presented in a context using truth-value judgement tasks (Skopeteas et al., 2006; Matthewson, 2004).]

Quantifier Movement: QM targets the edge of the vP phase, even if there is no head-movement (Jónsson, 1996; Svenonius, 2000). If DAT undergoes QM it should no longer act as an intervener for v, hence, we predict that the NOM agreement should be obligatory. This prediction is borne out, as witnessed by (4). The pattern holds even for DAT arguments that cannot undergo OS.

(4) Það *hefur/hafa næstum öllum/fáum köttum fundist fiskarnir góðir.
EXPL *has/have almost all/few cats found fish-the.pl good
'Almost all cats/Few cats have found the fish tasty.'

Wh-movement: Since the lower vP in this type of bi-clausal structure does not have an external argument, vP does not constitute a Spell-out domain, unless Spec,vP needs to be projected for another reason (Richards, 2003; Kučerová, 2012). It follows that vP is a strong phase if DAT moves to Spec,vP, but not otherwise. We argue that only d-linked wh-words must move through spec,vP since they undergo OS. Consequently, vP becomes a Spell-out domain with v obligatorily agreeing with NOM. In contrast, if wh-word is not d-linked, it does not undergo OS and consequently, vP is not a strong phase: Since the wh moves only later when the appropriate probe is merged in the structure, DAT is still within the probing domain of v at the point when Agree takes place. Consequently, LDA is blocked. These predictions are borne out: if the DAT wh-word is d-linked, LDA is obligatory, (5-a). In contrast, if the DAT wh-word is non-d-linked, LDA is blocked, (5-b).

(5) a. Hvaða köttum *virðist/virðast mýsnar góðar?
which cat.Dat seems.sg/seem.pl the-mice.Nom tasty
'To which cat do the mice seem to be tasty?'
b. Hverjum mundi/*mundu hafa virst hestarnir vera seinir?
whom.Dat would.sg/*would.pl have seemed horses to-be slow
'To whom would have seemed the horses to be slow?'

Interestingly, wh-words like *hverjum* are semantically ambiguous: with the appropriate scenario (which becomes semantically plausible if the NOM argument is definite), speakers understand it either as d-linked or as non-d-linked. Crucially, the d-linked interpretation is accompanied by agreement, while the non-d-linked interpretation yields default agreement on the verb, (6).

(6) Hverjum virðist/virðast mýsnar góðar?
whom.Dat seems.sg/seem.pl the-mice.Nom tasty
'To whom do the mice seem to be tasty?' *virðist (seems.sg)* → *non-d-linked*
virðast (seem.pl) → *d-linked*

Topic vs. case marking in Japanese and Korean: Comparing heritage speakers and second language learners

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Heritage speakers (HSs) are subtractive bilinguals natively exposed to a minority language in childhood, but dominant in the societal majority language. Research suggests that HSs show unequal deficits at different levels of linguistic representations; e.g., they have few phonological problems but strong morphosyntactic deficits, particularly evident for speakers at the lower end of the proficiency continuum (Montrul, 2002; Polinsky, 2007). In high proficiency HSs, discourse-level phenomena remain difficult despite otherwise target-like performance on phenomena mediated in the grammar (Laleko, 2010). HSs also exhibit a tendency toward redundancy and over-marking (in comprehension and production), consistently preferring overt elements to null elements (Polinsky, 1995).

In this paper, we examine topic (TOP) and nominative (NOM) marking in heritage Japanese and Korean, two typologically similar languages that organize syntax around information structure. Both languages have a dedicated TOP projection (Japanese *wa,* Korean *(n)un*). The TOP marker appears instead of NOM (*ga, -ka/-i)* when the referent of a DP is interpreted as an anaphoric, generic, or contrastive topic in the main clause. In embedded clauses, TOP-marked DPs are interpreted only as contrastive. Both languages allow for the omission of markers in informal registers under certain structural and discourse-pragmatic conditions (Kuno, 1973; Tomioka, 2010).

We address two general questions:
(i) Which linguistic sub-modules are most vulnerable in HSs and why? More specifically, are discourse-level phenomena more difficult than phenomena mediated within narrow syntax?
(ii) Are null elements associated with more difficulty than those overtly expressed?

Regarding (i), If HSs have general morphosyntactic deficits, we expect equal difficulty with NOM and TOP; if their problems arise from the syntax-discourse interface (Laleko, 2010; Polinsky, 2006), all conditions involving TOP should be more difficult; if the problems are associated with contexts that allow for optionality, we expect difficulty with TOP in matrix clauses only.
Regarding (ii), If preference for overt elements is a consistent property of heritage grammars, we predict greater accuracy on conditions involving overt markers than on conditions involving omissions.

We examined acceptability ratings for 56 sentences for each language, elicited on Amazon Mechanical Turk, by comparing three sets of conditions: (a) acceptable uses of TOP/NOM (1); (b) misuses of markers (NOM instead of TOP and vice versa) (2); (c) acceptable/unacceptable particle omissions (3).

(1) a. Sakana-wa tai-ga oisii.
fish-TOP snapper-NOM delicious
'Speaking of fish, red snapper is delicious'
b. [Mari-wa kita-to] Erika-ga sinzite-iru
Mari-TOP came-COMP Erika-NOM believe-PRES
'Erica believes that MARI [not others] came.'

(2) Watashi-wa hudan hougaku -wa /*ga kikimasu
I -TOP usual Japanese music-TOP/*NOM
ga yougaku -wa/*ga kiki -masen
but western music-TOP/*NOM listen –NEG
'I usually listen to Japanese music but I do not listen to Western music.'

(3) Kouta -wa [Mai *(ga) tsukut –ta] keiki tabe -ta
Kouta –TOP Mai-NOM make –PAST cake eat -PAST
'Kouta ate the cake [which Mai made].'

30 adult Japanese HSs and 36 Korean HSs, from various countries of residence, took the experiment; based on their ability to read the original scripts and on their biographical data, they qualify as higher-proficiency speakers. Since there is a lingering question whether heritage grammars are similar to advanced L2 ones, we also included L2 learners of Japanese (N=36) and Korean (N=13), in addition to monolingual controls (Japanese N=13, Korean N=14).

Although they outperform L2s on identifying correct and incorrect use of TOP/NOM, HSs in both languages have greater difficulty with TOP in matrix clauses. This preference for NOM instead of TOP can be explained by appealing to economy considerations: the projection of a NOM DP requires less structure than the projection of TopP. However, HSs do not have problems with contrastive topics in embeddings, which argues against the generalized deficit at the syntax-discourse interface.

HSs in both languages also have significantly more difficulty with null marking than with the overtly expressed markers. This corroborates previous observations on the general difficulty of null elements for HSs. We propose that the absence of overt marking leads to excessive ambiguity for HSs, which takes them above the threshold of efficient processing.

Conditions on Sprouting **Bradley Larson** **University of Maryland**

Aim: I argue that sprouting instances of sluicing are crucially conditioned by their inner antecedents being Given (Schwarzschild 1999). This contrasts with current analyses of sprouting which hold that it is conditioned by either syntactic or phonological absence of an antecedent. Further, this condition on sprouting spurs local movement in the form of extraposition or scrambling of the sluiced element and constraints on these movements constrain sprouting.

Background: The importance of sluicing constructions like in (1) has been well established dating back to Ross 1969 and sprouting instances of sluicing like in (2) have been pivotal in the analysis of them (see Chung et al. 1995, 2010). The superficial difference between these two being that regular sluicing involves an overt 'inner antecedent' *something* in the antecedent clause whereas sprouting does not.

(1) Amy was eating something, but I don't know what.

(2) Amy was eating, but I don't know what.

Chung et al. and Barker 2012 claim that the sluiced *what* in (2) has no syntactic inner antecedent. Chung et al. crucially rely on there being no syntactic inner antecedent. They argue for a copying operation that substitutes the antecedent IP into the lower clause in covert syntax (3-4). This is followed by covert downward movement of the wh-word (trace here) into an empty position (5):

(3) [[$_{IP}$ He was singing]] but I don't know [$_{CP}$ {why/what} [$_{IP}$ e]]

(4) [[$_{IP}$ He was singing]$_j$] but I don't know [$_{CP}$ {why/what} [$_{IP}$ He was singing]$_j$]

(5) [[$_{IP}$ He was singing]] but I don't know [$_{CP}$ {why/what$_i$} [$_{IP}$ He was singing t$_i$]]

Larson 2012 argues against this analysis by showing that sprouting also occurs when there is a syntactically existent yet phonologically *non*-existent inner antecedent. That is, the wh-sluicing in (6) is shown to have the same profile as sprouting. Larson argues that the inner antecedent is syntactically there in the elided portion of the fragment answer (in the sense of Merchant 2004) (7). He concludes that that the relevant condition for sprouting is phonological non-existence of the inner antecedent.

(6) Q: Who ate something? A: Bill, but I don't know what.

(7) Bill [$_{IP}$ ~~ate something~~], but I don't know what.

Problems: The phonological non-existence account is however insufficient to capture the range of data. For example, given current theory syntactic movement results in an unpronounced version of the moved element either as a copy in the copy theory of movement or as an occurrence in re-merge theories of movement. If mere lack of pronunciation of the syntactically extant inner antecedent were sufficient to license sprouting in these cases, we would expect the following discourse to be an instance of sprouting. The VP-fronting leaves behind a copy or occurrence of unpronounced syntactic material much like in (6).

(8) Amy said that she wanted to sell something. And sell something she did [~~sell something~~], I just can't remember what.

There are a few diagnostics for sprouting; here I use swiping (following Rosen 1976 and Merchant 2002) for simplicity's sake. In the examples in (9,10) the inner antecedent could be found in the un-pronounced base-position of the moved elements on analogy with the elided content in (6). The fact that swiping is not licit in these cases shows that sprouting is not possible here. Also, Chung et al. (2010) show that it is impossible to sprout the object of a preposition, which further militates against a sprouting analysis of this construction.

(9) Amy said that she wanted to talk to someone. And talk to someone she did [~~talk to someone~~], I just can't remember who (*to).

(10) (It was) A book about something Amy read, but I don't know what (*about).

However when the VP (or IP) is *elided* sprouting is available (11,12). Unlike in the movement examples in (9,10) swiping is possible and sprouting the object of the preposition alone is not.

(11) Amy talked to someone. Jim did [~~talk to someone~~] too, but I don't know who *(to)

(12) Someone was waiting for something. I remember who, but I can't remember what *(for).

New Account: Descriptively, we see that sprouting is conditioned on the inner antecedent being both indefinite (*something* or null) and implicit (elided or null). This rules in null indefinite and elided indefinite antecedents. On the other hand this rules out traces of movement and un-elided *something* which are respectively not indefinite and not implicit. Why is it that sprouting occurs under these conditions? An important commonality is that in both environments the inner antecedent becomes Given in the sense of Schwarzschild (1999). Merchant (2001) argues that ellipsis is licensed by Given-ness and eliding the overt indefinite inner antecedent *something* in (11,12) ensures that it is Given. The null indefinite complement qua inner antecedent in (2) also becomes Given when the optionally transitive verb is uttered without an internal argument.

A Repercussion: The set of things 'Given' in a discourse is necessarily updated with each new utterance. In the dialogue in (6), the fragment answer utterance updates that which is Given so as to include the elided inner antecedent. The fact that the inner antecedent is thereby made Given explains why it is irrelevant that there is an overt counterpart (*something*) previously in the discourse: In light of the new utterance, the overt version is now Given. The irrelevance of previous overt instances of the inner antecedent is unexplained in Larson's formulation.

Constraints on Sprouting: In the null indefinite and ellipsis instances above, the inner antecedent is Given because it is not pronounced. Asking a content question of the inner antecedent trivially requires that the corresponding wh-word be pronounced and thus contrast with the implicit inner antecedent. I posit that this wh-word must then be contrastively focused and in turn have moved to a local focus position before moving to spec,CP. This local focus movement will differ cross-linguistically. In English sprouting, the option for local focus movement is extraposition and only elements that can extrapose can sprout. This makes the correct predictions in ruling out objects of prepositions (13) among others. In languages like Dutch without extraposition, scrambling is the option and constraints thereon limit sprouting. In Dutch indirect objects can neither scramble (Neeleman 1994) nor sprout (14).

(13) *J. talked to yesterday a tall man *J. talked, but I don't know who ~~Amy talked to~~

(14) *J. heeft M. niet boeken uitgedeeld *J. heeft boeken uitgedeeld, maar ik weet niet wie
J. has M. not books out-handed J. has books out-handed but I know not who
'Jan has not handed out books to Marie' 'Jan handed out books, but I don't know who to'

In Sum: Determining the conditions on sprouting allows for a unified account of its constraints. Sprouting relies on the relevant sluiced element being contextually Given. It falls out from this condition that the Given element is unpronounced and its corresponding wh-word contrastive. Licensing this contrast is not always possible and thus effects constraints on sprouting.

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The Emergent Nature of Parametric Variation

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One of the key points in the biolinguistic agenda concerns the nature of linguistic (parametric) variation. The relevant literature makes reference to three possible loci: (i) parameters that are part of the mental lexicon by being localized on functional heads (lexical parameters), (ii) parameters that are syntactic in that they pertain to narrow syntax variation (NS parameters), and (iii) parameters that are morphophonological variants; viewed as the product of the externalization process (PF 'parameters'). From the three possible answers to the question about the locus of variation, the most minimalist is the third one and it is the one explored in the current state of development of the biolinguistic enterprise (Berwick & Chomsky 2011).

Other recent works address the emergent nature of parametric variation, usually in relation to the role of environmental factors that affect this emergence. This view entails that variation is related to the externalization process, neatly alluding to a non-overspecified Universal Grammar (UG) as well as to the nature of parameters as emergent properties (Roberts 2011). Empirically showing that parameters are indeed emergent properties would be a further step in the direction of shifting the locus of variation from the innermost components of FL (i.e. the lexicon, UG, NS) to PF operations. The present work draws on instances of recent (sign) language emergence in order to argue that certain core properties of language, even properties traditionally treated as unparametrized principles and design characteristics, emerge as a response to environmental, (post-)externalization-related factors.

Chomsky (1986 *et seq*.) argued that a distinction should be made between I(nternal)-language and E(xternal)-language, viewing language from a cognitive and a socio-cultural perspective respectively. Details of the evolution of I-language are largely unidentified and different accounts in the literature lay emphasis on different aspects of the I- vs. E-language distinction, most of them, however, agree that such a distinction is viable. Lassiter (2008) and Mondal (2011) have recently made an attempt to reconcile internalism and externalism through suggesting a mutual reinforcement of the two. Mondal took the reinforcement to be between biology and culture, however in the present discussion the interplay is assumed to exist between the biological nature of language and environmentally driven adaptations. It is argued that the complex dynamics of this interplay can be best illustrated with respect to human language, in cases of recently emerged (or even still emerging) E-languages because in such instances, the relation between I- and E-language is in its earliest stages and the latter has not undergone significant adaptations yet. One such language is Al-Sayyid Bedouin Sign Language (ABSL), a language that emerged in the last 70 years in a relatively isolated, tight-knit community in Israel.

On the contrary to what one observes in the literature coming from linguistics, in the biology literature, the robustness of the link between the genetic makeup of an organism and the environmental influences that affect its development is made explicit when one examines the phenotypical properties of an organism, even in the case of language. Genes determine the capacities of organisms, yet the limits of these capacities may never be explored, depending on how adequate the environmental factor eventually proves to be; in other words, 'human beings can speak because they have the right genes and the right environment' (Lewontin 2000). Linguists, on the other hand, have often followed Chomsky (1986) when arguing that a distinction should be made between I- and E-language, viewing language from a cognitive and a socio-cultural perspective respectively. Yet, linguistic data coming from cases of language emergence in its earliest stages show an area of intersection between what lies behind the terms 'I-/E-language'; an intersection that reflects the point where the development of biological traits (I-properties) gets affected by environmental, externalization-related triggers (E-factors).

More specifically, this work reflects on how certain properties of language emerge gradually due to the need to meet communicative, post-externalization needs. It is argued that this observation points to the surfacy, PF nature of parameters as emergent properties. The underlying assumption here is that if language emergence is in its earliest stages, the time that has elapsed is not enough for it to have already undergone significant environmentally driven adaptations. The prediction that follows is that some I-properties would be still under development into these recently emerged languages. ABSL is one such case: fieldwork on this language suggests that manifestations of properties like grammaticalization and complexity, but also of design properties of language such as signifier/signified-consistency (else known as 'semanticity' in Hockett 1960) are absent from the production of the first-generation signers and develop gradually. Their development is subject to environmental factors (e.g., time, input from previous cohorts, etc.) and reflects environmental needs (e.g., size of the community, distribution of signers, degree of interaction, etc.). If grammaticalization — which involves the development of finer grammatical markers — is shown to develop gradually and in response to environmental factors, then the markers themselves — which are points of variation across grammars, traditionally referred to as 'parameters' — develop gradually and in response to environmental factors as well, and under these assumptions, the link between points of variation and the externalization process is hard to miss.

To give a concrete example, with respect to grammaticalization and the emergent nature of parametric variation, according to Meir *et al*. (2010), ABSL first-generation signers have the tendency to break an event that requires two arguments into two clauses which come along with two verb signs that each predicates of a different argument. For example, a description of girl feeding a woman would be realized with two SV clauses rather than a single SOV. SOV is the word-order that is largely preferred among ABSL signers, unlike the closest languages around it, which are SVO (Sandler *et al*. 2005). It is worth stressing that SOV is the *prevalent* order from the second generation of signers onwards but variation still exists given that Sandler *et al*. (2005) report the existence of some (S)VO patterns. Moreover, verbs are predominantly final in this language, but if there is a noun and modifier in a phrase, the order is noun-modifier. The fact that SOV patterns became robust in the second generation of signers illustrates the existence of variation when certain grammatical properties of the language are still emerging. This variation is an indication that word-order should indeed be better viewed a surfacy PF-decision that allows for varying realizations, rather than a fixed, deeply rooted NS or UG parameter. In this context, it seems theoretically plausible and motivated to describe grammatical markers called 'parameters' as realizational/PF variants rather than as the outcome of parametrized syntactic operations or as UG-specified principles with unfixed values.

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(Biolinguistic) Primitives Lost in Translation

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Approaching language from a biolinguistic perspective entails adopting a view of Language that is tenable from a biological, neuro-cognitive point of view. Making progress in biolinguistics corresponds to making progress in terms of viewing language as a biological organ, which implies interdisciplinarity and emphasis on the way linguistics communicates with interfacing fields. Similarly, a shift of focus from language-specific, feature-based, supposedly U(niversal) G(rammar)-represented particularities to principles of general cognitive architecture is highly likely to be progress with respect to what Poeppel & Embick (2005) define as the "Granularity Mismatch Problem" (GMP).

The goal of the present work is two-fold: First, it revisits linguistic primitives of the kind that Poeppel & Embick (2005) list. We propose that these *linguistic* primitives should not be taken as *biolinguistic* primitives, since they are not necessarily informative once the focus is on Language as a biological organ and not on specific languages. We concede that some of these primitives are helpful in describing some language-specific particularities, and therefore might be empirically useful when discussing certain phonological or morphosyntactic phenomena. However, they are less informative with respect to the biological character of language or when language is viewed in relation to other modules of human cognition (Boeckx 2011). The highly language-specific character of these primitives is what leads to problems like GMP. In this context, the second part of the present discussion relates to the fact that one of the main desiderata of the re-emerging biolinguistic enterprise is to find its own primitives. This can be achieved through selecting from the two interfacing fields that comprise it those units that are informative in terms of its biological makeup.

GMP boils down to the fact that linguistic and neuro-cognitive research are operating on units of different granularity. According to Poeppel & Embick's (2005) formulation of GMP, "linguistic computation involves a number of fine-grained distinctions and explicit computational operations. Neuroscientific approaches to language operate in terms of broader conceptual distinctions". This applies mainly to what linguistics "canonically" takes as primitives: features, syllables, morphemes, etc. Most of these, however, seem to be strictly linguistic concepts and even within linguistics their status has not been immune to points of criticism. For example, features are the kind of primitives that linguists usually resort to in order to explain a grammatical phenomenon but, in and of themselves, they offer no explanatory adequacy, in that they do not derive or construct the phenomena in question; they only reduce them to something allegedly pre-existing. In this sense, features cannot be of any interest from a biolinguistic point of view. From a linguistic point of view, the richness of features has long been assumed to give rise to distinct functional heads as argued by cartographers (Shlonsky 2010). In other words, linguistics posits two inventories (i.e. features in the lexicon and functional projections in the syntactic representation) that feed one another, to the point of giving rise to a highly stipulative, open-ended array of linguistic primitives.

Analogously, if we look at phonology, the field which spawned distinctive features (Trubetzkoy 1939), one can argue for their irrelevance to the computations at the core of what biolinguistics considers phonology to be. Phonological features are based on phonetic factors (articulatory and perceptual), which forces the assumption that these factors are somehow encoded in language. This assumption loses its robustness once different modalities are taken into account, as they lack the characteristics on which features are based. If we take *sign*, for example, it is hard to determine the role of a feature like [+coronal]. Faced with such a problem, we are left with two mutually-exclusive options: i) posit a unique set of features for each

modality, or ii) see phonology as modality-independent. The first option would require an extremely specific and complex UG, with features for every modality deemed possible. This alone should be enough for the second option to be favoured, although even if speech were the only modality for human language one could argue for a phonetics-independent phonology. Blevins (2004) shows that much of what is usually attributed to phonology can be accounted for on the basis of phonetics. This paves the way for a much simpler, autonomous, *substance-free* phonology, comprising of a computational system which is ready to operate on any kind of external units. The architecture and workings of such a system have more recently been discussed by Blaho (2008) and Samuels (2011).

The syllable, however, seems to be a special case. While a solely computational phonological system would imply that syllables, much like features, are external to it, some studies show that in fact that might not be quite the case. Giraud & Poeppel (2012) provide a synthesis of recent work that classifies the syllable as emerging from the brain's intrinsic oscillations, which somehow explains the entrainment of both the mechanisms that enter into speech production and perception. Therefore – and contrary to the examples mentioned above – one should not ask first whether syllables should be dispensed with. Rather, the main question ought to be whether they are linguistic primitives or biological primitives, as both seem to enjoy some degree of plausibility.

Given the narrow linguistic status of the primitives described above, biolinguistics should not ascribe them the same ontological status and presuppose them as primitives of its own. It is part of the biolinguistic agenda to rethink them, and doing so could help overcoming GMP-related issues. It is highly likely that turning away from feature-based accounts of variation makes progress related to how language is implemented in the brain, as it would allow for a better, GMP-free exploration of how language interfaces with other modules of human cognition in the brain.

With respect to the second goal of this study, we suggest that the formulation of an array of biolinguistic primitives entails bringing a neuro-cognitive perspective into the equation. In a nutshell, rethinking GMP in the context of biolinguistics requires adopting the perspective of neuroscience in understanding which primitives are informative for the biological makeup of the language faculty. Some of these might be: (i) *(oscillatory) syllable* (Giraud & Poeppel 2012), (ii) *long-distance dependencies* which are impaired in agrammatic populations (e.g., Grodzinsky *et al*. 1991), and (iii) processing *recursion* and different types of grammars (finite-state vs. phrase-structure; Friederici *et al*. 2006). By analyzing these primitives, we provide a solid basis for other interfacing fields to contribute to the biolinguistic enterprise.

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Who triggers focus intervention effects?

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1 Introduction This paper concerns focus intervention effects (FIEs) in Chinese. Specifically, when *wh*-words are preceded by focus particles and their focused associates, *wh*-questions become ungrammatical (1) (focus particles are boldfaced and their focused associates are underlined throughout).

(1) *[$_{CP}$ Q-Op [$_{IP1}$ **zhiyou** [$_{IP2}$ ~Op [$_{IP3}$ Libai mai shenme]]]]?
only Libai buy what
Intended 'What did only Libai buy?'

Based on Rooth (1992), Beck (2006) argues that FIEs are induced by the focus interpretation operator ~ (~Op). In (1), the focus particle is associated with the focused constituent via ~Op, which adjoins to IP3 and intervenes between the question operator (Q-Op) and the *wh*-word. According to Beck, Q-Op cannot skip ~Op to evaluate the *wh*-word, so the *wh*-question is uninterpretable. Beck's account has inspired many recent studies, for example, Beck & Kim (2006), Kim (2006), Eckardt (2006), Tomioka (2012).

In this study, we examine FIEs in Chinese and show that Beck's analysis cannot explain association between focus particles and *wh*-words (FWHA). We propose that the trigger of FIEs is not ~Op, but a focus particle which is not associated with a *wh*-word. Then, we develop an alternative semantic analysis for both FWHA and FIEs.

2 FWHA It is well known that focus particles must be associated with focused constituents in their c-command domain. In Chinese, according to Aoun & Li (1993), focus particles can be associated with not only focused constituents but also *wh*-words (2a-b).

(2) a. [Q-Op [**zhiyou** [~Op [shei lai le]]]]? b. [Q-Op [Libai [**zhi** [~Op [mai shenme]]]]?
only who come SFP Libai only buy what
'Who is x such that only x come.' 'What is x such that Libai only buys x?'

FWHA is a counterexample for Beck's (2006) analysis. According to her, the Q-Ops in (2a-b) cannot skip ~Ops to evaluate the *wh*-words. Therefore the *wh*-questions should be ruled out by FIEs, contrary to fact.

In addition, Beck assumes that *wh*-words have focus values (F-value), i.e. sets of alternatives, but lacks ordinary values (O-value). The F-value of *wh*-words cannot be interpreted by ~Op, because the latter must use both the O-value and the F-value. Therefore, it is predicted that focus particles cannot associate with the *wh*-words via ~Op. However, this prediction is falsified by FWHA in Chinese.

3 FIEs FIEs appear when focus particles are associated with focused constituents rather than with *wh*-words in their c-command domains, as in (3a-b).

(3) a. *Libai **zhi** zai na ci bisai zhong de-le shenme jiang?
Libai only at that Cl game in obtain-Asp what prize
Intended 'What prize did Libai obtain only in that game?'

b. *Libai **zhiyou** zai tushuguan cai neng kan shenme shu?
Libai only at library just can read what book
Intended 'What can Libai read only in library?'

The stark contrast between (2) and (3) points to a descriptive generalization—focus particles which intervene between *wh*-words and the Q-Op induce FIEs only when they are not associated with the *wh*-words.

4 Semantic account Adopting Hamblin's (1973) study, we assume that a *wh*-word denotes a set of individuals, and we follow Eckardt (2006) in treating the denotation of the set as the O-value, rather than the F-value, of *wh*-words. Based on these assumptions, we analyze FWHA and FIEs as follows:

(I) FWHA The *wh*-word *shenme* 'what' in (2b) denotes a set of non-human individuals (4a). The *wh*-word and the verb *mai* 'buy' are composed in a pointwise manner (Rooth 1996, Kratzer & Shimoyama 2002), and form a set of properties (4b). Also in the pointwise manner, the focus particle *zhi* 'only' is applied to each member of (4b), forming another set (4c).

(4) a. $[[\textit{shenme}\text{ 'what'}]]^{O}$ = {books, vegetables …}
b. $[[\textit{mai shenme}\text{ 'buy what'}]]^{O}$ = {y buys books, y buys vegetables …}
c. $[[\textit{zhi mai shenme}\text{ 'only buy what'}]]^{O}$ = {**only**(y buys books), **only**(y buys vegetables)..}

In (4c), *zhi* is associated with each member of the set (4b) and its semantics is computed as follows: for "**only**(y buys books)", the individual property "y buys books" provides the O-value for "only", while the whole set in (4b) provides the F-value for "only". In this way, (4c) can be represented as (5). Finally, the subject *Libai* in (2b) is applied, forming a set of propositions, which is equivalent to the semantics of (2b).

(5) $\left\{\begin{array}{l}\lambda y.\forall p\in\{\text{y buys books, y buys vegetables …}\}\ \&\ p = 1 \rightarrow p = \text{y buys books} \\ \lambda y.\forall p\in\{\text{y buys books, y buys vegetables …}\}\ \&\ p = 1 \rightarrow p = \text{y buys vegetables …}\end{array}\right\}$

(II) FIEs As shown in (6), the O-value of IP3 in (1) is a set of propositions through expansion of the set denoted by the *wh*-word. Suppose (7a) represents the F-value of the focused constituent *Libai*. Then, (7b) represents the F-value of IP3, which is a set of sets of propositions.

(6) $[[\text{IP3}]]^{O}$ = {Libai buys books, Libai buys vegetables …}
(7) a. $[[\textit{Libai}]]^{F}$ = {Libai, Wangwei …}
b. $[[\text{IP3}]]^{F} = \left\{\begin{array}{l}\{\text{Libai buys books, Libai buys vegetables …}\}, \\ \{\text{Wangwei buys books, Wangwei buys vegetables …}\}, \ldots\end{array}\right\}$

Since the focus particle *zhiyou* 'only' is associated with *Libai* rather than the *wh*-word, it must take (6) and (7b) as arguments, yielding (8).

(8) $\forall p\in [[\text{IP3}]]^{F}\ \&\ p = 1 \rightarrow p = [[\text{IP3}]]^{O}$

Here, "$p = [[\text{IP3}]]^{O}$" indicates that "p" does not denote a single proposition (see (6)), incongruent with "p =1". Therefore, (8) is uninterpretable.

5 Stressed focus In my account, FIEs are due to the failure of the application of focus particles, but not directly related to ~Op. It predicts that ~Op alone does not trigger FIEs. The prediction is verified by the fact that FIEs do not occur when *wh*-words are preceded by stressed foci without focus particles, as exemplified by (9B) in the dialog (9).

(9) A: Wo zhidao Libai jian-guo shei. B: Na WANGWEI jian-guo shei?
I know Libai see-Asp who then Wangwei see-Asp who
'I know who Libai saw.' 'Then, who did WANGWEI see?'

According to Kadmon (2001) and Eckardt (2006), the F-value of the *wh*-question in (9B) is a set of questions (10a), and its O-value is (10b). Now, ~Op is applied to interpret the focus feature of the stressed focus. According to Rooth (1992), ~Op introduces to the logical form of (9B) a set C (10c) defined in the context, and it requires the set be a subset of the F-value of (9B) and contain the O-value of (9B). Obviously, the requirement is satisfied.

(10) a. $[[(9B)]]^{F}$ = {who did Wangwei see, who did Libai see, …}
b. $[[(9B)]]^{O}$ = {who did Wangwei see}
c. C = {who did Wangwei see, who did Libai see}

6 Summary Empirically, this study shows that FWHA is possible in natural languages. This has the effect of calling into question the lines of research initiated by Beck (2006) which predict that FWHA is impossible. We further argue that the culprit of FIEs is not ~Op, but a focus particle which intervenes between a *wh*-word and Q-Op without undergoing FWHA. Theoretically, we offer an alternative semantic formulation of FIEs which captures this generalization.

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The historical reality of biolinguistic diversity

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Goals. Arguing that the historical application of the biolinguistic model can complement molecular antrhopology to model out a 'grammatical anthropology' as a new discipline at the crossroads of cognitive, biological and historical sciences. **Background**. In many respects, P&P models of UG are a conceptually plausible answer to the problem of explanatory adequacy (Chomsky 1964). However, empirically, parametric theories are not yet sufficiently corroborated, since nobody has so far indisputably assessed their effectiveness to the acquisition of grammatical diversity by implementing a parameter setting system over a realistic collection of parameters (Fodor 2001, Yang 2003; cf. Chomsky 1995:7). It is therefore debatable that a P&P model has actually attained substantial explanatory adequacy, though progressing beyond language-specific descriptive adequacy. To address the need for more solid arguments in favor of P&P, Longobardi (2003) suggested the opportunity of: **i)** adopting a Modularized Global Parametrization strategy, aiming at studying together relatively many (closely interacting) parameters in relatively many languages within the circumscribed domain of small modules of grammar; **ii)** beginning to aim at further testing grounds and levels of success, i.e. at satisfactory accounts of the actual distribution of grammatical diversity in time and space (*historical* adequacy). **Methods**. Elaborating on previous work (Longobardi/Guardiano 2009), a sample of more than 50 carefully identified binary parameters in DP-syntax, set in over 30 languages, is focused on; it is complemented with a set of hypotheses about UG constraints, defining two levels of deductive structure: one determines the traditional covariation of properties following from the same parameter, the other encodes an extraordinarily rich implicational hierarchy among parameters themselves (more pervasive than hinted in Baker 2001), largely responsible for hierarchies of size (e.g. Biberauer/Roberts 2012). Phylogenetic programs of biostatistical derivation have been applied to this database to formally measure syntactic diversity and generate hypotheses of phylogenetic trees and networks. Specific mathematical procedures (a sampling algorithm capable of dealing with the universal constraints imposed on parameter setting) have been elaborated on purpose, to compute the width of potential diversity allowed by this fragment of UG and to evaluate the significance of the one observed in the actual language set. **First results**. The distribution of actual syntactic distances is statistically highly significant. The results have been measured against independently known historical data (from comparative linguistics, history, genetics), with largely correct correlations: given a non-trivial set of languages, the description of their variation provided by the systematic parametric analysis of a whole compact domain quite exactly recapitulates their known history and relationships. The reality of a P&P model of the language faculty, therefore, receives strong and original support from its historical adequacy. **Further testing**. Recently, the use of structural traits (superficial grammatical patterns) has been advocated and tested for conclusions on language phylogenies, the status of universals, and the modeling of grammatical evolution (Dunn *et al.* 2011). Now, since parameters try to represent 'abstract' differences, often exhibiting a high degree of deductive depth with respect to surface contrasts, counting similarities in patterns rather than in parameter values could turn out to provide different outcomes when quantitatively assessing areal or genealogical relatedness. In order to test this idea, the same experiments above have been repeated using a choice of the surface descriptive patterns derived from the parameters, rather than the parameter values themselves (i.e. comparing E-languages rather than I-languages). Again, the results were plotted against the same independently known historical variables. This experiment allows one to empirically test the parameter-pattern controversy and Dunn *et al.*'s alleged conclusion that implicational universals and

UG are not supported by the extant distribution of structural diversity in the world's languages. The first computations suggest that pattern-based phylogenies are by no means more significant or more revealing than those founded on abstract parameters and that the latter better represent actual historical linguistic relations. Further corroborating these results, we argue that biolinguistic models of diversity encode a higher level of reality than surface-oriented typologies.

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Fig. 1: UPGMA Tree from 56 syntactic parameters[1]

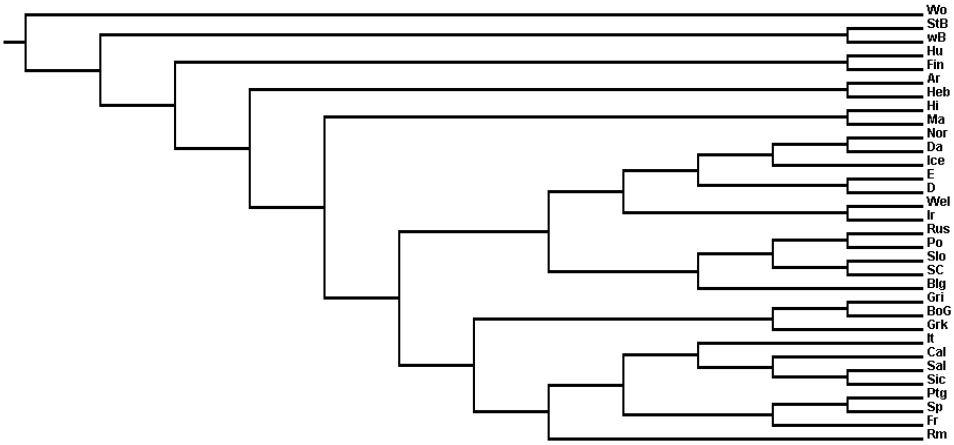
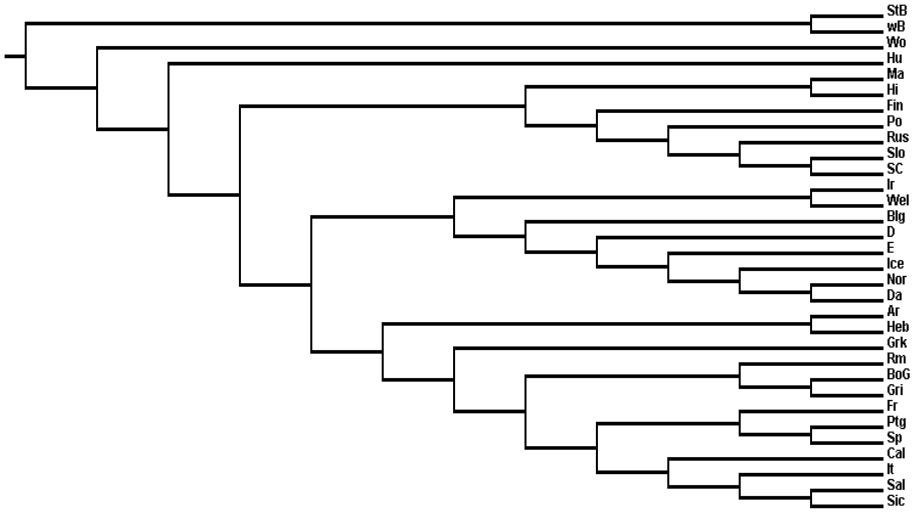


Fig. 2: UPGMA Tree from 113 corresponding surface patterns



[1] **Legenda**. **Wo** = Wolof; **StB** = Standard Basque; **WB** = Western Basque; **Hu** = Hungarian; **Fin** = Finnish; **Ar** = Arabic; **Heb** = Hebrew; **Hi** = Hindi; **Ma** = Marathi; **Nor** = Norwegian; **Da** = Danish; **Ice** = Icelandic; **E** = English; **D** = German; **Wel** = Welsh; **Ir** = Irish; **Rus** = Russian; **Po** = Polish; **Slo** = Slovenian; **SC** = Serbo-Croat; **Blg** = Bulgarian; **Gri** = Grico (Salentino Greek); **BoG** = Bovese Greek (Calabria, Grecanico); **Grk** = Greek; **It** = Italian; **Cal** = Calabrese; **Sal** = Salentino; **Sic** = Sicilian; **Ptg** = Portuguese; **Sp** = Spanish; **Fr** = French; **Rm** = Rumanian.

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Variation and the architecture of grammar. Where are parameters? Where is lexicalization?

Data. I base my study on Italian dialects, favored by the existence of large corpora of data collected with contemporary formal grammars in mind (Atlante Sintattico Italiano, Padua; Manzini & Savoia 2005). Among the most systematically studied phenomena are those involving person hierarchies, because of the ease of study; given six persons, at most 64 variation schemas for two-valued choices are in principle possible. Case studies include partial pro-drop (partial drop of subject clitics) in Northern Italian dialects (Manzini & Savoia 2005, Calabrese to appear for summary tables) ï and *have/ be* auxiliary alternations according to person in Central and Southern Italian dialects (Manzini & Savoia 2007, 2011, Legendre 2010 for summary tables). In order to be able to present some results at all, I will limit myself to 1st/2nd person, i.e. to the participant set (16 possible patterns overall for two-valued choices). Among the 187 subject clitic dialects in Manzini & Savoia (Calabreseôs count), only the six patterns in (1) are instantiated. On the other hand this holds of proclitic subjects, i.e. in declaratives contexts. In enclisis, i.e. in interrogative contexts, my survey of the same corpus reveals that only two patterns are clearly not attested (namely P Ø Ø P; Ø P P Ø, roughly with the plural specular to the singular).

(1)	1sg	Ø	Ø	Ø	Ø	P	P
	2sg	Ø	P	P	P	P	P
	1pl	Ø	Ø	Ø	P	Ø	P
	2pl	Ø	Ø	P	P	Ø	P

e.g. column 2: *Ø dɔrmo, ti dɔrmi, Ø dorˈmi* ód sleep etcé ô *Chioggia* (Veneto)

In *have/ be* auxiliary selection in the present perfect, only the six person patterns in (2) are attested. If we line up *be* selection (*essere*, E) with P lexicalization and *have* selection (*avere*, A) with Ø lexicalization, the patterns in (2) are seen to mostly overlap with those in (1). Strikingly however the dominating A E pattern can also be reversed, as in the last column (E A). In past and modal (subjunctive) forms, practically all dialects select either *have* or *be* uniformly.

(2)	1sg	A	A	A	E	E	E
	2sg	A	E	E	E	E	A
	1pl	A	A	E	A	E	A
	2pl	A	A	E	A	E	A

e.g. column 2: *aʃʃə/ si/ ɔmmə/avi:tə drəmmeutə* ód have/ etc... sleptô *Ruvo di Puglia*
last column: *sɔ/ a/ ammə/ avitə vənɔutə* ód have/ etcé comeô *Gravina di Puglia*

Literature. The obvious generalization to be drawn from (1) is that if any P clitic is lexicalized, then 2nd sg is (cf. Renzi &Vanelli 1983); another generalization is that the plural can be at most as differentiated as the singular or otherwise lacks any differentiation at all. To what parametric organization do these generalizations correspond? Why do they hold only in certain contexts? There are several answers available in the literature. Cardinaletti & Repetti (2008) argue that person hierarchies in subject clitics systems are to be modelled by syntactic hierarchies; if the verb moves as high as clitic x, then x and all clitics lower than x are lexicalized ï while clitics higher than x are not. In enclisis the verb moves higher than in proclisis, so more clitics can be seen in proclisis than in enclisis. In the auxiliary selection domain this type of approach is best exemplified by Kayne (1993). The general problem is that these approaches consistently undergenerate. Thus if 1st singular is above 1st plural, we derive the penultimate column in (1), but not the third column ï and vice versa. In enclisis, given that roughly all combinations are allowed, we will inevitably find varieties that have 2nd singular lexicalized in proclisis and not in enclisis (e. g. *te dɔrmes* óyou sleepô vs. *(nɔwa) dɔrmɛs* ó(where) do you sleep?ô, *Mulegns*, Grisons), therefore disconfirming the prediction that all clitics present in proclisis are present in enclisis. Another possible approach is proposed by Calabrese (to appear) within the framework of Distributed Morphology. He argues that

(1) is governed by a morphological markedness hierarchywhich governs the ócobliterationô of features bundles at Vocabulary Insertion. The more highly marked the feature bundles are, the more likely they are to be obliterated. Such a model still undergenerates; for instance Calabrese is aware of the ordering problems created by the third and fifth columns in (1) and by the proclitic Ø P vs. enclitic P Ø alternations. Undergeneration also characterizes the OT approach of Legendre (2010), cf. the discussion by Manzini &Savoia (2011).

Analysis. I advocate a different view of what happens in (1)-(2). The hierarchy between 1st and 2nd person in (1) is best modelled as a conceptual, rather than a linguistic one; the speaker is more salient (pragmatically) than the hearer, as in (3). Thus it is possible to have subject clitic sets where speaker reference is lexicalized, while speaker reference lacks a lexicalization, being recoverable independently of context in virtue of its salience. The reverse is not possible. This split between 1st and 2nd person may not be defined for plural referents, as in (4). Again there is no evidence that (4) refers to a syntactictically structured content, as opposed to a purely conceptual one.

(3) (pragmatic) salience of speaker reference

(4) (3) not defined in the plural

In languages which differentiate non-modal subject clitic series from modal (interrogative) ones, the modal series can keep the conditions of the non-modal one (i.e. Ø P), or it can neutralize the split, or it can reverse it. The neutralization of the split corresponds to a simple mechanism of the type in (4) with (interrogative) modality substituted for plural. Possibly the reverse of the prominence hierarchy in (3) (i.e. hearer more salient) may hold in languages which reverse the lexicalization split in interrogative contexts. Turning to the *have/ be* alternation in (2), it is tempting to read in the predominant alignment of hearer with *be* and speaker with *have* a reflex of the classical ergativity split, whereby most prominent arguments are aligned with nominative (transitive *have*), though other arguments may be aligned with absolutive (ergative *be*). In this instance, however, the reverse alignment is also possible (cf. the last column in (2)). Since the two alignments subtly differ in their consequences for the plural, possibly a markedness effect is at play, allowing for lesser variation in the marked alignment. In any event, note the substantial identity of these parameters with those defined by typological data ï despite the different grain of the variation involved (micro- vs. macro-variation).

Discussion. The models discussed in the literature (cartography, DM, OT) have a similar outlook on variation. DM (e.g. Calabrese) is clearest on variation being a PF interface matter, since it pairs abstract, (potentially) universal bundles of features with a PF exponent only in the postsyntactic Morphological Structuer component. The Kaynian ósilentô categories approach, presupposing something like an underlying universal cartographic tree, is also compatible with a PF interface view of variation, whereby certain pieces of structure are left unpronounced, though syntactically present. The view I take is that variation is defined by lexical items carving directly the universal conceptual/ categorial space. This reflects the traditional lexicalist conception of the architecture of grammar, under which the mapping between LF content and PF content, with its potential for variation, is carried out by the lexicon. Since lexical items cut the conceptual repertory in slightly different ways, and the syntax is projected from the lexicon (Chomsky 1995), differing lexicons, though built on the basis of an identical conceptual repertory, will yield different syntaxes.

My argument here is not that an account of, say, the gaps in subject clitic paradigm in (1) along the lines in (3)-(4) cannot be executed at the PF interface ï it obviously can. The point is that the non syntactically structured interface offered by the conceptual system is sufficient to yield the desired parametrization as well. Vice versa, the extra mechanisms (rigid hierarchies) made available by a syntactically structured interface are not exploited by lexicalization/ parametrization ï certainly in the cases at hand and arguably in all (sufficiently documented) instances. This is not expected if lexicalization/ parametrization is a PF interface phenomenon, feeding on syntactic(-like) structures.

Non-counterfactual past subjunctive conditionals in French
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1. Introduction. This paper focuses on **past subjunctive conditionals** (**PSCs**) in French. French PSCs have a *conditionnel 2* in the consequent. It is often assumed that French (like Greek) requires imperfective aspect as a **counterfactual** (**CF**) marker in the antecedent (Iatridou 2000, Bjorkman & Halpert 2012). This should explain why we find in the antecedent of PSCs the *plus que parfait*, a double past combining an imperfective morphology to a first layer of past, cf. (1a). Non-imperfective past tenses, a.o. the present perfect, are supposed to be banned, as confirmed by (1b).

(1) *Si on* ***(a.)*** *OK avait réfléchi* ***(b.)*** **a réfléchi, on n' aurait pas signé.*
If we (a.) think-PQP (b.) think-PRST-PERF, we NEG sign-COND.2-NEG
'If we had thought/ have thought about it, we wouldn't have signed.'

We start from the observation that this empirical picture should be refined. We found many occurrences of conditionals with a *conditionnel 2* in the consequent and a present perfect in the antecedent in corpora, cf. e.g. (2)-(3). Their context of use makes clear that they are not confined to a substandard variant of French, even if they are banished by some prescriptive grammars. Since conditionals like (2)-(3) mix the morphologies typical of PSCs and **past indicative conditionals** (**PICs**), we call them **'swing' PSCs**.

(2) *Si un missile sol-air a effectivement été utilisé, il aurait été tiré à partir d' un bateau au large de Long Island.*
If a missile ground-air indeed be-PRES.PFCT used, it be-COND.2 launched from a boat at the coast of Long Island.
'If a missile has indeed been used, it would have been launched from a boat off the Long Island coast'

(3) *Si le chef a réellement tenus [c]es propos, il aurait commis un acte grave*
If the Chief held-PRES.PFCT really these comments, he commit-COND.2 a act serious
'If the Chief really has made these comments, he would have committed a serious act'

2. Swing PSCs vs standard PSCs. A first defining property of swing PSCs *si p, q* if that they are systematically odd if p or $\neg p$ follows from the **context C** (the **set of worlds currently taken to be epistemically accessible** by all participants): they require p to be *undecided* relative to C. This suffices to explain the problem of (1b), since there, C most probably entails either p or $\neg p$. Swing PSCs thus differ from standard PSCs, since the latter can be used if p is counterfactual in C. A second related property of swing PSCs is that they are typically used when p is contextually salient but not yet accepted or rejected — p is on the Table (Farkas & Bruce 2010). A sign of this is the frequent presence of anaphorical adverbials like *effectivement/ vraiment* 'indeed/really' in their antecedent, cf. (2)-(3). Asserting a swing PSC is then a way to address the question on the Table p. Interestingly, doing so through the assertion of a swing PSC **projects a different set of future common grounds** (***projected set***, ***ps***; Farkas & Bruce 2010) than through the assertion of a standard PSC. The way we interpret A's confirmation (6) of B's reaction (5) illustrates the point. Through (5), B reacts to A's proposal (4) to add p to the common ground.

(4) A. Le Boeing 747 a été détruit par un missile, je crois/ 'The Boeing 747 was destroyed by a missile, I think'

(5) a. B. S'il avait été détruit par un missile, il aurait été lancé par l'US Navy! (standard PSC)
'If it had been destroyed through a missile, it would have been launched by the US Navy!'
b. B. S'il a été détruit par un missile, il aurait été lancé par l'US Navy! (swing PSC)
'If it has been destroyed through a missile, it would have been launched by the US Navy!'

(6) A. Tu as raison/'You're right.'

(5a) and (5b) have the same literal content $p \rightarrow q$. They also both presuppose that q is false or at least implausible in the current context C_1. But they differ through their implicated content. As an answer to (5a), (6) is easily understood as a confirmation to $p \rightarrow q$ but also to $\neg p$, because the rule of *modus tollens* is applied ($ps = \{C_1 \cup \{p \rightarrow q\} \cup \{\neg p\}\}$). By contrast, as an answer to (5b), (6) *cannot* be interpreted that way. To begin with, the reaction (5b) to the proposal (4) neither amounts to rejecting p, nor to accepting it. Rather, it invites to choose between (i) rejecting p and (ii) challenging the presupposition $\neg q$ and accepting both p and q. The context state after a swing PSC is thus *inquisitive* wrt to p: its *ps* contains two future common grounds, namely $ps = \{C_1 \cup \{p \rightarrow q\} \cup \{\neg p\}, C_1 \cup \{p \rightarrow q\} \cup \{p\} \cup \{q\}\}$. However, A can still react to (5b) through (6) in order to signal she accepts the imposed choice. She can then continue by signaling which future common ground she goes for, either through (i) *You are right. The*

missile theory is after all very unlikely (A chooses $\neg p$), or (ii) *You are right. After all it isn't the first time that the Army is involved in such disasters* (A goes for p and q). Note that (ii) *cannot* be used to assent to (5a).

3. Swing PSCs vs PICs. Swing PSCs also differ from PICs in three respects. **1.** PICs can sometimes be used as a rhetorical device when p follows from C (*It rained. If it rained, the match was cancelled*, cf. e.g. Dancygier 1999); this is not possible with swing PSCs. **2.** PICs *à la* Anderson 1951 (e.g. (7b)) are odd, because they are totally uninformative (von Fintel's 1997). By contrast, 'Andersonian' swing PSCs are natural, as shown by the acceptability of (7a). **3.** Except in Andersonian cases, swing PSCs tend to presuppose that the consequent q is false (or at least implausible) in C. This is not the case with PICs.

(7) *Si John a pris de l'arsenic, il (a.) aurait montré (b.) # a montré exactement les*
If John take-PRST.PFCT of-the arsenic, he (a.) have-COND.2 (b.) have-PRST.PFCT exactly the
symptomes qu'il a maintenant
symptoms that he has now
'If John has taken arsenic, he would have shown/has shown exactly the symptoms that he has now'

4. Swing PSCs *are* subjunctive conditionals. Why should we analyse 'swing PSCs' as subjunctive rather than indicative conditionals, if (i) their morphology only partly matches the one of PSCs and (ii) they do not implicate that p is false? We endorse here the view according to which the difference between PSCs and PICs mainly lies in the kind of domain (D(w)) the conditional quantifies over. Following e.g. von Fintel's 1997, we assume that the default pragmatic constraint on quantification over worlds performed by conditionals is that D(w) is entirely in C. The indicative being *unmarked*, it does not signal anything against this constraint D(w)$\subseteq$C. The subjunctive is *marked* and indicates a violation: SCs presuppose that D(w) is partly outside C (D(w)$\subsetneq$C). This explains why standard PSCs are used when the antecedent p is taken to be CF, but also when D(w) needs to be widened for some other reason (e.g. if p and q follow from C but D(w) contains $\neg q$-worlds, as in Andersonian PSCs according to von Fintel's 1997's analysis). The facts described in § 2 and 3 allow to conclude that swing PSCs **are** PSCs: their D(w) contains either CF/implausible q worlds (cf. e.g. (2)-(3) & (5b)), or CF/implausible $\neg q$ worlds (cf. (7a)).

5. The role of the imperfective. Swing PSCs allow to better tease apart the contribution of aspect/tense morphology in the antecedent and the consequent of PSCs. Their properties point to the following conclusions. **1.** The 'subjunctivehood' of French PSCs (that we equal with D(w)$\subsetneq$C) depends on the *conditionnel 2* morphology in the consequent (found in swing and standard PSCs), and *not* on the extra-layer of past in the antecedent (not present in swing PSCs). This is confirmed by the fact that PSCs cannot be obtained by combining a *plus-que-parfait* in the antecedent and a non-*conditionnel* indicative in the consequent (these sentences are either out, or force a temporal interpretation of the *pqp* and are PICs). **2.** The 'CF antecedent falsity' of PSCs depends, in French, *not only* on the *conditionnel 2*, *but also* on the imperfective in the antecedent. Given that the *conditionnel* can be analysed as the morphological spell-out of the imperfective plus the future (Iatridou 2000), this suggests that imperfectivity in **both** clauses is necessary to signal *CF antecedent falsity*.

6. A case of agreement failure. In several treatments of PSCs (e.g. Ippolito 2003, Arregui 2004), the past tense morpheme *in the main clause* is used to go back to a time where the proposition could still be true. A way to implement this is to have the past tense outscoping the modal (NOW PAST(MOD(p$\rightarrow$q)). Tense/aspect morphology *in the antecedent* is often analysed as a case of agreement with the morphology in the matrix clause (cf. e.g. von Fintel 1997, Arregui 2004, Anand & Hacquard 2009). Swing PSCs can then be conceived as a case where agreement *fails* to hold. We propose the idea that through this agreement failure, the speaker indicates that subjunctivehood is not obtained through the counterfactuality of p, i.e. that *it is not* because p is CF that D(w) reaches outside of C.

THE GRAMMAR OF THE ESSENTIAL INDEXICAL

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Pronouns are said to uniquely exhibit 'essentially indexical' forms of referential use (KAPLAN 1989, PERRY 1993, LEWIS 1983): for example, 'I' does not mean 'the speaker' or 'Bob', even if I utter 'I' and am Bob. Commonly, the phenomenon is modeled formal-semantically through a character-content distinction and evaluation relative to both worlds and contexts. Here we ask why the phenomenon exists in the first place, and argue that inspection of the non-linguistic context does not in fact bring out what makes 1st person reference to an individual different from 3rd person reference to it. Pronoun use in mental illness (e.g. WATSON et al., 2012) also suggests that a speaker can know the speaker/agent of the context without knowing whether it is 'I'. We argue that essential indexicality involves the Person system essentially and is uniquely grammatical rather than lexical or semantic. Indeed, qua *lexical items*, pronouns can lack such uses.

LONGOBARDI 2005 proposes the 'Topological Mapping Hypothesis', according to which the forms of nominal reference are not regulated lexically or semantically but by the 'topology' of the nominal phase (object-reference iff N-to-D movement or expletive-associate CHAINS). SHEEHAN & HINZEN 2011, interpreting the phase as the smallest unit of referential-deictic significance in grammar (ARSENIJEVIĆ & HINZEN 2012), capture the relevant topological principle as 'movement to the edge', extending it further to the *clausal* phase (fact/truth reference iff T-to-C movement, based on evidence from V2, root phenomena, and expletive-associate CHAINS). Irrespective of lexical category, then, the phase exhibits a *phase interior* providing descriptive content, and a *phase edge*, which needs to be strongly filled for referential uses:

(1) a. (saw) [$_{\text{EDGE}}$ *(*the*) [$_{\text{INTERIOR}}$ *mayor of Paris*]]

b. (resents) [$_{\text{EDGE}}$ *(*that*) [$_{\text{INTERIOR}}$ *the mayor of Paris is dead*]]

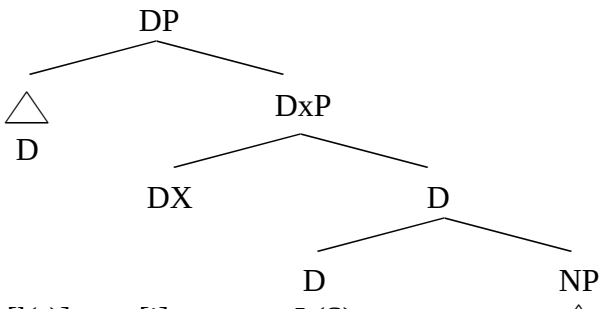
Interpretations of this template range from purely predicative (maximally intensional) to quantificational (scope-bearing), to 3rd person object-referential. Here we extend the relevant mapping principles further, to deictic to personal forms of reference, as follows:

(2) **TOPOLOGICAL MAPPING PRINCIPLES**:

a.	*Predicative*	→	phase interior only	→	[$_{\text{EDGE}}$ ∅ [$_{\text{INT}}$ *man*]]
b.	*Quantificational*	→	edge + interior	→	[$_{\text{EDGE}}$ a [$_{\text{INT}}$ *man*]]
c.	*Referential* (3P)	→	edge + <interior>	→	[$_{\text{EDGE}}$ *John* [$_{\text{INT}}$ <*John*>]]
d.	*Deictic reference*	→	edge + (interior)	→	[$_{\text{EDGE}}$ *this* / ☞ [$_{\text{INT}}$ (*man*)]]
e.	*Personal* (1st/2nd)	→	phase edge only	→	[$_{\text{EDGE}}$ *I* [$_{\text{INT}}$ ∅]]

We demonstrate (2e) through a systematic morpho-syntactic decomposition of Romance object clitics, which exhibit a stepwise *increase* in grammatical complexity with each layer in the hierarchy of referentiality above. MARTIN 2012 argues for the following structure:

(3)



⇒ dative (deictic)

⇒ strong accusative (referential)

⇒ weak accusative (quantificational)

⇒ partitive (predicative)

a. CATALAN:	[l(s)]	[i]	L(S)	△
b. PADUAN:	D	[ge]	D	
c. SARDINIAN:	D	[bi]	[li(s)]	

d. FRENCH: [l] [ui] D
e. SPANISH: [l]-e DX D

This tree depicts four hierarchically ordered layers. Following KAYNE 2008 and CAHA 2009, MARTIN 2012 suggests that grammatically complex clitics may contain as subparts grammatically simpler ones, and shows this for dative clitics, which amount to the structure [D + DEIX], as transparently shown by Catalan (3a). The hierarchy is mirrored in the morphological structure and syntactic behavior of clitics, and maps onto the four interpretive classes of (pro-) nominals. Thus, partitive clitics are entirely devoid of extended structure. They are pro-forms for empty noun phrases, and can only be interpreted predicatively, occupying the interior of the nominal phase. Climbing up the phase, we find weak accusative clitics next, which project a D layer that endows them with gender and number features, corresponding to a 'lower' region of D that allows φ-features. These correlate with weak referentiality properties (cardinal interpretations) and feature scope and bound readings. Strong accusative clitics involve an additional deictic layer (JAYASEELAN & HARIPRASAD 2001). D stays in place, and this allows gender features, but D is bound by the deictic head, which imposes a referential (3rd person) strong interpretation with referential import. The difference between the two kinds of accusative clitics is not morphological in Romance, but it is in languages like Kannada (LIDZ 2006) or Hebrew (DANON 2006). Dative clitics in turn pattern with personal clitics, as they are dependent for interpretation on the system of participants in the discourse, involving an additional D layer on top of the deictic head. That additional head, overtly visible in Catalan (3a), gives them their deictic interpretation, which is exactly the same that we see in personal clitics (1st&2nd person). Because the dative can be lexicalized by any part of the complex dative phrase, the others remaining silent, it is quite expected that the dative can have the overt form of an accusative (standard Catalan 3rd person plural dative: *els*), the form of a locative (Paduan *ghe*), the form of a locative plus an accusative (Sardinian [bi+lis]), or the form of a dative plus a locative (colloquial Catalan [els+hi]). That extra D layer – an extension of the phase edge leading to a D-field and triggering D-to-D movement – provides these clitics with a number of morphological and syntactic properties: (i) Dative (and personal) clitics don't get gender features (in virtually all of Romance), as they are blocked by person features (gender and person features are in complementary distribution); (ii) The [D + DEIX] configuration accounts for the intriguing morphological form of dative clitics in some Romance languages, like for instance Catalan [els hi], with [hi] a locative/deictic clitic. It also accounts for the formal syncretism of dative and locative clitics in Northern Italian languages such as Paduan (3b); (iii) The fact that dative clitics include accusatives also gives a principled explanation to many syntactic puzzles of these clitics, including opacity in clitic clusters, or the Person Case Constraint (BOECKX & MARTIN, *in press*).

CONCLUSION: Indexicality is essential because forms of reference systematically exhibiting greater grammatical complexity cannot be replaced by forms involving lesser complexity.

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Motivating head movement: The case of negative inversion in West Texas English

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Negative inversion (or Declarative Negative Auxiliary Inversion) is a phenomenon present in some varieties of North American English such as African American English, Appalachian English, and West Texas English (WTE). Constructions exhibiting negative inversion are declaratives and contain a clause-initial negated auxiliary or modal followed by a quantificational subject, as in (1). The corresponding non-inverted construction is often also possible, as in (2).

(1) *Didn't everybody go to the party.* (WTE; Foreman, 1999)

(2) *Everybody didn't go to the party.* (WTE; Foreman, 1999)

The properties of negative inversion: (i) it can only occur in negated clauses containing the sentential negation morpheme *n't*, (ii) it is licensed in embedded clauses with an overt complementizer, and (iii) it has a restriction on the types of subjects it allows. Regarding the last property, it is typically observed in the literature that definite subjects are disallowed. I show that the subject restriction is more subtle, and argue that negative inversion will only occur with quantificational subjects which interact scopally with negation. Foreman (1999) points out that the sentence in (2) is ambiguous. In one interpretation, the subject quantifier scopes over sentential negation and in the other interpretation, negation scopes over the quantifier. The sentence in (1), however, is unambiguous with only negation scoping over the quantifier. The present analysis builds on these scope facts.

I follow prior movement analyses of negative inversion in assuming that the construction exhibiting negative inversion is derived from its non-inverted counterpart by head movement of the auxiliary to a position higher than the subject (Labov, Cohen, Robins, & Lewis, 1968; Labov, 1972; Martin, 1993; Foreman, 1999; Green, 2008, 2011). Following Foreman (1999), I assume that the auxiliary raises to $\text{Neg}_2{}^o$, a projection available in the CP layer of WTE which occurs above T^o and below C^o. The structure of (2) is derived as in (3) and the structure of (1) is derived as in (4).

(3) [$_{\text{TP}}$ everybody didn't ~~everybody~~ go to the party]

(4) [$_{\text{Neg}_2{}^o}$ didn't [$_{\text{TP}}$ everybody ~~didn't~~ ~~everybody~~ go to the party]]

This analysis differs from other analyses in motivating head movement as a way to resolve scope ambiguity. I propose that negative inversion can only be derived from scopally ambiguous structures and furthermore, that negative inversion will result in negation taking wide scope over the subject. I argue that movement in unambiguous structures is ruled out by positing a scope economy principle in the spirit of Fox (2000), as in (5).

(5) *Principle of Scope Economy*
A scope-shifting operation can move an operator *O* overtly only if the resulting structure is less ambiguous than its source, i.e.

$$[\![\ \text{X}\ [\ \text{O}\ \ \text{Y}\ [\ \text{t}\ ]\ ]\ ]\!] \subset [\![\ \text{Y}\ [\ \text{O}\ ]\ ]\!]$$

I assume that syntactic structure can be scopally ambiguous and that the interpretation of a structure can be a set of meanings. The interpretation of the pre-movement structure in (3) has two meanings, one in which the quantificational subject scopes over negation and the other in which negation scopes over the quantifier, whereas the interpretation of the post-movement structure (4) contains only the latter meaning.

Structures containing non-quantificational subjects, as in (6), do not have inverted counterparts, as in (7), because derivations containing movement which does not derive a change in meaning are ruled out by economy principles.

(6) *Jack can't beat them.* (WTE)

(7) **Can't Jack beat them.* (WTE)

Subjects which are not definite but which do not interact scopally with negation, *few* (8) and *some* (9), are not ruled out in previous analyses but they are in the present analysis. Because the pre-movement structure for these sentences is unambiguous, negative inversion is ruled out by the principle of scope economy.

(8) **Didn't few people live there then.* (WTE)

(9) **Didn't some people come.* (WTE)

I argue for a movement analysis of negative inversion which resolves scopal ambiguity. Adopting a principle of scope economy provides a uniform account of the properties of negative inversion. Negative inversion is licit when negation interacts scopally with a quantificational subject because the resulting structure is less ambiguous whereas movement in sentences lacking ambiguity is ruled out by economy principles.

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Limits on Noun-suppletion

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Suppletion refers to the phenomenon in which a single lexical item is associated with two phonologically unrelated forms, the choice of form depending on the morphosyntactic context. Consider the familiar example of the *good-better-best* paradigm, in which the adjective root surfaces as *good* in isolation but as *be(tt)* in the context of the comparative (and superlative). Though rare in absolute terms, suppletion is frequently observed across languages (Hippisley *e.a*. 2004). Indeed, when we look at nouns, we observe that languages can display suppletion for number, but not in the presence of case. Consider data from Ket (spoken in the Krasnoyarsk region): the singular forms in (1) have a phonologically distinct root from the plural forms of the corresponding lexical items (cf. regular forms in (2)).

(1)

	SG	PL
'tree'	:oks'	aʔq
'child'	dyl'	kat
'man'	kɛʔt	dɛʔ-ŋ

(2)

	sg	pl
'mother'	am	ama-ŋ
'knife'	doʔn	doʔna-ŋ
'crow'	kyl	kyle-n

(Ket; Surrey Database)

In the Surrey Suppletion Database, 12 out of 34 genetically diverse languages were found to display number-driven root-suppletion, while only one noun suppletes for case (see below).

In contrast, pronouns regularly supplete not only for number but for case as well (3):

(3) (German; 1st person)

	SG	PL
NOM	ich	wir
DAT	mir	uns
ACC	mich	uns

In this paper, I argue that pronouns and lexical nouns have distinct structures. These structures interact with locality restrictions, which results in allowing for case-driven suppletion in pronouns but prohibiting it in nouns.

My argument crucially relies on hierarchical structure, and so it is cast in Distributed Morphology (DM; Halle & Marantz 1993). In DM, features are distributed over nodes, which are subject to Vocabulary Insertion (VI); e.g., [1-SG-NOM] corresponds in English to /ai/ 'I'. Suppletion is modeled as (a type of) contextual allomorphy: a feature (set) has a context-free default exponent, but in a more specific context a different exponent takes precedence (Bobaljik 2012). Consider again the *good-better-best* paradigm; its regular (context-free) exponent is *good* (4) but in the context of the comparative it is *be(tt)* (5).

(4) $\sqrt{\text{GOOD}} \Leftrightarrow$ good

(5) $\sqrt{\text{GOOD}}$ / _ Comparative $\Leftrightarrow$ be(tt)

What is accessible as a potential context for VI-rules is restricted by cyclicity (Embick 2010, Bobaljik 2012). Certain nodes delimit domains and processes are confined to operate within a domain. In particular, a *phasal* node induces the spellout (including VI) of its sister, and, as such, immobilises it for further interaction. In (6), if B is a phasal node, then B forces the spellout of its sister: A. On the assumption that spellout freezes a string, C and A cannot interact across B (Embick 2010, Bobaljik 2000,2012; see Scheer 2010 for an overview).

(6) [[A B^{phasal}] C]

Note, though, that the node that triggers VI of its sister may serve as a context for insertion (Bobaljik 2000, 2012). As such, B can condition suppletion of A.

I assume pronouns to be purely functional (Postal 1969, Longobardi 1994), containing (a complex of) φ-features and (a complex of) case features (K); in addition, they may contain a D-projection (7). In contrast, nouns contain a root and category node in addition to φ and K (8).

(7) *pronouns*
[[(D) φ] K]

(8) *nouns*
[[[√ n] φ] K]

Aside from the category-defining node *n*, the complex of φ-features constitutes a phase (cf. Sauerland ms, 2008).

First consider lexical nouns. VI proceeds cyclically from the root outwards so we start at the root. Next, on theories including a category-defining node directly above the root, this node does not interfere for purposes of locality (Embick 2010) Thus, when we reach the φ-features, which will trigger spellout (and VI) of the root, root-suppletion by number is possible since number is sufficiently local to the string undergoing VI. However, when we reach case, the root will not be accessible since the root has already been spelled out on the φ-induced cycle. Thus, we derive the lack of case-driven root-suppletion in nouns.

In contrast, pronouns are impoverished compared to lexical nouns in that they lack a root and category-defining node (*n*) below φ and K. I assume that (first and second) personal pronouns also lack D, while demonstratives do contain a D projection (personal pronouns with more internal structure are subject to the same restrictions as demonstratives). In the absence of D, suppletion is expected since K is local to φ upon VI of the latter. When a D projection is present, we account for Case-driven suppletion as follows. Radkevich (2010) and Bobaljik (2012) argue that portmanteaux extend locality. In effect, a portmanteau makes the node dominating the elements within it the focal point; i.e., whether by pre-VI fusion of morphosyntactic nodes or VI-insertion at non-terminal nodes, the relevant node at which VI (sensitivity to suppletive contexts) applies is higher than the VI-targeted nodes prior to the portmanteau. Applying this to pronouns, when D and φ form a portmanteau, this provides an opportunity for Case-driven suppletion, since K then is local to the "D-φ" portmanteau; indeed, D-pronouns in Xakass (Surrey Dababase) and Georgian (Hewitt 1995) display suppletion for case but crucially only when they form a D-φ portmanteau.

Finally, as mentioned above, there is a counter-example to the claim advocated here that lexical nouns do not display suppletion for case. Archi (a North-Caucasian language spoken in Southern Daghestan) displays 'regular' suppletive nouns that show suppletion for number (9) (Hippisley *e.a.* 2004). However, the form for *father* suppletes for case (10).

(9)

		SG	PL
'man'	ABS	bošor	Lele
	ERG	bošor-mu	Lele-maj
'corner of a sack'	ABS	bič'ni	boždo
	ERG	bič'ni-li	boždo-rčaj

(10)

		SG	PL
'father'	ABS	abt:u	--
	ERG	um-mu	--

Intriguingly, though, (10) is a *singulare tantum* and the form does not have a corresponding plural. Indeed, I argue that Archi's *father* is defective in that it lacks number (cf. Pesetsky 2012). Furthermore, I argue that the absence of number in this particular item opens up the door for case-driven root-suppletion. Specifically, the lack of number in this item means the φ-feature complex is deficient and, as such, I assume it does not trigger spell-out. Consequently, the spellout domain will be extended to include [√-n-φ]; therefore, the root remains susceptible to the case node, which allows for case-driven root-suppletion.

In sum, the interaction between structural differences and locality restrictions account for the divergent behaviour of pronouns and nouns regarding case-driven suppletion, and, as such, contributes to the formalisation of locality domains as employed in DM. The curious behavior of Archi's *father* is explained by appealing to domain extension due to absence of number. The proposal advocated here relies on (morpho)syntactic structure playing a crucial role in the discrepant behavior, which raises the question whether these observations can be captured in frameworks that deny that hierarchical syntactic structure plays a role in the morphology.

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Unbounded Successive-Cyclic Rightward Movement

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1. Introduction. The existence of rightward movement faces at least two serious challenges. First, Ross (1967) argued that it is subject to stricter locality conditions than, for instance, wh-movement. Second, Akmajian (1975) argued that rightward movement is not obviously successive-cyclic in the way that wh-movement is often taken to be (cf. Chomsky 1977). This paper argues that rightward DP-movement actually displays both of these properties given appropriate licensing conditions. In particular, rightward movement can apply successive-cyclically in a potentially unbounded fashion when licensed by a parasitic gap as in (1), adapted from Engdahl (1983).

(1) John offended *e* by not recognizing *pg* immediately – my favorite uncle from Cleveland.

2. The Nature of the Displacement Operation. Based on the presence of derived island effects (Wexler & Culicover 1980) and non-sensitivity to the Right Edge Restriction Wilder (Wilder 1999), the paper argues that structures like (1) are not derived via Right Node Raising (cf. Postal 1994, a.o.), but by rightward DP-movement. Starting from the observation by (Larson 1989) that a parasitic gap is obligatory when a DP is displaced rightward over an adjunct clause (2), the movement operation is suggested to be licensed by the parasitic gap.

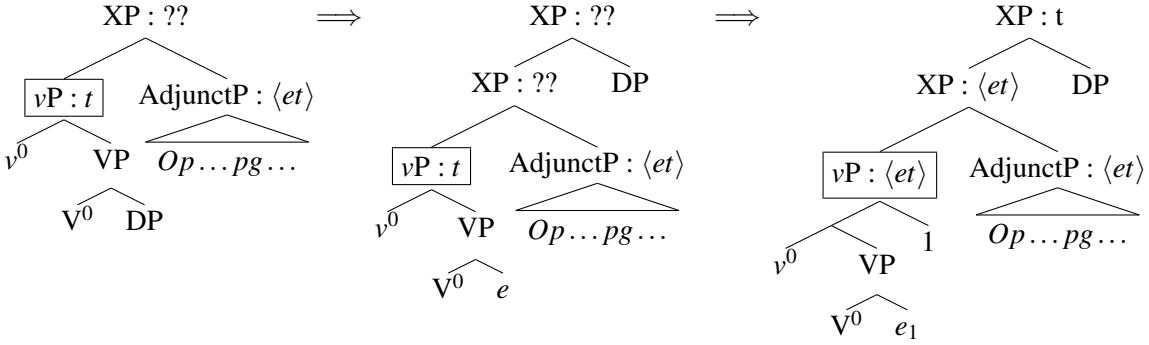
(2) Sam stole *e* because Kim wouldn't buy [*pg*/*anything] for him – an autographed picture of Jonathan Frakes.

Diagnostics including VP-ellipsis, VP-fronting, and a form of antecedent-contained deletion suggest that only adjunct clauses adjoined above the locus of typical focus-driven Heavy-NP Shift at the edge of *v*P require the parasitic gap. Thus, the parasitic gap in (1) and (2) is licensing additional movement beyond Heavy-NP Shift in violation of the Right Roof Constraint (3).

(3) RIGHT ROOF CONSTRAINT (adapted from McCloskey 1999)
Rightward movement may move a DP to the right edge of the *v*P that most immediately contains X, but no further.

3. Type-Driven Rightward Movement. The paper proposes a theory for the derivation of rightward DP-movement and parasitic gaps that achieves the representation for parasitic gap licensing proposed in Nissenbaum (2000) but allows a parasitic gap to license movement beyond *v*P according to local economy considerations. The parasitic gap domain is a null-operator structure, and thus a $\langle et \rangle$ predicate, which is merged cyclically to the type *t* matrix clause. Rightward movement is allowed because it converts the matrix clause to a derived predicate, which allows it to compose via predicate conjunction with the parasitic gap domain. This repair strategy is made possible by a logical extension of the operation Merge based on the ideas that Merge can be counter-cyclic (Lebeaux 1988, a.o.) and should be decomposed into a number of smaller operations (Hornstein 2009). I propose a sub-type of Merge called *Mixed Merge*, which has been decomposed into the steps in (4).

(4)



The operation that establishes a sisterhood relation between syntactic objects cyclically combines a copy of the DP with the matrix clause to extend the tree. However, the operation that inserts a binder index after movement applies counter-cyclically to change the *v*P node into the needed $\langle et \rangle$ derived predicate. Thus, this movement, like quantifier raising, is type-driven.

4. Consequences and Predictions. This analysis straightforwardly accounts for instances of a parasitic gap in an adjunct not in the same clause where the rightward moved DP originates (5).

(5) Tim thinks [that Pam already bought *e*] because he knows she loved *pg* thoroughly – the documentary about Bengal tigers.

This fact, in conjunction with the more basic obviations of the Right Roof Constraint like in (2), suggests that rightward DP-movement is not subject to unique locality conditions and is potentially unbounded, just like wh-movement, when the appropriate licensing conditions are present.

It is also possible for a parasitic gap to simultaneously appear in an adjunct clause below and in an adjunct clause above negation (6).

(6) Sam didn't buy *e* before tasting *pg* because he didn't like *pg* last time – the German potato salad at this deli.
"Because Sam didn't like the potato salad last time, it's not the case that he bought it before he tasted it."

Given the analysis being proposed, the displaced DP must have ultimately moved beyond the *v*P and above negation. But it also must have moved cyclically through a position above each adjunct in order to repair the type mismatch between the parasitic gap domain and the matrix clause.

As a final point, it was noted above that this system allows the rightward movement to be licensed by a local economy constraint on movement. This is a desirable property of the current analysis that the paper argues is absent from the pure late-merge analysis in Nissenbaum (2000). As Nissenbaum notes, a parasitic gap is required in every adjunct clause that the DP moves past. This is also true when the adjuncts are adjoined to different domains in (7) below, just as above.

(7) Sam didn't buy *e* before tasting [*pg*/*the sample] because he didn't like *pg* last time – the German potato salad at this deli.
"Because Sam didn't like the potato salad last time, it's not the case that he bought it before he tasted the sample."

If a global economy constraint licensed this movement, one would predict that a single parasitic gap in the higher adjunct should be enough to license the rightward displacement in (7).

5. Conclusion. To conclude, this paper not only supports the existence of rightward movement, but demonstrates its potential unboundedness (a result reached independently for Right Node Raising constructions by Sabbagh 2007) and its successive-cyclic application. These supposed differences between rightward DP-movement and wh-movement, then, are only apparent. The remainder of the paper spells out the claim that the true difference between rightward DP-movement beyond typical Heavy-NP Shift and wh-movement lies purely in their licensing conditions.

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Same, different, other, and the historical microsyntax of the Degree Phrase

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This presentation has two goals: first, to extend the coverage of microcomparative syntax to a neglected domain (DegP, the extended adjectival projection), and second, to consider the implications of the newly uncovered data for the theory of syntactic change in general.

Much generative research on syntactic change has focused on the functional heads C, T, and D, but the Deg head has received little attention. For example, Roberts and Roussou's (2003) landmark study makes only passing mention of "the various degree markers which may make up a functional system associated with AP" (223). This presentation will advance our understanding of syntactic change in the DegP by examining the English "identity adjectives" *same, different*, and *other*, a little-studied class that displays micro-syntactic variation both diachronically and synchronically.[1] The analysis will reveal a grammaticalization pathway from A (adjective) to Deg (degree head) to Ident (a proposed category in the DP spine). An item's diachronic journey through the Deg position will be shown to coincide with its ability to possess comparative grammatical properties, as expected if Deg is the locus of comparative grammatical features. The analysis is consistent with a micro-parametric model of syntactic change in which grammaticalization involves an upwards reanalysis from one head to the next (e.g. Roberts and Roussou 2003), with the selectional properties of the grammaticalizing item shifting to reflect those of its newly reanalyzed category.

The data. Synchronically, *same, different*, and *other* pattern grammatically with **comparative** adjective forms rather than unmarked absolute forms. Most strikingly, they can precede a numeral without requiring focus, like comparatives but unlike absolutes:

(1) IDENTITY ADJ *the **same/other** three cars*
COMPARATIVE *the **bigger** three cars*
ABSOLUTE ADJ *#the **big** three cars* (only acceptable with focus on *big*)

Same and *different* are also able to **select comparative clauses** (2) and take the same **degree modifiers** as comparative forms do (3).

(2) IDENT *the **same** answer* [***as** I expected*]
COMP ***as good** an answer* [***as** I expected*]
IDENT *a **different** answer* [***than** I expected*]
COMP *a **more thorough** answer* [***than** I expected*]

(3) IDENT *exactly **the same** answer*
COMP *exactly **as good** an answer*
IDENT *a far/way **different** answer*
COMP *a far/way **more thorough** answer*

In the past, *other* shared the comparative properties in (2-3), as shown by the examples in (4):

(4) a. *Neyther is the church reformed in our dayes, **another** church* [***than** that deformed in the dayes of our fore-fathers*]. (1656; OED)
b. *This Italian poetry is in a world far **other** from ours of to-day*. (1879; OED)

However, in most contemporary English dialects, *other* is no longer able to take comparative clauses or degree modifiers, as shown in (5). Also unlike *same, different*, and typical adjectives, *other* cannot function predicatively (*It seems **the same / different / *other***).

(5) a. ****another** answer* [***than** I expected*] b. **a far/way **other** answer*

Synchronic analysis. My core proposal is that *same* and *different* belong to the functional category Deg rather than the lexical category A, differing from the prototypical Deg heads *as* and *more/-er/less* only in that they do not select an AP complement. Identity adjectives are thus "intransitive Deg", just as Abney (1987) argued that pronouns are intransitive D. That is, *same* is "intransitive *as*" and *different* is "intransitive *more/-er/less*":

[1] While I am aware of no other generative syntactic work on this class of words, their semantics has received much attention (e.g. Carlson 1987, Beck 2000, Alrenga 2007, Barker 2007, Matushansky 2010) and Tine Breban has examined them from a functionalist perspective in an extensive series of studies (e.g. Breban 2002/03, 2010).

(6)

	D	Deg (equative)	Deg (non-equative)
TRANSITIVE	*the* NP	*as* AP (*as...*)	*more/-er* AP (*than...*), *less* AP (*than...*)
INTRANSITIVE	*it*	*same* (*as...*)	*different* (*than...*)

Identifying *same* and *different* as comparative Deg explains why they pattern grammatically with comparatives rather than absolutes. As for *other*, which has lost its former comparative and adjectival properties and now serves a quasi-referential function, I propose that it occupies a higher functional head in the DP spine. For convenience, I will assign this head the ad hoc label Ident ("Identity"), mirroring Breban's (2010) functionalist analysis, but the only crucial point here is that contemporary *other* occupies some position in the DP rather than the DegP.

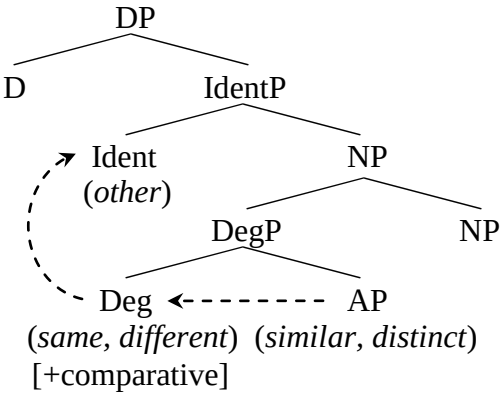
Diachronic analysis. The synchronic analysis above is only a snapshot of a dynamic system. Although *same* has long been grammatically stable (Breban 2002/03), *different* and *other* have evolved in ways that are captured by the proposed model.

Different. The preceding discussion focused on *different* as Deg (*different*$_{\text{Deg}}$ *than...*), but this variant of *different* is in fact a recent innovation; *different* was formerly a purely lexical adjective, selecting a comparative PP (*different*$_{\text{A}}$ *from...*) just as the similar adjective *distinct* does (and this lexical variant of *different* still exists). Modelling the development of *different*$_{\text{Deg}}$ is straightforward: along with the change of its category from A to Deg, its lexical selectional property (+PP) was replaced by the categorial selectional property of comparative Deg (+CP) and its lexical meaning was reinterpreted as the Relation element of Kennedy's (1999) general denotation for all Deg heads, supplying the relation "not equal."

***Other*.** As shown above, *other* has lost its comparative properties and taken on a quasi-referential function. To account for this change, we can posit the reanalysis of *other* from Deg to some higher head in the DP (here "Ident"), thus removing it from the Deg system altogether.

***Different* thus illustrates how an item may gain comparative properties upon entering the Deg category while *other* illustrates the loss of such properties upon exiting Deg.** The upwards grammaticalization trajectory revealed by this analysis is shown in (7).

(7) GRAMMATICALIZATION PATHWAY



Summary. Synchronic and diachronic data from English illustrates that "identity adjectives" constitute a valuable empirical domain for testing microparametric theories of syntactic change.

Extensions. In addition to the core proposals stated above, the presentation will also expand the empirical picture by discussing a possible incipient change in English (the transitivization of *same*) and showing striking parallels to the English system in the Algonquian language Innu-aimun.

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Selectivity in L3 transfer: effects of typological and linguistic similarity in the L3 Turkish of Uzbek-Russian bilinguals

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A sentence such as (1) is scopally ambiguous: It has a surface (see (1a)) and an inverse scope ((1b)) interpretation:

(1) Jack didn't find two guys.
a. It is not the case that Jack found two guys. (e.g. Donald found one guy, three guys, no guys, etc.)
b. There are two guys that Jack didn't find.

L1 acquisition research has found, with truth-value judgments (TVJs), that English-speaking children consistently interpret these sentences on their surface scope reading, though adults prefer inverse scope readings (e.g. Musolino 1998; Musolino, Crain & Thornton 2000; Lidz & Musolino 2002). Given the Semantic Subset Principle (Crain, Ni & Conway 1994), one interpretation of these facts has been that (1a) is children's initial hypothesis, and that they add (1b) on the basis of positive evidence (though see Gualmini 2003, 2004). Given also that there are languages like Turkish, which allows only (1a) (see (2)), it has been argued that there is a binary parameter of UG which distinguishes superset languages like English from subset languages like Turkish (Özçelik 2011):

(2) Jack iki kişi bul-ma-dı.
Jack two person find-NEG-PAST
"Jack didn't find two guys."

✓ a. It is not the case that Jack found two guys. (e.g. Donald found one guy, three guys, no guys, etc.)
* b. There are two guys that Jack didn't find.

We focus on this issue, for the first time, from the perspective of L3 acquisition. We investigate L3 acquisition of Turkish by Uzbek-Russian bilinguals. Uzbek, a Turkic language that is typologically and structurally similar to Turkish and is mutually understandable with it, is surprisingly like English with respect to this parameter. As with English, it has both surface and inverse scope interpretations of sentences with quantification and negation (see (3)):

(3) Jack ikki kishi-ni top-ma-di.
Jack two person-Acc find-NEG-PAST
"Jack didn't find two guys."

✓ a. It is not the case that Jack found two guys.
✓ b. There are two guys that Jack didn't find.

On the other hand, Russian, which is typologically more like English than Turkish, behaves like Turkish with respect to this parameter, as it does not, arguably, allow quantifier raising (see e.g. Ionin 2001):

(4) Jack ne našel dvux mal'čikov.
Jack not found two boys
"Jack didn't find two guys."

✓ a. It is not the case that Jack found two guys.
* b. There are two guys that Jack didn't find.

In other words, the learning scenario here is ideal in that it allows us to disentangle the effects of typological vs. structural similarity in leading to syntactic transfer. If, as maintained by the Cumulative Enhancement Model (CEM) (Flynn et al. 2004), transfer is either facilitative or remains neutral, the similarity between Russian and Turkish with respect to the structure investigated here, i.e. quantificational scope, should have a scaffolding effect on the acquisition of the relevant structure in Turkish by Uzbek-Russian bilinguals; knowledge of Russian should, in other words, enhance subsequent acquisition of Turkish while knowledge of Uzbek remains neutral in this regard. To put it another way, under the CEM, transfer is not expected to obtain in the Uzbek to Turkish direction. If, on the other hand, typology is the deterministic factor, as proposed by the Typological Primacy Model (TPM) (Rothman 2011), linguistic properties of the closest (psycho)typological language, i.e. Uzbek in this case, will constitute the initial state, rather than Russian, even though Russian provides the best/most ideal source for transfer here. In other words, non-facilitative transfer, under the TPM, is possible, based on perceived typological proximity.

To pursue these issues, we conducted an experiment, testing adult Uzbek--- Russian bilingual learners of Turkish, of different proficiency levels, on the same structures, and using the same task. The task involves TVJs of sentences like (2). Sentence (2) is presented following a story where *Jack* Plays hide---and---seek with four of his friends, and, in the end, finds two of the four guys. In such a context, (2) would be true on its inverse scope interpretation (if available, as with (1b)) whereas it is false on its surface scope interpretation. Given the Maxim of Charity (Grice 1975), one would choose the interpretation that makes the sentence true (i.e. inverse scope) if both interpretations are accessible, and would, therefore, accept (2). If, on the other hand, the (2b) interpretation is not available, as with the target language Turkish, one would reject (2), since the only interpretation that is available is the one that makes the sentence false. Preliminary results, based on 7 Uzbek---Russian bilingual learners of Turkish, show that these learners accept such sentences, indicating that they have the additional inverse scope interpretation that is not available in Turkish or Russian, but is available in Uzbek, a response pattern similar to Uzbek (and English) native speakers.

In conclusion, even though one of the previously acquired languages (i.e. Russian) provides the features needed for immediate successful L3 acquisition, as this language is also the system that is perceived as less typologically similar to the target language (Turkish), transfer is not activated, contra the CEM. Rather, as is predicted by the TPM, transfer is activated on the basis of (perceived) typological similarity, even though this leads to a less optimal result, as the source language (Uzbek) and the L3 (Turkish) behave rather differently with respect to the parameter tested here, despite the general similarity between the two languages, which are both members of the Turkic language family and are mutually understandable

Anaphoric dependencies in real time: Processing of Russian numerical constructions

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Natural language has numerous ways to encode anaphoric dependencies, including filler-gap (movement) constructions, antecedent-anaphor relations, control, variable binding, and coreference. Such relations can be created in the syntax (e.g. movement constructions), in the semantics (e.g. variable binding), or in the discourse (e.g. coreference). Reuland 2011, building on Reinhart 1983 and others, proposes the following hierarchy in the economy of the encoding of anaphoric dependencies.

(1) syntax < semantics < discourse

The hierarchy translates into processing preferences; the processing of dependencies farther to the left should be easier than the processing of those to the right. A specific prediction is that syntactic dependencies require less processing effort than discourse-derived dependencies (Koornneef 2008). In other words, movement is, perhaps surprisingly, less burdensome for processing than pronominalization. To test this prediction, this paper analyzes two constructions from Russian which have not been previously fully analyzed. They minimally differ on the surface but we show that they involve distinct kinds of anaphoric dependencies. An experimental study confirms that the syntactic dependency requires less effort than the discourse dependency.

In the Russian examples in (2), a nominal can be fronted out of a numerical expression, stranding a modifying numeral. When the stranded numeral is a so-called paucal number (1.5, 2, 3, 4, and the expression 'both'), the fronted nominal can appear in a form that matches in number with the numeral, (2a), or in a non-matching plural form, (2b).

(2) a. *A' movement dependency: matching morphology*

Sobor-a	v	gorodke	bylo	tri	~~sobor-a~~
cathedral-**PAUCAL**	in	town	was	three.**PAUCAL**	

b. *pronominal coreference dependency: non-matching morphology*

Sobor-ov	v	gorodke	bylo	tri	*pro*
cathedral-**PL**	in	town	was	three.**PAUCAL**	

'As for cathedrals, there were three in that town.'

We argue that the construction with matching between the fronted element and the numeral (2a) involves A'-movement of the fronted element but (2b) without matching involves co-indexation between the fronted element and a null pronoun, as shown. Evidence comes from island sensitivity, number connectivity, binding reconstruction, parasitic gaps, word order, and resumption with a pronoun or epithet. For example, only the matching form is sensitive to islands (in blue), (3), and only the matching form reconstructs to yield a Binding Principle C violation, (4).

(3) a.

*Ženixa	ja	pomnju	[vremja	[kogda	u	nee	bylo	tri	~~ženixa~~]]
suitor.**PAUC**	1SG	remember	time	when	by	her	was	three		

b.

Ženixov	ja	pomnju	[vremja	[kogda	u	nee	bylo	tri	*pro*]]
suitor.**PL**	1SG	remember	time	when	by	her	was	three	

'As for suitors, I remember the time when she had three.'

(4) a. [Raza kogda Mašu$_i$ xvalili] ona$_{k,*i}$ nasčitala tri ~~[…]~~
time.**PAUC** when Masha.ACC praised she counted three
'She$_{k,*i}$ found three times when Masha$_i$ got praised.'

b. [Raz kogda Mašu$_i$ xvalili] ona$_{k,i}$ nasčitala tri *pro*
time.**PL** when Masha.ACC praised she counted three
'As for times when Masha$_i$ got praised, she$_{k,i}$ counted three.'

In contrast, only the base-generated non-matching form allows an expletive (in red) at the post-numeral position because pronouns but not traces alternate with overt elements, (5).

(5) a. Želanija u Peti bylo tri (*štuki)
wish.**PAUC** by Petya was three piece.PAUC
b. Želanij u Peti bylo tri (štuki)
wish.**PL** by Petya was three piece.PAUC
'Wishes, Petya had three'.

We conclude that the matching form (2a) involves A'-movement, a syntactic dependency, and the non-matching form (2b) involves coreference, a discourse dependency. The contrast replicates the well-known distinction in Romance between topicalization and Hanging Topic Left Dislocation. The minimal pair is an excellent candidate for a processing study.

The hierarchy in (1) predicts that (2a) should be processed more easily than (2b). We test this prediction in a reading time experiment. The results show a strong effect of the number difference ($p=0.0085$), with a statistically significant slowdown in reading time in the region after the numeral in the non-matching case (discourse dependency) compared to the matching case (syntactic dependency). The result supports Reuland's hierarchy in (1) and is particularly striking since matching topics are less frequent than non-matching ones (5 tokens of (2a) vs. 12 tokens of (2b) over 1000 randomly selected sentences from the Russian National Corpus, http://www.ruscorpora.ru/en/index.html).

We reject an alternative explanation of the data in which the reading time slow down is due to a simple morphological mismatch, which has been noted by several studies (e.g Molinaro et al. 2011). First, agreement mismatches in Russian numeral expressions do not otherwise result in reading time slow down (Xiang et al. 2011). Second, native speakers rated the two constructions comparably; in other studies, agreement mismatch has yielded lower acceptability ratings (Fanselow and Frisch 2006).

In conclusion, our analysis of a syntactic minimal pair in Russian forms the basis of a processing study comparing a syntactic dependency to a discourse dependency. Our experimental investigation of the two constructions shows that syntactic dependencies are processed more quickly than discourse dependencies, providing novel support for the hierarchy in (1). From a processing perspective, movement is less burdensome than pronominalization.

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Constraining Local Dislocation dialect-geographically: V-T-AGR versus V-AGR-T in Dutch dialects

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Theoretical frameworks that describe natural language often make a difference between phenomena that are central to the grammar and phenomena that are more peripheral, for instance the "exceptions" in traditional grammar. Chomsky (1981), for instance, uses the "core grammar" versus "peripheral rules" opposition to validate linguistic data. In articulated derivational models, such as Distributed Morphology, an elaborated post-syntactic sequence of ordered modules is assumed, which helps us to situate the "exceptions" or the "periphery" within the theory itself: the later in the derivation, the more peripheral in the Chomskyan sense. Especially, the post-linearization part of these morphological modules are assumed to be ridden with arbitrary phenomena.

This DM-model makes a prediction. It is expected that the later in the derivation a phenomenon is ordered, the more arbitrary its variation will be, across languages or the more arbitrary and scattered in a dialect geographical continuum (Arregi & Nevins 2012:342). For instance, a typical post-linearization phenomenon such as Basque Ergative Metathesis, a case of Local Dislocation (LD), only shows up in some dialects and is assumed not to correlate with deep syntactic phenomena. If, on the other hand, it can be shown that variation in the application of LD correlates with an undoubtedly syntactic dimension, it will be an argument for situating the phenomenon higher up in the derivation.

In this talk we study a LD phenomenon in Dutch dialects, illustrated in (1), where the standard V-Tense-AGR ordering of morphemes occasionally realizes as V-AGR-Tense. We call this effect *AGR-intrusion*, as a parallel term to *pronoun-intrusion* (Barbiers & Van Koppen 2006, B&vK), where V-pronoun-Tense-AGR is realized instead of the standard V-Tense-AGR-pronoun, cf. (2).

(1) a du klöp-z-de an (AGR intrusion, dialect of Venlo)
you knock.2sg.past PRT

b du klöp-de-s an (common pattern, general Limburgian)
you knock-past-2sg PRT
'you knocked on the door'

(2) a Dan wandel-die-de er heen (pronoun intrusion, dialect of Rotterdam)
then walk-PRON-ed there to

b. Dan wandel-de hij er heen (common pattern, general Dutch)
then walk-ed PRON there to
'Then he walked to it'

B&vK opt for a syntactic analysis, by assuming that V strands T in its way to C, cf. (3).

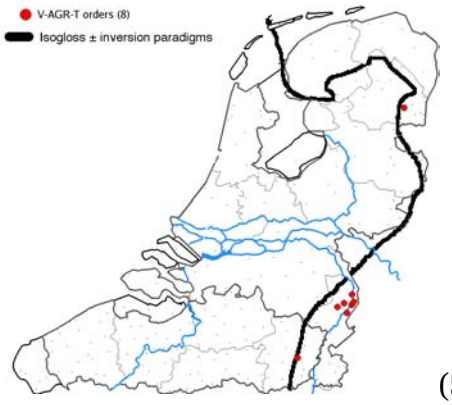
(3) $[_{CP}$XP V $[_{TP}$ pron $[_{T}$-de] $[_{VP}$ ~~V~~]]] (T-stranding)
↑_____|_____|

The strict locality of pronoun intrusion in (2) still allows that it be situated after linearization, i.e. as Local Dislocation. Indeed, in direct contexts, where the subject precedes the verb, no pronoun intrusion shows up, i.e. we do not see any kind of doubling effect SU + V-SU-T-AGR in those cases. Pronoun intrusion, therefore, does not provide a compelling argument that favors a syntactic approach over and above a 'late' LD approach.

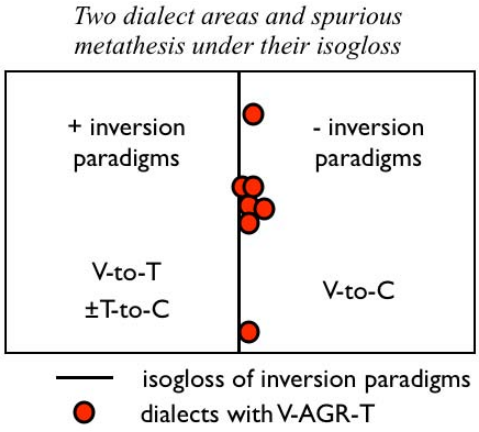
In this talk, we discuss language-internal and language-external properties of AGR-intrusion structures. First, the V-AGR-Tense orderings in (1) are only present in direct contexts, never in inverted contexts. As nothing in the V-Tense-AGR string distinguishes these contexts, we must add a diacritic that it sits in C. If these structures also sit in C in inversion structures, we have to add more of the syntactic environment. This is problematic

for LD. Secondly, they seem to be dialectologically rare. In (4), the red dots display the scattered nature of the AGR-intrusion effect, based on the MAND database. At first glance, this scattered distribution is predicted by A&N's Hypothesis if we assume a post-linearization explanation along the lines of AGR-Tense Metathesis. Closer dialect-geographical investigation shows they are far from random.

(4)



(5)



Dutch dialects can be divided into a dialect area with $AGR_{T/C}$ (inversion paradigms), and dialects with uniform AGR_C (Postma 2012). Curiously, AGR intrusion typically occurs on the borderline of these two dialect areas, schematized in (5).

Dutch dialects with AGR_C and AGR_T are dialects in which T-to-C is not generalized, e.g. T-to-C is absent in (some) direct SV clauses. We, therefore, assume that intrusion dialects combine properties of both dialect areas: they realize V-to-C (generalized V2, German-type dialects) **and** block T-to-C (Dutch-type dialects), providing the structure as in (6).

(6) $[_{CP}$du V-AGR $[_{TP}$ ~~du~~ $[_{T}$-de] $[_{VP}$ ~~V~~$]]]$ T-stranding

↑_____|_____|

This is a T-stranding structure just as in (3). However, application of B&vK's approach to AGR-intrusion allows us to construct the language-contact argument in favor of a syntactic account. We then present a minimalistic calculus of this structure that explains 1. why AGR-intrusion only occurs in direct contexts, 2. the syntactic ingredients that are combined (uniform V2 and T-to-C blocking): T-to-C is blocked if a subject passes through specTP on its way to specCP. It creates an economy violation, very similar to the *that*-trace effects in WH extraction: *{T-to-C + specTP-to-specCP}, cf. Pesetsky & Torrego (2001). This causes V to strand T in its way to C. If another constituent moves to specCP, the subject sits in specTP and no *that*-trace violation looms, i.e. no AGR intrusion. The calculus also explains why B&vK's pronoun intrusion only occurs in inversion contexts. The idea is that the post-verbal pronoun in (3) moves covertly to CP because of discours features, thus creating a *that*-trace configuration. That is why *bona fide* 3 personal pronouns, like *zij/ze* 'she' do not intrude:

(7) *dan wandel-ze-de er heen 'then she walked to it'

We conclude that AGR intrusion is a syntactically motivated process that combines syntactic properties of two dialect areas. The enterprise illustrates the relevance of dialect geographical variation for grammatical analysis.

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A Dual-Source Analysis of Gapping

David Potter, Michael Frazier, Masaya Yoshida

Gapping constructions (1) have long been known to be ambiguous with respect to the scope of modals and negation [11], with the scope-taking material scoping either under the coordinator, yielding *distributed scope*, or above the coordinator, yielding *wide scope*. Extant analyses of Gapping [2, 5, 4, 6, 9] stumble over this ambiguity, failing to account for its full distribution and a constraint on *split scope*: multiple scope-taking elements cannot be split between wide and distributed scopes. In turn, we propose that Gapping is a heterogenous phenomenon and that this scope ambiguity should be reduced to a structural ambiguity between the coordination of CPs (2a) and *v*Ps (2b).

(1) Jim can't eat caviar and Sue ~~can't eat~~ beans.

(2) a. [$_{CP}$ Jim can't eat caviar] and [$_{CP}$ Sue$_i$ beans$_j$ ~~[$_{TP}$ t$_i$ can't eat t$_j$]~~]

b. Jim can't [$_{vP}$ eat caviar] and [$_{vP}$ Sue$_i$ beans$_j$ ~~[$_{vP}$ t$_i$ eat t$_j$]~~]

Distributed scope follows from the interpretation of scope-taking material within the scope of the coordination; this reading of (1) can be paraphrased as "Jim is not permitted to eat caviar and Sue is not permitted to eat beans." In the *wide scope* reading, the scope-taking material scopes over the coordinator and can be paraphrased "it is not permitted for Jim to eat caviar and for Sue to eat beans." Most other elements in the IP and CP domains participate in this ambiguity, including high adverbs (3), aspect (4), and epistemic and root modality (5). Furthermore, scope-taking material in the IP and CP domains must all take either distributed or wide scope. (1) cannot be interpreted as in (6a) or (6b): *split scope* is impossible in Gapping.

(3) James is probably writing his term paper and Mary her final exam

(4) James has been working hard on their article and Mary on their presentation.

(5) a. James might vote independent and Mary Democrat

b. James can cook the pasta and Mary the chicken.

(6) a. It is not the case that Jim is permitted to eat caviar and Sue is permitted to eat beans.

b. It is permitted for Jim not to eat caviar and for Sue not to eat beans.

Material interpreted below the IP domain, including manner adverbs and adverbial negation (7), can only take distributed scope. However, *wh*-words at the left edge of the correlate conjunct are interpreted with a single referent, obligatorily taking wide scope along with *can't* (8).

(7) a. James quickly ate the beans and Mary the rice.

b. James can't not eat beans and Mary rice.

(8) Who can't James meet on Monday and Bill on Tuesday?

This data suggest that Gapping is supported in exactly two configurations: CP and *v*P coordinate structures. In the large-conjunct structures, each conjunct contains a copy of the gapped material, resulting in the distributed scope reading. Remnants interpreted in the CP domain, including epistemic modality (5a)[1], and topicalized elements (9) [10] can receive a distributed interpretation, and so the large conjuncts must be full CPs (contra [9, 6, 4]). In the small conjunct structures, the scope-taking material in the IP and CP domains c-commands and consequently takes wide scope over the low coordinate structure. Material within the *v*P

domain, including adverbial negation (7b) and manner adverbials (7a), cannot occur above the coordinate structure, and so cannot take wide scope. Furthermore, assuming that Gapping is supported in only two configurations, the split-scope facts follow; the relevant scopal material is either entirely contained with the large conjuncts, or positioned above the small conjuncts. No intermediate configurations are possible.

(9) Beans, Peter can't eat, and rice, Mary.

The gap in both structures is derived through ellipsis, licensed by an ellipsis feature [7] hosted on the head of a CP-domain FocP [10] or a *v*P domain FocP [3]. The obligatorily focused remnants raise to the FocP domain to escape ellipsis, following [8]. While the small-conjunct structures may be compatible with either ellipsis or ATB movement analyses, the large-conjunct structures resist an ATB movement analysis. For parsimony and expository clarity we therefore assume that the ellipsis process is identical in both large and small conjunct structures.

In this analysis, it is the complements of the FocPs that are elided. This derives the well known proscription of complementizers in Gapping constructions (10). Complementizers, in the head of FinP in large-conjunct structures, are elided as elements of the complement of FocP [10]. The conjuncts in small-conjunct structures contain no FinP, precluding the appearance of complementizers. This analysis also derives the obligatory wide scope of *who* in (8). English *wh*-words raise to FocP, thereby escaping the ellipsis site; any fronted *wh*-phrase cannot be elided in large conjunct structures. Small conjunct structure do permit non-remnant *wh*-words, which ATB move to the shared CP domain from the coordinate structure, from which position they take wide-scope, the only available parse for (8).

(10) Peter thinks that James hates beans and (*that) Mary rice.

Finally, we address examples like (11a), in which the disjunction can be interpreted conjunctively [11] even when the modal takes distributed scope. If the conjunctive reading were solely due to the negation c-commanding the disjunction it would constitute a counterexample to the split scope generalization. We argue that conjunctive *or* in large conjunct structures is a variant of *nor*, licensed in the same manner, by a sentential negation operator [12]. This correctly predicts the ability of *nor* to replace *or* exactly when the conjunctive reading is available (11b).

(11) a. Bill shouldn't drink PBR or Jane champagne.
b. Bill should drink PBR *nor/or Jane champagne.

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Paths

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One of the potential benefits of a decomposed and constructivist approach to phrase structure is that generalizations about meaning that have linguistic consequences can be represented within the core symbolic system of language (what we traditionally call the 'syntax'), thus localizing recursion and generativity to a single module. However, it is not always clear in practice which aspects of meaning should be so represented, or how. Recent cartographic expansions of the prepositional domain and verbal domain respectively turn out to differ crucially in decisions about how to represent the notion of PATH. In this paper, I argue on the basis of linguistic diagnostic evidence that the path-like notions of P and V *are* semantically and syntactically commensurate, and that our cartographies should be adjusted to reflect that. As a point of comparison, I will argue that the scalar structure associated with Adjectives is *not* commensurate with the former two categories in the same way, contra Hay et al. (1999) and Kennedy and McNally (2005).

Semantic Parallels: Gradability seems to be a cross-categorial phenomenon: event shape or trajectory of change for V (Zwarts 2006, Rappaport-Hovav and Levin 2008, Beavers 2005), paths for P (Zwarts 2005, Krifka 1989), and of course property scales for adjectives (Kennedy 1999, Kennedy and McNally 2005) Significantly,the scales corresponding to different categories have been argued to interact in semantically predictable and systematic ways when in close syntactic relationship, often via some kind of homomorphism: VP telicity is affected by the boundedness or quantizedness of the direct object for a certain class of verbs (Krifka 1992); VP telicity is affected by the cumulativity of the PP in complement position to the verb (Zwarts 2005); the telicity/boundedness of a deadjectival VP is determined by the boundedness of the scale of the underlying adjectival property (Hay et al. 1999). Arguably, then, the geometric properties of path transcend sortal domain and can be seen to interact with one another, but to what extent do they play out in the same way in the syntax?

Syntactic Representations of V and P: Decomposition of verbal paths classifies the event trajectory more in terms of subevental substructure, or predicational substructure with differences in participant role crucially affecting the proposed decompositions. When it comes to 'paths of change', events can be classified as having a pure process portion with no result (activities), process leading to result (accomplishments), punctual change leading to result (achievement) (Dowty 1979; Parsons 1990; Pustejovsky 1995; Higginbotham 1999). These notional 'paths of change' have been represented explicitly in the syntax by many, based on linguistic evidence, both morphological and semantic. One classic linguistic linguistic test is the von Stechow (1996) test on the scope of *again*, and its equivalents. The existence of a result subcomponent is diagnosed by the presence of a purely restitutive reading, in addition to the expected repetitive one (see also Beck and Johnson 2002).

1. (a) Bob pushed the cart again (*repetitive*)
   (b) Bob opened the door again (*repetitive/restitutive*)

On the other hand, in work on the decomposition of P Koopman (2000), van Riemsdijk (1990), Svenonius (2010), Kracht (2002), den Dikken (2009), it is assumed that it includes at least a Path Projection which dominates a Place Projection for directional PPs. In languages where distinctive morphology is found, the place morpheme is always closer to the root than path morphology (cf. Svenonius (2010), Kracht (2002)). Thus, the decomposition

of Paths into P_{path} and P_{place} is syntactically and morphologically grounded crosslinguistically. It has also received support in the compositional semantics literature (Zwarts (2005) and Zwarts and Winter (2000)): paths are systematically constructed from place denotations in a compositional fashion. Within this system, it can be shown that Paths themselves can either be bounded (noncumulative) or unbounded (cumulative) (Zwarts (2005)), but *always* embed a P_{place}P. The Path heads assumed in this system can be (at least) TO, FROM and VIA (according to Svenonius (2010)).

Diagnosing Substructure in PP paths: Classically then, *all* paths, both bounded and unbounded contain a P_{place}P at the base of the projection. But do we really have evidence that THROUGH paths headed by prepositions like English *through* contain P_{place}P substructure? I show that if one systematically applies the 'Again'-Test to the prepositional domain, we get a split that parallels the result verb/non-result verb split in the verbal domain.

2. (a) John pushed the cart into the woods again (*repetitive/restitutive*)
(b) John pushed the cart through the garden again (*repetitive*)

Thus, in addition to the P_{path} combining with P_{place}P to create a derived Path based on a location, we should also allow P_{path} to combine directly with a DP, on analogy with the verbal domain. In the VP case, particularly salient is the parallel to creation/consumption verbs, where dynamic verb and DP 'Path' combine under homomorphism, and where the path of change is mapped to the DP's material part-whole structure. Similarly, P_{path} in a *through* PP creates a predication of ordered locations from the internal part-whole structure of its DP complement. In this paper, I show with a series of novel tests applied to PPs that a structural distinction needs to be made between so-called TO-paths which genuinely do have resultative substructure, and *via* paths which do not. FROM-paths will be argued to contain resultative substructure in addition to reversative semantics.

Combinability and Commensurability. In the second part of the paper, I show systematic effects of matching and composition when elements of P and V are combined, not just in V -PP combinations but also in particle constructions, arguing that the scales involved are syntactically commensurate. Moreover, I argue that a simpler mapping between syntax and semantics is achieved if the syntactic decompositional ingredients of the P and V categories are made more parallel. Thus, the version of PP structure I propose will be a slight departure from the strict templaticity of earlier decompositions of P in the literature, but one that is more sensitive to the linguistic diagnostics for predicational substructure, bringing together verbal and prepositional decompositional criteria for the first time.

Consequences for Cartography and Grammatical Architecture. Finally, I turn to the case of scalar structure in Adjectives. This is an important part of the argument because semantic parallelism per se does not require true syntactic commensurability. Using the same strict testing standards on adjectives and verbs, I show that there is no compelling evidence that adjectival scales and scales of change are directly commensurable: boundedness entailments do not go through in general (despite recent prominent claims in the literature to the contrary Hay et al. 1999, Wechsler 2005), and direct modification is impossible. The conclusion will be that either the decomposition of A into general path structure is not motivated in the syntax at all, or that one has to argue that it is strictly encapsulated. The linguistic evidence regarding P and V is importantly different in the regard. The decomposed path structure of V and P, and the parallelism in their cartographies is a robust and exciting result, with deeper consequences for the notion of category.

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Deriving the Functional Hierarchy

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1 Introduction. There is a tension between Chomsky's recent Minimalist theory and the cartographic program initiated by Cinque. Cinque's cartography argues for a large number of fine-grained categories organized in one or more universal Rich Functional Hierarchies (RFH). The subtlety of the evidence and the richness of the inventory virtually force an innatist approach.

In contrast, Chomsky argues for a minimal role for UG (MUG), shifting the burden to extralinguistic cognition, learning, and what he calls third factor principles such as principles of efficient computation. In this paper we reconcile the austere MUG vision of Chomsky with the impressive empirical evidence that Cinque and others have presented for RFH.

We argue (building on previous work) that some Cartographic work overstates the universality of the orders observed, and furthermore conflates several different ordering sources. Ordering sources include scope (cf. Ernst 1992, ch. 3 on *frequently*), polarity (cf. Nilsen 2003 on *possibly*), and semantic category (cf. Jackendoff 1972, McConnell-Ginet 1982 on V-level and S-level adverbs).

Once these factors are properly understood, there remains an irreduceable universal functional hierarchy, for example that which orders epistemic modality and tense over root modality and aspect, and that which orders the latter over argument structure and Aktionsart (as discussed in much previous work, e.g. Bybee, Smith).

This residual core functional hierarchy (CFH) is unexplained so far by work which follows MUG. Rather than simply stipulating the CFH as part of UG, we reconcile CFH with MUG by detailing what nonlinguistic cognition must look like in order for MUG to derive the CFH. We furthermore show how an individual language develops a language-specific RFH which is consistent with the universal CFH.

2 Our Empirical Domain. To ground and illustrate our general proposal, we present a specific analysis of a classic problem from the phrase structure of English: Auxiliary ordering, illustrated in (1). In (2) we show a version of the original affix hopping analysis from Chomsky (1957), and in (3) we present its cartographic alternative.

(1) John might have been being chased.

(2) John [might + ∅ [have + EN [be + ING [be + EN [chase]]]]] (Chomsky 1957)

(3) $[_{Mood_{speechact}}$ $[_{Mood_{evaluative}}$ $[_{Mood_{evidential}}$ $[_{Mod_{epistemic}}$ might $[_{T(Past)}$ $[_{T(Future)}$ $[_{Mood_{irrealis}}$ $[_{Asp_{habitual}}$ $[_{T(Anterior)}$ $[_{Asp_{perfect}}$ have $[_{Asp_{retrospective}}$ $[_{Asp_{durative}}$ $[_{Asp_{progressive}}$ been $[_{Asp_{prospective}}$ $[_{Mod_{root}}$ $[_{Voice}$ being $[_{Asp_{celerative}}$ $[_{Asp_{completive}}$ $[_{Asp_{semelfactive}}$ $[_{Asp_{iterative}}$ $[_{VP}$ chased]]]]]]]]]]]]]]]]]]]]]] (Cinque 1999)

The problem with (2) is that it encodes no general or universal claim, but is simply a hierarchical representation for the particular given morphemes. The problem with (3) is it simply repeats these morphemic tags in the labels for the functional items proposed and does not ground them semantically. It also explicitly advocates a view of phrase structure which is the conjunction of the morphemes and pairwise orderings that could be established across all the languages investigated. This view takes the hierarchization of function so seriously that even when the 'same' lexical item is found in two possible word order positions, the assumption is that there *are* two distinct heads, but that for some reason certain lexical items can merge equally well in more than one position. Cinque (1999) does not of course advocate rampant homonymy; he argues that certain adverbs for example, or modals, have general enough semantics that they are compatible with more than one categorial functional head and have their meaning modulated according. However, this opens up the possibility that a worked out version of the semantics of these items, together with an

understanding of the semantic type(s) of the constituents they combine with could deliver the required ordering and interpretation *without* the extra Cinquean functional heads (see e.g. Ernst 2002 for such an attempt). In this paper we present a concrete analysis of English auxiliary ordering that is designed specifically to motivate a particular CFH for the verbal extended projection, and show how the richer ordering evidence from Cinque can nevertheless be reconciled with it.

3 Ontology and Category. The CFH, we argue, has its basis in a semantic ontology of 'sorts' which is finer-grained than commonly assumed. One important part of this is a three-way distinction among events, situations, and propositions, building on work by Kratzer, Giorgi & Pianesi, Hacquard, and others in our theory of the semantics of the clause. The semantic ontology, we argue, has its roots in turn in extralinguistic cognition. Language constructs categories which are compatible with this extralinguistic component in their organization, for example a VP is an event description, a TP is a situation description, and a CP is a proposition, and as a result of the containment relation among those entities, C > T > V.

Consider in the light of our English example given in (1) above which exemplifies Epist > Perf > Prog > Pass. Epist[emic modality] must dominate the others because it is only defined at the propositional level. Perf[ective aspect] must be in the situational domain, below the propositional domain, because it involves temporal precedence, only statable at the level of the situation, according to our assumptions (as motivated by Barwise & Perry and other previous work). Prog[ressive aspect] could in principle be part of the situational or eventive domain, depending on whether it is essentially an aspect or essentially an Aktionsart. We show that in English, it interacts with event semantics, and hence must be in the VP-domain, below Perf. Pass[ive] involves argument structure, and hence is also clearly part of the VP.

A certain subset of ordering properties is built on this substrate. However, elements within the same sortal domain can be shown to exhibit ordering flexibilities with attendant semantic differences which can be attributed to scope. We analyze examples of adverbial ordering which we argue feed off the rigidity of sortal embedding, and contrast them with other cases where adverbial ordering flexibilities derive from scopal interactions within sort. Thus, for example, a manner adverb like *quickly* names an attribute of an event, hence attaches at the VP level, while an aspectual adverb like *already* is part of a description of a situation and hence can only attach at the TP level. This captures and in fact derives the basic intuition behind the category-based orderings discussed by Jackendoff, McConnell-Ginet, and Ernst, among others.

The finer-grained orderings seen in the RFH are captured in this model without the need to postulate as many semantic categories as there are positions in the RFH; in other words the RFH has a distinct source from the CFH. We show that the positions in the RFH are not as universal as they have been made out to be. Some of the orderings of the RFH are due to scope or polarity, as mentioned above, and others we ascribe to selection. We argue that category selection is part of how language organizes categories, with the effect that essentially functional considerations may lead to rigid language-specific orders (along the lines discussed by Horn 1989 for modals and negation).

3 Consequences. The reconciliation that we propose of Chomsky's MUG with Cinque's RFH has important consequences. Work which adheres closely to the Minimalist C-T-v-V template for the clause can explain only a tiny part of the observed hierarchy, e.g. {Epist, Perf} > {Prog, Pass} (by C > v); Chomsky argues that all syntactically relevant features come from the phase heads and are distributed within the phases by Inheritance. There is no motivation for ordering within either of the two phasal domains. Cartographic work, on the other hand, places no limits on the stipulated hierarchy but cannot provide a phylogenetic source for it. By distinguishing CFH from RFH, our compromise retains the austere and conceptually attractive MUG assumption without forcing us to say that most of grammar is a matter of 'externalization' or 'usage' or simply relegating it to unspecified 'interface conditions.'

Reflexivity without reflexives

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Background: What prevents pronominals from being locally bound? Does this a) reflect an intrinsic property of pronominals (Chomsky 1981), is it b) a relative (economy) effect, that only shows up where there is a more dedicated competitor (see from different perspectives, Safir 2004, Boeckx, Hornstein and Nunes 2007, Levinson 2000), does it c) have a semantic basis as in Schlenker (2005), or does it d) follow from general conditions on agree based chains, and reflexive predicates (Reuland 2011)? To resolve this issue, it is important to study languages that are reported to allow locally bound pronominals, and assess whether they in fact do have them, and, which factors come into play when local binding obtains. Khanty (Uralic, spoken in Northwest Siberia) is such a language (Nikolaeva 1995). In this talk we review data collected on a field trip in July 2012, and show that these support option d).

A first set of facts and their consequences: *łuveł* in object position can be bound by a co-argument subject. It can also receive a value from discourse, showing that *łuveł* is a true pronominal (1a). (1b) with a quantificational antecedent shows that the local dependency is one of binding, not coreference.

(1) a. UtltiteXo$_i$ łuveł$_{i/k}$ išək-s-əłłe.
teacher he.ACC praise-PST-SG.3SG *The teacher praised him(self).*
b. NemXojat$_i$ łuveł$_{i/k}$ ănt išək-ł-əłłe.
no.one he.ACC NEG praise-NPST-SG.3SG *No one praises himself / him.*

This fact rules out both the approaches in a) and c). But it is **compatible** with the approaches in b) – there is no competitor – and **prima facie problematic** for the approach in d). If *nemXojat* 'no one' binds *łuveł* 'him', this is potentially a violation of the chain condition in Reuland (2011) since *łuveł* is fully specified for phi-features. Furthermore, this approach faces the fact that logical syntax representations as in (2) with two identical variables in the coargument domain are ruled out (Reuland 2011).

(2) *DP (V x x)

A second set of facts and their consequences: i) Khanty has two types of verbal agreement: obligatory subject agreement and optional object agreement (OAgr), as illustrated in (3).

(3) UtltiteXo poXlen'ki išək-s-əłłe / išək-s.
teacher boy praise-PST-SG.3SG / praise-PST.3SG *The teacher praised the boy.*

The following condition applies: a personal pronoun can be locally bound – yielding a reflexive predicate – only if the verb carries object agreement, cf. the ill-formedness of (4).

(4) *UtltiteXo$_i$ łuveł$_i$ išək-s.
teacher he.ACC praise-PST.3SG *The teacher praised him / *himself.*

ii) The presence of object agreement facilitates object drop, as in (5).

(5) TămXătł ma c'ăta van-s-em.
today I there see-PST-SG.1SG
{LC: Yesterday my son went to Beryozovo.} *Today I saw (him /*myself) there.*

But a **zero object is incompatible with local binding**. The predicate in (5) cannot be interpreted as reflexive.

These facts are incompatible with any straightforward version of the no-competitor approaches in b). That is, even with object agreement the pronoun "is" not a reflexive; nothing in the competition theories would lead us to expect that *łuveł* + OAgr would be a winner against bare *łuveł* or bare OAgr (assuming we can compare them, although they reflect different numerations). How does option d) fare?

[1] The authors are listed alphabetically.

Analysis: The object agreement marker occupies a position after the tense marker, preceding the subject agreement marker (table 2). Thus, given Baker's Mirror Principle subject agreement is higher on the verbal spine than object agreement. Assuming agree-based chains (Pesetsky and Torrego 2004, implemented as in Reuland 2011) object agreement will block the formation of a syntactic dependency between the T-system and the object pronoun by minimality. At the stage when subject agreement comes into play object agreement will already have checked any syntactic property of pronoun (e.g. structural Case) that would make it visible for probing. Thus, the pre-conditions for the formation of a chain – which would be ill-formed – are not met. Hence, cancellation of the derivation does not ensue (Chomsky 1995, Reuland 2011) and the pronoun can be variable bound at the C-I interface.

The second issue is the prohibition in (2). Object drop in isolation does not license reflexivity (see (5)). In order to avoid the configuration in (2), the object argument should be complex. It is, since OAgr licenses a null object. Overt *łuveł* forms a constituent with the null object. This analysis is further supported since *łuveł* is also used as an intensifier (note that in this capacity it cannot be null):

(6) Jełp škola puš-s-ə(t) Komarova łuv joXt-əs.
new school open-PST-3PL Komarova he come-PST.3SG
Komarova {the governor} herself came for the opening of the new school.

Thus, the structure of (1) under its reflexive interpretation is (7), with ⌀ licensed by OAgr.

(7) UtltiteXo$_i$ [łuveł$_i$ ⌀] išək-s-əlle.
teacher he.ACC ⌀ praise-PST-SG.3SG *The teacher praised himself.*

Conclusion: We tested various current approaches to binding against the facts from Khanty. It turns out that only an approach as in d) can adequately account to the use of locally bound personal pronouns in Khanty. The key factor here is object agreement: it prevents the configuration for chain-formation and licenses a complex structure to avoid identical variables in a local domain.

	Number		
Person	SG	DU	PL
1	išak-s-əm	išak-s-əmən	išak-s-uv
2	išak-s-ən	išak-s-ətən	išak-s-əti
3	išak-s	išak-s-əŋən	išak-s-ət

Table 1: Subject agreement, past tense

		Object	
Subject		SG	PL
SG	1	išak-s-em	išak-s-əł-am
	2	išak-s-en	išak-s-əł-ən
	3	išak-s-əłłi	išak-s-əłłi
DU	1	išak-s-emən	išak-s-əł-amən
	2	išak-s-ələn	išak-s-əł-łən
	3	išak-s-əŋən	išak-s-əłłən
PL	1	išak-s-ev	išak-s-əł-əv
	2	išak-s-ələn	išak-s-əł-łən
	3	išak-s-əł	išak-s-əł-əł

Table 2: Object agreement, past tense

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Oral or poster

Dinka and the architecture of long-distance extraction

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Summary: Work by Rackowski and Richards (2005) on Tagalog and Den Dikken (2009, 2012) on Hungarian shows that agreement between *v* and CP is necessary for long-distance extraction. These authors develop proposals in which this agreement allows *v* to probe into the CP phase, thereby doing away with the need to postulate intermediate movement to Spec-CP.

This paper presents novel data from Dinka Nyarweng (Nilo-Saharan, South Sudan) bearing on this issue. We demonstrate that Dinka offers strong evidence that successive-cyclic movement does involve movement through intermediate Spec-CPs, contra Rackowski and Richards (2005) and Den Dikken (2009, 2012). Intriguingly, Dinka at the same time shows that CPs that are extracted from stand in an Agree relation with *v*, just as these authors propose. We propose a modification of Rackowski and Richards (2005), in which both intermediate movement and Agree between *v* and CP are necessary steps in establishing a long-distance dependency.

Two EPP positions: Dinka has two positions with the EPP property, which must be occupied in declaratives. For ease of exposition, these are boxed throughout. The first of these is Spec-CP, as Dinka has C-level V2 in all finite clauses:

(1) [Bòl] a-cí ɣòt yík Dɛ̀ŋ bâai.
Bol 3SG-PRF house build Deng town
'Bol built a house for Deng in the town.'

(2) [Bâai] a-cíi Bôl ɣòt yík Dɛ̀ŋ.
town 3SG-PRF Bol house build Deng
'Bol built a house for Deng in the town.'

The second such position is in the verbal domain, just before the main verb if an auxiliary is present. We identify it as Spec-*v*P. This position must be filled by one nominal object:

(3) ɣɛ̀n cí [Ayén] yiɛ́n kitàp.
I PRF Ayen give book
'I gave Ayen a book.'

(4) ɣɛ̀n cí [kitàp] yiɛ́n Ayén .
I PRF book give Ayen
'I gave Ayen a book.'

Successive-cyclicity: These positions are sensitive to successive-cyclicity in two ways:

Empty edge positions: Although Spec-*v*P and Spec-CP must be occupied in declaratives, if extraction takes place across them, these positions must be empty (5a–b). We take this to show that these are *edge positions*, which extraction uses as intermediate landing sites, behavior we attribute to the effects of phase impenetrability (Chomsky 2001).

(5) a. Yàar a-cí [Dɛ̀ŋ] lɛ́k, [yè [Bòl] a-cí [Ayén] tuɔɔc wúut].
Yaar 3SG-PRF Deng tell C Bol 3SG-PRF Ayen send cattle.camp
'Yaar told Deng [that Bol sent Ayen to the cattle camp].'

b. Yeŋà cíi Yâar [___] lɛ́k Dɛ̀ŋ, [yè [___] cíi Bôl [___] tuɔɔc wúut]?
who PRF Yaar tell Deng C PRF Bol send cattle.camp
'Who did Yaar tell Deng [that Bol sent to the cattle camp]?'

Plural clitic stranding: The second way in which extraction affects these positions is by way of the plural clitic *ke*, which plural DPs leave in each Spec-*v*P along the path of movement:

(6) Yèyîŋà ye [*(ké)] tàak [[___] cíi Bôl [*(ké)] tíŋ]?
who.PL AUX.2SG PL think PRF Bol PL see
'Who all do you think Bol saw?'

PP extraction: The behavior of argument and adjunct PPs is more complicated. As (7) shows, extracted PPs fail to empty the Spec-*v*P along its path, but do leave a plural *ke*:

(7) Ye bɛ̀ɛ̀i kò cíi nyankáai [*(ké)] [wanmáath] tuɔɔc thín?
Q villages which PRF sister PL brother send there
'Which villages did my sister send my brother to?'

We propose that these PPs move through Spec-*v*P, leaving a plural clitic, but do not satisfy the EPP property of this position. Rather, we invoke the condition on the *v*P EPP position illustrated in (3–4): it must be occupied by a DP. We posit two movement-driving features

on *v*, one associated with uφ and the other with successive-cyclic movement. When a DP is *wh*-extracted, it satisfies both features, and the *v*P edge position is left empty, as in (5b); when a non-DP is *wh*-extracted, the two features must be satisfied by different specifiers, and *wh*-movement fails to empty the *v*P edge position, as the example in (7) shows.

A puzzle in long-distance extraction: PP extraction cannot satisfy the EPP property of the Spec-*v*P position in the clause the PP is generated in, as (7) shows. Long-distance extraction of PPs, however, does apparently satisfy EPP in Spec-*v*Ps in higher clauses:

(8) Yétenô cíi Yâ̤a̤r [___] lɛ̤́k Dɛ̀ŋ, [yè [___] cíi Bô̤l [Ayén] tuɔ̀ɔc]?
where PRF Yaar tell Deng C PRF Bol Ayen send
'Where did Yaar tell Deng [that Bol sent Ayen]?'

The role of complement clauses: We propose that this difference arises because of the role the embedded CP plays in long-distance extraction. We first show that CPs in Dinka can also fill edge positions. When a verb takes a CP object, the *v*P and CP edges may be left empty:

(9) a. Bò̤l a-cí [Dɛ̀ŋ] lɛ̤́k [Ayén a-cí kità̤p ɣòoc].
Bol 3SG-PRF Deng tell Ayen 3SG-PRF book buy
'Bol told Deng [that Ayen bought a book].'

b. Bò̤l a-cí [___] lɛ̤́k Dɛ̀ŋ [Ayén a-cí kità̤p ɣòoc].
Bol 3SG-PRF tell Deng Ayen 3SG-PRF book buy

c. [___] a-cíi Bô̤l [___] lɛ̤́k Dɛ̀ŋ [Ayén a-cí kità̤p ɣòoc].
3SG-PRF Bol tell Deng Ayen 3SG-PRF book buy

d. *[___] a-cíi Bô̤l [Dɛ̀ŋ] lɛ̤́k [Ayén a-cí kità̤p ɣòoc].

We take the wellformedness of (9b–c) to show that complement clauses may move to Spec-*v*P and Spec-CP, but must extrapose afterwards. The ungrammaticality of (9d) attests that Spec-CP is indeed occupied via movement; if Spec-CP is to be emptied by the complement clause, the complement clause must extract via Spec-*v*P, satisfying that EPP position also. These facts about clausal complementation suggest an explanation for the empty *v*P position in the matrix clause of (8); this position is occupied, not by the extracted phrase (which, as (7) shows, does not empty Spec-*v*P), but by the complement clause itself. The complement CP apparently must move to Spec-*v*P if extraction from it is to take place.

Locality and phasehood: Dinka then also exhibits the restriction that Rackowski and Richards (2005) and Den Dikken (2009, 2012) propose: extraction from CP requires *v* to Agree with CP (what is particular to Dinka is that this Agree relation triggers movement of CP to Spec-*v*P). We depart from these works (which predict, incorrectly for Dinka, that extraction takes place only via Spec-*v*P, and not via Spec-CP), however, in how we derive this requirement. We propose that Agree between *v* and CPs that are extracted from is necessary because such CPs act as interveners for *wh*-probing (as these CPs themselves carry a *wh*-feature, to attract the *wh*-phrase, Preminger 2011). This proposal is to be understood together with the principle, defended in Rackowski and Richards (2005), that once a Probe has Agreed with a Goal α, it is free to ignore α in further probing. This means that Agree between *v* and a complement CP allows *v* to ignore the CP as an intervener, letting *v* target the *wh*-phrase.

In addition to this, we assume, following much work, that *wh*-extraction must take place via the edges of CP and *v*P, in order to escape the effects of phase impenetrability (e.g. Chomsky 2001). The Dinka facts provide new support for this view, and also for the condition on extraction posited by Rackowski and Richards (2005); to escape a phase, not only must a *wh*-phrase move to the phase's edge, but the phase must itself be Agreed with by the higher Probe that is responsible for moving the *wh*-phrase.

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What a syllable can tell us on language

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Language is a system of discrete infinity (DI). Any human being can cope with an infinite number of sentences (syntax) and chunks of well-formed sound/gesture sequences (phonology). Any human has also at his/her disposal an open-ended lexicon. In this paper I put forward the proposal that DI relies on a single mechanism, namely unrestricted, hierarchically binary Merge, in either syntax or phonology. As long as binary Merge is optimally adapted to the interfaces, it shows hierarchical self-embedding only at the CI interface (Hauser, Chomsky & Fitch 2002, Pinker & Jackendoff 2005) while it cannot go beyond a single syllable layer at the SM interface. Articulatory-perceptive restrictions lead to linearity in externalization and, consequently, do not allow for its pieces (features, segments, syllables, etc.) to self-embed. The syllable, however, stands up against linearization pressures: its terminal segments, crucially divided in vowels and consonants, linearize but its hierarchically binary structure remains untouched internally to the mind/brain: [$_{\sigma}$ onset [$_{\text{rhyme}}$ nucleus coda]]. The syllable, therefore, appears as the clearest evidence that Merge operates at the service of the SM interface. It deserves to be considered a basic building block for "productive combinatorial phonology" (Zuidema & de Boer 2009) which, in turn, has to be understood as "a property of the internal representations".

Different consequences ensue from the hypothesis that there is only a single binary Merge in language with the syllable and the phrase as its main instructions for SM and CI interfaces, respectively. Let us focus on some of the major ones.

Syllable structure and syntactic structure replicate one another. This non trivial but in general neglected fact led Carstairs-McCarthy (1999) to view the latter as an exaptation of the former. More recent findings on vowels and consonants, however, suggest otherwise and seem to provide strong support to a proposal along the lines set out above. Syllables, and vowels and consonants —or movements and holds, respectively, in Sign Language— go hand in hand; they entail each other. The nucleus is a vowel/-like segment, and the onset and coda are consonants or consonant clusters. The functional specialization and ensuing categorical distinction between vowels and consonants turns out to not be epiphenomenal but foundational (Bonatti et al. 2007, Pons & Toro 2010): the partition cannot be derived from the different place vowels and consonants occupy in a continuous sonority scale and they are not succinct labels for bundles of features. Thus, there are selective deficits that cannot be reduced to either the sonority value in the acoustic continuum or the feature properties (Caramazza et al. 2000, Nespor et al. 2003). The neural mechanisms responsible for vowels and consonants and even their location in the brain seem to be different. There is also a division of labour between them: consonants contribute more to the lexicon and vowels to grammar (Toro et al. 2008). On the other hand, the fact that syllabification crosses word boundaries points out that syllabic structure is not lexically stored but computed on-line, like syntactic structure. In addition, syllables are the units of babbling which all infants, even the deaf ones, practice before learning words. Furthermore, neither syllables nor the distinction between vowels and consonants are found outside human language, unlike plenty of other mechanisms involved in phonological processing (Samuels, Hauser & Boeckx 2011). All in all, this seems to point out that the syllable has to be seen as the result of

Merge when applied to the SM interface. As in syntax, Merge has to play with categorically different elements, hence the distinction between vowels and consonants.

The impact of Merge at SM automatically explains the otherwise elusive character of DI when observed in pseudo-words or non-sense syllable sequences. The ordinary creative use of language depends exclusively on syntactic Merge —hence its primacy. And syntactic Merge works on finite lexicons in which pseudo-words and similar units are excluded by definition. DI in meaningless sound/gesture arrays seems sort of extemporary. This overlooked fact shows us that in any language the phonological potential exceeds what the construction of the most richly populated lexicon would require. Of course, this potential underlies the open-ended character of any human lexical inventory, which is useful for coining new words. This, however, even underscores the functionally excessive phonological potential of language provided that the coining of new words shows up very occasionally. In the same vein, consider the fact that this unplanned DI in sound is absent in the rest of combinatorial externalizer animals (birds, cetaceans, etc.). In animal songs, where no construction of meaning is involved, much more restricted combinatorial patterns are observed —take for instance $(a...n)^{w}$ with n, the number of repeated elements, around ten in humpback whale songs. In their totality, the aforementioned claims lead to the conclusion that a "productive combinatorial phonology", which goes well beyond any functional expectancy, is a design feature of language. In rigor, Duality of Patterning (DoP), as originally defined in Hockett 1958, is called into question because having "minimal meaningful units made up of meaningless elements" does not entail an open-ended lexicon at all. In other words, a language with a non expandable lexicon fulfilling DoP would qualify as a natural language, counterfactually.

Finally, the proposal put forward here calls for a reassessment of many evolutionary approaches to the evolution of language. It reaffirms the superiority of the internalist vision for the explanation of the key novelties of language in both interfaces. In particular, it calls into question externalist emergentist approaches to combinatorial phonology.

In sum, a unique binary mental operation Merge is not only responsible for all sorts of DI in language but also indissociable of syllables and phrases, the basic building blocks of language.

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Comparative Structural Determinism and Cognitive Economy Guide Multilingual Acquisition: Transfer Evidence in Closely-Related Language Pairings

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Empirical research on the acquisition of a third (L3) or more (L*n*) language has been undertaken from a multitude of linguistic perspectives over the past few decades (see for review Rothman, Cabrelli Amaro & de Bot 2013). In recent years, generative acquisition has made significant contributions to the growing body of literature on adult multilingual acquisition (see e.g. García Mayo & Rothman 2012; Leung 2007, 2009; Rothman et al. 2011). Starting with Flynn et al. (2004) and taken up more directly in Rothman (2010, 2011, in press), it has been acknowledged by the emerging generative L3 literature that examining the patterns of initial stages transfer highlights in unique ways the economic underpinnings of language acquisition more generally. In this talk, I will focus on this latter line of argumentation, considering what multilingual transfer patterns at the very initial stages of L3 reveal about linguistic architecture and how economy constrains linguistic acquisition, specifically when either the L1 or the L2 is closely related to the target L3.

To be sure from the outset, there are two main objectives. The first is to introduce the reader to the emerging field of generative third language acquisition, especially as it regards investigating linguistic transfer effects. In doing so, I will argue for and demonstrate that data provided by studying L3 acquisition make significant contributions towards a better general understanding of how the mind represents language and how cognitive economy delimits acquisition processes. The second goal is to clarify, if not update, the Typological Proximity Model (TPM) of L3 morphosyntactic transfer (Rothman 2010, 2011, in press). The TPM maintains that structural[1] proximity between the target L3 and the previously acquired L1 and/or L2 determines which of the previous linguistic systems will provide initial stages transfer. Beyond showing the tenability of the TPM with empirical data from language triads involving two Romance languages and English, a unique contribution rests in the updated proposal offered as to how the TPM works in linguistic and cognitive terms. There is a growing body of empirical research supportive of the tenets of the TPM (e.g. Foote 2009; Iverson 2010; Montrul, Dias and Santos 2011; Wrembel 2012), showing it has descriptive and (some) predictive power. The obvious questions left largely unaddressed by proponents of the TPM to date relate to its ultimate explanatory power: (a) What are the cognitive and linguistic explanations for why structural similarity is such an influential factor for L3 transfer?, and (b) how does the mind come to unconsciously determine relative structural comparisons so early on in the multilingual acquisition process? In addressing question (a), I will argue that multilingual transfer selection based on structural proximity is inherently motivated by cognitive economy. In addressing question (b), I will offer a sketch of my developing thoughts on how the mind determines structural proximity based on a series of linguistic cues that are active at the earliest of L3 stages.

[1] I use the more precise word *structural* here as opposed to *typological*. The term's precision will become clearest when the updated articulation of the TPM is laid out. However, I will also interchange the term *structural* with *typological* for historical reasons (i.e. the name of the model itself) to remind the reader of the connection, and not because I believe them to be inherently interchangeable. To be clear, as pointed out to me by Roumyana Slabakova, the most accurate term to be used is indeed *structural.* I thank her for pointing this out; as usual, she is entirely correct.

The Semantics of Hindi Multi-Head Correlatives

Konstantin Sachs (University of Tübingen)

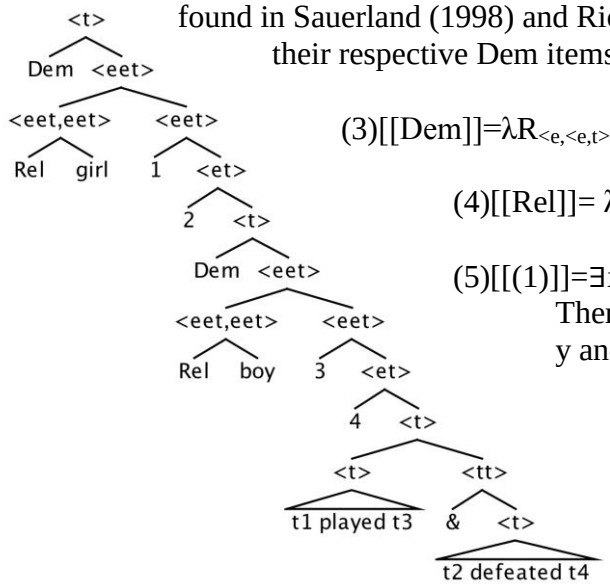
Introducing Hindi Correlatives: Correlatives are biclausal structures which consist of pairs of topic and comment clauses. (Bittner (2001)) The first of which is structured like a relative clause, while the other contains a demonstrative item that refers to what is described in the relative. In Hindi, there can be multi-head correlatives with several pairs of relative (Rel) and demonstrative (Dem) items (Bhatt (2003)). This seems to be a recursive process, as it allows for arbitrarily many pairs:

(1) [jis laRkii-ne jis laRke-ke saath khelaa] us-ne us-ko haraayaa
Rel1 girl-erg Rel2 boy with play Dem1 Dem2 defeated
(Which girl played with which boy, she defeated him)

(2) jo jise jisne se milata hai use usko usa naam batana hoga
Rel1 Rel2 Rel3 –SE introducing is Dem1 Dem2 Dem3 name tell must
(Who1 introduces who2 to whom3, he1 must tell him3 his2 name.)

There is a strict pattern of uniqueness, where a single-head correlative always refers to a unique entity, while one with three or more heads is such that the first one is universal, while the others are unique relative to the first one as noted in Brasoveanu (2008). To get the same uniqueness pattern for two heads, there are two restrictions noted in Gajewski (2008): The exhaustivity requirement is that for every member of the higher head, there must be a pairing with a member of the lower head. The uniqueness requirement is that there is exactly one such pairing for every member of the higher head. Semantically speaking, there are some noteworthy accounts of the phenomenon: Dayal (1991, 1995 & 1996) and Gajewski (2008).

Core Question: Can we explain multi-head correlatives without positing machinery specific to the phenomenon? Dayal's approach either needs quantifiers that are polyadic to a degree equal to the number of heads of the correlative (Dayal 1991) or an operator that typeshifts according to the number of heads (Dayal 1996) while Gajewski (2008)'s approach relies on two-place function application for it to work. My approach wants to provide a recursive method that makes it possible to handle an arbitrary number of heads and can be used for degrees and entities. Syntactically, I follow Bhatt (2003)'s account for Hindi correlative structures, but for the LF the Dem items move to a sentence initial position, keeping the order they are in at surface structure. Afterwards, the Rel items undergo parasitic movement (as found in Sauerland (1998) and Richards (1997) who calls it "tucking in") to their respective Dem items. This gives us the truth conditions in (5).



(3)[[Dem]]=$\lambda R_{<e,<e,t>>}$:∃!a[∀x,y[R(x)(y)∈{1,0}→y=a]].∃z[R(z)(z)]

(4)[[Rel]]= $\lambda P_{<e,t>}.\lambda Q_{<e,<e,t>>}.\lambda x.\ \lambda y.[P(y)\&Q(x)(y)]$

(5)[[(1)]]=∃x[girl(x)&∃y[boy(y)&play(x,y)&defeat(x,y)]]
There is a girl x and there is a boy y and x played y and x defeated y

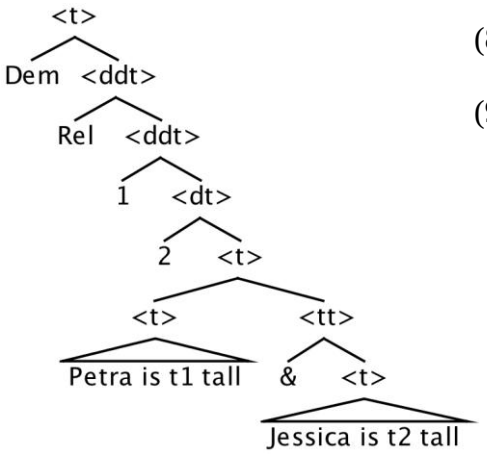
Parasitic movement moves an element in between another moved item and the binder that was generated by that movement. That way, the LF can end up with two moved items standing together, being followed by both binders.

To get the Universal/Unique reading in a structure with two or more heads, I roughly follow Brasoveanu (2008) in assuming that this happens through an operator that distributes over cases, making the uniqueness presupposition relative to a situation, thereby voiding it. This operator starts out adjoined to the IP above the correlative XP's adjunction site. From there, it gets raised to the topmost position in the LF, leaving behind a trace of type <s>, and a binder for it at the landing site. If we make these changes to the LF above, we get this:

(6)[[Dist]]= $\lambda p_{<s,t>}.\lambda s.\forall s'$[s' is relevant in s → p(s')]

(7)[[(1)]]= $\lambda w.\forall s$[s is relevant in w→$\exists x$[girl(x)&$\exists y$[boy(y)&play(x,y)in s & defeat(x,y)in s]]]
The set of all worlds such that for all worlds s that are relevant in w, there is a girl x and there is a boy y and x played y in s and x defeated y in s

Extending the Concept: With minimal modification, this approach is also able to handle other types of correlatives, for example degree correlatives. For this, the presupposition is unnecessary, which reduces Rel_{deg} down to its essence. As Rel_{deg} and Dem_{deg} are at deep structure in the position of a DegP, there is no need to combine $Reld_{deg}$ with property, as Rel does. As this is basically all that Rel does, we can assume that Rel_{deg} is semantically empty or at least redundant. The following example is not a multi-head correlative, but a single-head one. As the process is recursive, the exact same strategy can be used for multi-head ones, as seen above.



(8) [[Dem_{deg}]]=$\lambda R_{<d,<d,t>>}$. $\exists d$[d=max(λd.R(d)(d))]

(9) Petra jitni lambi hai, Jessica utni lambi hai.
Petra Rel tall is, Jessica Dem tall is.
('how tall Petra is, Jessica is that tall')

Conclusion: This approach covers single-head and multi-head correlatives using the same procedure and the same lexicon entries for the used elements, no matter how many heads, and employs only mechanisms that are also used elsewhere. I argue that this approach can therefore be considered more parsimonious than the existing approaches.

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Covert without overt: QR for movementless parsing frameworks

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After a two-decade period of relative absence, rich linguistic representation is returning to engineering applications, particularly incremental parsing and spoken dialogue systems. However, for reasons of structural ambiguity avoidance and representational convenience, movementless formalisms dominate the landscape, maintaining the on-going disconnection with potentially useful generalizations from syntactic and semantic theory. We suggest that one important area in which these generalizations can be restored to engineering-oriented formalisms is in the representation of scope ambiguity.

We propose a new way of representing quantifier scope ambiguities and their resolutions that is derived entirely from neo-Davidsonian semantic expressions. We use a limited form of movement and simple restrictions thereon in order to implement covert movement without imposing aspects of movement-based formalisms on movementless incremental parsers. Implementing only covert movement therefore allows the parsing algorithm to proceed unchanged.

The problem of scope ambiguity in the output representation has recently become a matter of debate (e.g. Joshi et al., 2008) in the parsing literature. Many of the current solutions proposed for Tree-Adjoining Grammars (TAGs), combinatory categorial grammars (CCGs), and so on have the property that the ambiguous structures are represented in the lexicon along with the scope items as logical forms. Ruys and Winter (2010) compare these logical approaches to quantifier raising (QR; May, 1985) approaches from theoretical syntax and find that the logical approaches do not capture some of the island generalizations that QR approaches do. Attempts to handle scope ambiguity through logical operations such as type-raising (Champollion, 2011) also require the bottom-up revision of semantic structures, which is incrementality-unfriendly.

A controversial example comes from Romero and Kallmeyer (2005), for which we give a neo-Davidsonian representation:

(1) a. Two politicians spied on someone from every city.

b. $2x_1\mathsf{Politician}(x_1)\&\exists x_2\mathsf{Person}(x_2)\&\forall x_3\mathsf{City}(x_3)\&\mathsf{From}(x_2,x_3) \rightarrow \exists e\mathsf{Spyer}(e,x_1)\&\mathsf{SpiedUpon}(e,x_2)\&\mathsf{Spy}(e)$

Neo-Davidsonian semantics (Parsons, 1990) uses existentially-quantified event variables (in this example, e) to connect verb predicates with their arguments, and to assign theta roles to arguments. Conjunctions are used to produce a flat semantic representation, which simplifies the inferences required to update the semantic expression during incremental parsing and allows adjuncts to be integrated into the expression without already knowing their hosts.

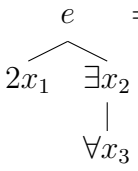
In this example, Romero and Kallmeyer claim that valid scope orders include $2 > \exists > \forall$, $2 > \forall > \exists$, $\forall > \exists > 2$, and $\exists > \forall, 2$, where $\forall$ is in the restrictor of $\exists$. However, $\forall > 2 > \exists$ is excluded. Within the TAG framework, Joshi et al. accommodate these readings using multi-component trees with ambiguous attachments in the syntax. During an incremental parse, commitments may have been made that would thus have to be undone in an *ad hoc* manner in order to accommodate multiple readings.

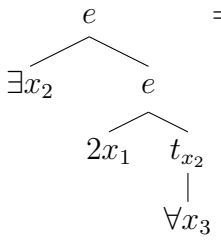
We reconcile these readings within a covert-only movement-based framework using a type of structure we call a variable scope tree (VST). Other approaches to scope ambiguity that involve the construction of a graph structure alongside the parse tree include Koller et al. (2003), which is fully lexicalized and non-incremental. We construct VSTs from neo-Davidsonian expressions using the following algorithm:

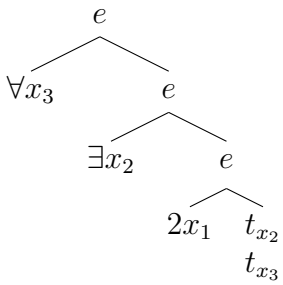
- Find the root event e corresponding to the outermost/matrix clause.
- Find every predicate in the expression mentioning e.
- For every variable v other than e mentioned in these predicates,
  - Make v a child of e in the VST. Label v's node with v's quantifier.

– Follow this procedure recursively for v. Ignore variables already met.

This constructs a spanning tree over variables in the semantic expression (2a). This can be applied at every incremental step or the tree can be grown dynamically.

(2) (a) 

⇒ (b) 

⇒ (c) 

We can permit $2 > \forall > \exists$ by declaring that sisters can scope over each other. (As this is happening in covert syntax, asymmetry is not required for e.g. a linearization algorithm. Such asymmetries can be introduced in future work as needed without losing the substance of this proposal.) We can then permit $\exists > 2, \forall$ and $\forall > \exists > 2$ using a type of movement over this very limited structure (2b,c). We then propose the following definition of VST-movement to restrict the possible movements of quantified variables:

(3) **VST-move**: a variable v and its quantifier are permitted to move to e iff e is the immediate parent of v, or is the ancestor of v only via traces (t). A new copy of e is created as a parent to the original e and v.

We further stipulate that no event node may have only traces as children, to prevent infinite movement. This excludes $\forall > 2 > \exists$, because $\forall x_3$ cannot move as long as $\exists x_2$ is its parent. Event variables thus become analogous to CP in accounts with overt movement, and restrictions on covert movement are now defined in terms of proximity to the event. This gives us a principled way to understand the difference between these sentences from Kallmeyer and Romero.

(4) a. A student said you met every professor. (inverse scope forbidden)
b. A student wants (you) to meet every professor. (inverse scope permitted)

In the first example, inverse scope is forbidden by the presence of two fully-fledged events. *Every professor* would be represented in the VST as the child of a lower event. However, in the control verb condition, the lower verb is not a fully-fledged event with a separate conjunct. This insight is reflected in structures used by Asudeh and Toivonen (2012) who nest the lower verb's event inside the representation of the control verb. Consequently, the movement of the lower event would not be blocked.

For *wh-in-situ* languages such as Chinese, quantifiers are not permitted to take inverse scope, but *wh*-items are. We can treat this as a parametric variation by building the VST based on question-bound variables rather than quantifier-bound ones. In conclusion, our VST analysis allows a principled unification of covert movement analyses for movementless formalisms that do not readily accommodate May-style generalizations.

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L. Champollion. (2011) Quantification and negation in event semantics.
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Morpho-syntactic transfer in L3 acquisition

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This paper examines with two tests three transfer hypotheses in adult L3 acquisition: (1) Developmentally Moderated Transfer Hypothesis (DMTH) (*e.g.* Pienemann et al. 2005), where transfer is constraint by the learner's developmental stage; (2) Full L1 transfer theories (FT1) (*e.g.* Schwartz & Sprouse 1998), where L1 syntax constitutes the initial L3 state; and (3) Full L2 transfer theories (FT2) (*e.g.* Bardel & Falk 2007), where L2 blocks L1 transfer.

The hypotheses were tested on four proficiency groups of L3 German learners with Swedish L1 and English L2 (N=61). In the first test, an elicited imitation task examined the participants' ability to imitate sentences that are distinctive for the stages that German learners allegedly pass; SVO, *ASV and AVS (Meisel et al. 1981, Pienemann 1998). DMTH predicts that the developmental order is reflected in the learners' ability to imitate sentences; FT1 predicts, beginners to imitate XVS better than *XSV structures, because only XVS exists in Swedish. FT2 predicts beginners to be equally good at imitating *XSV and SVO structures, because both are frequent in the learners' L2, English, and will therefore transfer to their L3. Results showed that beginners imitated SVO better than *XSV sentences and *XSV better than XVS sentences, which supported the DMTH hypothesis.

A second test, a communicative task, elicited German adjectives in attributive and predicative position. German adjectives only agree with the noun when in attributive position. Swedish has noun-adjective agreement in both attributive and predicative position and English has none. DMTH predicts German learners to produce attributive and predicative agreement consecutively. FT1 predicts predicative and attributive agreement to appear simultaneously and FT2 predicts that there will be no predicative agreement. The results supported the DMTH hypothesis. Beginners produced either none or attributive agreement. There were only few learners that produced noun-adjective agreement in predicative position. All of those produced agreeing adjectives in attributive position before. Taken together, the data from both tests strengthen a DMTH but not an FT1 or FT2 approach.

A parameter hierarchy approach to alignment

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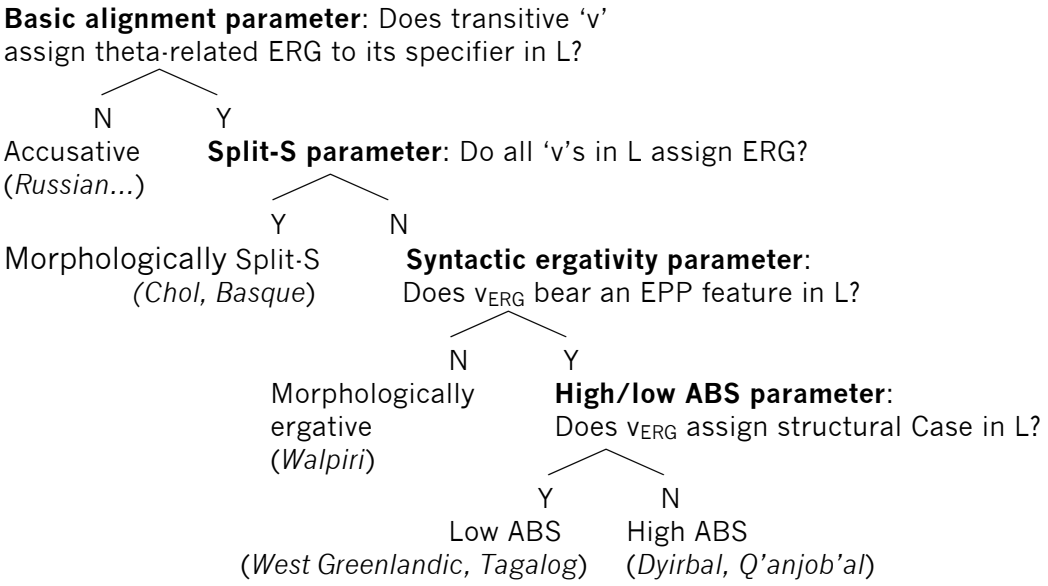
Following the format in [1], this paper presents an attempt to characterize the general parameter hierarchy governing case/agreement alignment in (i) clauses and (ii) ditransitives, arguing that a unified approach has rich empirical support as well as conceptual appeal. It has long been noted that there is no single 'ergativity parameter' regulating alignment in transitive clauses ([2], [3]). While split-ergativity (whereby a language is accusative in some contexts and ergative in others at the clausal level) may not exist (cf. [4]), various different alignments are fairly uncontroversially attested: morphological ergativity ([5]), split-S and fluid-S systems ([3], [6], [7]), syntactic ergativity ([3], [8]), which can be subdivided into High ABS and Low ABS ([9], [10], [11], [12]). The alignment hierarchy in (1) provides a new perspective on these patterns, building on the insight that ERG is a theta-related case/Case ([13]):

(1)



(1) predicts that there will be classes of progressively more ergative alignments as we move down the hierarchy. Split-S languages are the least ergative and are predicted never to be syntactically ergative. As in such languages ERG functions as a quirky case in an underlyingly accusative system, agreement morphology can be either ACC or ERG, as is the case in morphologically ergative languages. In syntactically ergative languages, the presence of an EPP feature on v serves to attract DP_{ABS} to spec vP, trapping DP_{ERG} inside the lower phase ([9], [10], [11]). Only in high ABS languages, though, is ABS really equivalent to NOM, meaning that it is suppressed in non-finite contexts ([12]). This captures the fact that there are languages which ban extraction of DP_{ERG} in which ABS is not NOM ([8]), but (apparently) no languages in which ABS=NOM which allow A-bar extraction of DP_{ERG}. Not only does (1) provide a coherent minimal description of attested alignments, it also explains certain important gaps and one-way implications, notably the non-existence of languages which ERG-mark only unergative subjects, the lack of syntactically ergative split-S languages ([7]) and the fact that apparently no language has ergative agreement and accusative case alignment, though the reverse is possible ([14], [15]). This follows because, according to (1), ERG can be quirky whereas ACC, a structural Case cannot, following [13].

We propose that a variant of (1) also regulates alignment in ditransitives. Assuming, following [20], that goals are base generated above themes, the 'ergative' pattern inside VP is

one where goals receive a theta-related case (DAT), and themes get structural ACC by agreeing with v (as in French, simplified in (2)):

(2) $[_{vP} \ldots v\ [_{vP}\ DP_{ACC}\ [_{VP}\ DP_{DAT}\ [_{V'}\ V\ \sout{DP_{ACC}}]]]$

As such, DAT can be quirky (Japanese) or inherent (French), as reflected in passivization patterns: Japanese, unlike French allows passivization of DAT DPs. The 'accusative' pattern is instantiated in *secundative* languages in which the goal gets structural ACC, as in Yoruba ([21]).

The format of (1) makes the prediction that there will be no languages with secundative morphology (in terms of case or agreement) which allow passivisation only of the Theme, and [18] claim this to be the case. Likewise, as DAT can be quirky (like ERG), it is predicted that there will be languages with indirective case marking and secundative agreement, but not vice versa. Again [19]'s 100 language survey supports this prediction. Word order is something else which correlates strongly with alignment in both the clausal and ditransitive context. Syntactically ergative languages permit O>S and, in the ditransitive context, with ergative (indirective) alignment the order is invariably Theme > Goal.

In both cases, the hierarchies themselves are emergent, rather than prespecified by UG and based on very generic parameters of the following kind: Does the most prominent instantiation of X have property P? Is this generalised to all Xs? Is P associated with EPP? Is P associated with phi-features, etc. The structure of (1) partially follows from plausible acquisition pressures such as [22]'s *input generalisation*. In other cases system-internal pressures are the defining factor. The split-S parameter being above the syntactic ergativity parameter avoids the creation of split-S syntactically ergative languages, where the EPP associated with unergative 'v's could never be satisfied. Likewise, the high/low ABS parameter is forced low because if higher, it would create the possibility of languages which lack ACC but nonetheless require objects to remain inside vP. Again, this would create derivations where object DPs have no means to receive Case, in apparent violation of the Case Filter.

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On the evolution of heterophony: lexical semantic pressures on phonological alternations
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•Through a combination of factors—**(1)** the low level *phonetic variation* inherent to speech production, **(2)** the consequences of *lexical semantic ambiguity* and *misunderstanding*, and **(3)** the tendency for speakers to *reproduce* the variation they perceive—sounds' context-specific properties may passively undergo changes. The small variations in which speech sounds naturally engage are thus a means by which they take on new properties. Quite simply, those pronunciations of words that sound less like other, phonetically similar words are more likely to be perceived by listeners with their semantic content intact, and are consequently more likely to be reproduced as these listeners become speakers. In short, successful speech propagates, failed speech falls by the wayside. Communicative success or failure thus drives patterns of sound change and patterns of sound alternation. Labov (1994): "It is not the desire to be understood, but rather the consequence of misunderstanding that influences language change."

•Both allophonic (contrast-preserving) alternations and neutralizing (contrast-eliminating) alternations may thus naturally evolve, as a passive, evolutive consequence of these slow-going diachronic pressures on linguistic sound systems, though importantly, the prediction is that neutralizing alternations in particular are more likely to evolve if heterophony is largely maintained, and less likely to evolve if rampant derived homophony were to result.

•Herein, I explore one aspect of this evolutionary approach to phonology by inventorying the linguistic domains over which a heterophone-maintaining pressure passively shapes and maintains the lexical-semantic clarity of the speech signal, despite the existence of oftentimes pervasive neutralizing alternations or sound mergers.

(1) Heterophone maintenance in the *phonological* domain: neutralizing alternations or mergers are fully blocked from entering a language if they would induce significant increases in derived homophony. Heterophone-maintaining neutralizing alternations, by contrast, may enjoy free reign. For example, in Korean (Silverman 2010, Kaplan 2011), a huge amount of neutralizing alternation is tolerated, because, by hypothesis, consequent derived homophony is remarkably meager: heterophony is overwhelming maintained despite neutralization.

(2) Heterophone maintenance in the *phonotactic* domain: neutralizing alternations or mergers that otherwise apply pervasively do not apply in particular phonotactic contexts, because their application here would result in significant increases in derived homophony. For example, Hindi (Ohala 1984) has a pervasive schwa-zero alternation (**tə̆ɽə̄p** "restlessness" - **tə̆ɽpa** "cause to be restless", **wapə̄s** "return" - **wapsi** "on return"), though with patterned exceptions. Specifically, while schwa alternates with zero in would-be **VCəCV** contexts, it does not alternate in certain **VCCəCV** and **VCəCCV**; contexts, that is, when the alternation would result in three sequenced consonants, the middle of which would be perilously susceptible to misperception, due to its lack of formant transitions: **VCC̲CV**. That is, the loss of schwa in these contexts may lead to a percept involving only two—not three—consonants (**VCCV)**. At this point, the chances of inducing homophony increase dramatically. Under even more particular phonotactic conditions—typically, when schwa deletion would result in a nasal - homorganic stop - sonorant sequence (also found in non-derived contexts)—schwa deletion is variably present (**kadəmbə̄ri ~kadəmbri** "a novel", name for a girl, **puɳḍə̄rik~puɳḍrik** "white lotus"). Since these medial consonants do not possess distinct place cues, the phonetic properties of these particular tri-consonantal sequences are readily recoverable from the speech signal, and hence run little risk of deriving homophonic forms.

(3) Heterophone maintenance in the *paradigmatic* domain: neutralizing alternations or mergers that otherwise apply pervasively are blocked in those morphological paradigms where semantic ambiguity would otherwise result. For example, Banoni (Mondon 2009, Blevins and Wedel 2009), has a lexical vowel length contrast that is now being lost, though with some telling exceptions: possessed nouns are marked *solely* by vowel length, and are resisting the length merger. Thus **tama** "father", **tama:** "my father", **kasi** "brother", **kasi:** "my

brother". As earlier reported by Lincoln (1976), "Banoni speakers tend to shorten long vowels, except when necessary for disambiguation".

(4) Heterophone maintenance in the pragmatic domain: neutralizing alternations or mergers that otherwise apply pervasively are blocked "on line", due to situation-specific semantic or pragmatic factors. For example, Catalan has an alternation involving final devoicing. This voicing alternation is more likely to be nearly-neutralized (as opposed to completely neutralized) if **(1)** the forms are minimally distinct on this voicing dimension (**rik**- "rich", **rig**- "I laugh, pres. ind."; **duk**- "duke", **dug**- "I carry, pres. ind.") *and* **(2)** these minimally distinct would-be homophonic forms are in contexts that would otherwise be semantically ambiguous. Charles-Luce (1993): "[W]hen semantically biasing information is absent, underlying voicing is distinguished, regardless of the assimilatory environments. However, when semantically biasing information is present, vowel duration shows the predicted effects of regressive voice assimilation".

(5) Heterophone maintenance in the *morphological* domain: neutralizing alternations or mergers may evolve, but any counter-functional consequences are offset by a concomitant morphological response. The classic example here is coda attrition vis-à-vis compounding in Chinese. According to most written evidence, Middle Chinese, unlike certain of its modern reflexes, was predominantly monosyllabic, and only consonants that possessed oral occlusions (**pˀ tˀ kˀ m n ŋ**) appeared in root-final position. Some contemporary dialects like Cantonese retain these six consonants, but others, such as Mandarin, have drastically reduced this set to only two members (**n ŋ**).This drastic loss of phonetic content resulted in a significant amount of root homophony: Cantonese has about 1800 syllable shapes, but Mandarin has only about 1300, with largely equivalent semantic reference (Duanmu 2000). But concomitant with the attrition of its root-final consonants, Mandarin—unlike Cantonese—co-evolved a huge inventory of two-root compounds, which means that its words are now usually twice as long, and so have ample opportunity to maintain heterophony.

(6) Heterophone maintenance in the *lexical* domain: neutralizing alternations or mergers may pervade the lexicon, but a would-be homophonic form comes to be replaced by a semantically analogous heterophone. Such patterns, please note, are anecdotal by their nature. One example of many: Bloomfield (1933) reports that, in certain Southern French dialects, final **l** has merged toward final **t**. While Standard French has **bɛl** "pretty", this dialect has **bɛt**. Because of the sound change, the Standard Southern French word for "cock" ("chicken"), **gɑl**, would be pronounced **gɑt** here. However, these southern speakers don't use **gɑt**. Instead, they use a variety of other local terms, including "chick" (**pul** in Standard Southern French, but **put** here). Why? If **gɑl** had been maintained, it would have been pronounced **gɑt**, which is also the word for "cat", both in the standard dialect, and in the rural dialect. Bloomfield: "This homonymy must have caused trouble in practical life; therefore **gɑt** was avoided and replaced by makeshift words".

•**Synchronic phonology is substance-free**: it investigates the mental organization of a particular body of knowledge, and should thus be pursued in coordinated tandem with learning theorists and cognitive psychologists. They learn from our data; we learn from their theories. **Diachronic phonology is substance-rich**: the shape and change of phonological systems derive from an exceedingly complex interaction of semantic (functional) pressures and phonetic (formal) pressures that are, in turn, subject to passive, evolutive pressures that are decidedly *functional* in character. Our job as phonologists is to isolate and untangle these highly distinct though highly interdependent pressures, and to explicate and motivate their interaction. In this paper then, I consider but one of many ways in which linguistic sound systems respond to both phonetic and semantic pressures—the only components of linguistic structure that are empirically ascertainable (Kiparsky 1973)—such that the communicative function of language is inevitably fulfilled. (*Refs. to be supplied*.)

Endoclisis (only) by Phonological Means

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Overview: The purported existence of endoclisis (placement of a clitic in an intramorphemic position) poses serious questions for almost every theory of syntax and morphology, and is an operation that is impossible to model in a framework such as Distributed Morphology (DM). We consider data from Udi (Nakh-Daghestanian) and argue that what are claimed to be endoclitics are actually second position clitics within the domain of the complex V^0. Instances where the clitic is unambiguously placed intramorphemically are shown to result from an additional metathesis operation, employed to repair a morphotactic violation. We further evaluate the status of endoclisis as part of UG with another reported case from Pashto (Indo-Iranian), and show that too is consistent with our proposal that UG does not directly permit endoclisis, but it can arise as a consequence of phonological operations (see Halle 2001 on infixation).

Udi person marker (PM) placement: PM clitics in Udi constitute the clearest instance of endoclisis in the literature. Harris (2002) shows that at times the PMs unambiguously appear intramorphemically, for instance in (1) where the PM *ne* lies within the monomorphemic verbal root *beγ*. Harris shows the rules placing PM clitics in Udi must make reference to syntactic information, since they follow a ranked series of rules sensitive to tense-aspect-mood (TAM) information, (2), and focus (3). In addition to appearing inside verbal roots, PM clitics also appear between the incorporated element (IncE) and light verb in complex verbs (4).

(1) pasčaγ-un γar-en gölö bẹ-**ne**-γ-sa met'a-laxo [verb = *bẹγ-* 'look at']
king-GEN boy-ERG much look$_1$-**3SG**-look$_2$-PRES this.GEN-on
'The prince looks at this for a long time.'

(2) q'ačaγ-γ-on bez tänginax bašq'al-**q'un**
thief-PL-ERG my money.DAT steal-FUTII-**3PL**
'Thieves will steal my money.'

(3) täzä [k'oǰ-**q'un** foc] biq'-e išq'ar-muγ-on
new house-**3PL** build-AORII man-PL-ERG
'The men build a new house.'

(4) nana-n bụγa-**ne**-b-e p'ạ ačik'alšey [(complex) verb = *bụγa-b-* 'to find']
mother-ERG find-**3SG**-DO-AORII two toy *find-do-*
'Mother found two toys.'

Analyses given for this behavior (see Harris 2002, Anderson 2005) are uniformly representational, couched in Optimality Theoretic alignment constraints, such as Harris' in (5). This approach however entails that clitics are placed by the syntax directly inside morphemes with the cases in (1), hence endoclisis must be a basic operation of UG, see Harris' definition (6).

(5) Align-PM-*al/a* ≫ Align-PM-FocC ≫ Align-PM-IncE ≫ Align-PM-Verbstem
= constraint for (TAM) (focus) (complex verbs) (simplex verbs)

(6) **Align-PM-Verbstem**
Align (PM, R, Verbstem, R)
"Align the right edge of the person marker to the right edge of the verbstem."

Proposal: Under basic DM assumptions, true endoclisis is impossible to model; doing so entails placing clitics inside a terminal node. The facts of (1) are therefore extremely challenging. We argue that these cases are not in fact true endoclisis, and the PMs are really enclitics made to look like endoclitics as the result of the combination of three quirks of Udi: (i) the elsewhere rule of PM placement, (7c), (ii) a rigid requirement of Udi that the verbal root be adjacent to TAM suffixes, and (iii) the availability of metathesis to repair violations to (ii) by moving intervening material lying between the stem and TAM suffixes. Specifically, we

follow Harris in assuming a ranked list of placement rules given in (7), but propose only three rules to her seven.

(7) Udi PM placement rules
   a. PM is enclitic to TAM categories Future II, Subjunctive I, II and Imperative.
   b. PM is enclitic to focus.
   c. PM is second position within the complex head containing V^0.

Where the clitic is not attracted by certain TAM suffixes, or focus, the elsewhere rule of (7c) places the clitic in second position of the complex head containing the verb. In cases of complex verbs, the PM then correctly appears between the IncE and light verb. With simplex verbs however, the clitic is placed between the root and the TAM suffix, an order not seen on the surface. In these cases, we propose that the PM intervening between root and TAM suffix induces a morphotactic violation which is flagged as subject to repair. Udi does not make available a morphological repair, so the structure is sent to phonology, where metathesis moves the clitic leftward from the offending position. This proposal follows the spirit of Rescue-by-PF theories of syntax (Chomsky 1972, Merchant 1999), where a grammatical violation does not immediately crash a derivation, as long as the violation is repaired at a later stage. Evidence that a phonological repair is responsible comes from exceptional cases where metathesis applies rightwards, placing the PM outside a TAM suffix, which otherwise does not attract the PM (PRES in (8) does not belong to the TAM categories in (7a)). In these cases leftward metathesis would lead to a violation of Udi onset phonotactics (**bz*) and so metathesis moves the clitic in the opposite direction, resulting in verb+TAM adjacency.

(8) a. bi-esa-**zu** b. *b-**zu**-i-esa [verb = *bi-* 'to die']
   die-PRES-**1SG** die$_1$-**1SG**-die$_2$-PRES
   'I am dying'

Wider consequences: Endoclisis is a strikingly rare phenomenon, with Udi being probably its strongest exponent in the literature. Even more surprising is that there does not seem to exist any clitic which is always placed intramorphemically; all noted cases show the endoclitics behaving as an enclitic in various other environments. Other purported instances such as Sorani Kurdish (Indo-Iranian, Bonami & Samvelian 2008, Walther 2012) and European Portuguese (Anderson 2005) both involve intermorphemic placement within a word, and as such are not true cases of endoclisis. Pashto (Tegey 1977, Roberts 1997, Yu 2007) seems to be the only other clear instance of genuine endoclisis, shown in (9b) where the clitic *me* appears inside the monomorphemic verb *axistələ*. Our approach goes some way to explain this rarity; endoclisis cannot arise through direct intramorphemic placement because UG does not make this operation available. Instead, endoclisis must come about from a conspiracy of language specific morphological and phonological factors. We see this again in Pashto, where apparent endoclisis is driven according to the position of word stress (Roberts 1997), (9).

(9) a. axistə́lə **me** b. á-**me**-xistələ [Pashto]
   buy **1SG** buy$_1$-**1SG**-buy$_2$ [verb = *axistələ* 'to buy']
   'I was buying them.' 'I was buying them.'

NB - the diacritic in (9) marks stress placement. Stress is either initial or penultimate here.

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A contrastive hierarchical account of positional neutralization

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Positional neutralization can be defined as the categorical inability to realize a given contrast within some phonologically defined environment. This occurs e.g. with phonological vowel reduction. For example, in stressed positions, Bulgarian contrasts six different vowels, as seen in (1a). When these underlying vowels occur in unstressed positions, the contrasts between them are neutralized in up to three pairs, depending on variety and register, as in (1b).

(1) a.

	front	central	back
	non-round		round
high	i		u
mid	e	â	o
low		a	

b.

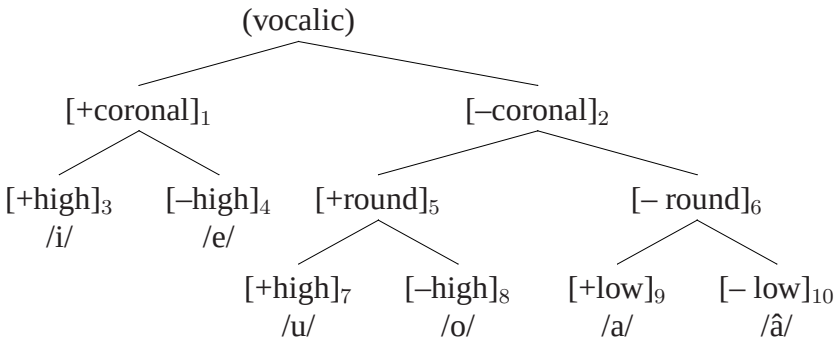
/â, a/	→	[ɔ]
/o, u/	→	[ʊ]
/e, i/	→	[ɪ]

Standard descriptions, such as Scatton (1984), assume that phonological vowel reduction is the result of limiting the phonemes which can be used in unstressed positions. Thus /â/ and /a/ correspond to unstressed /a/, /o/ and /u/ correspond to unstressed /u/, and /e/ and /i/ correspond to unstressed /i/. The centralized and laxed realizations of the unstressed vowels are considered positional allophones of unstressed /a/, /u/, and /i/.

It is implicit in any such analysis that the phonemic identity of a segment in reduced position can be known based purely on its phonetic realization, such that a neutralized phoneme is identical to its phonetically most similar non-neutralized counterpart. However, this approach fails to capture the fact that phonological vowel reduction results in a true loss of contrast between phonemes and not merely the restriction of the use of certain phonemes. More recent theoretical work in vowel reduction by Crosswhite (2001) also restricts itself to surface-driven analysis. Both phonetic realization and phonological neutralization are explained by either perceptual constraints licensing only peripheral vowels in less prominent positions or articulatory constraints requiring unstressed vowels to be less sonorous.

I suggest instead that neutralization is a core concern of contrast, and that the notion of the Contrastive Hierarchy (Dresher 2009) plays a key role in the way neutralization functions phonologically. Let us assume that the contrastive specifications for stressed vowels in Bulgarian are assigned by the hierarchy in (2).

(2)



I propose that rather than vowels in reduced position being a subset of the stressed inventory, they are archiphonemic, being represented by non-terminal nodes of the contrastive hierarchy. Thus instead of a reduction rule or constraint neutralizing the pair /a/–/â/ by turning all instances of /â/ (node 10) to /a/ (node 9), the reduction process instead changes all instances of both /â/ (node 10) and /a/ (node 9) into node 6. Likewise, the neutralization of /u/ and /o/ involves

changing instances of nodes 7 and 8 into node 5, and the neutralization of /i/ and /e/ involves changing instances of nodes 3 and 4 into node 1. In this way, all nodes of the hierarchy, not only terminal nodes, are viable as members of the inventory. I argue that this contrastive hierarchical approach better conceptually reflects phonological reduction as the conflation of a contrast between two phonemes, and that it furthermore offers a number of theoretical advantages.

First, centralization of reduced vowels follows from the phonetic implementation of the phonological specifications of the non-terminal nodes with which they are represented. Because the reduced pair /a/–/â/ represented with node 6 is not specified for height (as opposed to /a/, which is specified as [+low]), it is free to move to a somewhat more central position in the vowel space, *viz.* [ə], as predicted Hall's (2011) model of contrastive feature-based dispersion. Likewise, the pairs /u/–/o/ (node 2) and /i/–/e/ (node 1) lack any specification for [±high], and so they are predicted to be realized somewhere between high and mid vowels, *viz.* [ʊ] and [ɪ].

Second, because it does not rely on constraints operating on specific features for particular functional reasons, but rather on the relationship between the hierarchical ordering of contrastive features and the patterns in which segments neutralize for those features, the non-terminal node model is applicable to all kinds of neutralization affecting contrastive members of the inventory, as opposed to being unique to vowel reduction. For example, in a language with positional neutralization of an obstruent voicing contrast between two terminal nodes /t/ and /d/, the neutralization process resolves not to /t/ or /d/, but to a non-terminal node dominating both /t/ and /d/, which has no contrastive specification for [±voice]. The phonetic voicing of a neutralized segment can then be understood as predictable allophonic realization of the non-terminal node, rather than alternation between the two terminal nodes. What is important is that contrastive features are only present in positions where they realize a contrast, and so the notion of neutralization of contrast is better reflected by not using the relevant feature at all.

Third, non-terminal nodes provide a better way to represent non-alternating neutralized positions. If a Bulgarian speaker is faced with a morpheme in which a certain vowel is never stressed, and so always heard as [ə], a non-archiphonemic model would require that speaker to arbitrarily posit either /a/ or /â/ as the underlying phoneme in that position. In terms of economy, such a situation is less than ideal, as it requires the implementation of a reduction process in every instance that the morpheme is interpreted. The model I propose handles this by allowing the use of non-terminal nodes of the hierarchy in underlying representations. Hence we gain an underlying /ə/ without the addition of any new elements to the inventory, since the hierarchical structure from which it is derived is motivated independently. Furthermore, because non-terminal nodes contain fewer contrastive features, representations are more economical.

Most importantly, it provides restrictive and principled predictions about possible phonological neutralizations which can occur within a given language, relative to its contrastive hierarchy. A set of terminal contrasts can neutralize only to a non-terminal node by which it is exhaustively dominated.

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Palatalisation across the Italian Lexicon

1. Introduction. Italian palatalises velars /k,g/ to affricates [tʃ,dʒ] if followed by front vowels /i,e/, though at the morpheme boundary this rule misapplies in both nouns (Giavazzi 2012) and verbs. This irregularity has roots in the evolution from late Latin - which had an exceptionless palatalisation rule - to modern Italian, which, I argue, provides phonological and morphological cues to the learner as to how the rule applies seemingly irregularly. Verbs show normal palatalisation (1a), underpalatalisation (1b), and overpalatalisation (1c):

(1) a. viŋ**ko** 'win$_{1SG}$' b. pa**go** 'pay$_{1SG}$' c. pja**tʃo** 'please$_{1SG}$' (cf. pjakwi, 'please$_{1SG.PAST}$')
vin**tʃi** 'win$_{2SG}$' pa**gi** 'pay$_{2SG}$' pja**tʃi** 'please$_{2SG}$'

Palatalisation in an inflected verb is conditioned by a base-derivative relation to the stressed segments in its infinitive. This is a development to theories of output-output faithfulness (Benua 2000) & prominence-conditioned faithfulness (Beckman 1999, Steriade 2001).

2. Palatalisation & verb families. There are consistent patterns within each Italian verb family: *-are* verbs never palatalise; *-ere* and *-ire* verbs display normal or overpalatalisation. Palatalisation results from contingent morpho-phonological properties - where stress falls and the vowel of the infinitive suffix. Three constraints derive nearly the entire paradigm series:

(2) ID(STRID) / ́ (BD) : Stressed *Base* (infinitive) segments retain stridency in *Derived* forms
*KI : Penalise velar - front vowel sequences
ID(STRID) (IO) : *Input* segments must match for stridency with *Output* correspondents

Normal palatalisation is only found in a subgroup of irregular *-ere* verbs that do not stress the infinitive suffix (Davis et al. 1987). Thus, in 'víntʃere' (to win), the relevant segment is unstressed, so BD faithfulness is not invoked, and the verb's derivatives palatalise normally:

(3) a.

/vink+o/	ID(STRI) / ́ (BD)	*KI	ID(STRI) (IO)
☞ víŋ.ko			
vín.tʃo			*!

Base = Inf: vín.tʃe.re

b.

/vink+i/	ID(STRI) / ́ (BD)	*KI	ID(STRI) (IO)
víŋ.ki		*!	
☞ vín.tʃi			*

Base = Inf: vín.tʃe.re

All other Italian verbs stress the infinitive suffix and proceed to misapply palatalisation in inflection. The entire *-are* paradigm underpalatalises as the infinitive, eg. 'pagáre' (to pay), stresses a [-strid] segment (4a). Overpalatalisation obtains in all but three forms of the regular *-ere* paradigm (see below). For 'pjatʃére' (to please), the relevant [+strid] segment is stressed, and so is retained in inflected forms, even if the suffix would not trigger palatalisation (4b).

(4) a.

/pag+i/	ID(STRI) / ́ (BD)	*KI	ID(STRI) (IO)
☞ pá.gi		*	
pá.dʒi	*!		*

Base = Inf: pa.**gá**.re

b.

/pjak+o/	ID(STRI) / ́ (BD)	*KI	ID(STRI) (IO)
pjá.ko	*!		
☞ pjá.tʃo			*

Base = Inf: pja.**tʃé**.re

The entire *-ire* paradigm palatalises. Most *-ire* verbs take an additional affix -isk- which may cause this (5a), but those that do not overpalatalise (5b), exactly as with 'pjatʃére' above.

(5) a. far**tʃí**re → far**tʃi**sko 'to fill → 1.SG' b. ku**tʃí**re → ku**tʃo** 'to sew → 1.SG'

3. Irregular forms. BD-faithfulness can be disrupted to cause reversion to normal palatalisation. Markedness accounts for the regular *-ere* forms that do not overpalatalise. These forms have suffixes with initial /w/, but the sequence [tʃw] is unattested in Italian.

(6) *TʃW ›› ID(STRI)/ ́ (BD): /pjak+wi/ → [pja**kwi**], *[pja**tʃwi**] (Infinitive: pja**tʃé**re)

More irregular verbs also palatalise normally, eg. ‘díre → di**ko**, di**tʃi**’ (to say → 1,2SG). Due to suppletion, BD-correspondence is made impossible in these cases as the relevant segments are not present in the infinitive. Palatalisation then follows the lower ranked constraints.

4. The nominal domain. Giavazzi (2012) shows palatalisation in nouns & adjectives is stress-conditioned. It is blocked in phonologically prominent positions: within & immediately after the stressed syllable. This rule governs the M.PL *-i* and the verbalising suffix *-izzare*:

(7) a. líriko (lyrical) → líri**tʃi**, lìri**tʃi**zzáre b. antíko (antique) → antí**ki**, antì**ki**zzáre

These suffixes do not shift stress, but the rule also applies to the remaining relevant deverbal suffix *-ire*. This suffix never causes palatalisation as it reassigns stress to its vowel, making the preceding stem-final velar prominent enough to avoid neutralisation. In conjugation, these verbs underpalatalise before -isk- as is predicted: ‘bjáŋko (white) → bjaŋ**kí**re → bjan**kí**sko’.

5. A lexical gap. Though *-are* verbs may have stem-final [tʃ/dʒ], eg. ‘mandʒáre’ (to eat), there are no *-ere* or *-ire* infinitives ending [-k/gere] or [-k/gire] except derivational *-ire* verbs. This gap is derived with the assumption that palatalisation misapplies due to BD-faithfulness; infinitives have no base of their own, so palatalise according to lower-ranked constraints.

6. A diachronic unification. This begs the question of why palatalisation in underived *-ire* & *-ere* verbs is not conditioned by stress. Save *-ire*’s use in derivation, these verbs form a closed class and are particularly irregular. I suggest that the form of these verbs was settled before palatalisation in Italian became stress-dependent, when the rule was exceptionless. As such, a speaker is aware of irregularity in this respect, but has a diagnostic to determine which verbs follow this diachronic rule: only verbs with no derivational base obey exceptional lexically indexed normal palatalisation. This approach is contra Krämer (2009), wherein exceptional constraints hold only by family - the speaker uses both phonology (stress) and morphology (presence of a base) to apply the rule. Additional constraints and final ranking then follow:

(8) *KI$_{[-BASE]}$: Penalise velar - front vowel sequences in forms without a derivational base
*KĬ : Penalise velar - front vowel sequences in prominently weak positions

(9) *KI$_{[-BASE]}$; ID(STRID) / σ́ (BD) ›› *KĬ ›› ID(STRID) (IO) ›› *KI

*KI$_{[-BASE]}$ is responsible for palatalisation of *-ere* and *-ire* verbs with no base which should not otherwise palatalise. BD-faithfulness is most clearly observed in overpalatalisation of *-ere* verbs (1c) and underpalatalisation of *-are* verbs with antepenultimate stress: ‘pratikáre (to practice) → práti**ki**’. The lower ranked constraints govern nouns, adjectives, & derived verbs.

7. Conclusion. Patterns of palatalisation in Italian are the result of the evolution of a rule conditioned by stress, but speakers are aware of the phonology of verb forms that entered the lexicon before this evolution. It is possible for the modern Italian learner to identify verbs which follow the earlier phonology: they have no derivational base. Misapplication of palatalisation found in verbal paradigms is due to a stress-dependent base-derivative constraint, and so stems from the form of the infinitive suffix, as derived above. If it is unstressed, the rest of the paradigm has normal application. If it is stressed, overapplication follows if the infinitive would trigger palatalisation, and underapplication if it does not.

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Concepts, Language, and Human Brain

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Studies on the relation between language and human cognition have agreed on two interrelated assumptions: (i) *some* concepts are innate; (ii) language creates *some* concepts. Developmental psychology has provided arguments to support (i), such as the possession of concepts in human babies, as shown by their behaviour (Carey 2009); however, the extensive focus on Merge within the field of linguistics has left (ii) unaddressed in theoretical terms. Consistent with this, cognitive science has been mostly considering Recursion as the 'only uniquely human component' of the faculty of language (Hauser, Chomsky & Fitch 2002) and taking the conceptual basis which underlies that operation as a construct that predated the emergence of language. The reason is twofold: the idea that language is required to create concepts (however this happens) appears to be impugned by the mere fact that we share with animals the same mental unit 'concept'; but more worringly, we still lack a clear definition of what a *concept* is (Laurence & Margolis 2012, 291) since it's entirely unclear how an innate (i.e., 'psychologically primitive') cognitive structure can be learned too—what Samuels' (2002) *Fundamental Conceptual Constraint* on nativism precisely rules out. Here I pursue an alternative which I argue it stimulates a more systematic debate about concepts that stops relying on deeply-rooted assumptions on the matter. In particular, I will argue (a) that language creates every concept, and (b) that concepts are not mere philosophical units, but neural entities, the outcome of an electrical activity triggered within the human brain.

My hypothesis for the emergence of genuinely human concepts focuses on comparative psychology. By contrasting the relationship between cognition and linguistic skills, it has been reported that rudimentary (human-like) symbolic capabilities in linguistically-trained great apes have not been followed by the production of protolanguage (non-recursive language, Bickerton 1990) in the wild state; furthermore, there are convincing reasons to reject primate calls as the precursors of the earliest words (cf. Tallerman 2011). Given these discontinuities, here I explore a different viewpoint by positing that the concepts (/symbols) to which calls attach must differ qua*l*itatively (rather than merely quantitatively, Hurford 2007) from those attached to human words—in line with their externalizations. Since (part of) our thought is unattainable for non-human primates, the emergence of language, I suggest, triggered simultaneously a new kind of cognitive symbol—the first 'uniquely human component'—, non apprehensible, unless in captive situations and with no small effort, by any other species.

My proposal builds partially on Hinzen's (2006 *et seq*.) Un-Cartesian theory, according to which distinctively human thought surfaces together with the computational engine of language (Narrow Syntax); nonetheless, and here resides my slight departure, the bootstrapped constituents which make up this part of human thought lack any kind of grammatical implementation: in my view they are concepts with no particular, language-specific category, so allowing a constraint-free (but still contentful), and therefore universal (language of) thought. In evolutionary terms, the appearance of the first words, I suggest, brought with it the emergence of the first human concepts; descriptively, the comprehension, and later convenzionalization, of the first word-like noises ('proto-words'), which our ancestors initially uttered to refer to perceptual elements, simultaneously brought with them the creation of their corresponding *concepts* into the human mind.

Fleshing out this model further, I will argue that the different trajectories of this round trip (the output/input sound pattern—expressed/understood meaning) have a neurological counterpart with specifically human perysilvian networks, whose morphology exhibits a specific enlargement in the parieto-occipital-temporal region not registered in other species. Consequently, the process underlying primate calls as well as artificial mappings in captive environments must follow, I hypothesize, a different neural pathway, specifically one which lacks an 'intersection' through which to create concepts *at will*.

—abstraction of the neural pathways underlying: (*left*) the emergence of words triggering the emergence of concepts; (*right*) the production of primate alarm calls—

If this picture is correct, the systematicity of human thought finds its place within the brain: a neural circuit turns our conceptual precursors, restricted combinatorially, into (*a*) free combinable units ('conjunctive concepts', in the sense of Pietroski 2007), (*b*) voluntarily accesible, and susceptible of (*c*) increasing massively and (*d*) becoming more complex semantically, as language develops. Further technical details will allow me to extract these and other minimal requirements of human *concepts* from the specific arrangement of the above neurological pathways. Its plausibility, at least, should make linguists and cognitive scientists reconsider where our mental phylogenetic split really began and whether to still treat recursion as the fundamental attribute of the faculty of language.

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A syntactic treatment of logophoricity and anaphoricity: evidence from verbal agreement

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Anaphoricity and logophoricity are standardly treated as underlyingly distinct, with the former receiving primarily structural treatments (Chomsky, 1981; Hicks, 2009; Reuland, 2011) and the latter predominantly semantico-pragmatic ones (Sells, 1987; Kuno, 1987, among others) – a dichotomy that is belied by the crosslinguistically pervasive morphophonological and syntactico-semantic similarities between the two. My paper will argue that: (I) a unified syntactic treatment of anaphoricity and logophoricity is empirically warranted, and (II) this can be achieved within an enriched grammatical model where certain types of discourse-pragmatic information are *syntactically* represented. In Tamil, the agreement triggered under a (nominative-marked) subject straightforwardly reflects the ϕ-features of this subject:

(1) [Nii paris-æ tookkapoo- gir-aaj-ŭnnŭ] Raman namb-in-aan.
you[NOM] prize-ACC lose.go- PRS-2SG-COMP Raman believe-PST-3MSG
"Raman$_j$ believed [$_{CP}$ that you would lose the prize]."

However, when the simplex anaphor *ta(a)n* occurs in subject position, the agreement triggered under it tracks *ta(a)n*'s antecedent:

(2) Maya$_i$ [$_{CP}$ Raman$_j$ [$_{CP}$ taan$_{\{i,*j,*k\}}$ paris-æ tookkapoo-gir-**aaḷ**-nnŭ]
Maya Raman ANAPH[NOM] prize-ACC lose.go-PRS-3FSG-COMP
namb-in-aan-ŭnnŭ] [pasaŋ-gaḷ-kiṭṭæ]$_k$ kaaṭṭ-in-aaḷ.
believe-PST-3MSG-COMP boy-3PL-ALL show-PST-3FSG
"Maya$_i$ showed [the boys]$_k$ [$_{CP}$ that Raman$_j$ believed [$_{CP}$ that she$_i$/*he$_j$/*them$_k$ would lose the prize]]."

(3) Maya$_i$ [$_{CP}$ Raman$_j$ [$_{CP}$ taan$_{\{j,*i,*k\}}$ paris-æ tookkapoo-gir-**aan**-nnŭ]
Maya Raman ANAPH[NOM] prize-ACC lose.go-PRS-3MSG-COMP
namb-in-aan-ŭnnŭ] [pasaŋ-gaḷ-kiṭṭæ]$_k$ kaaṭṭ-in-aaḷ.
believe-PST-3MSG boy-3PL-ALL show-PST-3FSG
"Maya$_i$ showed [the boys]$_k$ [$_{CP}$ that Raman$_j$ believed [$_{CP}$ that he$_j$/*she$_i$/them$_k$ would lose the prize]]."

(4) Seetha$_i$ naḍandadæ-patti joosi-čč-aaḷ. Taan$_i$ een
Seetha[NOM] happening-ACC-about reflect-PST-3FSG. ANAPH[NOM] why
kašṭappaṭṭ-iru-kk-**aaḷ**?
suffer-PRF-PRS-3FSG
"Seetha$_i$ reflected about what had happened. Why had she$_i$ suffered?"

When the intended antecedent is 3FSG *Maya* (2), the agreement under *ta(a)n* is also 3FSG, but in the minimally varying (3), the agreement under *ta(a)n* is 3MSG, with the only possible antecedent being *Raman*. In (4), *ta(a)n* refers "logophorically" to the extra-sentential attitude-holder *Seetha*, but the agreement under *ta(a)n* must still reflect the ϕ-features of this antecedent: if *Seetha* were replaced by 3MSG *Raman*, the agreement-marking would be 3MSG *-aan* instead. Given (1), it is tempting to think that the source of agreement under *ta(a)n* is *ta(a)n* itself. However, since the agreement triggered under *ta(a)n* may vary, this would be tantamount to proposing three different *ta(a)n*-s in (2)-(4). Further counter-evidence that *ta(a)n* directly triggers agreement comes from (5); crucially, (5) also shows that the agreement under *ta(a)n* is not directly triggered by *ta(a)n*'s antecedent (e.g. via long-distance Agree) either:

(5) Raman$_i$ [$_{CP}$ taan$_{\{i,*j\}}$ ʤej-pp-**een**-nnŭ] so-nn-aan-nnŭ] Krishnan$_j$
Raman ANAPH[NOM]$_i$ win-FUT-1SG-COMP say-PST-3MSG-COMP Krishnan
nene-čč-aan.
say-PST-3MSG
"Krishnan$_j$ thought [$_{CP}$ that Raman$_i$ said [$_{CP}$ that he$_{\{i,*j\}}$ would win]"

Taan's antecedent, *Raman*, is 3MSG, but the agreement under *ta(a)n* is 1SG. But this 1SG agreement only obtains when the antecedent is the AGENT of a speech-predicate; if the antecedent were *Krishnan*, 3MSG agreement would obtain instead. These facts show that the agreement under *ta(a)n*: (1) is sensitive to the properties of *ta(a)n*'s antecedent, (2) is nevertheless not *directly* triggered by the antecedent itself, and (3) is also not *directly* triggered by *ta(a)n*. I will independently demonstrate that the 1SG agreement in (5) instantiates 1st-person indexical shift (Kaplan, 1989) and reflects the ϕ-features of a phase-local shifted 1st-person indexical that "stands in" for *ta(a)n*'s antecedent. If agreement were triggered directly by *ta(a)n*'s antecedent, the mismatched ϕ-features in (5) would be unexpected. But under an account claiming that the agreement under subject *ta(a)n* is directly due to *ta(a)n*, we would have to posit that *ta(a)n* in (5) $\neq$ that in (2)-(4), leaving opaque why 1st-person agreement obtains only in the clausal complement of a speech-verb. The idea that *ta(a)n* doesn't itself trigger agreement is also in line with robust crosslinguistic evidence showing that anaphors are incapable of triggering regular ϕ-agreement (Rizzi, 1990; Woolford, 1999, "Anaphor Agreement Effect") and often fail to unambiguously identify the full set of ϕ-features of their antecedents (leading to proposals that they lack some or all ϕ-features (Pica, 1987; Reinhart and Reuland, 1993; Kratzer, 2009)).
Observations: ϕ-feature agreement under subject *ta(a)n* is not directly triggered by *ta(a)n* or by *ta(a)n*'s antecedent; nevertheless, it tracks this antecedent. **Premises:** ϕ-agreement is implemented in the Narrow Syntax, via Agree between a DP with valued ϕ-features and a phase-local T/*v* with unvalued ones. The antecedent is not phase-local to *ta(a)n* or its clausemate T in (2-5).
Conclusions: There must be a local DP triggering agreement under *ta(a)n* which is distinct from both the antecedent and the anaphor, but "talks to" both. Its ϕ-features are syntactically represented in "logophoric" (4) as well as long-distance binding structures (2-3, 5). Thus, logophoricity and anaphoricity involve a core syntactic sub-component, and a unified approach to both is empirically warranted. I will show that, descriptively, the anaphoric/logophoric antecedent is always a DP denoting an individual that holds a mental/spatio-temporal perspective toward the minimal phase containing *ta(a)n*. I will present independent evidence that anaphora is a two-step process involving: (i) a non-obligatory control relationship (Williams, 1980) between the intended antecedent DP and a silent pronoun in the specifier of a "Perspectival Phrase" phase-local to the anaphor; (ii) (syntactic) Agree between this pronoun (the binder) and the anaphor, yielding the antecedent-tracking "effect" of agreement under *ta(a)n*. Thus, all binding is local, all antecedence is non-local. This model may be straightforwardly adapted to derive other logophoric/anaphoric patterns: e.g. Japanese empathy-based anaphora, logophoric/long-distance binding in Icelandic and Italian, and spatial anaphora in Norwegian and Dutch.
Selected References: Chomsky 1981 *Lectures on Government and Binding*. **Hicks 2009** *The derivation of anaphoric relations*. Benjamins. **K**aplan 1989 Demonstratives. In *Themes from Kaplan*. **Kratzer 2009** Making a pronoun: fake indexicals as windows into the properties of pronouns. *LI*. **Kuno 1987** *Functional syntax – anaphora, discourse and empathy*. Chicago. **Pica 1987** On the nature of the reflexivization cycle. NELS 17. **Reinhart and Reuland 1993** Reflexivity. *LI*. Reuland, 2011. *Anaphora and language design*. MITP. **Rizzi 1990** On the anaphor-agreement effect. *Rivista di Linguistica*. **Sells 1987** Aspects of logophoricity. *LI*. **Williams 1980** Predication. *LI*. **Woolford 1999** More on the anaphor agreement effect. *LI*.

Licensing of dative case in four Nordic languages

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1 Introduction. Scandinavian languages provide a rich basis for microcomparison in the distribution of the dative case. I discuss four examples and base the empirical observations in a licensing theory of dative case, integrated in a larger theory of abstract case.

2. Descriptive generalizations.

2.1 Icelandic. It is well documented that Icelandic has expanded the domain of dative compared to Old Norse. The expression "dative sickness" is a pejorative term for the use of dative case in contexts which are not historically dative. In addition to certain experiencer subjects, dative has also spread to objects of verbs of ballistic motion, including neologisms (Barðdal). Not every domain of the dative has been expanded, e.g. some instrumental uses have been lost, but these were not central in Old Norse and on the whole dative has advanced.

2.2 Faroese. Faroese has extended its use of the dative on benefactive indirect objects, compared with Old Norse (Thráinsson). However, Faroese has also lost a number of dative arguments compared with Old Norse. Thus, it cannot be said of Faroese that dative in general has expanded its domain, only shifted it.

2.3 Övdalian. Classic Övdalian, as described by Levander, can similarly be said to have changed the domain of the dative, but in a direction different from that of Faroese. Classic Övdalian has innovated a dative possessor not found in Old Norse. But at the same time, it has severely cut back on the use of dative with experiencers, thus cannot be said to have straightforwardly expanded the domain of the dative.

2.4 Norwegian. Certain Norwegian dialects, including some spoken in Romsdal, preserve a dative case in a limited number of contexts. By and large, this dative can be said to be restricted compared to Old Norse, and is used mainly on indirect objects and the complements of certain prepositions. Yet even here, the picture is slightly more complicated, in that some prepositions which did not take dative in Old Norse do take dative in Romsdal.

3. Theory of Case. The complexity of the situation shows that the correct theory of case is not a simple linear one, in which the set of dative licensers in each language is a subset of the licensers in another. On the other hand, typological work on case (Blake, Butt, Malchukov & Spencer, etc.) shows that case systems do not vary unrestrictedly. There is a reason that we continue to use the label 'dative' both for a case in Latin and a corresponding case in Turkish, Japanese, Warlpiri, and these four Nordic languages. Thus a general theory of case must be constrained enough to capture the crosslinguistic limits on variation but at the same time be able to describe the situation in these four related languages.

The general theory of case which I propose here is the following. Any extended projection which is embedded in another must be licensed. When the licensee is an extended projection of N, the licensing relation is called case. I model this formally in a version of the 'uninterpretable feature' theory of case (Pesetsky & Torrego): Overt morphological case is the expression of an uninterpretable instantiation of a feature which is interpretable only on the licenser, which might be a category in a verbal or prepositional projection.

A given category may serve or not serve as a case licenser in a given language, but functional considerations lead to most languages having some way of licensing a 'subject' (licensing by some head in the T domain, in a nominative-accusative language) and an 'object' (licensing by some lower head in the extended projection of V, possibly an Asp head, in a nominative-accusative language). These can then be called nominative and accusative, respectively.

If there is a distinct class of licensers for indirect objects (an applicative head, in the sense of Pylkkänen), then the case licensed is called dative. Functional heads have clusters of semantic properties which make them more or less similar to each other. Experiencer v_{exp} shares some

properties with Appl (introduces an argument 'above' another subevent) and thus may be classed with Appl for the purposes of case, in which case experiencer subjects can be assigned dative.

Similarly, if C in a given language licenses a hanging topic, then it licenses a noun phrase and hence assigns case. It could either assign a special 'topic' case (as in Japanese), or it could assign a case that is morphologically indistinct from some other case. Of the other case assigners, T is semantically the most similar to C, so if the case on hanging topics is syncretized with any other case, it will be syncretized with the nominative (as in Icelandic). A prepositional head, on the other hand, might be semantically more like an applicative, hence assign dative, or more like Asp, hence assign accusative . Or a language might distinguish it from both, and have a distinct prepositional case (as in Russian).

Thus, universally, case is assigned by a class of functional heads, which are grouped and classified according to semantically interpretable features. Surface cases in most languages simply underspecify the exact identity of the licenser, so that a single case appears in multiple contexts. Languages make cuts in different places, when there are multiple features involved, e.g. [poss,exp] could be classed together with [poss] or more like [exp].

Any head in a syntactic structure needs to be lexicalized, or 'spelled out.' Morphological productivity has to do with what lexical items a language has to spell out a given head. A head with only a small number of potential lexicalizers is not productive, for example ditransitive verbs are the only lexicalizers for dative-assigning Appl in Icelandic, so benefactive indirect objects are not productive. A language can gain or lose lexicalizers, making a phenomenon more or less productive. If it innovates a free morpheme for a given head (possibly null), then the phenomenon becomes fully productive.

4. Analysis. The core dative assigner is a low applicative head Appl, which is lexically incorporated into a closed class of verbs like 'give.' Any head which is semantically similar to it and which is designated as a case assigner can be grouped with it in a given language's case system.

4.1 Icelandic. In Icelandic, there is no free lexicalizer for Appl, which continues to be lexically restricted, so there are no free benefactives. A meaning component in ballistic motion verbs (proc_{Mot}) has been identified semantically with Appl, because like Appl it introduces a distinct subevent compared with the initiating or causing event (along the lines suggested by Svenonius). At the same time, an experiencer-introducing head (v_{Exp}) with similar Aktionsartal properties (i.e. introducing a distinct subevent) has become productive (i.e. a null lexicalizer for it has been innovated), leading to "dative sickness." These two changes contribute substantially to the spread of dative in Icelandic, compared with Old Norse.

4.2 Faroese. Faroese has innovated a null lexicalizer for Appl. This allows Faroese to appear with 'free benefactives' which are not possible in Icelandic. However, a low dative-introducing head in Faroese has become less productive, by losing its lexicalizers, hence the range of dative secondary objects has retreated, compared to Old Norse (and to Icelandic).

4.3 Övdalian. In Icelandic, the possessive head Poss licenses genitive case, but Övdalian has lost this case, which has been reanalyzed as a possessive clitic lexicalizing Poss. This raises the question of what case is assigned to the possessor. Just as in some German dialects, the answer is dative; in other words, there is a semantic similarity between Poss and Appl which is recognized by Övdalian in the case system. At the same time, Övdalian has replaced many dative experiencers with nominatives, suggesting that it has developed a more restrictive interpretation for v_{Exp}.

4.4 Norwegian. In Norwegian, the defining characteristics of dative have been redefined to exclude v_{Exp} but to include a number of prepositions which were not included in Old Norse. This means that dative appears on many prepositional objects, as well as with a lexically restricted set of the original ditransitives benefactives, but not on experiencers.

Anti-reconstruction, anti-agreement and the dynamics of A-movement

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In this paper we propose an analysis of agreement-based antireconstruction effects. Focusing on British 'team DPs', we show that reconstruction seems to be subject to a representational condition barring the interpretation of non-exhaustively-agreeing DPs in 'agreement positions;' however we propose that this representational constraint has a derivational basis, arising as a direct consequence of the theory of movement and locality proposed by Richards and van Urk (2012) as applied to (cyclic) A-movement.

Team DPs and anti-reconstruction. In British English, the class of group nouns like team, committee and group allow for both plural and singular agreement on the verb, and in general they display both singular and plural characteristics, sometimes simultaneously (though see Smith 2012). As noted by Sauerland and Elbourne (2002; S&E), these 'team DPs' (henceforth TDPs) display curious anti-reconstruction effects in plural agreement contexts: they do not undergo A-reconstruction for scope (1a), cf. singular-agreeing (1b). S&E also note that TDPs also show apparent anti-agreement in certain contexts, being unable to trigger plural agreement in a postverbal position in existentials (2). S&E argue that these two phenomena are related, explaining it in terms of a PF-movement theory of A-reconstruction. For S&E, standard A-reconstruction (i.e. 1b's inverse scope reading) does not involve phrasal A-movement in narrow syntax; rather, it involves feature movement (Chomsky 1995) of agreement-related features to Spec,TP in narrow syntax, then PF movement of the subject to Spec,TP in the post-syntactic derivation; this way, the semantic features of the DP stay in the lower position, thus deriving low scope (`reconstruction'). S&E assume that agreement in expletives involves feature movement, and by stipulating that the special plural-agreeing features on TDPs (called 'mereology' features) are unable to undergo feature movement, they derive (1)-(2): both the low scope reading of (1a) and the plural agreeing (2) require feature movement to Spec,TP, and so both are correlated and both ruled out. S&E's theory thus predicts a correlation of anti-agreement and anti-reconstruction, where both are borne of 'immobile features.'

(1) a. A Northern team are likely to be in the final. (*likely > E)
b. A Northern team is likely to be in the final. (likely > E)

(2) *There are likely to be a Northern team in the final. (cf. there is likely...)

Reconstructing elsewhere. We show that S&E's account has a number of empirical problems with the TDP paradigm and the correlation of anti-agreement and anti-reconstruction more generally. First, TDPs can reconstruct for scope under negation (3) and IP-adverbs (4); indeed we note that the general preference for surface scope is reversed in cases with 'inflectional' negation n't (5). This may suggest that TDPs only resist reconstruction across non-finite clause boundaries, but this is disproven by the fact that they do not invert for scope with another QP even in monoclausal cases (6).

(3) A Northern team have not made it to the final. (not > a)

(4) A Northern team have rarely failed to make it to the final. (rarely > a)

(5) A Northern team haven't made it to the final. (not > a; ?/a > not)

(6) #A Northern team have beaten every German team in the competition. (*every > a)

Many authors have argued on empirical grounds that object>subject scope in monoclausal contexts required QR of the object to a vP-adjoined position (or higher) and reconstruction of the subject to Spec,vP (Hornstein 1995, Johnson and Tomioka 1997, Fox 2000, Nevins and Anand 2003). Given this, we propose the generalization is that it is not possible to reconstruct into Spec,vP, the base position of monoclausal subjects and phase edge through which cyclic A-movement to matrix Spec,TP must proceed; this rules out (6) and it also gets (1a) on the assumption that A-movement proceeds through cyclic Specs (i.e. Sauerland 2003) and that reconstruction (however construed) must obey some version of cyclicity (i.e. if we can’t

reconstruct to position A then we can't 'skip' that and reconstruct to a lower position B). We propose that the inverse scope readings for (3)-(5) follow from reconstruction to successive-cyclic landing sites in the inflectional layer between the subject position and Spec,vP. We show that this does not follow from the PF-movement theory of A-reconstruction.

We then criticise the 'feature movement' component of S&E's theory. Looking beyond English, we note that the correlation of anti-agreement and anti-reconstruction is unlikely to be an accidental property of features, as Nevins and Anand (2003) note a number of cases of A-movement in English, Hindi, Russian, Greek where an XP does not reconstruct when it does not agree with the probing head; they call this "Purely EPP-driven movement" and propose PEPPER: "Purely EPP Eliminates Reconstruction." One argument comes from English locative inversion: the subject does not agree with the verb and scope is frozen.

(7) On some stage stood every actress. (*every>some)

This indicates that the anti-reconstruction in British English is not a property of the 'mereology' feature but rather a more general effect whereby non-agreeing subjects do not reconstruct, where "non-agreeing" encompasses cases where features that should be visible for Agree are not probed. Intriguingly, N&A discuss exceptions to PEPPER which are reminiscent of the TDP paradigm, such as Hindi non-agreeing ergative subjects, which do not reconstruct for inverse scope, do scope under negation (i.e. they can be NPIs). The PEPPER and TDP facts thus require a unified explanation where reconstruction to positions like Spec,vP is not possible, but reconstruction to other intermediate positions is possible, when the XP in question does not Agree fully with the probe which drives formation of the A-chain.

A-movement and 'Position Coherence.' We propose an account in terms of Richards and van Urk's (2012; R&vU) theory of locality of cyclic movement. R&vU propose (building on Richards and Rackowski 2005) that for a head X to probe and attract a YP contained in the lower phase ZP, X must first probe and Agree with the phase head Z; this 'opens up' the phase (which is otherwise opaque) and allows Agree to probe and attract YP. R&vU's proposal concerns A'-movement, so we extend it to A-movement: this involves uninterpretable features (uFs) on T probing and Agreeing with interpretable features (iFs) on v (a dependency often realised as V-to-T), then T probing the DP to derive agreement and A-movment. This requires v to bear iFs that are visible to T, namely the phi features borne by the DP in its spec; with base-generated subjects these may be selectionally related (i.e. features that encode that it introduces a subject), and with successive cyclic movement to a v they are the features borne to attract the DP from a lower position (the same phi-features). Crucially, this means that in A-chains there are iFs that identify the subject on v.

Now consider reconstruction. We assume that A-reconstruction is the result of interpreting a lower copy in a chain (Chomsky 1995), and in simple cases of reconstructing locally A-moved subjects this involves interpreting the copy in Spec,vP. We propose that this is subject to a representational constraint which states that if a head projects an A-specifier for an XP, spec and head must match for valued iFs. This rules out interpreting an XP in a position where that position does not bear matching iFs; we tentatively suggest that this is how A-positions are distinguished from A'-positions. We call this *Position Coherence*, and we propose that it may derive from a general LF-coherence constraint ensuring that linked syntactic objects match w.r.t. iFs. We propose this rules out interpreting plural-agreeing TDPs in Spec,vP: the iFs that v bears are [+plural], but the DP bears [-plural] iFs. This means that interpretation of the lower copy is not possible, as the position would be 'incoherent.' Importantly, this also derives the inability of TDPs to be associates in existentials: associates do not raise, so they are only interpretable in Spec,vP and thus always create 'incoherent positions.' We show how this account extends to PEPPER and how to derive intermediate A-movement without deriving further 'incoherent positions.'

Selected refs: Nevins and Anand 2003. Some AGREEment matter. WCCFL 22. Richards and van Urk 2012. Two components of long distance extraction: evidence from Dinka. NELS 43.

The directionality of agreement and nominal concord in Zazaki

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We investigate two issues in the theory of agreement from the perspective of nominal concord in Zazaki. First, does Agree operate downward, upward, or in both directions (Adger 2003, Baker 2008, Zeijlstra 2012, Preminger 2012)? Second, does nominal concord make use of the same mechanism as agreement in the verbal domain (Carstens 2000, Baker 2008, Kramer 2009, Norris 2011)? Using our own fieldwork data, we argue that nominal concord in Zazaki (Northwest Iranian, Indo-European) is bidirectional, because it first operates downward with features inside nominal dependents and then upward with features in the extended nominal projection. In addition, we argue that it is derived by the same mechanism as verbal agreement, because it is sensitive to the same barriers for agreement. This suggests that, if agreement in the verbal domain is derived by Agree, nominal concord also uses Agree and that Agree is bidirectional, with downward Agree taking precedence over upward Agree (cf. Béjar & Rezac 2009).

Nominal concord in Zazaki. In Zazaki, nominal concord is realized on the *ezafe* morpheme that introduces dependents of the noun, i.e. adjectives and possessors. Though *ezafe* cliticizes to its left, it forms a constituent with the adjective (1a) or the possessor (1b) to its right at some stage in the derivation (cf. Samiian 1983, den Dikken & Singhapreecha 2004, Larson & Yamakido 2009). Its form *always* varies with the φ-features of the head noun — (1a) vs. (2a) and (1b) vs. (2b).

(1) a. [$_{DP}$ ju kutık [**=o** gırs]]
one dog **=EZ.M.NOM** big
'a big dog (m.)'

b. [$_{DP}$ ga [**=ê** Alik=i]]
ox **=EZ.M.OBL** Alik=OBL.M
'Alık's ox (m.)'

(2) a. [$_{DP}$ a mang [**=a** spi]]=e
that.F goat **=EZ.F** white=F
'that white goat (f.)'

b. [$_{DP}$ bız [**=a** Alik=i]]
goat **=EZ.F** Alik=OBL.M
'Alık's goat (f.)'

With masculine nouns, which have a nominative-oblique case distinction, *ezafe* also agrees in case — but only when it introduces adjectives (3a–b). When it introduces possessors — which receive oblique case realized as the marker *=i* — *ezafe* invariably takes the oblique form *=ê* (4).

(3) a. [$_{DP}$ kutık [**=o** gırs]]
dog **=EZ.M.NOM** big
'the big dog (m. nom.)'

b. [$_{DP}$ kutik [**=ê** gırs]]=i
dog **=EZ.M.OBL** big=OBL.M
'the big dog (m. obl.)'

(4) [$_{DP}$ Kutik [**=ê** Alik=i] [=o gırs]] goşt wen-o.
dog **=EZ.M.OBL** Alık=OBL.M =EZ.M.NOM big meat eat.PRS-3SG.M
'Alık's big dog (m. nom.) is eating meat.'

The proposal. Our proposal has two parts. First, we propose that the *ezafe* marker agrees first downward with its dependent and then upward with a head in the extended nominal projection. This accounts for the difference in possible case realizations when *ezafe* introduces possessors and adjectives. With possessors, *ezafe* is always oblique because it agrees downward in case with the possessor, which is always oblique case marked. No such effect arises when *ezafe* introduces an adjective, however, since adjectives do not have their own case. Second, we propose that nominal concord in Zazaki employs the same mechanism as verbal agreement, since neither allows φ-agreement with obliques (cf. Rezac 2008, Bobaljik 2008, Preminger 2011). *Ezafe* never agrees in φ-features with the possessor (1b, 2b), even though it has its own φ-features (unlike an adjective). In the verbal domain, φ-agreement with obliques is also banned. Zazaki is split ergative: the oblique case marks objects in the present tense and transitive subjects in the past tense. The verb never agrees with an oblique argument, even with transitive verbs in the past tense. T agrees with the (nominative) object, skipping the oblique subject (5).

(5) Kutik=i **ez** guret-**a**.
dog=OBL.M **1SG.NOM** bite.PAST-**1SG**
'The dog bit me.'

To derive this restriction, we assume that obliques — in both the nominal and verbal domains — are introduced by a null P, which is a phase head. This phase boundary shields the φ-features of the oblique DP from agreement. The oblique case feature on P is, however, still available.

Formal implementation. If verbal agreement is derived by Agree, this means that nominal concord is too (Mallen 1997, Carstens 2000, Baker 2008). To account for nominal concord in Zazaki, we posit two sets of features on the *ezafe* head: unvalued φ-features and an unvalued case feature. In addition, we assume, abstracting away from different analyses of *ezafe*, that it is a functional head (Ez) that takes a nominal dependent as its complement (e.g. an AP or a PP, such as a possessor). The resulting EzP merges with or adjoins to a nominal projection. When Ez is merged with AP (6a), it first probes downward into AP. But since adjectives have neither φ- nor case features, Ez must probe upward. Once EzP merges with or adjoins in the extended nominal projection, it can Agree with the functional heads Num(ber) and Gen(der) and is valued with the φ-features of the head noun; and, it can Agree with D to get its case feature valued (either nominative or oblique). When, however, Ez merges with a possessor (6b), it can successfully Agree downward with the case feature on the P introducing the possessor, so that the form of *ezafe* is invariantly oblique with possessors. Since φ-agreement with oblique PPs is blocked, Ez must probe upward to Agree with Gen and Num, so that with possessors *ezafe* still varies with the φ-features of the head noun.

(6)

a. $[_{DP}$ D Gen/Num $[_{EzP}$ Ez $[_{AP}$ A]]]
φ
case

b. $[_{DP}$ D Gen/Num $[_{EzP}$ Ez $[_{PP}$ P Poss]]]
φ
case

Further consequences. We have proposed that nominal concord makes use of bidirectional Agree. This accounts for simpler cases of nominal concord that are all upward. In Icelandic (7), nominal concord in φ-features only operates upward because the dependents (adjectives and numerals) do not themselves have the right kind of features. It also accounts for why possessors agree with the possessee. In Swahili (8), nominal concord on the preposition introducing a possessor must be upward with the features of the (possessed) head noun, rather than with the possessor, since φ-features inside obliques are inaccessible.

(7) Icelandic (Norris 2011:3)
$[_{DP}$ $[_{NumP}$ fjór-**ir**] snigl-**ar**]
four-**NOM.PL** snail-**NOM.PL**
'four snails'

(8) Swahili (Carstens 2000:334)
$[_{DP}$ kiti $[_{PP}$ **cha** mtoto]]
7chair **7of** 1child
'the child's chair (7)'

Unlike the markers of concord in either Icelandic or Swahili, *ezafe* in Zazaki introduces both adjectives and possessors. Because of this unique syntactic configuration, and because *ezafe* agrees in both case and φ-features, we see that Agree can operate both downward and upward in the nominal domain. Crucially, however, Agree is triggered as soon as a licit goal is available. In a bottom-up derivation, this means that downward Agree is *preferred* when a choice arises, because this configuration is established first. As such, downward Agree takes precedence over upward Agree (Béjar & Rezac 2009).

Selected references. Baker, M. 2008. *The syntax of agreement and concord*. Cambridge University Press. □ Béjar, S. & M. Rezac. 2009. Cyclic Agree. *Linguistic Inquiry* 40:35–73. □ Kramer, R. 2009. *Definite markers, phi-features, and agreement: A morphosyntactic investigation of the Amharic DP*. Ph.D. dissertation, University of California, Santa Cruz.

Against usage-based approaches to recursion: The grammar-performance distinction in a biolinguistic perspective

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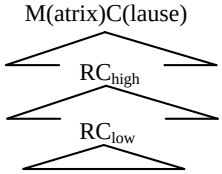
Keywords: syntax; processing; recursion; center-embedding; third factor

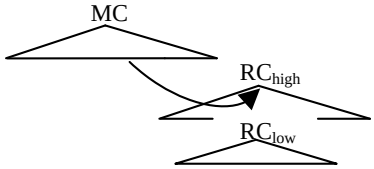
The distinction between grammar and performance distinguishes the biolinguistic approach to language from other cognitive accounts such as usage-based theories that also aim at a biological explanation of the human language faculty (cf. Christiansen & Chater 2008). One prominent argument, initially developed by Chomsky & Miller (1963), in favor of drawing a sharp distinction between processing operations on the level of performance and formal mechanisms on the level of grammar is the observation that unbounded recursive structures cannot successfully be interpreted despite being generable by the grammar. However, it has recently been argued in a usage-based setting that constraints on recursive structures do not follow from extrinsic limitations on memory or processing but from intrinsic constraints of the system in which the knowledge of grammatical regularities is embedded. In this paper, we will provide both empirical evidence and conceptual arguments against such approaches to the grammatical property of unbounded recursion.

In the first part of the paper, we turn to Christiansen & MacDonald's (2009) connectionist implementation of a usage-based approach to recursion. They trained a 'Simple Recurrent Network' (SRN) on recursive center-embedded structures and claimed that the SRN develops human-like processing of recursive constructions, and that this model is thus able to predict patterns of human performance. Crucially, they hypothesize that externally specified limitations on memory or processing cannot fully explain patterns of human performance, since their SRN predicts a significant effect of depth of recursive embedding that cannot be attributed to potential length effects. Regarding this hypothesis, we draw on recent empirical evidence from both a corpus study and an experiment testing acceptability using a speeded grammaticality judgment task (cf. Trotzke *et al.* in press; Bader subm.); the four sentence types investigated in these studies are shown in (1):

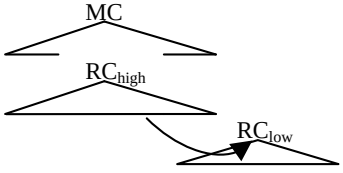
(1) a. RC_{high} and RC_{low} center-embedded



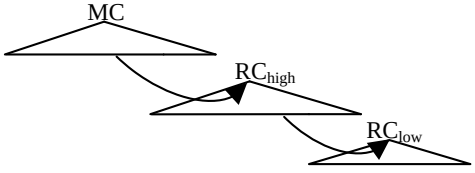
b. RC_{high} extraposed, RC_{low} center-embedded



c. RC_{high} center-embedded, RC_{low} extraposed



d. RC_{high} and RC_{low} extraposed



Our aim was to find out whether German sentences containing doubly center-embedded relative clauses (RCs) have unique properties attributable to the high degree of recursive center-embedding, as Christiansen & MacDonald's (2009) model would predict. To answer this question, the corpus study included not only sentences containing doubly center-embedded RCs (1a) but also three additional sentence types in which the degree of center-embedding was reduced to either one ((1b) and (1c)) or zero (1d) by means of RC extraposition. The re-

sults summarized in (2) suggest that the two possible applications of extraposition – within the superordinate clause and within the higher relative clause – are independent of each other.

(2) Bader (subm.: Table 14)

	Degree of CE	RC high	External properties	RC low	Internal properties
sentence type (1a)	2	+ CE	long post-NP region Subj antecedent	+ CE	long post-NP region
sentence type (1c)	1	+ CE	long post-NP region Subj antecedent	– CE	short post-NP region
sentence type (1b)	1	– CE	short post-NP region Obj antecedent	+ CE	long post-NP region
sentence type (1d)	0	– CE	short post-NP region Obj antecedent	– CE	short post-NP region

It is for this reason that doubly center-embedded RCs have no unique properties. Instead, they share properties with sentences containing the same kind of disrupted dependency: sentences with center-embedded RCs of type (1c) as far as the properties of the superordinate clause are concerned, and sentences with extraposed RCs of type (1b) as far as the properties of the higher RC are concerned. The corpus evidence was corroborated by an experiment that investigated the acceptability of the very same sentence structures that were the topic of the corpus study. Thus, in contrast to the predictions of Christiansen & MacDonald's (2009) SRN, our data support the *Disrupted-Dependency Hypothesis* that all constraints on center-embedding follow from the fact that center-embedding disrupts syntactic dependencies.

In a biolinguistic context, it has been claimed that approaches such as Christiansen & MacDonald's (2009) model "speak to how processing and knowledge of language are fundamentally intertwined in a way not well-captured by traditional approaches in formal language theory" (de Vries *et al.* 2011: 29). Recently, however, it has been shown for the domain of language acquisition that data from frequency-oriented linguistics can fruitfully be connected to current conceptions of UG (cf. Yang 2010). In the second part of our paper, building on our arguments against usage-based approaches to recursion, we will argue that systematic properties of performance systems can play an important role within the biolinguistic perspective on language by providing third-factor explanations for crucial design features of human language. In particular, we will propose a typology of explanatory strategies that address properties of the performance interface and, as we will argue, show points of convergence with Chomsky's (2005) three-factor parcellation (cf. Trotzke *et al.* in press).

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Agreement vs Concord in Icelandic

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This paper examines the morphology of passive participles, floated quantifiers, and secondary predicates in Icelandic. In Icelandic, verbs and passive participles agree only with nominative DPs. Floated quantifiers and secondary predicates, on the other hand, agree with whatever DP they modify, irrespective of the case of the DP. The theoretical generalization that arises is that passive participles (like verbs) agree only with structurally case-marked DPs, while floated quantifiers and secondary predicates agree with both structurally and non-structurally case-marked DPs. I show that this difference suggests that agreement morphology and concord morphology come about via different mechanisms. I argue that because of its relationship to case, verbal agreement – including passive participle agreement – should be determined in the syntax. I provide an analysis of passive participles based on Bhatt's (2005) idea of covaluation. I argue that T covaluates the case feature on the participle when T probes a nominative DP. By contrast, I argue that floated quantifier and secondary predicate concord come about via a combination of syntactic case assignment and PF feature-copying.

This analysis contrasts with two types of proposals. The first type, building on parallels between DPs and CPs, argues that both agreement and concord are established in the syntax via a probe-goal relationship (e.g., Baker 2008, Carstens 2000). The second kind of analysis argues that both types of features are established at PF (e.g., Embick and Noyer 2007, Halle and Marantz 1993, Sigurðsson 2006). I argue that the Icelandic data suggest a more nuanced approach, namely that agreement and concord phenomena should not be treated with a one-size-fits-all approach.

As is well-known, DP-internal concord generally involves case, gender, and/or number features while verbal agreement generally involves person, gender, and/or number features. In their agreeing forms, passive participles in Icelandic morphologically pattern like floated quantifiers and secondary predicates. That is, all three items show case, gender, and number features. On the surface, this pattern seems to suggest that passive participle agreement is a form of concord. However, passive participles syntactically behave like verbs, even though their morphology differs.

Icelandic verbs agree in person and number with nominative DPs, as shown in (1)a. In (1)b, the verb does not agree with the dative subject. Rather, the verb appears in the default form, which is homophonous with the third person singular.

(1) a. Við lásum/*las bókina.
we.nom read.1pl/dft book.the
'We read the book.'

b. Stelpunum leiddist/*leiddust.
girls-the.dat.pl bored.dft/*3pl
'The girls felt bored.'

In passives, the participle agrees in case, number, and gender with the nominative subject. The auxiliary patterns like main verbs and also agrees (in person and number) with the nominative, as shown in (2)a. Just as in actives, when there is not a nominative, the verb appears in the default. In (2)b, neither the auxiliary nor the participle agrees with the dative.

(2) a. Strákarnir voru aðstoðaðir/*aðstoðað.
boys.the.nom was.3pl aided.nom.pl.masc/*dft
'The boys were aided.'

b. Strákunum var hjálpað.
boys.the.dat was.dft helped.dft
'The boys were helped.'
(Boeckx and Hornstein 2006, ex 2-3)

Following Legate 2008 and Woolford 2006, I assume that nominative is a structural case and dative is a non-structural case. As such, T assigns nominative and v_{Dat} assigns dative.

Building on Bhatt's (2005) analysis of long-distance agreement in Hindi-Urdu, I argue that passive participle agreement in Icelandic is a consequence of Agree plus covaluation. Hindi-Urdu exhibits long-distance agreement in some infinitival constructions. Verbs in Hindi-Urdu agree with the highest DP within the clause that is morphologically unmarked for case. Ergative subjects appear in clauses with perfective aspect and are overtly case-marked. Consequently, verbs do not agree with ergatives. In constructions with ergative subjects and infinitival complements, the matrix verb may agree with the embedded object. In this situation, the infinitival verb also agrees with the embedded object, as shown in (3). When the matrix verb does not agree with the embedded object, all verbs appear in the default form.

(3) Shahrukh-ne [tehnii kaat -nii] chaah-ii thii. *LDA in Hindi-Urdu. All*
Shahrukh-erg branch.fem cut-inf.fem want-pfv.fem.be.past.fem. *verbs agree with*
'Shahrukh had wanted to cut the branch.' (Bhatt 2005, EX 6) *embedded object.*

Bhatt (2005) proposes that when the matrix T probes the embedded object, it *covaluates* the unvalued φ-features on the infinitive. The infinitive agrees with the embedded object only when the matrix verb does as well.

Given that Icelandic passive participles agree with a DP only when T assigns case to that DP, I propose an analysis for (2) based on Bhatt's (2005) proposal. The analysis for (2)a is shown in (4)a. T probes the DP and assigns nominative. Because the participle also has an unvalued case feature and is in the c-command domain of T, T also assigns nominative to the participle via covaluation. The DP, in turn, values the φ-features on T and covaluates the φ-features on the participle. (Of course, the DP moves to Spec,TP for EPP.)

(4) a. $T_{[Nom]}$ $PasPart_{[uCase]}$ $DP_{[uCase]}$=(2)a
[uφ] [uφ] [φ]

b. $T_{[Nom]}$ $PasPart_{[uCase]}$ $DP_{[Dat]}$ v_{Dat}=(2)b
****
[uφ] [uφ] [φ]
****

Unlike in (4)a, in (4)b, T does not assign case to the DP. Consequently, T cannot value the case feature on the participle. Nor can the DP value the φ-features on the participle because the DP does not value the φ-features on T. The participle, therefore, appears in the default.

By contrast, secondary predicates and floated quantifiers agree with whatever DP they modify. In (5) 'both' and 'alone' agree with the dative subject.

(5) a. Bræðrunum var báðum boðið á fundinn.
brothers.the.dat was.def both.dat.masc.pl invited.dft to meeting.the
'The brothers were both invited to the meeting.' (Sigurðsson 2008, ex 17)
b. Ólafi leiddist einum í veislunni.
Olaf.dat bored.def alone.dat.masc.sg in party.the
'Olaf felt bored alone in the party.' (Sigurðsson 2008, ex 20)

I propose that concord comes about via case assignment in the syntax and PF feature-copying. I follow Sigurðsson's (2006) suggestion that floated quantifiers should be analyzed as DP-internal concord and that secondary predicates could have either a raising or a control structure. I build on this proposal by articulating a PF mechanism that delivers the concord morphology. In (5)a, v_{Dat} assigns dative to the DP *both the brothers* in the syntax. At PF, an AGR node (Embick and Noyer 2007) attaches to the quantifier and copies the features of the head noun. Similarly, in (5)b, v_{Dat} assigns dative to the subject in the syntax. On a raising analysis of (5)b, *Olaf* is merged inside of the adjective phrase, and on a control analysis, a coindexed PRO is inside the AP. Irrespective of the syntax, both analyses require that an AGR node attaches to *alone* at PF and copies the features of the subject. A syntactic covaluation analysis cannot account for (5)b because this would require a case-assigning head to probe an AP, as opposed to probing a DP.

Geminates: from Old Norse to Scandinavian Languages.

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Consonants in scandinavian languages (Icelandic, Faroese, Danish, Swedish and one variety of Norwegian, Bokmål) have very similar behaviors: they undergo the same changes. Some examples showing this proximity are given below in (1):

(1). (a) semi-vocalization Icelandic /lagɪ/ [lajɪ] *lie* past. part. ; /segja/ [sej**ː**a] *say* inf.

Faroese /stʊtligʊr/ [stʊtlij**ʊ**r] *pleasant* ; /drɔugu/ [drɔu**w**u] *drag* past. part.

Danish /lægə/ [læjə] *play* inf. ; /sɒg/ [sɒ**ˀw**] *sorrow* ; /bɔg/ [bɔ**ˀw**] *book*

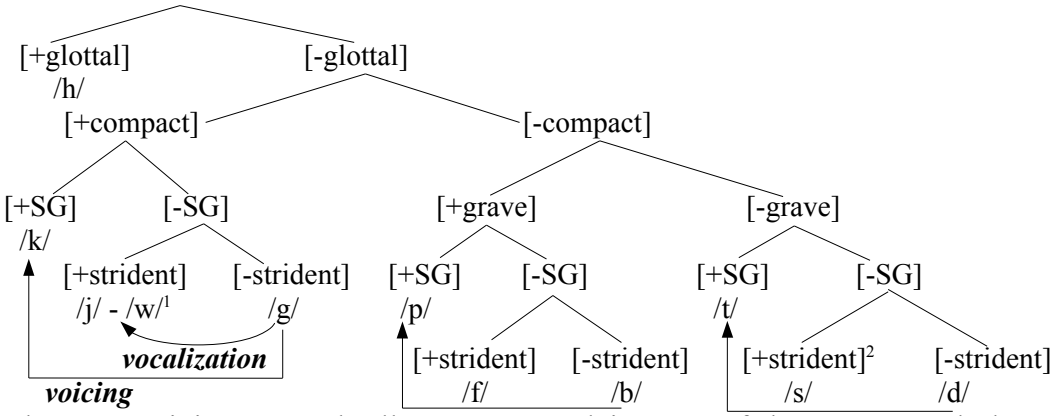
(b) voicing Icelandic /ljɛku/ [ljɛ**g**u] *play* pret. ; /tapa/ [ta**b**a] *lose* inf. ;/matur/ [ma**d**ur] *meal*

Faroese /tɛaka/ [tɛa**g**a] *take* inf. ; /drepa/ [dre**ː**ba] *kill* inf. ; /sita/ [si**ː**da] *sit* inf.

Danish /ʁyːpə/ [ʁy**ː**bə] *lagopus*; /pawkə/ [paw**g**ə] *kettledrum* ; /ʁuːtə/ [ʁu**ː**də] *route*

This similarity finds its source in the diachrony of these languages: they all are from the same language continuum, Old Norse (henceforth ON). In order to explain their behavior and to test if this genetic proximity still holds in the synchrony, we used the contrastive hierarchy method (Hall : 2007, Dresher : 2009), which allows us to identify the phonologically active material in the segments. We obtained the same hierarchy for the five nordic languages. It is given in (2):

(2). [glottal] >> [compact] >> [grave] >> [Spread Glottis] >> [strident] >> [voice]



The contrastivist approach allows us to explain most of the consonantal changes in nordic languages: segments that interact share most of their features and hence they appear under same node. In the vocalization process, /g/ gains stridency, i.e. become [+strident]. In the voicing process, stops lose their aspiration (hence positive specification for [SG]) and gain voicing in the same time, since there is no phonological voiceless non aspirated in nordic.

There is however one specific process the contrastive hierarchy fails to explain: gemination. Examples in (3) show the treatment of voiceless stops geminates across nordic languages. As we can see datas exhibit variation from a language to another:

(3).

	V /pp/ V	V /tt/ V	V /kk/ V
Icelandic	/lappa/ [la**hp**a] *patch* inf.	/fatta/ [fa**ht**a] *catch* inf.	/θakka/ [θa**hk**a] *thank* inf.
Faroese	/lɛappi/ [lɛa^{h}**p**ːi] *patch, rag*	/kɛttəɹ/ [ʧɛ^{h}**t**ːəɹ] *cat* pl.	/tɛakka/ [tɛa^{h}**k**ːa] *thank* inf.
Danish	*(lappe)*[3] /lɑpə/ [lɑ**b**ə] *patch* inf.	*(fatte)* /fatə/ [fa**d**ə] *catch* inf.	*(takke)* /takə/ [tɑ**g**ə] *thank* inf.
Swedish	/lappa/ [la**pː**a] *patch* inf.	/fatta/ [fa**tː**a] *catch* inf.	/takka/ [ta**kː**a] *thank* inf.
Bokmål	/lappe/ [la**pː**ə] *patch* inf.	/fatte/ [fa**tː**ə] *catch* inf.	/takke/ [ta**kː**ə] *thank* inf.

1 We put the labial velar /w/ under the same specifications as /j/ : they are both [+compact] and their behaviors across nordic languages are very similar.

2 After [+strident] Icelandic needs an extra contrast, namely [±voice], in order to distinguish between coronal fricatives /s/ and /ð/. The former is common to every nordic languages but the latter is present only in Icelandic.

3 We give for Danish orthographic forms. This will be relevant later.

Underlying (derived from ON) /pp, tt, kk/ should surface respectively [pː, tː, kː]. That's indeed what we can observe in Swedish and Bokmål, in (3). In Danish however, we can see that voiced stops, [b, d, g] are produced. We posit simple consonants in underlying representations and not geminates. Otherwise we can't justify why a consonant in a *protected* environment (Lass 1984 : 182) undergoes lenition and why it's phonetically short.

During a previous field study we recorded native speakers of Danish, Swedish and Norwegian (Bokmål) for reading and conversation tasks. Some unexpected data showed up with the Danish speaker, they are presented in (4):

(4). Danish

(*ikke*) /ikə/ [i**k**ə] *not*	(*lappe*) /lapə/ [la**p**ə] *patch* $_{\text{inf.}}$	(*fatte*) /fætə/ [fæ**t**ə] *catch* $_{\text{inf.}}$
(*klokken*) /klogən/ [klo**k**n̩] *clock*		

Where Danish speaker was expected to produce voiced segments (intervocally), she produced [p, t, k] instead. This backs our proposal of underlying single voiceless stop: voicing would then not be obligatory and the underlying segment surfaces without any change.

Following Lass (1984) and his proposal explaining sound change, we assume that the synchronic treatment of geminates in nordic languages allows us to reconstruct a sequence of a developmental type from ON to today. We already mentioned that the jump from /pp/ to [b] without intermediate stage would be hard to justify. According to this and to Lass' hierarchy of segments in terms of phonological strength (1984 : 178) we assume the following sequence (we illustrate it with labial voiceless stops):

(5). pp > p > b

In (5) [p] would be what Lass calls a *missing link* (1984 : 337), i.e. a stage we can reasonably posit but for which we don't have diachronic data. If the literature never mentions [p] as the production of /pp/ for any nordic languages, we showed in (3) that it is however a possible stage. Lass (1984) proposed that checking in the outputs of speakers could be a way to borne out assumptions about *missing links*, since the movement across the hierarchy a speaker can control may be taken as a "possible sound change" (Lass 1984 : 333).

Assuming that [p] is indeed the *missing link* leads to two implications: either speakers have access to the diachronic sequence, or the change is still in progress. Another, maybe more convincing, solution would be the one proposed in Nevins & Vaux (2006): speakers underlying representations may be influenced by their knowledges of alternations and orthography. The datas in (4) are extracted from our reading task: the speaker had the words in front of her and she may have produced [p,t,k] because of the orthographic (double) *p, t, k*.

We explore here the possibility of reconstructing the diachrony with the help of the synchrony, considering the expected forms but also the particular or unexpected productions made by the speakers. In this way we should be able to find out the *missing links* between two observable stages, like we did in (5). We will also show how preaspiration fits in this scenario. In return, diachrony, and more particularly *missing links,* allows us to explains and to justify the underlying representations we posit (here for Danish former "geminates").

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Possessor case in Udmurt: A local reanalysis as fusional case stacking

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Claim: We claim that an alleged non-local case dependency in the Uralic language Udmurt can be reanalyzed as a local dependency. According to the literature, Udmurt exhibits a case split: the actual case value of a possessor (Poss) in a DP depends on the grammatical function (GF) of that DP, an information that is not locally available at the point of case assignment in the DP. However, the traditional formulation of the generalization is ambiguous because GFs are not defined precisely. We disambiguate the term by testing predictions of potential interpretations of the generalization and present new data that show that the correct generalization is not about GFs but rather about the case value of the DP that contains Poss. These findings facilitate a local reanalysis in terms of case stacking: arguments in Udmurt possess two case slots to which case values are assigned locally in the syntactic component. Due to a morphological constraint, these two case values must be fused into one in the postsyntactic morphological component. This resulting value is realized by an exponent that is different from the exponents that would have realized each of the two original case values, thus creating the illusion of a case split.

An alleged non-local case dependency: In Udmurt, Poss can bear either genitive (GEN) or ablative (ABL). The case values are in complementary distribution: According to the literature, GEN is the default possessor case; ABL occurs if the DP that contains Poss functions as a direct object (DO), cf. (1) (Csúcs 1988, Kel'makov 1993, Vilkuna 1997, Winkler 2001, Nikolaeva 2002, Koptjevskaja-Tamm 2003, Suihkonen 2005, Edygarova 2009).

(1)a. so-len/*-leš eš-ez siče ug diśaśki
he-GEN/ABL friend-3SG such dress NEG.PRES.3SG
'His friend does not dress such a way.'

b. so-leš/*-len eš-s-e ažžiśko
he-ABL/GEN friend-3SG-ACC see.PRES.1SG
'I see his friend.' (Edygarova 2009)

Under a strictly derivational model of grammar in which the structure unfolds step by step in a bottom-up fashion (cf. Chomsky 1995 et seq.), case assignment to Poss in Udmurt seems to be non-local: Poss is assigned case within the DP that contains Poss and the possessum. But the choice of the concrete case value of Poss seems to depend on the GF of the DP. In minimalism, the GF of a DP is determined by the position of the DP in the structure. A DP is a direct object if it is the sister of V. But this information is not available at the point of case assignment within DP because the DP is not yet merged with an external head when Poss is assigned case. Hence, there is a *look-ahead* problem. Assigning case to Poss after Merge with the external head does not help either: In this case, case assignment would be *counter-cyclic*, affecting only elements in the DP cycle. Two questions arise: (a) Where does ABL come from? (b) How can case assignment be modeled in a strictly derivational grammar without look-ahead?

Distribution of the ablative: The answers depend on the conditions in which ABL is used: the literature says that ABL occurs when the DP is a 'direct object', but the term is never precisely defined, although it is ambiguous: (a) Thematic role: Poss gets ABL if the DP containing Poss has the macro-role patient; (b) Position in the tree: Poss gets ABL if the DP containing Poss is selected by the head V; (c) Case: Poss gets ABL if the DP containing Poss is assigned accusative case. These hypotheses make different predictions that we tested with a native speaker (data in (2) to (5) from Svetlana Edygarova). Hypothesis (a) predicts that ABL should be preserved on Poss under passivization (passive changes the GF but not the thematic role of the object DP in (2a)). As (2b) shows, ABL changes to GEN under passivization; this falsifies hypothesis (a). Hypothesis (b) predicts that if the sole argument DP of the passivized verb in (2b) remains within its VP-internal base position, Poss should get ABL case. However, this prediction is not borne

out, as shown in (3) (that the DP is still in the VP can be seen because it stands to the right of the adverb *tolon* 'yesterday' which marks the VP boundary). Thus, only hypothesis (c) remains. It is compatible with the data in (2) and (3). Furthermore, it predicts that (i) if a transitive verb assigns a case different from accusative to its internal argument, Poss will get GEN; and (ii) in an ECM construction, the Poss of the embedded accusative marked subject gets ABL. (i) and (ii) are borne out (cf. (4) and (5)). Note that the data in (4) are also an argument against hypotheses (a) and (b) (the DP is within VP and gets the patient role, but Poss bears GEN).

(2) *Possessor case in active-passive alternation*:

a. Petyr Masha-leš puny-z-e zhug-i-z
Peter Masha-ABL dog-3SG-ACC beat-1PST-3SG
'Peter beat Masha's dog.'

b. Masha-len/*-leš puny-jez zhug-em-yn val
Masha-GEN/-ABL dog-3SG beat-PST-PART AUX.1PST
'Masha's dog was beaten.'

(3) Tolon Masha-len puny-jez zhug-em-yn val.
yesterday Masha-GEN dog-3SG beat-PST-PART AUX.1PST
'Yesterday Masha's dog was beaten.' *adverb placement*

We are now able to formulate the new generalization: The possessor in Udmurt bears ABL, if the DP in which the possessor is contained is assigned accusative. It bears GEN elsewhere.

(4) Petyr [Masha-len suzer-ez-ly] akylt-e
Peter Masha-GEN sister-3SG-DAT bother-PRES.3SG
'Peter is bothering Mary's sister.' *dative assigning verb*

(5) Petyr Masha-leš puny-z-e tyloburdo-os-ty kutyl-e malpa.
Peter Masha-ABL dog-3SG-ACC bird-PL-ACC.PL catch-PRES.3SG think.PRES.SG
'Peter believes Mary's dog to catch birds.' *ECM construction*

A local analysis: Under the new generalization, the case split can be reanalyzed locally. Proposal: Poss is always assigned GEN from D inside the DP via Agree, a local operation. In Udmurt, every DP has exactly two case slots and hence Poss can in principle get two case values, i.e., Udmurt exhibits an instance of case stacking (similarly to languages like Huallaga Quechua with overt case stacking, cf. (6)). Case is assigned by a head to its sister node and then spreads to all elements in the c-command of the head (cf. Matushansky 2008, Pesetsky 2010). However, only two structural cases can stack. This is derived as follows: The structural cases NOM, ACC and GEN are simplex and check one case slot of a DP, whereas the semantic cases (ablative, elative, etc.) are complex in that they consist of an oblique case + a structural case (cf. Béjar & Massam 1999, Richards 2008). As a consequence, a semantic case values both case slots of a DP and the DP can thus not be assigned another case (no stacking). If a DP is assigned a non-semantic case first, it only values a single case slot. The second slot can then be valued by another non-semantic case (a semantic case would need two case slots). Hence, the following combinations can arise on Poss: NOM+GEN, GEN+ACC, GEN+GEN, NOM+ACC. These values are realized postsyntactically (cf. Halle & Marantz 1993). But since there is only a single morphological case slot in Udmurt, a repair strategy applies: The feature structures of the cases fuse into a single feature structure; in case of feature conflict, the positive value of a feature remains in the resulting structure. Case decomposition: NOM = [–obl, –obj], ACC = [–obl, +obj], GEN = [+obl, –obj], ABL = [+obl, +obj] (the various oblique cases are further distinguished by semantic-based features). Fusing NOM+GEN results in the feature structure of GEN, i.e., only the GEN marker is realized. Fusion of GEN+ACC results in an oblique case. Since ABL is the default oblique case in Udmurt (it is used in a variety of different contexts), the ABL marker will realize the resulting feature structure (cf. (7); GEN+GEN=GEN, NOM+ACC=ACC). To conclude, ABL is not assigned to Poss in the DP; rather, Poss is always assigned GEN in the syntax, but due to the one-slot condition + fusion in the morphological component, it is realized as ABL if Poss has been assigned ACC as well, creating the illusion of a non-local dependency. By discussing two alternatives that build on a presyntactic morphology, we show that a local analysis of the case split in Udmurt must necessarily adopt a postsyntactic morphology.

(6) *Case stacking in H. Quechua (Plank 1995)*:
Hipash-nin-ta kuya-ː Hwan-pa-ta
daughter-3POSS-ACC love-1 Juan-GEN-ACC
'I love Juan's daughter.'

(7) a. gen+nom = [+obl, –obj] + [–obl, –obj] $\xrightarrow{fusion}$ [+obl, –obj] = morph. genitive
b. gen+acc = [+obl, –obj] + [–obl, +obj] $\xrightarrow{fusion}$ [+obl, +obj] = morph. ablative

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Word order and definiteness in the Norwegian DP: Complexity, frequency and structural similarity in bilingual acquisition and attrition

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Nowegian DP constructions are relatively complex, especially compared to English. Norwegian possessives may be pre- or postnominal (1a, b), while English possessives are always prenominal (1c). The distinction between the two word orders in Norwegian is dependent on information structure; the prenominal adds contrastive stress on the possessor, while the postnominal is neutral. Furthermore, postnominal possessors have to co-occur with a noun in the definite form (1b). Norwegian also differs from English in having a suffixal definite article (1b, 2a) and in having definiteness marked twice in modified definite noun phrases (2b), by both a suffixal article and a preadjectival free determiner (double definiteness).

(1)	a.	*min stol*	b.	*stol-en min*	c.	*my chair*
		my chair		chair.DEF my		
		'MY chair'		'my chair'		
(2)	a.	*hus -et*	b.	*det gamle hus -et*		
		house.DEF		DEF old house.DEF		
		'the house'		'the old house'		

These structures allow us to consider factors such as frequency, complexity, and structural similarity: Postnominal possessives are used considerably more frequently than prenominal possessives (75%), but are also argued to be more complex, involving both definiteness marking and syntactic movement (Anderssen & Westergaard 2010, Lødrup 2012). Prenominal possessives, on the other hand, are structurally more similar to their English counterparts. Double definiteness is both complex and infrequent. Within the DP structure, the suffix is extremely frequent, while the prenominal determiner is infrequent but structurally similar to English.

In Anderssen & Westergaard (2010), monolingual Norwegian children are shown to use both word orders in possessives, but to have a preference for the prenominal possessive construction early on, i.e. the least complex and least frequent one. This is argued to be an indication that children do not simply pay attention to frequency, but choose the more economical construction (without syntactic movement). Anderssen & Westergaard (2012) investigate the use of possessives in Norwegian-English bilingual children and Norwegian heritage speakers in the US. The results reveal that, while the bilingual children have a stronger and more long-lasting preference for prenominal possessives than the monolinguals, see (2), the heritage speakers almost exclusively use postnominal possessor constructions, also with English loanwords, cf. (3). It is thus argued that, while the lack of complexity makes prenominal possessives the preferred order in language acquisition, the high frequency of the postnominal possessor protects it against language attrition.

(2) *Den er ikke i* ***min veska.*** (Sun, 1;10.16)
it is not in my handbag.DEF

(3) ***schoolhouse'n din*** (3M SpringG)
schoolhouse.DEF your

Similar findings have recently been made with respect to adjective-noun word order in Italian-German bilingual acquisition and attrition (Kupisch 2012), where the heritage speakers are argued to pay attention to frequency and structural *difference*.

Against this backdrop, we re-evaluate the Anderssen & Westergaard (2012) data in this paper and argue that frequency is a more important factor in attrition than complexity or structural similarity. We also provide some further data on double definiteness (cf. 2b) from one bilingual child as well as a number of heritage speakers and compare the findings to monolingual acquisition (Anderssen 2006). Given that double definiteness is both complex and infrequent, we expect it to be vulnerable in both bilingual groups, as it is in monolinguals, who have been shown to omit the prenominal determiner for an extended period of time, cf. (4). Our findings show that the bilingual child investigated to a large extent omits the suffix (55.6%, 10/18)), cf. example (5), even though this is produced in a target-consistent manner in her simple definites. The heritage speakers, on the other hand, are found to omit the prenominal determiner as often as 57% (37/65) (and the suffix only 3.1%, 2/65), despite its structural similarity to English, cf. (6).

(4)	*store troll**et***	(Ina, 2;1.0)
	big troll.DEF	(Target: **det** store troll**et)**
(5)	***den** stor ball*	(Emma 2;7.10)
	the big ball	(Target: **den** store ball**en**)
(6)	*engelske skol**en***	*(coon_valley_WI_sep_03gm)*
	English school.DEF	(Target: **den** engelsk skol**en**)

We argue that our results support the hypothesis that complexity plays a more important role than frequency in acquisition. Furthermore, structural similarity may be a factor in bilingual acquisition. In attrition, on the other hand, frequency and structural *difference* seem to be the most important factors, accounting for the heritage speakers' lack of prenominal determiners in double definites as well as their overuse of postnominal possessives in Anderssen & Westergaard's (2012) data.

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Visser's Generalization and the c-command condition on Control

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The aim of this presentation is to address the issue of Visser's Generalization (henceforth VG), holding that subject control (hence SC) verbs are incompatible with the passive, and propose a solution based on a combination of the passive seen as smuggling and Obligatory Control seen as A-movement (Hornstein 2001, Hornstein & Polinsky 2010). We will be arguing that Control holds under c-command:

(1) In the LF representation of Obligatory Control the controller must c-command its trace in the subject position (PRO).

The VG effect arises as the condition in (1) is not respected in the passive of SC verbs.
The nature of VG: the generalization, put forward in Visser (1973), holds that structures of subject-oriented predication resist the passive transformation, specifically, SC verbs are not compatible with the passive transformation (cf. 2b). Interestingly, the same matrix control predicates shifting to OC allow for the passive (cf. 2d). Similarly, OC verbs shifted to subject control mode disallow the passive (cf. 3d):

(2) a. *He promised me [PRO to open my gifts for me]. (SC)*
b. **I was promised to open my gifts for me. (SC + passive)*
c. *He promised me to be allowed to [PRO to open my gifts]. (SC shifts to OC)*
d. *I was promised to be allowed to open my gifts. (OC + passive)*

(3) a. *He asked me to open my gifts. (OC)*
b. *I was asked to open my gifts. (OC + passive)*
c. *He asked me to be allowed to open my gifts for me. (OC shifts to SC)*
d. **I was asked to be allowed to open my gifts for me. (SC + passive)*

Van Urk (2011) narrows the scope of the VG effect further and observes that it applies only when the matrix object is promoted to [spec,T], while it does not apply in the (impersonal) passive construction without promotion:

(4) *Er werd mij beloofd om me op de hoogte te houden.*
there was me-DAT promise-PAST COMP me-DAT on the height to keep-INF
'It was promised to me to keep me informed.'

Thus the nature of the VG effect does not consist in the incompatibility of the passive and Subject Control interpretation but rather the clash between Subject Control interpretation and the promotion of the object. In solving the VG puzzle we will assume the smuggling theory of the passive in Collins (2005a), whose key element is (5) below:

(5) a. within an articulated projection of the passive clause the constituent including the passive participle, the object DP and (possibly) the remainder of the complement domain of the verb ($[_{PartP}$ Part $[_{VP}$ V DPo]]) is moved to the position of [spec,Voice] around the implicit Agent in [spec,v]; next the DP object is moved to [spec,T], in line with MLC:
b. $[_{VoiceP}$ $[_{PartP}$ Part $[_{VP}$ V DPo]] Voice-*by* $[_{vP}$ DP_{Agent} v $[_{PartP}$ …t…]]]]

The genuine nature of the VG effect: The key element of our working hypothesis is that the head of Participial Phrase takes VP as its complement, thus the whatever material VP contains, including the infinitive, is promoted around the implicit Agent to the position of [spec, Voice]. Consider OC with promotion, where the implicit Agent (pro_1) is in [spec,v]:

(6) a. *Mary was persuaded to leave the party.*
b. [$_{TP}$ $Mary_2$ T-was [$_{VoiceP}$ [$_{PartP}$ Part [$_{VP}$ persuaded [$_{ApplP}$ $Mary_2$ Appl [$_{VP}$ t_V [$_{CP}$ ~~$Mary_2$~~/PRO to leave the party]]]]]] Voice [$_{vP}$ pro_1 [$_{v'}$ v ~~PartP~~]]]

The infinitive is carried along as part of PrtP above pro_1 and the object is raised to the subject position. In this representation (1) holds, as $Mary_2$ c-commands both its trace within PartP and PRO/$Mary_2$.

Now consider the passive of the SC verb with promotion in (7); the smuggling step of the operation removes PRO from the c-command domain of its controller (the implicit Agent pro_1 in [spec,v]):

(7) a. **Mary was promised to leave the party.*
b. [$_{TP}$ $Mary_2$ T-was [$_{VoiceP}$ [$_{PartP}$ Part [$_{VP}$ promised [$_{ApplP}$ $Mary_2$ Appl [$_{VP}$ t_V [$_{CP}$ ~~pro_1~~/PRO to leave the party]]]]]] Voice [$_{vP}$ pro_1 v ~~PrtP~~]]]

There is a clear difference between the representations of OC in (6) and of SC in (7); while in the former the position of PRO is c-commanded by its controller ($Mary_2$), in the latter it is not, so the VG effect is a violation of postulate (1).

This solution leads to three expectations confirmed in the literature: (a) lack of object promotion, meaning no smuggling of the infinitive and PRO out of the c-command domain of the implicit Agent, does not disturb Subject Control (van Urk 2011); (b) PRO requires c-command by its controller at LF, which holds true once the apparently problematic cases of intraposition and extraposition in Super Equi and the concept of logophoric extension from (Landau 2001, 2010) are reconsidered; (c) the smuggled constituent including the infinitive does not reconstruct to its original position, as this would equate (2b) with (4).

(8) a. *??The magazines were sent to herself by Mary*
b. *The magazines were sent to $Mary_1$'s mother by her_1 (the $idiot_1$ herself) yesterday.*
c. *Mary was told to meet $Betty_1$'s daughter by her_1/the $idiot_1$ on Friday.*

Ex. (8a-b) from Collins (2005a) show that PrtP does not reconstruct, bleeding Conditions A and C; ex. (8c) shows the same effect when an infinitive is carried along within PrtP and not reconstructed. One of the reasons for which PartP, and other smuggling vehicles, do not reconstruct is that they feed another movement operation, Wh-movement in (9a-b, Starke 2001) or anaphor raising to T (in 9d, Chomsky 1995):

(9) a. *?Who is it unclear [how many pictures of ~~who~~] he wants to shoot t*
b. *Who is it unclear [how many portraits of ~~who~~] Amelie drew t?*
c. *John wondered which picture of himself Bill saw.*
d. *John self-wondered [which x, x a picture of t_{self}] [Bill saw x]*

Any reconstruction of the smuggling vehicle makes the ensuing further movement violate MLC. **In conclusion**, the account of VG developed above points to the conflicting requirements between the c-command condition on Control and promotion in the passive as

the key factors. The combination of control and smuggling in the passive leads to explanation of another puzzle: preservation of the pattern of OC into an adjunct in the passive, where the implicit Agent pro_1 should block this relation as a more minimal potential antecedent, (cf. 10b):

(10) a. *The boss$_1$ fired the painter$_2$ [for PRO$_2$ drinking on the job]*
b. *The painter$_2$ was fired [$_{vP}$ pro$_1$ [for PRO$_2$ drinking on the job]]*
c. [$_{TP}$ the painter$_2$ T-was [$_{VoiceP}$ [$_{PartP}$ Part [$_{VP}$ [$_{VP}$ fired ~~the painter$_2$~~][for PRO$_2$ drinking on the job]]] Voice [$_{vP}$ pro$_1$ [$_{v'}$ v ~~PartP~~]]]]

Clearly, once the adjunct is promoted together with the object inside PrtP, the preservation of object control is to be expected (cf. 10c).

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Tipping Points

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The human memory is impressively large and capable of storing detailed linguistic information. These findings raise important questions for the role of the grammar, as what can be stored needn't be computed. But evidence from language acquisition that not only is the grammar necessary, children are extremely adept at identifying the types of linguistic patterns (e.g., exceptions and rules) and learning them differently.

The main thrust of this work is to develop a calculus (Yang 2005), one which builds on the third factor of efficient computation (Chomsky 2005), that weighs in on the balance between storage and computation. We suggest that grammar/rule emerges at certain tipping points, where the number of rule-following items greatly exceeds the number of exceptions. The calculation of the tipping point is supported by psycholinguistic evidence, which suggests that exceptions cause delay in the real time computation of rules. Under very general assumptions, it is possible to derive that a rule/process applicable to N items can tolerate no more than N/ln(N) exceptions before losing productivity, i.e. all items are subject to lexicalized storage.

We present two classes of evidence to showcase tipping points in language.

First, it is well known that 80-90% of English words are primarily stress initial (Cutler & Carter 1987), yet no theories of English metrical stress, or English learning children, treat English as a quantity insensitive system. Transparently, a statistical majority of 80-90% does not guarantee productivity. Through a corpus study of child directed English, we show that the tipping point model accounts for the developmental stages in metrical stress acquisition, while supporting Halle's theory of English stress (1998).

Second, it is instructive to study cases where grammar fails, a most prominent case being the so-called "paradigmatic gaps" (e.g., stride-strode-*strode/?*stridden). Gaps emerge due to the absence of productive process, which arises when exceptions exceed the critical tipping point (N/ln N). We show that several well known inflectional gaps in English, Polish, Spanish and Russian are predictable on purely numerical basis.

Parasitic Gaps Licensed by Elided Syntactic Structure
Masaya Yoshida, Tim Hunter, & Michael Frazier

1. *Introduction*: As is well-known, the licensing condition on Parasitic Gaps (PGs) crucially refers to a specific syntactic configuration: a PG is licensed by a gap left by an **overt A-bar movement** which **does not c-command the PG** ([1]). An interesting consequence of the syntactic nature of PG-licensing is that PGs can be used to diagnose the internal structure of an ellipsis site: if a gap appears inside a domain that is usually opaque for extraction (e.g. an adjunct), and there is no obvious licensing gap on which it could plausibly be parasitic, then perhaps it is parasitic on a licensing gap in an ellipsis site's unpronounced syntactic structure ([2]). Employing this logic, this study argues that fully-fledged syntactic structure underlies the ellipsis site in sluicing. Specifically, we observe that the wh-remnant in sluicing can host a PG, as illustrated in (1a) (where the first clause contains a correlate of the remnant "how soon" phrase) and (1b) (without any correlate, i.e. "sprouting"). We show that the PG in the wh-remnant in (1a) and (1b) is licensed by a real gap (RG) in the ellipsis site, and thus the ellipsis involves the structure that is necessary for the licensing of PGs. This is expected under PF-deletion analyses of sluicing, but not LF-copying approaches.

(1) a. The editor told me which book I must review__ soon after receiving __,
but I don't remember exactly how soon after receiving $\_\__{PG}$.

b. The editor told me which book I must review __ ,
but I don't remember exactly how soon after receiving $\_\__{PG}$.

c. The editor told me which book I must review__ soon after receiving __.

d. *The editor told me which book I must review__,
but I don't remember exactly how soon after receiving $\_\__{PG}$ I must review it.

2. *The Paradigm*: We focus on the simpler (1b) for ease of exposition, but everything we say about (1b) also holds for (1a). We will show that the gap in the sluicing remnant in (1b) has the properties expected of a PG licensed from within the elided structure. First, like regular PGs as in (1c), the gap in the wh-remnant in (1b) co-varies with the object gap in the first conjunct. However, crucially, the gap in the wh-remnant is **not** licensed by this gap in the first conjunct, as the contrast between (1b) and (1d) shows: If the gap in the wh-remnant were licensed by the wh-movement gap in the first conjunct, (1d) should be grammatical. The contrast between (1b) and (1d) thus suggests that the gap in the wh-remnant is dependent on something in the ellipsis site. Studies on sluicing have revealed that the ellipsis site and its antecedent hold a certain parallelism requirement ([3]). Consequently, if the gap in the wh-remnant is a PG, we expect that this gap will not be licensed if the antecedent clause for ellipsis has a structure that does not license PGs, since the ellipsis site will be structurally parallel to the antecedent. As is well-known, a PG is not licensed in the following environments: (i) when there is no RG left by an overt A-bar movement; (ii) when the RG c-commands the PG; (iii) when the RG is a PP-gap; (iv) when the PG is embedded in an island within an island. As the examples in (2) through (5) show, when the antecedent clause has one of these structures, the gap in the wh-remnant is not licensed (6 native speakers all agreed on these judgments). All of these examples strongly suggest that the gap in the wh-phrase is a genuine PG.

(2) No overt A-bar movement
a. *The editor told me who must review **which book** after receiving $\_\__{PG}$.
b. *The editor told me who must review **which book**, but I don't remember [exactly how soon after receiving $\_\__{PG}$].

(3) Anti-C-Command Condition
a. *The editor told me **which book** __ must be reviewed after I received $\_\__{PG}$.
b. *The editor told me **which book** __ must be reviewed, but I don't remember [exactly how soon after I received __].

(4) PP-gap
a. The editor told me [$_{NP}$ **which book]** I must write about __ soon after talking about $\_\__{PG}$.

b. *The editor told me [$_{PP}$ **about which book]** I must write __ soon after talking __$_{PG}$.
c. The editor told me [$_{NP}$ **which newly published book**] I must write about __, but I don't remember [exactly how soon after talking about __].
d. *The editor told me [$_{PP}$ **about which newly published book**] I must write __$_{RG}$, but I don't remember exactly how soon after talking __$_{PG}$.

(5) Island
a. *The editor told me which book I must review __ [soon after I hear [$_{NP}$ the news that the secretary receives __$_{PG}$]].
b. The editor told me which book I must review __ [soon after I hear [$_{CP}$ that the secretary receives __$_{PG}$]].
c. *The editor told me which book I must review __, but I don't remember exactly [how soon after I hear [$_{NP}$ the news that the secretary receives__]].
d. The editor told me which book I must review __, but I don't remember exactly [how soon after I hear that the secretary receives __].

3. *Consequences*: These facts yield several theoretical consequences. **First** and most immediately, the fact that a PG is licensed in cases like (1b) indicates that the ellipsis site has full-fledged syntactic structure that supports the licensing conditions on PGs, contrary to some recent studies ([9,10])**. Second**, it bears on the issue of island repair by sluicing. In deriving (1b), the wh-remnant including the PG must move out of a wh-island configuration as in (6).

(6) ... [$_{CP}$[*WH* exactly how soon after receiving __**PG**][$_{TP}$ he told me [$_{CP}$ which book I must review __$_{RG}$ __*WH*]]]]

This indicates that sluicing can indeed ameliorate wh-island violations and even ECP violations (since the moved wh-phrase is an adjunct) ([3,4,5,6]), contrary to some recent studies ([7,8]). This argument for island-repair cannot be avoided by positing a non-parallel non-island-violating structure in the ellipsis site, such as a truncated cleft (e.g. "how soon after receiving *it is*") ([7,8]) or a short extraction (e.g. "how soon after receiving *I must review it*") ([3]): since these structures do not license PGs, positing such a source for (1b) would not account for the crucial gap in the sluicing remnant. **Third**, the fact that a PG must be licensed by overt A-bar movement is not obviously compatible with LF-copying analyses of sluicing ([5]), since on that view the overt A-bar movement that licenses a PG will not exist in the ellipsis site. **Fourth**, these data raise an interesting difficulty for the single-cycle view of syntax ([11]), which supposes that the distinction between overt and covert movement is only a matter of whether PF pronounces the higher or lower of two copies that form a chain. The familiar requirement of an overt licensor for PGs (violated in (2a)) already poses something of a puzzle for this view, since it must attribute the contrast between (1c) and (2a) to a distinction between a "pronounce-high" chain and a "pronounce-low" chain; but the data above indicate that furthermore, and even more surprisingly on the single-cycle view, there also appears to be a distinction between elided-but-pronounce-high chains (which license PGs, as in (1b)) and elided-but-pronounce-low chains (which do not, as in (2b)).

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Stages of grammaticalization of the assertion structure in Spanish varieties.

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This paper examines the specificational pseudo-cleft (*PCleft)* in s*tandard Spanish* (**StSp**) and in *spoken Peninsular Spanish* (**SPSp**), as well as the focus copular structure (*FocCop*) in *Caribbean Spanish* (**CSp**), and argues that these reveal different stages of the grammaticalization of the bi-clausal *Assertion Structure* of the sentence (i.e the presupposition/assertion divide). A biclausal-qua-ellipsis analysis is shown to readily capture the grammatical properties and the historical connection between the *P-cleft* and the *FocCop* structure. It is furthermore suggested that "focusing via marked word ordering" in SSp is best analyzed as a case of reduplication of vPs-qua- ellipsis, and it is proposed that this case constitutes the ultimate grammaticalization of the AS, where the presupposition and assertion parts share the same T(ense), but branch out into two distinct vPs. The focused phrase is identified as the constituent in the asserted clause that is adjacent to the left-edge of the CP or vP phase at PF (Molnar & Winkler 2010).

Alongside PClefts introduced by a wh-phrase (as in English), StSp also has PClefts introduced by a relative pronoun, composed of a definite weak pronominal element plus the complementizer *que*. These can be analyzed as a structure with an operator-variable in the pre-copular clause (the presupposition) and a post-copular clause (the assertion). Forward ellipsis deletes all but the focused constituent in the assertion (Ross 1972, Schlenker 1998, 2003, Den Dikken et al. 2000).

(1) a. *De la que* te hablé fué *de Maria*. **(StSp)**
of Fem.Sg. that (I) to you.spoke was of Maria.
b. [$_{CP}$ [de la que]$_i$ te hablé e$_i$] [fué [$_{CP}$ ~~te hablé~~ de María]]]

Of particular interest is the case of the neuter *lo* in (2a) bound to the complement of *hacer*, which cannot be anything else than an event-denoting DP; cf. (2b) and (2c). Thus, (2a) shows that in a PCleft, where the op-vbl relation is formed via movement, it is the semantic content (not the syntactic form) of the variable that must match that of the focus phrase.

(2) a. *Lo que* debes hacer es *comprar un coche nuevo.* **(StSp)**
Neut.3Sg. that must.2PSg. do is buy a new car.
'What you must do is buy a new car.'
b. Debes hacer ésto: comprar un coche nuevo.
Must.2PSg do this: buy a new car.
c. *Debes hacer comprar un coche nuevo
Must.2PSg. do buy a car new

Pclefts in SPSp, first described by Fernandez-Soriano 2009, have the peculiarity that part of the assertion is elided in the post-copular rather than in the expected pre-copular part. This "ellipsis mismatch" so to speak, is particularly conspicuous in cases of idioms (3).

(3) Lo que no puedes *meter* es *la pata* hasta el punto de que te echen. (**SPSp**, F-S 2009)
3PSg.Neut. (you) cannot put is your foot in it until (they) you-fire
'What you cannot do is put your foot in it until you get fired."

The difference between the two varieties can be described as follows. In StSp, the presuppositional variable is created before spell-out, while in SPSp, it can be created after spell-out via LF ellipsis. More precisely, in SPSp, *both backward and forward deletion applies at LF* (as in PF), opening up the possibiliy for an ellipsis mismatch beween what is deleted at PF and what

is deleted at LF. (The mismatch appears to be contrained to the V head and its associated functional categories, subject to similar constraints as noun head ellipsis).

(4) PF: [Lo$_i$ que [$_{Neg}$ no [$_T$ puedes [$_{vP}$ meter ~~la pata~~] es [[$_{Neg}$ ~~no~~ [$_T$ ~~puedes~~ [$_{vP}$ ~~meter~~ la pata]]]]

LF: [Lo$_i$ que [$_{Neg}$ no [$_T$ puedes [$_{vPi}$ ~~meter la pata~~]]]] es [[$_{Neg}$ ~~no~~ [$_T$ ~~puedes~~ [$_{vP}$ meter la pata]]]]

The FocCop, documented in different varieties of Venezuela (Sedano 1998, 1990, 2003, Bosque) and Colombia (Camacho 2006, Mendez-Vallejo 2009), has evolved from the pseudo-cleft. It lost the overt relative pronoun, bringing about a loss of the existential presupposition characteristic of definite pronouns; cf. (5a) vs. (5b).

(5) a. No comió fué *nada*. (**CSp**)
neg. eat.3Sg.Past be.3Sg.Pret.potatoes 'He did not eat anything'
b. *Lo que *no* comió fué *nada*. (**StSp**)

The loss of the overt relative pronoun leads to a major restructuring of the clause structure: the pre-copular part becomes the main clause. The post-copular part becomes a vP, sister to a reanalyzed copula with a defective T (temporally bound to the minimally c-commanding Tense); copula + vP is *adjoined to matrix vP* (Camacho 2006). This restructuring will be argued to account for the fact (among many others to be discussed) that the Neg in the pre-copular part can formally license the NPI in the post-copular part of the clause (5a).

In the FocCop structure, the op-variable structure is created at LF (as in SPSp PCleft), via (backward) deletion and *null operator* insertion. This accounts for the contrast between CSp (6) and StSp (2a): variables created via ellipsis at LF (unlike those created via overt movement) require both syntactic and semantic identity.

(6) * Debes hacer es comprar un coche nuevo. (**CSp,** compare with **StSp** (2a))
Must.2S. do.inf is buy a car new

The FocCop structure in the Andean variety of Columbian Spanish (described by Mendez-Vallejo 2009) provides a further argument in favor of the ellipsis-based analysis. In this dialect, the "given" part of the VP may surface either in the pre-copular part (via PF forward deletion) or post-copular part (via PF backward deletion).

(7) Clara le trajo <a Armando> fué GALLETAS <a Armando> (**CSp, Andean variety**)
Clara Dat Cl.bring. <to Armando> be.3Sg.Pret. cookies <to Armando>
'It was cookies that Clara brought for Armando'

The case of "focusing via marked word ordering" in StSp (Zubizarreta 1998) represents the ultimate grammaticalization stage, with a reduplicated VP (8). This construction will be shown to be akin to the CSp FocCop, but crucially with no copula-bearing Tense.

(8) Me regaló un libro Maria 'it was Maria who gave me a book' (**StSp**)
PF: [$_{TP}$ me regaló [$_{vP}$ [$_{vP}$ ~~Maria~~ ~~regalV~~ el libro]] [[$_{vP}$ Maria ~~regalV~~ ~~el libro~~]]
LF: [Op$_k$ [$_{TP}$ me regaló [Ev-T [$_{vP}$ [$_{vP}$ DP$_k$ ~~regalV~~ el libro]] [$_{vP}$ [$_{DPk}$ Maria] regalV el libro]]

To summarize, assuming an ellipsis-based analysis, the *PCleft in SPSp* (with an overt rel. pron but covert op-vbl formation), *the FocCop in CSp* (with no overt rel. pron. and covert op-vbl formation), and the *"focusing via marked word-order" in StSp* (with covert op-vbl formation and no copula) can be seen as different stages of an incremental grammaticalization of the bi-clausal *Assertion Structure* of the sentence.