# glow

## generative linguistics in the old world

**GLOW Newsletter #72, Spring 2014**
Edited by Marc Richards

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# GLOW Newsletter & Conference Handbook

## CONTENTS

## INTRODUCTION

Welcome to the 72nd GLOW Newsletter and Conference Handbook, and to the 37th GLOW Conference, taking place in Brussels from the 2nd to the 5th of April, 2013.

Hereinbelow you'll find gathered together for you in a hopefully handy package all the necessary information for your Brussels experience, from the practical section starting on page 5, through details of the rigorous selection procedure on page 9, to the programs for the Colloquium (April 2-4) and workshops (April 5) on page 13. Along the way you'll also find a summary of the topics and schedule for this year's inaugural GLOW Spring School, *Theories in Dialogue*, which takes place after the conference in the week of April 7-11.

With a record-bothering 220 submissions for the Colloquium this year, competition for speaking slots was higher than ever, and so it promises to be a particularly high-quality meeting. But don't take my word for it; check out the 55 abstracts that follow (starting on p.18) to see what's in store…

Marc Richards

## CHANGES TO THE BOARD

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

| | | |
|---|---|---|
| Congress President | Dany Jaspers | 2013-2014 |
| Chairperson | Sjef Barbiers | 2013-2015 |
| Secretary | Jeroen van Craenenbroeck | 2013-2015 |
| Treasurer | Maaike Schoorlemmer | 2013-2015 |
| Newsletter Editor | Marc Richards | 2012-2014 |
| Journal Editor | Harry van der Hulst | |
| Website Manager | Alexis Dimitriadis | 2013-2015 |
| Member A | Roberta D'Alessandro | 2012-2014 |
| Member B | Mojmír Dočekal | 2013-2015 |
| Member C | Sarah Zobel | 2013-2015 |
| Member D | Maria-Rosa Lloret | 2012-2014 |
| Advisory member 1 | Henk van Riemsdijk | |
| Advisory member 2 | Martin Everaert | |
| Co-opted member (Phonology) | Tobias Scheer | 2013-2015 |
| Co-opted member (GLOW Asia) | Pritty Patel | 2013-2015 |

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:

- Isabelle Roy (Congress President)
- Marc Richards (re-election for Newsletter Editor)
- Roberta D'Alessandro (re-election for Member A)
- Clàudia Pons Moll (Member D)

# Welcome to GLOW 37, Brussels!

The 37th GLOW Colloquium is taking place in Brussels, Belgium, from 2-5 April 2014, hosted by CRISSP, a research center of KU Leuven HUBrussel. In addition to the Colloquium on 2-4 April, there will be two thematic workshops taking place on Saturday 5th April, followed by the inaugural GLOW Spring School (GSS1) from Monday 7th to Friday 11th April.

**PRACTICAL INFORMATION**

CONFERENCE SITE

GLOW 37 will take place in the heart of Brussels, at KU Leuven Campus Brussel (HUBrussel).

*Address:*
Stormstraat 2
1000 Brussels
Belgium

*Room numbers:*
Main Colloquium: room 2215 (second floor)
Phonology Workshop: room 3112 (third floor)
Semantics Workshop: room 3212 (third floor)

Check out http://www.glow37.org/practical-information/venue to view the conference venue on a map.

The easiest way to get to the conference and workshop rooms is through the main entrance. This is the glass door entrance that you can see in the centre of the picture below (with a green frame).

TRAVEL INFORMATION

*By plane*

There is a frequent train service between the airport and the Central Station. The train station is located under the airport building and can be reached from within. A taxi ride from the airport to the city centre will set you back around €50.

Be aware! The airport called 'Brussels South' is located in Charleroi, which is about 50km from Brussels. There is a bus shuttle service between the airport and the Brussel Zuid railway station, which runs every thirty minutes. More details can be found at: http://www.charleroi-airport.com/en/passengers/acces-and-parking/brussels-city-shuttle/index.html

*By train*

Get off at Brussel Centraal/Bruxelles Central (Central station). Leave the building either through the main exit (on a street called Putterie) or through the main entrance (on the corner of Keizerinlaan/Boulevard de l'Impératrice and Putterie). Go down the Keizerinlaan/Boulevard de l'Impératrice, thereby leaving the Gothic spire of the city hall behind you on your left.  Once you have reached the Cathedral of Saint-Michael on your right and the name of the street has changed to Berlaimontlaan/Boulevard Berlaimont, turn immediately to the left.  This is Stormstraat/Rue d'Assaut. Make sure you enter the building by the main entrance (depicted above), which is Stormstraat 2.

*By metro*

Take line 1 or 4 and get off at Central Station (Centraal Station/Gare Centrale). The metro station De Brouckère is also within walking distance.

*By bus*

Lines 29, 38, 63, 66 and 71 all stop in front of KU Leuven Campus Brussel.

*Public transportation in Brussels*

For metro, trams, buses, and trains in the Brussels region, you can use a JUMP ticket with 1, 5, or 10 journeys. You can buy this ticket in every metro station or at ticket vending machines at bus and tram stops. You have to validate it every time you board a metro, tram, bus, or train. The ticket is valid for one hour. Certain tickets can also be purchased on buses or trams, but these are dissuasively expensive.

***Taxi problems?*** *Call +32 (0)800/14795*

This number is only for customers in trouble. You can call the above number free of charge if you forget something in a taxi, if you are dissatisfied with the service, if you think you have been cheated, or if you want some information. You cannot book a taxi with this number!

REGISTRATION

The online registration page for GLOW37 (Colloquium, Workshops, and Spring School) is:

http://www.kuleuven.be/congresregistration/congres/omr/reg_form.php?uid_congres=m28738133424

REGISTRATION FEES

*GLOW Colloquium and Workshops*

- The reduced advance registration fee for the GLOW Colloquium and workshops is €100. Advance registration for the workshops only is €40.
- Advance registration closes on **March 25th 2014, at 12pm** (MET). After this date, registration is possible on-site at the full price of €150. Registration for single days is possible on-site only, at €40 per day.
- The reception on Wednesday April 2nd 2014 is free for preregistered participants. Please indicate on the online registration page whether you will attend.
- The conference dinner will take place on Thursday April 3rd, 2014. The price is €50. If you want to take part, please indicate this on the online registration form.

*GLOW Spring School*

- The registration fee for the Spring School is €200.
- Please indicate which classes you will attend.

Everybody attending GLOW 37 (including presenters) must be a paid-up member of GLOW. Information on how to join is available on the GLOW homepage.

SPEAKER REIMBURSEMENT

Speakers accepted for a talk at the Main Colloquium will be partially reimbursed for travel and accommodation expenses, to the following amounts:

Europe, faculty: € 200
Europe, student: € 350
Overseas, faculty: € 350
Overseas, student: € 550

Papers with more than one speaker are reimbursed only once, and based on the highest-ranked author in our reimbursement categories.


ACCOMMODATION

Brussels offers a wide choice of hotels, but since demand is generally high, prices tend to be high as well. To secure a good rate, it is advisable to book a hotel well in advance of your stay.

We recommend the following hotels, all of which are within walking distance of the conference venue:
- NH Grand Place Arenberg, Stormstraat 15, 1000 Brussels (50m from conference venue)
- NH Atlanta, Adolphe Maxlaan 7, 1000 Brussels (600m from conference venue)
- NH Brussels City Centre, Charleroisesteenweg 17, 1060 Brussels (2.2 km from conference venue)
- Hotel Bloom!
- Sandton Brussels Centre
- Hotel Villa Royale
- Scandic Hotel Grand Place
- Radisson Blu Royal Hotel Brussels
- The Dominican
- Youth Hostel "Jacques Brel"

For details, check the map at http://www.glow37.org/practical-information/accommodation, where you can also find a selection of other hotels and youth hostels within walking distance of the conference venue.


CONFERENCE DINNER

The conference dinner will take place at 7.30 pm on Thursday April 3rd at *Restaurant La Manufacture*, Onze-Lieve-Vrouw van Vaakstraat / Rue Notre Dame du Sommeil, 12-20, 1000 Brussels (www.manufacture.be).
*Price*: 50 euros, payable when you register online for the conference.

CONTACT INFORMATION

For further information, please consult the GLOW37 Brussels website (http://www.glow37.org/), or contact the local organizers at:

GLOW37
CRISSP
Warmoesberg 26
1000 Brussels
Belgium

glowbrussels@gmail.com


LIVE STREAMING

All talks at the GLOW Main Colloquium will be live-streamed. More details will be made available in due course on the GLOW website (http://www.glow37.org).


## SELECTION PROCEDURE

A total of 220 abstracts were submitted for the Main Colloquium (and an additional 29 for the Semantics Workshop and 19 for the Phonology Workshop). From these, 20 were selected for oral presentation, with three alternates. The acceptance rate for oral presentations and alternates is thus 10.45%. In addition, 15 abstracts were accepted as posters, which led to an overall acceptance rate of 17.3%.

Each of the 220 abstracts was sent to five external reviewers. The average score (weighted by reviewer's confidence) of this reviewing round (on a scale from 1 [reject] to 5 [definite accept]) was 2.934. The median score was 3. The selection committee (consisting of three GLOW Board members and three local organizers) then read and scored (a) the 50 abstracts that scored best according to the ranking made by the external reviewers (i.e. the abstracts that scored 3.59 or higher), (b) the twelve abstracts with the highest standard deviation (i.e. for which there was substantial inter-reviewer disagreement), and (c) one abstract for which the organizers received only four reviews and for which it was mathematically possible (based on the missing fifth review) that it would have made it into one of the previous two categories. These 63 abstracts were discussed one by one. On the basis of the reviewers' comments (both the confidential remarks and the actual reviews) and the assessments and reviews by the six committee members, 20 abstracts were identified for presentation at the Colloquium, three alternates were selected, and 15 abstracts were selected for poster presentations.

## STATISTICS BY COUNTRY

| Country | Authors | Submitted | Accepted | Acceptance rate |
|---|---|---|---|---|
| Australia | 5 | 2 | 0 | 0 |
| Austria | 3 | 2.5 | 0 | 0 |
| Belgium | 8 | 8 | 3 | 0.38 |
| Brazil | 1 | 1 | 0 | 0 |
| Canada | 11 | 8.5 | 2.5 | 0.29 |
| China | 2 | 2 | 0 | 0 |
| Czech Republic | 2 | 0.67 | 0 | 0 |
| France | 8 | 7.5 | 1 | 0.13 |
| Germany | 32 | 25.25 | 3.75 | 0.15 |
| Greece | 1 | 0.5 | 0 | 0 |
| Hong Kong | 1 | 0.5 | 0.5 | 1 |
| Hungary | 3 | 2 | 0 | 0 |
| Iceland | 1 | 1 | 0 | 0 |
| India | 9 | 6.5 | 0 | 0 |
| Israel | 12 | 10 | 0.5 | 0.05 |
| Italy | 10 | 6.33 | 0 | 0 |
| Japan | 14 | 9.5 | 1.5 | 0.16 |
| Korea, Republic of | 4 | 4 | 0 | 0 |
| Netherlands | 14 | 12.33 | 1.33 | 0.11 |
| Norway | 8 | 7 | 1.5 | 0.21 |
| Poland | 1 | 1 | 0 | 0 |
| Portugal | 3 | 2.5 | 1 | 0.4 |
| Romania | 1 | 1 | 0 | 0 |
| Russian Federation | 2 | 2 | 0 | 0 |
| Serbia | 1 | 1 | 0 | 0 |
| Slovenia | 1 | 0.5 | 0 | 0 |
| Spain | 12 | 9.83 | 1.5 | 0.15 |
| Sweden | 1 | 1 | 1 | 1 |
| Switzerland | 2 | 1.33 | 0 | 0 |
| Taiwan | 4 | 3.5 | 1 | 0.29 |
| United Kingdom | 30 | 18.33 | 1.83 | 0.1 |
| United States | 75 | 60.92 | 16.08 | 0.26 |
| **Total** | **282** | **220** | **38** | |

# The First GLOW Spring School (GSS1)
## April 7-11, 2014

**THEORIES IN DIALOGUE**

The inaugural GLOW Spring School (GSS1) will take place from Monday April 7 to Friday April 11, 2014.

The general theme of GSS1 is "Theories in Dialogue". The main idea is to approach the same topic from two different theoretical angles, thus creating a dialogue between the two theories. These dialogues will be organized in the form of two consecutive classes – taught by different teachers – each day during an entire week.

TOPICS AND TEACHERS

- <u>Modelling learnability</u> (computational linguistics)
  Antal Van den Bosch (Radboud University Nijmegen)
  Charles Yang (University of Pennsylvania)

- <u>Islands</u> (syntax)
  Norvin Richards (MIT)
  Philip Hofmeister (Essex University)

- <u>Pronouns</u> (morphosyntax and semantics)
  Martina Wiltschko (University of British Columbia)
  Philippe Schlenker (École Normale Supérieure Paris & NYU)

- <u>Spell-out</u> (morphosyntax)
  Hagit Borer (Queen Mary, University of London)
  Pavel Caha (University of Tromsø)

GRANTS AND REIMBURSEMENTS

The following students will be reimbursed both for registration costs and for accommodation costs: Aleksandra Janić (University of Kragujevac); Anton Poludnev (Masaryk University); Hana Strachoňová (Masaryk University); Marta Ruda (Jagiellonian University).

The following students will be reimbursed for accommodation costs: Ava Creemers (University of Amsterdam); Constantin Freitag (Humboldt-Universität); Iris Edda Nowenstein (University of Iceland); Milica Denic (Ecole Normale Superieure); Paula Fenger (University of Amsterdam).

## SCHEDULE

|  | Parallel Session 1 | Parallel Session 2 |
|---|---|---|
|  | **Spell-Out** | **Islands** |
| 08:30-10:30 | Pavel Caha (University of Tromsø) | Norvin Richards (MIT) |
| 10:30-10:45 | Coffee Break | |
| 10:45-12:45 | Hagit Borer (Queen Mary, London) | Philip Hofmeister (University of Essex) |
| 12:45-13:45 | Lunch Break | |
|  | **Pronouns** | **Modelling learnability** |
| 13:45-15:45 | Philippe Schlenker (ENS Paris & NYU) | Charles Yang (University of Pennsylvania) |
| 15:45-16:00 | Coffee Break | |
| 16:00-18:00 | Martina Wiltschko (University of British Colombia) | Antal Van den Bosch (Radboud University Nijmegen) |

For course abstracts, please visit http://www.glow37.org/spring-school/.

# Main Colloquium

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### CRISSP · KU LEUVEN · GIST · UNIVERSITEIT GENT

Brussels - Wednesday, April 2nd, 2014
Room 2215

| | |
|---|---|
| 9.00-9.15 | Welcome |
| 9.15-10.15 | Elena Guerzoni and Yael Sharvit (University of Southern California, UCLA)<br>**NPIs in Questions, Disjunction and Ellipsis** |
| 10.15-11.15 | Aida Talic (University of Connecticut)<br>**Upward P-cliticization, accent shift, and extraction out of PP** |
| 11.15-11.30 | Coffee Break |
| 11.30-12.15 | **POSTER SESSION 1**<br><br>Tomoko Ishizuka and Hilda Koopman (Tama University, UCLA)<br>**On the importance of being silent or pronounced; English -able and Japanese -rare potentials compared**<br><br>Tue Trinh and Andreas Haida (University of Wisconsin-Milwaukee, Humboldt-Universitaet zu Berlin)<br>**Building Alternatives**<br><br>Enrico Boone and Anikó Lipták (Leiden University)<br>**Extraction with deep anaphora: The role of VP external orphans**<br><br>Theodore Levin (MIT)<br>**Dependent Case and Object-Conditioned Differential Subject Marking**<br><br>Richard Compton (McGill University)<br>**An argument for genuine object phi-agreement in Inuit: Evidence from mood variance**<br><br>Niina Ning Zhang (National Chung Cheng University)<br>**Degree Words: Modifiers or Functional Head Elements?**<br><br>Ethan Poole (University of Massachusetts Amherst)<br>**A configurational account of Finnish case**<br><br>Dennis Ott (Humboldt University of Berlin) (alternate)<br>**Ellipsis in Appositives and the Syntax of Parenthesis**<br><br>Halldór Sigurðsson (Lund University) (alternate)<br>**Gender & PRO** |
| 12.15-13.45 | Lunch |
| 13.45-14.45 | Željko Bošković (University of Connecticut)<br>**From the Complex NP Constraint to Everything** |
| 14.45-15.45 | Hans van de Koot, Renita Silva, Claudia Felser and Mikako Sato (UCL, UCL, University of Potsdam, UCL)<br>**Dutch A-Scrambling Is Not Movement: Evidence from Antecedent Priming** |
| 15.45-16.00 | Coffee Break |
| 16.00-17.00 | Coppe van Urk (MIT)<br>**On the relation of C and T, A'-movement, and "marked nominative" in Dinka** |
| 17.00-18.00 | Isabelle Charnavel and Victoria Mateu (Harvard, UCLA)<br>**Antilogophoricity in Clitic Clusters** |
| 18.00-18.15 | Coffee Break |
| 18.15-19.15 | Haoze Li and Jess Law (The Chinese University of Hong Kong, Rutgers University)<br>**Focus intervention effects and the quantificational domain of focus operators** |

# Main Colloquium

Brussels - Thursday, April 3rd, 2014
Room 2215

| | |
|---|---|
| 9.15-10.15 | Tue Trinh (University of Wisconsin-Milwaukee)<br>**On the Evidence Condition of Yes/No Questions in English** |
| 10.15-11.15 | Martina Wiltschko and Elizabeth Ritter (UBC, Ben Gurion University)<br>**Animating the Narrow Syntax** |
| 11.15-11.30 | Coffee Break |
| 11.30-12.15 | **POSTER SESSION 2**<br><br>Víctor Acedo-Matellán (Universidade do Minho)<br>**A syntax for atransitivity**<br><br>Ekaterina Chernova (Universitat de Girona)<br>**What moves where in echo wh-questions?**<br><br>Raphael Girard (University of British Columbia)<br>**Voicing contrasts in Shona: towards an account of consonant mutations**<br><br>Laura Grestenberger (Harvard University)<br>**Localizing Voice in bivalent voice systems: passive and middle in Sanskrit and Greek**<br><br>Anne Breitbarth (Ghent University)<br>**Exceptive negation in historical Low German**<br><br>Yimei Xiang (Harvard University)<br>**Focus structure and NPI-licensing**<br><br>Patricia Schneider-Zioga (California State University, Fullerton)<br>**Linking, predication & symmetry in Kinande**<br><br>Sandhya Sundaresan and Thomas McFadden (University of Leipzig, University of Tromsø)<br>**In support of an articulated event-layer** |
| 12.15-13.45 | Lunch |
| 13.45-14.45 | Arantzazu Elordieta and Bill Haddican (University of the Basque Country, Queens College-CUNY)<br>**Truncation feeds intervention: Two clause type effects in Basque** |
| 14.45-15.45 | Eric Lander (GIST)<br>**Intraparadigmatic cyclic and roll-up derivations in the Old Norse reinforced demonstrative** |
| 15.45-16.00 | Coffee Break |
| 16.00-17.00 | Maria Polinsky, Gregory Scontras and Zuzanna Fuchs (Harvard University)<br>**The Differential Representation of Number and Gender in Spanish** |
| 17.00-18.00 | Bill Haddican, Anders Holmberg and Nanna Haug Hilton (Queens College-CUNY, Newcastle University, University of Groningen)<br>**Stay in shape!** |
| 18.00-19.00 | GLOW Business Meeting |
| 19.30- | Conference Dinner, La Manufacture |

# Main Colloquium

Brussels - Friday, April 4th, 2014
Room 2215

| | |
|---|---|
| 9.15-10.15 | Yangsook Park (UMass Amherst)<br>**Indexicals and the long-distance reflexive caki in Korean** |
| 10.15-11.15 | Yohei Oseki (NYU)<br>**Bare Adjunction as "Two-Peaked" Structure** |
| 11.15-11.30 | Coffee Break |
| 11.30-12.30 | Ewan Dunbar (Laboratoire de Sciences Cognitives et Psycholinguistique ENS / EHESS / CNRS)<br>**Cyclic opacity facilitates phonological interpretation** |
| 12.30-14.00 | Lunch |
| 14.00-15.00 | Thomas McFadden (University of Tromsø)<br>**Why nominative is special: stem-allomorphy and case structures** |
| 15.00-16.00 | Doreen Georgi (Leipzig University )<br>**Opaque reflexes of cyclic movement: Ordering final vs. intermediate steps** |
| 16.00-16.15 | Coffee Break |
| 16.15-17.15 | Jutta Hartmann and Caroline Heycock (Tübingen University, Edinburgh University)<br>**Agreement in Copula Clauses: Evidence for a dual mechanism of Agreement** |
| 17.15-18.15 | Karen Lahousse (KU Leuven)<br>**Low sentence structure in French** |
| | |
| Alternate 1 | Hiroki Narita (Waseda University/Waseda Institute for Advanced Study)<br>**\*{t, t}** |
| Alternate 2 | Dennis Ott (Humboldt University of Berlin)<br>**Ellipsis in Appositives and the Syntax of Parenthesis** |
| Alternate 3 | Halldor Sigurdsson (Lund University)<br>**Gender & PRO** |

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# Semantics Workshop: Possession

Brussels - Saturday, April 5th, 2014
Room 3212

CRISSP
CENTER FOR RESEARCH IN SYNTAX, SEMANTICS & PHONOLOGY

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g GIST
Generative Initiatives in Syntactic Theory

UNIVERSITEIT GENT

| | | |
|---|---|---|
| 9.00-10.00 | Invited Speaker:<br>**Kilu von Prince** (ZAS) | tba |
| 10.00-10.20 | Coffee Break | |
| 10.20-10.55 | **Marcel den Dikken** (CUNY Graduate Center) | On the morphosyntax of (in)alienably possessed noun phrases |
| 10.55-11.30 | **Balkiz Ozturk Basaran** (Bogazici University)<br>**Eser Erguvanli Taylan** (Bogazici University) | Possessive Constructions in Turkish: PPs in Disguise |
| 11.30-11.45 | Coffee Break | |
| 11.45-12.20 | **Chiara Gianollo** (Universät Köln) | Internal and External possession in the diachrony of Greek |
| 12.20-12.55 | **Neil Myler** (NYU)<br>**Einar Freyr Sigurðsson** (University of Pennsylvania)<br>**Jim Wood** (Yale University) | Predicative Possession Builds on Top of Attributive Possession:<br>Evidence from Icelandic |
| 12.55-13.55 | Lunch | |
| 13.55-14.30 | **Ellen Brandner** (University of Konstanz) | On possessive (reflexive) pronouns, equatives, and<br>the structural basis of Principle A |
| 14.30-15.05 | **Bronwyn M. Bjorkman** (University of Toronto)<br>**Elizabeth Cowper** (University of Toronto) | Possession and necessity: from individuals to worlds |
| 15.05-15.20 | Coffee Break | |
| 15.20-16:20 | Invited Speaker:<br>**Chris Barker** (New York University) | tba |
| | | |
| 1st Alternate: | **Giorgos Spathas** (University of Stuttgart) | Disentangling own: evidence from association with focus |
| 2nd Alternate: | **Neil Myler** (NYU) | Predicative Possession Constructions Vary in the 1st-Merge Position<br>of the Possessor: An Existence Proof from Cochabamba Quechua |

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**Generative Linguistics in the Old World**

# Phonology Workshop:

## Phonological Specification and Interface Interpretation

CRISSP
CENTER FOR RESEARCH IN SYNTAX, SEMANTICS & PHONOLOGY

KU LEUVEN

GIST
Generative Initiatives in Syntactic Theory

UNIVERSITEIT GENT

Brussels - Saturday, April 5th, 2014
Room 3112

| | | |
|---|---|---|
| 9.00-10.00 | Invited Speaker:<br>**Paula Fikkert** (Radboud University Nijmegen) | From raw speech to a phonological system: how do children do this? |
| 10.00-10.20 | Coffee Break | |
| 10.20-10.55 | **Hyunsoon Kim** (Hongik University) | Acoustic correlates of articulation-based distinctive features in perception: Evidence from Korean |
| 10.55-11.30 | **Geoff Schwartz** (Adam Mickiewicz University) | All gradience is not created equal |
| 11.30-11.45 | Coffee Break | |
| 11.45-12.20 | **Antonio Baroni** (University of Padua) | About U and I |
| 12.20-12.55 | **Daniel Currie Hall** (Saint Mary's University) | Substance use in moderation: Contrast and content in phonological features |
| 12.55-13.55 | Lunch | |
| 14.00-15.00 | Invited Speaker:<br>**Bert Vaux** (University of Cambridge) | The atoms of phonological representation: features vs. gestures |
| 15.00-15.20 | Coffee Break | |
| 15.20-15.55 | **Pavel Iosad** (University of Edinburgh) | The [ATR]/laryngeal connection and emergent features |
| 15.55-16.30 | **Paul Boersma** (University of Amsterdam) | How phonological elements can be both auditory-based and substance-free |
| 16.30-16.50 | Coffee Break | |
| 16.50-17.50 | Invited Speaker:<br>**John Harris** (University College London) | Mapping segmental phonology to the speech signal: what's the acoustic energy baseline? |

| | |
|---|---|
| Alternate 1 | Typhanie Prince (University of Nantes)<br>**The Case of Segmental Complexity in Aphasia and in Acquisition of French: Evidence for Element Theory** |
| Alternate 2 | Katerina Chladkova (University of Amsterdam), Titia Benders (Radboud University Nijmegen) and Paul Boersma (University of Amsterdam)<br>**Is the phonetic signal mapped directly to phonological feature categories? Investigating the perceptual basis of vowel height** |

# A syntax for atransitivity
## Víctor Acedo-Matellán (Universidade do Minho)

The goal of this work is threefold: 1. to put forth a new analysis of atransitivity (see (1) through (3)) in terms of a reprojection mechanism; 2. to extend the analysis to other predicates like the conative construction (see (9)) and activity VPs with patients (see (10)); 3. to show how this treatment of activity VPs accounts for their cross-linguistic variation.

**0.** McIntyre (2004) calls *atransitivity* the fact that a verb cannot link its usual internal argument when accompanied by certain particles or PPs. The next examples illustrate this phenomenon in three Germanic languages (examples from McIntyre 2004):

(1)    a. I saw (*them) into the window. [Cf. *I saw them.*]
       b. I played (*the guitar) on/away/along/around. [Cf. *I played the guitar.*]

(2)    Anne sah (*einen    Mann)    ins   Fenster.              [German]
       Anne saw  a.ACC    man.ACC)  in.the.ACC.N   window.ACC
       'Anne saw into the window.' [Cf. *Anne sah einen Mann*.]

(3)    (*Spekulaas)   door-eten. [Cf. *Spekulaas eten*.]              [Dutch]
       gingerbread    through-eat
       'Eat on.'

Atransitive predicates show the following properties (based on McIntyre 2001, 2004, 2007): A) it is a case of productive variable argument realisation; B) the event is understood both as an activity and as a Figure of a spatial schema in which the PP/particle denotes the spatial relation + Ground (e.g., in (1a) the seeing is interpreted as somehow traversing a metaphorical path which leads into the window); C) the PP/particle seems to be truly in complementary distribution with objects: if an object is inserted it is obligatorily understood as a Figure of a caused motion event, sometimes yielding aberrant results (cf., e.g., *I saw <u>them</u> into the window* ≈ "I caused them to go into the window by seeing"); D) The subject of the construction is not an internal argument, and the construction is therefore not unaccusative: atransitive predicates systematically select the HAVE-auxiliary for the perfect tense in German and Dutch (cf., e.g., (2): *Anne hat/*ist ins Fenster gesehen*). To these I add: E) atransitive predicates are usually atelic. Telicity or, to be more precise, lack of homogeneity, is allowed (although not enforced) by the concurrence of both a bounded-Path PP and a verb understood also as a bounded event (these two ingredients are present only in (5a)):

(4)    I saw into the window for/*in 3 seconds.

(5)    a. I shot into the window in/for 3 seconds.
       b. I shot on for/*in 3 seconds.

F) the (non-)quantity properties of the subject do not have any impact on inner aspect (cf. 6), which constitutes an additional proof that it is truly an external argument (unlike in (7), an unaccusative predicate) (cf. Borer 2005, MacDonald 2008):

(6)    {Three sea snakes/Marine wildlife} ate into the dead octopus for/*in an hour.

(7)    a. Three sea snakes swam into the cave in/*for five minutes.
       b. Marine wildlife swam into the cave for/*in five minutes.

G) there are languages, like Romance or Modern Greek, which do not allow these predicates:

(8)    *Els ratolins menjaren  endins  del      formatge.            [Catalan]
       the  mice    ate         into     of=the  cheese

H) the majority of atransitive predicates share with the conative construction (9) and predicates involving patients (i.e., non-measuring-out objects; cf. (10)) both the lack of telicity and the expression of the relation between an event and an entity (cf. Marantz 2005):

(9)    Jane ate at the cake for/*in 5 minutes.

(10)    Jane swept the floor for five minutes. [*in five minutes* is good on a non-patient reading.]

**1.** Only one syntactic account has been proposed for this phenomenon: McIntyre 2004 (cf. also Zeller (2001)'s lexicalist account). McIntyre (2004) puts forth a control-like structure:

(11)  $[_{\text{INITP}}$ I $[_{\text{INIT'}}$ play-INIT$_i$ $[_{\text{CHANGEP}}$ X$_i$ $[_{\text{CHANGE'}}$ V$^{\text{GO}}$ $[_{\text{PP}}$ on$]]]]$          [Analysis of (1b)]

The subject (*I*) is projected as the specifier of a causative eventive head, INIT. The lexical verb, being a left-member of a compound with INIT, cannot link its argument (cf. (*the guitar)). An eventive head of GO/BECOME semantics, CHANGE, structures the rest of the predicate. The PP/particle is the complement (*on*) and the specifier is a null element (X) coindexed with INIT, which is aimed at accounting for the interpretation that the event is the Figure of a metaphorical caused motion event. I propose to literally cling to the idea that the light event head (v) + verbal root ($\sqrt{\text{PLAY}}$) combination, beyond its interpretation as an activity, is actually the Figure for the spatial relation denoted by PP/particle (PLACEP); it must therefore be its *specifier*, which eliminates the need of the mysterious coindexed X element:

(12)  $[_{\text{VOICEP}}$ I $[_{\text{VOICE'}}$ VOICE $[_{\text{VP/PLACEP}}$ $[_{\text{VP}}$ v $\sqrt{\text{PLAY}}]$ $[_{\text{PLACE}}$ $\sqrt{\text{ON}}]]]$          [preliminar; cf. (14b)]

v+$\sqrt{\text{ROOT}}$ is thus claimed to be both a specifier and a head. This is reminiscent of Hornstein & Uriagereka's (1999, 2002) claim about binary quantifiers like *most*, as in *Most people love children*. They propose that in a sentence such as this one, I is originally the head of the sentence before reprojection makes Q the new head, IP being the new specifier. This accounts for the status of Q as a two-place predicate relating the scope (IP: external argument) and the restriction (NP: internal argument) (Larson 1991):

(13)   a. quantifier raising, head = I: $[_{\text{IP}}$ $[_{\text{QP}}$ most people$]_i$ $[_{\text{I'}}$ I $[_{\text{VP}}$ t$_i$ love children$]]]$
        b. reprojection, head = Q: $[_{\text{QP}}$ $[_{\text{Q'}}$ most people$]_i$ $[_{\text{IP}}$ I $[_{\text{VP}}$ t$_i$ love children$]]]$

For atransitive predicates I propose that v+$\sqrt{\text{ROOT}}$ is the head of the construction before the preposition/particle is reprojected, the verbal phrase becoming its specifier, as desired:

(14)   a. "PP raising", head = v+$\sqrt{\text{ROOT}}$: $[_{\text{VP}}$ $[_{\text{PLACEP}}$ PLACE $\sqrt{\text{ON}}]_i$ $[_{\text{V'}}$ $[_{\text{v}}$ v $\sqrt{\text{PLAY}}]$ t$_i$$]]$
        b. reprojection, head = P: $[_{\text{PLACEP}}$ $[_{\text{PLACE'}}$ PLACE $\sqrt{\text{ON}}]_i$ $[_{\text{VP}}$ $[_{\text{v}}$ v $\sqrt{\text{PLAY}}]$ t$_i$$]]$

Being a Figure, the v+$\sqrt{\text{ROOT}}$ is expected to be relevant in the calculation of the inner-aspectual properties of the predicate (cf. Harley (2005); cf. (7)), as shown to be the case in (4)/(5a). Moreover, a possible problem for McIntyre's (2004) analysis, namely that X could correspond to a cognate object coindexed with the eventive head, is avoided:

(15)  He danced (*a merry dance) on.

**2.** The conative construction (see (9)) can be analysed as a case of atransitivity, in that it also relates an event and an entity (e.g., for (9), "Jane did eating at the cake"). This is precisely Marantz's (2005) semantic proposal for predicates involving a patient (see (10)). However, Marantz analyses patients as VP-adjuncts headed by a null preposition. Instead, I suggest that, in English and similar languages, patients, while headed by a null preposition, are *internal* to an atransitive VP. Passivisation of patients (cf. *The floor was swept for five minutes*) is thus no mystery.

**3.** As already proposed by McIntyre (2004), atransitive predicates involve *conflation* (Haugen 2009): the verbal root is bundled with the null v head. This bundling is not possible in many languages (Snyder 2001), which explains data like (8). Languages showing the pattern of (8) also lack anything similar to the conative construction. Moreover, there is evidence that patients in these languages are adjuncts. Thus, passives of activity verbs sound awkward if the activity interpretation is forced (cf. Bartra 2008 for Catalan, Mendikoetxea 1999 for Spanish):

(16)  To    patoma   skupistike         se/??yia    pende    lepta.          [Modern Greek]
      the    floor    sweep.PST.PASS.3SG in/during   five     minutes

Greek/Romance-type languages cannot construe patients as (VP-internal) arguments since they do not have conflation available. The fully grammatical telic variant of (16) corresponds to a change-of-state predicate, the root expressing a result state, and not an activity.

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ABOUT **U** AND **I**
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Element Theory (Kaye et al. 1985, 1990, Harris 1990, Scheer 1999, Backley 2011) distinguishes between place elements (**A**, **I**, **U**) and manner elements (**L/N**, **H/h**, **?**). Place elements are grouped together because they identify the "colour" of both vowels and consonants, e.g., lowness, frontness, backness, roundness, brightness, etc. However, I argue that the element **A** differs from **I** and **U** inasmuch as it is more vocalic. As a matter of fact, **A** and **?** tend not to combine in the same syllabic slot, whereas no such limitation is known for **I** and **U**. In (1) I propose the following internal structure of stops:

(1)

```
U       I       I       U
|       |       |       |
h       h       h       h
|       |       |       |
?       ?       ?       ?
[p]     [t]     [c/tʃ]  [k].
```

A language typically has a series of three stops, [p, t, k]. If there is a fourth member of the series, it is normally a postalveolar affricate (which behaves phonologically as a stop). I argue that velars are not empty (*contra* Kaye et al. 1985, Harris 1990) and do not contain **A** (*contra* Botma 2004). As a matter of fact, there is a great deal of evidence that velars interact with labials (and therefore contain **U**), and acoustically labials and velars share similar spectral characteristics (Backley 2011) Similarly, both coronals and palatals are acoustically "bright", as they share the element **I**. When **A** occurs in coronal sonorants, it conveys sonorancy, not colour. These facts suggest that the presence of **A** in C is marked. Conversely, every language has at least a low vowel in its inventory. **I** and **U** are less marked than **A** in a **C** position, e.g., **I**-vowels and **U**-vowels typically alternate with glides, whereas **A** does so to a much lesser extent. Given that **A** is the vocalic element *par excellence*, what about **U** and **I**? The difference in their behaviour suggests that **I** is more vocalic than **U**.

- First of all, given languages with "defective" stop series (where a major place of articulation is missing), the **U** element is always present whereas the **I** element is sometimes missing. Hawaiian only has [p, k] but not [t] (only **U**-stops), Xavante has [p, t, c] but not [k] (one **U**-stop and two **I**-stops) and Wichita has [t, k, kʷ] but not [p] (one **I**-stop and two **U**-stops). No language with only **I**-stops is attested.
- The typical epenthetic vowel is some kind of schwa, which according to Backley (2011) is a non-headed **A** element. Also [ɨ], the colourless vowel, is frequently employed as epenthetic, as well as [i], whereas languages with epenthetic [u] are unattested (Lombardi 2002).
- The co-occurrence of **I** and **U** in a V slot is marked and results in [y], which is relatively rare in the world's languages. As a matter of fact, when [y] is adapted in languages that do not allow **I** and **U** to co-occur (e.g., Louisiana French-based Creole), the result is the loss of **U**, i.e., [i], suggesting that **I** is less marked than **U** in V. Similarly, Pöchtrager (2012) notices an asymmetry between **I** and **U** and points out that Turkish has both **I**-harmony and **U**-harmony in vowels but the latter is more restricted, while Finnish only has **I**-harmony. However, in consonantal systems, **U** seems less restricted, e.g., English has more labials than palatals.
- Nasal place assimilation seems to indicate that **U** is fitter than **I** in a C position. When **I** meets **U**, **U** prevails: the coronal nasal (containing **A,I**) becomes labial (**A,U**) or velar (**A,U**) before labials (**U**) and velars (**U**) respectively.

- There seems to be a preference in the world's languages for labials to occur syllable-initially (cf. Fikkert & Levelt 2008, McNeilage & Davis 2000), whereas dorsals tend to appear syllable-finally (e.g., /ŋ/ in English). The fact that [t] is frequently used as epenthetic consonant between two vowels could indicate that intervocalically coronals are preferred. This tendency can be formalized as such: the more consonantal **U** occurs in positions where the influence of vowels is minimal, i.e., word-initially, post-consonantally and syllable-finally, whereas the less consonantal **I** occurs intervocalically, where the influence of vowels is greater. Since the word-initial and post-consonantal position are strong (Ségéral & Scheer 2001), **U** becomes headed (**U** = labial), while the opposite holds syllable-finally, where **U** is in weak position (**U** = dorsal). This analysis could possibly solve the long lasting debate on markedness ("is coronal or velar the unmarked place of articulation?"): coronals are unmarked intervocalically and velars syllable-finally. That would explain why [t] is used epenthetically (but [k] is not) and why coronal sonorants typically become dorsals when in the coda, e.g., [l → ɫ, n → ŋ, r → ʀ].

The preference for certain place elements to occur in specific syllabic positions can be captured as follows: certain syllabic positions project, by default, a certain element, or better, they are phonetically interpreted in a certain way. Other things being equal, syllabic configurations are interpreted as shown in (2).

(2)
(a)          (b)                                          (c)                    (d)

                        ┌───────────┐                                        ┌──────────┐
                        │           │  Gvt                                   │          │  Gvt
                        ▼                                                    ▼

V           [C     V]    C  ⟵ V                  C        V             V     C      V
↓                        ↓ Lic                   ↓                            ↓
A                        <u>U</u>                U        ø                   I
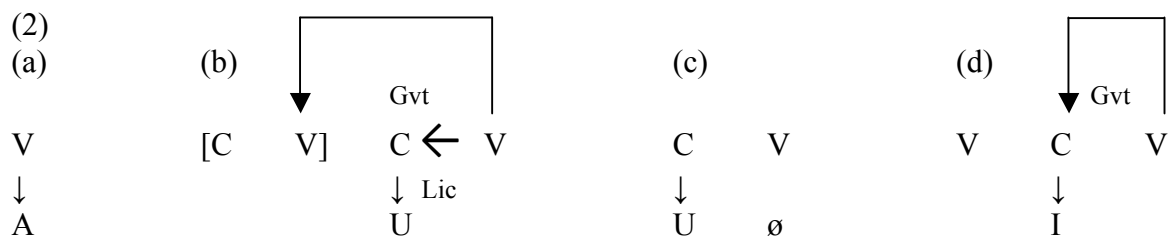
Following Ségéral & Scheer (2001), government acts here as an inhibiting force that spoils its target, while licensing is a corroborating force. The beginning of the word is represented as an empty CV unit (Lowenstamm 1999). (2a) shows that, in absence of lexical specification, a vowel will contain (or consist of) **A**, (2b) shows that a consonant in a strong position (ungoverned and licensed) is preferably realised as a labial, (2c) shows that a consonant in a weak position (unlicensed, ungoverned) is preferably realised as dorsal and (2d) shows that an intervocalic consonant (governed) is coronal by default.

The current proposal goes against one of the major tenets of all frameworks working with elements, i.e., that phonological representations must be fully specified. However, the strong evidence brought here for certain elements to occur in certain positions calls for an explanation. My assumption is that underspecified melody manifests itself as **A**, **I** or **U** depending on the syllabic configuration.

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# Possession and necessity: from individuals to worlds

*Bronwyn Bjorkman and Elizabeth Cowper (University of Toronto)*

This paper investigates the use of possessive morphosyntax to express modal necessity, illustrated in (1) and (2) for the English "semi-modal" *have (to)*. This phenomenon is found not only in languages with a possessive verb like *have*, such as English, German, Spanish, and Catalan, but also in those that express possession with *be* together with prepositional or oblique subject marking, including Hindi (Bhatt, 1997) and Russian (Jung, 2011).

(1)  Cyclists have to obey traffic laws.  *(necessity)*

(2)  That cyclist has a helmet.  *(possession)*

Our central claim is that possessive modality constructions arise because both possession and necessity express a relation of inclusion or containment between two arguments of the same semantic type. This contrasts with previous accounts, which have proposed that sentences like (1) express abstract possession or existence of an obligation (Bhatt, 1997; Bybee and Pagliuca, 1985). Possession expresses inclusion between two individual-type arguments, while necessity expresses inclusion between sets of worlds. This relation arises in different configurations, however: with a possessive verb like *have* it is expressed via syntactic transitivity, while the inclusion relation in modality is hidden, resulting in apparent syntactic intransitivity, with one of the two arguments being part of what is spelled out by the modal head.

The semantics of predicative possession are the subject of much current investigation and disagreement, but one core use of possession is to express part-whole or inclusion relations (Aikhenvald, 2013, a.o.). Levinson (2011) suggests that *have*, at least in Germanic languages, is the verbal realization of a head with the semantics of (non-locative) WITH, expressing inclusion or containment between its internal and external arguments, as in the phrases in (3).
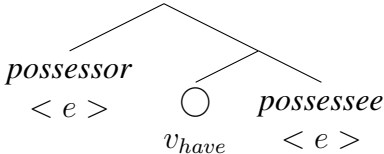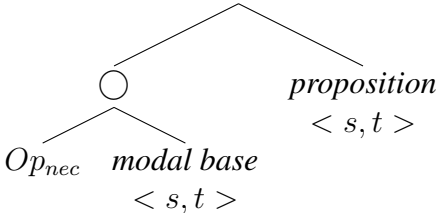
(3)  a.  the tree with branches
     b.  coffee with milk

The formal analysis of necessity operators is strikingly similar to this view of possession, but where possession relates individuals, necessity involves inclusion between sets of worlds. Since Kratzer (1981, 1986), work in formal semantics has proposed that modal interpretations are built from (at least) three elements: a modal operator (universal or existential), which composes first with a modal base (i.e. a set of epistemically or deontically accessible worlds), and then with a proposition (also modelled as a set of worlds). A universal modal operator requires that the proposition be true in all accessible worlds—i.e. it requires that the set of worlds corresponding to the modal base be included in the set of worlds corresponding to the proposition.

This semantic similarity, we argue, is the basis of the extension of possessive morphosyntax to express modal necessity. Assuming a realizational morphological framework such as Distributed Morphology (Halle and Marantz, 1993, et seq.), we assume that insertion of *have* is underspecified, conditioned only by an interpretable formal feature expressing inclusion. The extension of *have* to modal necessity reflects a reanalysis of the contexts in which this feature can occur; more precisely, it reflects a semantic reanalysis of this feature, allowing it to relate not only individuals but also arguments of higher semantic types.

What remains to be explained are the substantial structural differences between possession and necessity: while both are semantically transitive relations between two arguments of the same type, only possession is also syntactically transitive. Indeed, syntactic transitivity has been argued to be the defining characteristic of possessive *have* (Hoekstra, 1984; Cowper, 1989, a.o.). By contrast, modal operators like *must* or modal *have (to)* are intransitive propositional operators with raising syntax, demonstrated by their ability to combine with expletive subjects,

as in (4). While the first argument of possessive *have* composes as its complement, as in (5-a), the first argument of modal *have* composes head-internally, as in (5-b).

(4)     a. It has to be raining.          b. There has to be a better solution.

(5)     a.                                b.

$$
\begin{array}{cc}
\textit{possessor} & \\
<e> & v_{have}\quad \textit{possessee} \\
& <e>
\end{array}
\qquad
\begin{array}{cc}
& \textit{proposition} \\
Op_{nec}\quad \textit{modal base} & <s,t> \\
<s,t> &
\end{array}
$$

We argue that this apparent compositional mismatch can be resolved by considering more carefully the syntactic representation of modal heads. Semantic work often assumes a structure like the one in (5-b), where a modal realizes a head that itself is semantically complex. A syntactic operation such as Merge, however, cannot create sisterhood relations within a head: the first-merged argument of an element is by definition its syntactic complement. We suggest instead that the head-internal structure of modals reflects the presence of more than one interpretable feature: modal heads thus bear two types of interpretable features, corresponding to modal force or to modal base. Either of these features can be the basis for morphological realization: while modals in languages like English primarily express modal force, Matthewson et al. (2005) demonstrate that modals in other languages primarily express the choice of modal base.

If the modal force and the modal base are systematically encoded by features of a single head, then their semantic composition cannot be via a syntactic sisterhood relation: the semantic transitivity of modal operators must instead arise because two interpretable features compose semantically within a single head. This introduces another configuration that can give rise to semantic composition: Function Application can apply not only to structures created by Merge, but also to heads bearing more than one semantically interpretable feature.

The advantage of this proposal over previous analyses, particularly the one developed by Bhatt (1997), is that it directly explains why possessive morphosyntax is always extended to express necessity, not possibility. Bhatt proposes that possessive expressions of necessity assert the existence of an obligation, expressed by a silent necessity operator. What remains unexplained on this type of account, however, is why there is no corresponding silent possibility operator. By contrast, the universal force of elements such as *have (to)* is an automatic result of the inclusion relation expressed by possession, on the proposal developed here.

Looking at possessive modal constructions thus gives us insight not only into the semantics of possession but also into the compositional syntax of modal operators. It supports the idea that inclusion is at least an aspect of the semantics of possession – and also highlights possible mismatches between cases of syntactic and semantic transitivity.

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# How phonological elements can be both auditory-based and substance-free

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The organizers of the GLOW 37 Phonology Workshop ask the following question about "the relationship between phonological primitives and phonetics":

> "As far as we can see, there are roughly three options: one can either assume that the primitives represent elements of articulation (as in most feature theories or in Articulatory Phonology); or elements of acoustics (as in Element Theory). Or is the mainstream view incorrect, in that phonological primitives bear no direct relationship to phonetics at all (as in Substance-Free Phonology)?"

We address this question from the viewpoint of a recurrent Artificial Neural Network. The result of our computer learning simulations is that in the first step, when the infant has access only to sound, phonological categories appear on the basis of auditory information alone; the relationship between these phonological proto-features and audition is arbitrary from a typological standpoint, because it is based on the distributions and correlations of auditory cues in the language environment, but the proto-features can still be described as what the organizers call "acoustics-based". In the next step, the infant has access not just to sound, but to meaning as well; this leads her to develop an indirect relationship between audition and meaning, mediated through an intermediate phonological representation; the learning process sharpens the relationship between audition and phonological features, with the possibility that some of these features merge or split. In the third step, the infant has access to compositional meaning and to morphological alternation; as a result, the computer-learned phonological features are restructured along the lines of natural classes of the undergoers and triggers of phonological alternation. In the final state, the phonological features have become substance-free to a large extent, reflecting the distributions and correlations between the uses of the earlier lower-level features in phonological alternation in the language environment at hand.

Our answer to the organizers' question would thus be that phonological features start out being audition-based, and that they shift towards being substance-free to the extent that such substance freedom is supported by the specific target language.

The ingredients of our recurrent Artificial Neural Network model have been designed to be as general as possible. The network consists of two layers of nodes (in step 1) or of three layers of nodes (in steps 2 and 3). The two-layer version (Boersma, Benders & Seinhorst "Neural network models for phonology and phonetics") has an input layer that represents auditory activity distributions (the most typical example is a tonotopic map of the basilar membrane), and an output layer that starts out being inactive but gradually acquires the ability to represent phonological proto-features. The three-layer version is constructed from the two-layer version by adding a new output layer that can represent meaning; the phonological layer thereby changes its status from being an output layer to being an intermediate layer. Each consecutive pair of layers is exhaustively linked by bidirectional connections, which can just as easily carry information from a lower level to a higher level as from a higher level from a lower level. The phonological layer is connected to the auditory and semantic layers, but the auditory layer is not connected directly to the semantic layer. The bidirectionality of the connections ensures that the network can comprehend as well as produce: listening proceeds by spreading the activation from the auditory layer to the phonological layer and perhaps on

to the semantic layer (once it exists), and speaking proceeds by spreading the activation from the semantic layer through the phonological layer to the auditory layer (and from there to an articulatory layer, which we model in the simplest way possible). Stability of the network is ensured by the fact that the connection *between* layers are excitatory and the connections *within* layers are inhibitory. Learning proceeds by a bidirectional update rule for connection weights, the *inoutstar* learning rule, which is a symmetrized version of Grossberg's instar and outstar rules.

The model makes predictions that can be tested. The predicted shift from auditory-based features to (partially) substance-free features can be tested with infants in the lab. The predicted dependence of the final degree of substance freedom on the ubiquity and nature of the phonological alternations in the language at hand can be tested by correlating this diachronically with symmetries and asymmetries in phonological and phonetic changes. Finally, the fact that the model predicts that adult phonological features reflect both their auditory origins and their participation in alternations can guide theoretical phonologists towards considering the possibility that the auditory-based viewpoint and the substance-free viewpoint are not incompatible after all.

# Extraction with deep anaphora? The role of VP external orphans
Enrico Boone and Anikó Lipták (Leiden University Centre for Linguistics)

**1. The issue**   Since Hankamer and Sag (1976), anaphora is classified in two basic types: syntactically atomic deep anaphora and fully articulated surface anaphora containing syntactic structure. The two types are predicted to show differences in extraction possibilities, which has become a standard diagnostic in identifying the two types. Extraction data, however, are often contradictory: Danish *det*, argued to be a surface VP anaphor (VPA) by Houser et al (2007), is compatible with A- but not with Ā-extraction, similarly to its surface anaphoric Norwegian cognate *det* (Bentzen et al 2013).

In this talk, we present a case study of Dutch VP anaphora and show that extraction data are an unreliable diagnostic for the presence of syntactic structure. While Dutch *dat* is a deep anaphor, it allows for A-extraction and some instances of Ā-extraction. We show that this behavior is fully compatible with the atomic nature of *dat* once one recognizes that the extractable constituents (both in the A- and Ā-domains) must be capable to syntactically integrate into the structure. Moreover, we show that the extractable constituent must be semantically integrated via a well-formed λ-expression as well (along the lines of Mikkelsen et al 2012).

**2. *Dat* VPA is a deep anaphor**     In Dutch, an anaphoric VP can be overtly realized by the demonstrative pronoun *dat* (or the neuter personal pronoun *het*). According to standardly used diagnostics for deep vs. surface anaphora (originating from Hankamer and Sag 1976, see also Houser et al 2007, Mikkelsen et al 2013), *dat* is without a doubt a deep anaphor: it can have non-linguistic antecedents and it allows for voice mismatches (e.g. passive / active) between the pronominalized VP and its correlate in the antecedent (cf.1).

(1)  Het  vuilnis  moest  buiten  worden gezet,   en   dus   heeft Jan **dat** gedaan.
     the   litter    must   outside  BE.INF  placed   and  PRT   has  J.   that done

Further supporting the assumption that *dat* is a deep anaphor, is its syntactic distribution, which patterns fully with that of a DP in that: (**i**) *dat* can only occur in syntactic positions that are reserved for nominal constituents (including a scrambling and topicalization position); and (**ii**) *dat* can only co-occur with verbs that c-select DP arguments, see e.g. (2/3):.

(2)  Jan  doet / ziet / kan / *laat / * dwingt / *  begint   { een  truckje / **dat** }.
     J.   does / sees / can /  let  /  forces  /    begins      a    trick /   that
(3)  Jan  begint liedjes te   zingen. *  Klaas  begint  **dat** ook.
     J.   begins songs  *te* sing.INF      K.   begins  that  too

**3. Extraction with *dat* VPA**     Given that *dat* is a deep anaphor, the behavior of *dat* VPA with respect to 'extraction' is at first sight puzzling: it allows for A-extraction with passives and unaccusatives (cf. 4), disallows Ā-extraction with DPs (5a), and for 8 out of 10 informants, it allows Ā-extraction with some PP arguments (5b).

(4) a.  Piet werd gearresteerd en  Marie werd **dat**   ook.                   (*A-extraction*)
         P    was arrested        and M.    was  that  too
    b.  Dit vliegtuig is  geland  en   dat vliegtuig is **dat** ook.
         this plane     is  landed  and  that plane    is that too
(5) a.  Jan leende Marie wel een boek.  *  Wie  deed  hij **dat** niet?    (*Ā-extraction*)
         J.  lent   M.   AFF a   boek      who  did   he  *dat* not?
    b.  Jan leende  wel een boek aan Marie.  Aan  wie  deed hij **dat** niet?
         J.  lent   AFF a   book P  M.       P    who  did  he  *dat* not?

The possibility of Ā-extraction for the speakers who accept (5b) furthermore co-exists with that of base generating the PP argument next to *dat* (cf. 6b), something that is only allowed with PP but not with non-subject DPs (cf. 6b). Such a PP associate of *dat* forms a single VP constituent with *doe dat* (which can be evidenced by e.g. VP topicalization, not illustrated here):

(6) a. ✓ Hij   deed **dat** ook aan Susan.         b. * Hij   deed **dat** Susan   ook.
       he   did   that too P  Susan                    he   did   that Susan   too

Base generation moreover is possible only for argument PP, (subject) DP, but not for AP or CP associates:

(7) * Jan heeft gezegd [CP dat hij zal   komen ]   en   Piet heeft   **dat** [CP dat hij niet komt ].
       Jan has  said       dat he shall come       and Piet has     that     dat he not comes

The PP-category restriction on associates of *dat* make the Dutch facts look a lot like so-called *orphan* PPs that appear next to the VP anaphors *do it/do the same*  in English (Mikkelsen et al 2012):

(8) You have [jilted <u>two fiancés</u> ] and I expect you would  [VP [VP *do the same*] [orphan to me]]

However, whereas in English such orphan PPs are restricted to PPs headed by a specific set of prepositions (*to/for/with*), PP associates of *dat* in Dutch are not so restricted: prepositions selected by the antecedent predicate can also be orphans (cf. 6a).

**4. The account**   As noted, *dat* is a DP proform selected by a DP-selecting verb like *doen*, auxiliaries or modals: *[VP doen **dat** ]*. Orphan associates that occur next to *dat* must be able to be syntactically integrated in the extended structure above this VP. Importantly, DPs cannot be introduced into this extended structure as adjuncts, as they would fail to receive case if integrated this way. This is precisely what rules out (6b): the only head available for assigning case on *Susan* is $v^0$. Crucially, $v^0$ already assigns accusative case to *dat*, as illustrated in (10).

(9) *   [TP Hij   [vP $t_{hij}$ [vP $v^0_{acc}$  [VP deed [DP **dat**$_{acc}$ ]] [DP Susan$_{acc}$ ]]   ]]]   (cf. 6b)

Subject DPs, even in the unaccusative and passive examples in (4), successfully integrate into the structure, due to the fact that they can start out in Spec,*v*P (instead of inside the VP, cf. Neeleman & Weerman 1999) and subsequently get assigned case by $T^0$.

PP arguments (but not CPs or APs) can successfully combine with the *doe dat* VP syntactically, as (**i**) they are allowed to be merged outside their selecting predicate in line with works like Barbiers (1995), Helmantel (2002), Koster (2000) and (**ii**) they do not need to receive case. Our account explains the extraction pattern in (4-6): all possible extractees are introduced VP-external (i.e. external to *dat*) and thus never actually extract *out of* the anaphor.

**5. Semantic integration of orphan associates**   The semantic composition of orphan associates  with their internal argument slot proceeds as proposed by Mikkelsen et al (2012): the presence of the associate forces λ-abstraction over the antecedent of *dat*. The resulting lambda function can then apply to the argument (i.e. the orphan) via functional application:

(10)  a. [λx.jilt x] (me)                 English (8) *from Mikkelsen et al 2012*
       b. [λx.leende x een boek] (Susan)       Dutch (6a)

Importantly, this successfully rules out cases in which the orphan associate is a predicative function itself, like a secondary predicate, as in (11). This shows that next to syntactic integration (as described above), semantic integration must also be successful.

(11)   * Ik beschouw Jan als intelligent, en  jij   doet   **dat** als stom.
         I  consider    Jan as intelligent  and you  do     that as stupid

Overall, an important result of our theory is that extraction cannot be taken as first hand evidence for structure: what looks like an extracted constituent might originate outside the anaphor.

*Selected references*  **Bentzen**, **Merchant & Svenonius** 2013 Deep properties of surface pronouns: Pronominal predicate anaphors in Norwegian and German • **Houser**, **Mikkelsen & Toosarvandani** 2007 Verb phrase pronominalization in Danish: Deep or surface anaphora? *WECOL*. • Koster 2000 Extraposition as parallel construal. Ms. • **Mikkelsen, Hardt & Ørnses** 2012 Orphans hosted by VP anaphora *WCCFL* 29. • **Neeleman & Weerman** 1999 *Flexible syntax: a theory of case and arguments*. Kluwer.

# From the Complex NP Constraint to everything
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While extraction from complex NPs (Ns modified by clauses) is disallowed, extraction from such VPs is allowed. In other words, while the Complex NP Constraint (CNC) holds there is no such thing as the Complex VP Constraint (note the CNC cannot be reduced to the adjunct condition by treating nominal clausal complements as appositives/adjuncts, see Safir 1985).

(1) ??Who$_i$ did you hear [$_{NP}$ rumors [that he hit t$_i$]]   (2) Who$_i$ did you [$_{VP}$ think [that he hit t$_i$]]

Previous research emphasized (2) as the test case for understanding the locality of movement, putting aside (1) as an exceptional case. I show that when properly generalized, (1) represents a pervasive pattern found all over the place, with (2) being exceptional. Understanding the CNC is then the key to understanding the locality of movement (as well as structure building)

First, extraction is banned not only from clausal, but all complements of Ns. This is shown by (3b) (I'll argue for a re-analysis/pruning (Hornstein & Weinberg 1981, Stepanov 2012, a.o) account of dangling Ps as in (3) (in Dutch, P-stranding in NPs is restricted to a single P), where there's no PP in (3a) hence (3a) involves extraction of the N-complement, not out of it) Further confirmation of the ban on extraction from N-complements is provided by the simple/ deep extraction contrast with *combien* (4). Also, while SC allows adjectival left-branch extraction and extraction of NP adjuncts, deep extraction of these elements is disallowed (5)-(7). I will provide a number of additional cases, which will lead to generalizing the CNC to (8).

(3) a. Who$_i$ did you see [friends of t$_i$]?        b. ?*Who did you see enemies of [friends of t$_i$]

(4) a. Combien$_i$ a-t-il consulté [$_{DP}$ t$_i$  de livres]?
   'How many did he consult of books?'
   b. *Combien$_i$ a-t-il consulté [$_{DP}$ (plusieurs/des) préfaces [$_{DP}$ t$_i$  de livres]]
      'How many did he consult several/some prefaces of books?'         (French)

(5) a. Pametne$_i$ on cijeni      [t$_i$ prijatelje]  b.*Pametnih$_i$ on cijeni      [prijatelje [t$_i$ studenata]]
      smart    he appreciates friends           smart    he appreciates friends      students
       'He appreciates smart students'            'He appreciates friends of smart students.'

(6)  Iz    kojeg   grada$_i$ je Petar sreo [djevojke t$_i$]
     from which  city   is Peter met  girls
     'From which city did Peter meet girls?'

(7) *Iz    kojeg   grada$_i$ je Petar kupio  slike   [djevojke t$_i$]?
      from which  city    is Peter  bought pictures girl
      'From which city did Peter buy pictures of a girl?'         (Serbo-Croatian)

(8)   Extraction out of nominal complements is disallowed.

Significantly, APs pattern with NPs (since weak islands are sometimes completely weakened with argument extraction, adjunct extraction is much more reliable; however, in English it can be tested only with clausal complements, even (6) being disallowed in English.)

(9)   a. Who$_i$ is he [proud of t$_i$]?         b. ?*Who$_i$ is he proud of [friends of t$_i$]?

(10) ??What$_i$ are you [$_{AP}$ proud [$_{CP}$ that John bought t$_i$]]?

(11) *How$_i$ are you [$_{AP}$ proud [$_{CP}$ that John kissed Mary t$_i$]]?

PPs exhibit the same behavior—they also ban extraction from their complements (some speakers can drop the P in (13); (13b-c) then improve).

(12) a. Who$_i$ did you read about t$_i$?         b. ??Who$_i$ did you read about friends of t$_i$?

(13) a. se        acordó            de   [que [Pedro preparaba        la comida]]
        clitic.3p (s)he.remembered  prep   that Pedro prepared.imperfect  the food
        "She just remembered that Pedro used to cook the food"
     b. ?*¿qué$_i$ se     acordó            de   [que [Pedro preparaba        t$_i$]]
         what  clitic (s)he.remembered    prep   that Pedro prepared.imperfect
    c. *¿cómo$_i$ se     acordó            de   [que [Pedro preparaba        la  comida t$_i$]]
       how   clitic (s)he.remembered  prep  that  Pedro prepared.imperfect the food (Spanish)

(14) a. Hij kan zich   niet  [in [de bibliografie [van dat boek]]] vinden
         He can himself not   in the bibliography of  that book  find
         'He cannot find himself in the bibliography of that book.'
     b. *Hij kan zich    $er_i$     niet in de bibliografie   van $t_i$ vinden
        he  can himself r-pron. not in the bibliography of     find
   c.*[Van dat boek]$_i$ kan hij zich niet in de bibliografie $t_i$ vinden (Dutch, Van Riemsdijk 1997)
A number of additional AP/PP cases will be presented, which will lead to positing (15).
(15)   **The Complex XP constraint** (where X ≠ V)
           Extraction from complements of lexical heads is disallowed
I also provide a deduction of (15) based on the following mechanisms:
1.Simplifying Grohmann (2003) by conflating his two functional domains into one: structure
is divided into two domains, thematic and non-thematic; movement must pass through the
highest phrase of each domain. (This differs from Grohmann 2003.)
2.Kayne (1994): Specs are adjuncts. I show this follows from Chomsky (2012), where in the
case where a head and a phrase merge, the head projects. I show the way Chomsky allows
projection in the case where non-minimal projections are merged is problematic; a natural
consequence of his system is then that there is no projection when non-minimal projections
are merged, only segmentation. This deduces Kayne's Specs-are-adjuncts claim.
3.Antilocality (the ban on movement that is too short) defined as in Bošković (in press) (not
in terms of Grohmann's domains): Move must cross at least one phrase (not only a segment).
The above system captures the CNC case (the relevant thematic/non-thematic domains are
highlighted in (16); only the relevant traces are shown): movement must pass through CP and
NP, given 1.; this can only be done by adjoining to CP/NP, given 2., which violates
antilocality. The system in fact rules out all the unacceptable cases from above (some
representative derivations are given in (17)), fully deducing (15) (without the parenthesis).
(16)   ??Who$_i$ did you hear [$_{DP}$[$_{NP}$ $t_i$ [$_{NP}$ rumors [$_{CP}$ $t_i$ [$_{CP}$ that [$_{IP}$ a dog [$_{vP}$ bit $t_i$]]]]]]?
(17) a. *Combien$_i$ a-t-il consulté [$_{DP}$ (plusieurs/des) [$_{NP}$ $t_i$[$_{NP}$ préfaces [$_{DP}$ $t_i$ [$_{DP}$ de livres]]]]]
     b. *How$_i$ are you [$_{AP}$ $t_i$ [$_{AP}$ proud [$_{CP}$ $t_i$ [$_{CP}$ that [$_{IP}$ John [$_{vP}$ kissed Mary $t_i$]]]]?
Why are VPs different? They are different due to the existence of vP. Since vP belongs to the
thematic domain, there is no need for VP adjunction in (2) (nP/pP/aP have often been posited
for the sake of uniformity with VP, but the fact is that there is no such uniformity across these
domains regarding extraction; if n/p/aP exist they are then not part of the thematic domain;
the above analysis will also be seen as supporting proposals for additional structure between
vP and TP, as a result of which subject movement to TP does not violate antilocality).
(18)   Who$_i$ did you [$_{vP}$ $t_i$ [$_{vP}$ [$_{vP}$ think [$_{CP}$ $t_i$ [$_{CP}$ [that he [$_{vP}$ hit $t_i$]]]
Significantly, passives/ergatives behave differently from other verbs regarding (15). This also
follows: passives/ergatives lack the _thematic_ vP layer, which means movement must proceed
via VP adjunction in (19b,d) (in contrast to (18)), violating antilocality (the degraded status of
subject extraction in ?*_Who$_i$ was it believed $t_i$ liked Mary_ will also be captured).
(19)a.How did they believe [that Jon hired her t] b.*How was it believed [that Jon hired her t]
  b. Who did they see (some) friends of   b.?*Who did there arrive (some) friends of last week
As for infinitives, Li (2003) shows adjunct extraction is banned from non-verbal infinitival
complements, but allowed with raising infinitives. The above system easily handles (20a). I
will propose an account of raising infinitives that voids the effect of (15) for them via the
mechanism of Rescue-by-PF deletion. (I will also discuss extraposed clauses and propose a
constrained theory of when restructuring is possible based on the above system.)
(20) a. *How did he witness an attempt [to fix the car t] b. How is John likely [to fix the car t]
Finally, I address the status of phases. I show that in addition to capturing (15), the above
system goes a long way in capturing a number of phase effects (e.g. subnumeration formation
and cyclic spell out can be restated in this system without appealing to phases), which will
lead to raising the possibility that phases (as currently understood) can be dispensed with.

# On possessive (reflexive) pronouns, equatives, and the structural basis of Principle A

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The paper proposes a sub-morphemic, nano-syntactic analysis of possessive pronouns in German(ic) (*sein-, zijn, sin/sitt/sina* etc.). The proposal is that the relational nature of the possessive construction is a direct consequence of the composite meaning of the two items that constitute the possessive pronoun: the equative particle **so** + a (kind of the) **indefinite determiner** (with its inflection). As for *so*, it ensures that there are two entities in a specific, slightly modified identity-relation, see below, whereas the indefinite determiner is responsible for the fact that the possessee is quantificationally dependent on the possessor, cf. (in)-definiteness spreading – a behaviour that cannot be observed in surrogate possessive constructions , e.g. with the preposition *of*.

In the first part, it will be shown, how the meaning can be derived, thereby also addressing questions of Binding Principle A. In the second part, the analysis will be bolstered by observations from contemporary German dialects as well as diachronic data, supporting the claim that *s-ein* indeed lies at the bottom of all possessive pronouns and that the different forms for 1st and 2nd person as well as feminine possessors (German *ihr*) are a secondary effect of adding interpretationally irrelevant person/gender features.

**The internal structure of s-ich and s-ein-:** It is a well known fact that possessive pronouns are diachronically closely related to the reflexive pronoun. Furthermore, both share the property of being subject to Principle A of the Binding theory. The question thus arises whether there is a uniform analysis that derives their common properties. Turning first to reflexives, it has been shown by Leiss (2004) that a de-composition into **so** + 1st personal pronoun is plausible, given the diachronic and comparative data from various Indo-European languages. The question then is how the combination of an equative particle with a personal pronoun may yield the reflexive meaning? Assume that the difference to the 'normal' equative construction where the two elements involved are situated in their own respective functional domain (two CPs, if we adopt the ellipsis analysis of equatives/comparatives, e.g. Lechner (2004), is that the two entities are coerced into one functional domain, i.e. one clause. As there are now no more different properties that could be equalled, the only remaining interpretation is that the referential indices are equalled, i.e. the reflexive meaning.  The analysis thus amounts to saying that a clause with a reflexive like *Peter wäscht sich* (P. washes himself) has a paraphrase like *Peter washes an X like me.* This might seem strange at first sight, but if we assume that the pronoun in this configuration has grammaticalized into an expletive-like element, being simply a 'bearer of properties', and if we further look at other languages where the reflexive often contains a noun like 'body', see König & Siemund (2013), the assumption seems well-motivated. Note also that in the Romance languages, the reflexive consists merely of the (equative) particle, *se, si*: an expected difference to Germanic as the former languages do not realize (weak) pronouns, i.e. pro-drop property. The internal structure of s-ich within a clause containing a reflexive pronoun (only heading D) is thus:

(1) [...DP$_i$.....[ $_{DP}$[D$^0$ s-$_{i,j}$ [D$^0$ ich]]]$_j$...]  whereby *so*: j=i

I assume that *so* adjoins to the respective head, since as a particle it does not have a category of its own. Since *so* may combine with any type of category (adjectives, nouns...), this seems to be the correct analysis.

Coming then to the possessive pronoun, the idea that it has an internal structure consisting of the indefinite article and the possessive component is of course not new, see Corver (2004), Leu (2012), also in a sense Georgi & Salzmann (2011) who point out the similar inflectional properties of possessive pronouns and indefinite articles. However, in all these accounts, the possessive meaning itself is still taken to be inherent to the possessive part. In light of the analysis of s-ich from above, the claim here is that again, the equative semantics with its inherent relational character is responsible for the possessive meaning. The difference to the reflexive is of course that we are dealing here with two nominals with their own distinctive

descriptive content. Thus an interpretation in terms of identity of the referential indices is not available. Assume nevertheless that the same type of coercion process took place, in this case in one nominal domain, i.e. one DP, as in (2). The most plausible interpretation is a BE-AT interpretation, i.e. that the <u>location</u> of the two entities is equaled. And this is exactly the possessive relation with all its 'shades' of interpretation, ranging from inclusion (leg - table) to more abstract relations (Peter – car, Mary – cloud). Which of the interpretations is chosen is a matter of encyclopedic knowledge and not one of grammar. To make this work we (i) have to consider what the contribution of the indefinite article is and (ii) how and where the possessor is located within this single nominal domain. As for (i), Carlson (1980) showed that elements like *so* (such…) within a nominal projection only combine with NPs that have a kind-reference, see also the paraphrase for the reflexive above (**an X** like me), and thus the obligatory (sub-)kind-reading is the source of the indefinite article in the possessive pronoun. If we then follow e.g. Zamparelli (2000) and assume that the KindPhrase does not have quantificational force, it follows that the quantificational interpretation co-varies with that of the possessor. For the latter I assume, that it is situated in Spec-DP, leading to a zero-realization of $D^0$ (DFC-effect).

(2) $[_{DP}$ Possessor$_j$ $[D^0 \emptyset [...[_{KindP} [KindP^0 s_{i,j}\text{-}[KindP^0 ein\text{-} [_{NP} Noun]_i]]]]]]$ whereby *so*: i BE-AT j

The possessor can be overt (Possessor doubling: *Peter his house*) or a pro, being either bound by an appropriate DP within the clause or from outside, accounting for the dual behavior of possessive pronouns in this respect.

**Morphological variation**: Since kind-interpretations do not necessarily require an (indefinite) article, it is expected that we find variants in which the 'article-part' of the possessive pronoun is missing. German dialects would be a case in point as they allow predicatively used NPs with and without the indefinite article. (*Peter is (a) teacher*). And indeed, we find variants where the possessive pronouns consists merely of the s- element plus the inflection according to the respective noun (Swiss German: *de Mari si-s(nom.n.sg) buech*). Moreover, if the s-root has been overwritten by a person-marking element, e.g. *unser* (our), there are dialects, that inflect nevertheless according to the pattern of indefinite article (*üser-n(nom.masc.sg) fater*, our father). The analysis may also shed new light on the 'Saxon genitive' in that it would support a clitic analysis, bolstered by the fact even in German, nouns like *mother* 'inflect' with –s although they do not belong to a declension class that does have –s as an exponent for the genitive. This part then will also briefly address the rather peculiar system of Mod. English with the consequences concerning its different behavior w.r.t. Binding Theory.

Note finally this analysis is very close to Postma's (1997) analysis of possessives in terms of a functional head, hosting two indices. But whereas in his analysis it remains rather opaque where the two indices come from, in my analysis, it is a direct consequence of invoking the equative particle in the formation of reflexive and possessive pronouns. The analysis furthermore is a contribution to the Minimalist program in its trial to eliminate classical BT such that the binding relations are a coindexation (something that the grammar does not have) but Principle A is the generalization about identity (=reflexive) or BE-AT (possessive) relations induced by the inherent relational nature of the equative particle.

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# Exceptive negation in historical Low German
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The present paper proposes an analysis for exceptive clauses with a negation particle in Middle Low German (MLG), which express a meaning equivalent to *unless*-clauses in English. In these clauses, the finite verb, in subjunctive mood, appears in second position, preceded by the inherited preverbal negative particle *ne/en*, (1).

(1)  *vnde dar moste numment yn, he ne gheue V mark vp dat minste*       (Stralsund 1392)
  and there must no.one in he NE give.SUBJN five marks on the least
  'and no one shall enter there, unless he give/pay at least five marks'

These clauses pose a challenge on several levels. First, while exceptive clauses are usually treated as a special type of conditional clauses, though different from *if...not*-type conditionals (for English e.g. Geis 1973, Dancygier 1985, 1998, von Fintel 1991, 1993), and while this particular type of subjunctive verb-second clauses with a preverbal negative particle have been called conditional clauses themselves (Holmberg 1967, Härd 2000), they are rather different from ordinary (negated) conditionals. Only focussing on the expression of negation, they are the only context where preverbal *ne/en* continues to be used on its own long after the initiation of Jespersen's Cycle in MLG. In all other clause types, including (regular negative) conditionals, MLG has either bipartite negation with *ne/en ... nicht*/n-indefinite, or, much more frequently, *nicht*/n-indefinite alone. Furthermore, the negative particle *ne/en* does not seem to express sentential negation in the exceptive clause, an impression supported by the fact that none of the exceptive clauses in the corpus on which this study is based contains NPIs, *nicht*, or n-indefinites, as would be expected if *ne/en* were a (clausal) negative marker. On the other hand, the matrix clause always seems to contain an expression of sentential negation in the corpus used for the present study, viz. (*ne/en*)...*nicht*/n-indefinite, cf. *numment* 'no one' in (1). The exceptive clause therefore appears to express a positive exception to the negation in the main clause, despite the presence of *ne/en*.

Exceptive clauses in MLG are also remarkable from a syntactic point of view. While in Old Saxon (OS) the exceptive meaning was expressed by a negated 'dummy' main clause *ne sî/uuari* 'NEG be.SUBJN/were.SUBJN' taking a complement *that*-clause containing the actual exception, (3),

(3)  *that thu giuuald obar mik hebbian ni mohtis ne uuari that it thi helag god selbo fargaui*
                                                                      (*Heliand* 5351-5352)
  that you power over me have NEG can.PAST NEG be. SUBJN that it you holy God self gave
  'that you could not have power over me, unless the holy God himself gave it to you'

the MLG exceptive clauses do not generally exhibit the expected continuation of this pattern, viz. a negated main clause with an expletive pronoun and a *that*-complement. Rather, the former main and embedded clauses seem in most cases to have 'fused' in the sense that a (pro-)nominal constituent, which can be the subject (4a) or an object (4b), from the former *that*-clause comes to occupy the clause-initial position, and the formerly embedded (lexical) verb comes to occupy the second position, taking the subjunctive morphology and the negative particle originally associated with the former matrix verb *sî/uuari* 'be/were.SUBJN', (4).

(4)a. *It en scal nement enne nyen stenwech setten eder hoghen, de rad en si darbi.*
                                                                      (Braunschweig 1349)
  it NEG shall no one a new stone.way set or make.higher the council NE be.SUBJN there-by
  'No one shall build a new stone way or make one higher, unless the council agrees.'

b. ... *den genanten kalandes heren ensyn ersten sodane veirundevertich marck gensliken unde all wol to dancke betalt.* (Uelzen 12/07/1487)

the named kaland's sirs NE-be. SUBJN first those fourty.four marks entirely and all well to thank paid

'… unless those fourty-four marks have been paid first in their entirety to the named sirs of the kaland society'

The present paper argues that the negative particle *ne/en* underwent a lexical split at the point when the language entered stage II of Jespersen's Cycle, i.e., when the postverbal negator was established as the neutral productive expression of negation (with or without additional *ne/en*). In ordinary negative clauses, *ne/en* is gradually replaced by *nicht* as the sentential negative marker (taking scope within IP) during the MLG period. In exceptive clauses, on the other hand, it is reanalysed as part of the C-layer, above the scope position of sentential negation. More specifically, the paper argues that *ne* takes scope over a world operator situated in the C-domain (cf. Bhatt & Pancheva 2006, Kempchinsky 2009, Haegeman 2010). This operator is lexicalized by the subjunctive morphology the verb takes. This analysis accounts for the fact that *ne/en* in exceptive clauses has an interpretive effect similar to the one of Romero & Han's (2004) preposed negation in *yes-no*-questions (6a), which they argue scopes over the epistemic operator VERUM (cf. also Höhle 1992), or of Cormack & Smith's (1998;2002) EchoNeg (6b): it generates a positive epistemic implicature.

(6)a. *Isn't Jane coming too?* = [$_{CP}$ Q *not* [ VERUM$_F$ [$_{IP}$ Jane is coming too]]] (R&H 2004)

b. *Shouldn't you be in school?* = You should be in school, shouldn't you? (C&S 2002)

Like English *n't*, *ne/en*, a clitic, needs a host at PF, as does the subjunctive morphology of the world operator, which is affixal. The paper argues that both are phonetically realised on the finite verb, argued to be in Fin in MLG exceptives, even though their LF-scope positions are higher (cf. also Cormack & Smith 2002). The paper further argues that there is an empty exceptive operator in the highest C-projection, ForceP, operating on the quantification introduced by the negation of the main clause (von Fintel 1994, Leslie 2009). The present paper proposes that the MLG exceptive construction developed out of the OS construction in the steps outlined in (5).

(5)a. [$_{ForceP}$ OP$_{exc}$ [$_{WP}$ [$_{FinP}$ [$_{Fin}$ *ne-sî*] [… [$_{VP}$ t$_{sî}$ [$_{CP}$ [$_C$ *that*] …] ]]]]] OS

b. [$_{ForceP}$ OP$_{exc}$ *ne* [$_{WP}$ W [$_{FinP}$ [SpecFinP ] [Fin ] [… [$_{VP}$ XP V YP]]]]]] MLG

This reanalysis can be argued to be triggered by structural ambiguity; the OS embedded complementizer *that* could under the new structure in (5b) be analysed as occupying the matrix Fin-position. Once the embedded complementizer can occupy matrix Fin, the embedded verb can, too, as in any verb-second clause. The particle *ne/en* and the subjunctive morphology continue to be spelled out on the finite verb, now the originally embedded verb moved to matrix C, as they need a host. A possibly significant parallel to English 'Echo'-*n't* is the fact that this affects a phonetically reduced negation particle without sentential scope.

Interestingly, Dutch took a different path from the same starting point. The former 'dummy' matrix clause as a whole was reanalysed as the exponent of the exceptive operator itself, giving rise to the exceptive complementizer *tenzij* < *'t en zij* lit. 'it NEG be.SUBJN', now a full-fledged subordinating conjunction inducing clause-final verb placement, (6):

(6)*Wij zullen het halen, tenzij de trein te laat aankomt.*

we will make it unless the train too late arrives

[$_{ForceP}$ [OP$_{exc}$ *tenzij*] [$_{WP}$ W [$_{FinP}$ [$_{TP}$ *de trein te laat aankomt* ]]]]

# Antilogophoricity in Clitic Clusters

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**Goal -** Some languages such as French and Spanish exhibit coreference restrictions in clitic clusters under certain circumstances: in (1), the direct object (DO) clitic *la* can refer to Anna, but when clustered with an indirect object (IO) clitic as in (2), it cannot.

(1)   a. *Anne$_i$ croit qu'on va la$_i$ recommander au patron pour la promotion.*        *[French]*
    b. *Ana$_i$ cree que la$_i$ recomendarán al jefe para el ascenso.*        *[Spanish]*
       'Anna$_i$ thinks that they will recommend her$_i$ to the boss for the promotion.'

(2) a. *??Anne$_i$ croit qu'on va la$_i$ lui$_k$ recommander pour la promotion -[au patron]$_k$.*        *[Fr]*
    b. *??Ana$_i$ cree que se$_k$ la$_i$ recomendarán [al jefe]$_k$ para el ascenso.*        *[Sp]*
      'Anna$_i$ thinks that they will recommend her$_i$ to him$_k$ - [the boss]$_k$ - for the promotion.'

This constraint (henceforth CCR: Clitic Coreference Restriction) has been claimed to derive from binding restrictions. Based on controlled data checked with a statistically analyzed questionnaire, we instead show that CCR is due to antilogophoricity effects, which derive from perspective conflicts similar to those observed with Chinese *ziji* (Huang and Liu 2001).

**Background -** The only attempt -to our knowledge- to account for this constraint first observed by Roca (1992) and Ormazabal and Romero (2007) is that of Bhatt and Šimík's (2009). They claim that syntactic binding is crucially relevant: when an IO and a DO clitic co-occur in a cluster, the DO clitic cannot be syntactically bound. They derive this constraint from PCC (Person Case Constraint, see Bonet 1991: when accusative and dative clitics co-occur, the former must be third person) drawing on the idea that binding transmits features.

**Experimental Study -** This hypothesis is not supported by our data, which we checked with a quantitatively controlled questionnaire. 97 French native speakers and 35 Spanish ones provided online grammaticality judgments about 33 sentences using a continuous scale. Our study confirms contrasts such as 1vs2 ($p<0.001$), but demonstrates that CCR effects do not correlate with antecedent binding. First, they emerge when the antecedent does not syntactically bind, i.e. c-command, the DO clitic ($p<0.001$ for contrasts such as 3vs1 or 4vs1).

(3) a. *??La lettre du prisonnier$_i$ explique qu'on le$_i$ lui$_k$ a livré sans preuve, au juge$_k$.*        *[Fr]*
    b. *??La carta del criminal$_i$ explica que se$_k$ lo$_i$ entregaron al juez$_k$ sin pruebas.*        *[Sp]*
     'The prisoner$_i$'s letter explains that they handed him$_i$ over to him$_k$, the judge$_k$, without evidence.'

(4) a. *??D'après l'enfant$_i$, les maîtresses vont le$_i$ lui$_k$ confier, à l'assistante.*        *[Fr]*
    b. *??Según el niño$_i$, las maestras se$_k$ lo$_i$ encomiendarán a la asistenta.*        *[Sp]*
     'According to the child$_i$, the teachers will entrust him$_i$ to her$_k$, the assistant$_k$.'

Conversely, CCR is not necessarily observed when the antecedent does c-command the DO clitic ($p<0.001$ for contrasts such as 5 vs. 2).

(5) a. *Le paquet$_i$ spécifie qu'il faut le$_i$ lui$_k$ remettre, au concierge$_k$.*        *[Fr]*
    b. *El paquete$_i$ especifica que se$_k$ lo$_i$ entregues al portero$_k$.*        *[Sp]*
     'The package$_i$ specifies that you should hand it$_i$ over to him$_k$, the doorman$_k$.'

These data show that CCR cannot be due to binding (at least in Fr. and Sp.). Remarkably, it is a constraint on coreference even if as suggested by Rule I (pioneered by Reinhart 1983), only syntactic binding, not coreference, is constrained by principles of grammar.

**Proposal -** We propose that this coreference constraint is to be related to antilogophoricity effects (cf. Dubinsky and Hamilton 1997 for epithets, Ruwet 1990 for French pronouns *en/y*): CCR arises if and only if the antecedent of the DO clitic is a logophoric center, i.e. a center of perspective. The confound in the literature comes from the fact that standard examples of bound clitics usually involve psychverbs and verbs of saying whose subjects typically have perspective over the sentential complement. Our study disentangles these two factors and shows that logophoricity, not binding, is crucially relevant, as explained below.

While it is still debated what logophoricity exactly is, there is a robust crosslinguistic generalization: the referent of the antecedent of a logophor must be capable of having a point of

view (a.o. Sells 1987, Huang and Liu 2001). Thus inanimates cannot be logophoric centers. Based on this idea, we examined the contrast between inanimate and animate antecedents (4 vs. 2), which is strongly significant ($p<0.001$): CCR arises in (2), (3), and (4) because Anna, the prisoner and the child are the centers of perspective in their respective sentences, while the package in (5) cannot be. Further facts involving animate antecedents support the antilogophoricity hypothesis: a- CCR only obtains in (2) under a *de se* reading (which is characteristic of most logophors, see a.o. Huang and Liu 2001, Anand 2006); b- CCR effects vanish when the antecedent is not an attitude holder (cf. use of evidential 'apparently' below).

(6)a.*Le criminel$_i$ s'est apparemment échappé avant que les gardes ne le$_i$ lui$_k$ livrent, au directeur$_k$.*

    b. *La delincuente$_i$ huyó antes de que se$_k$ la$_i$ entregaran a la policía$_k$.*

    *'The criminal$_i$ apparently escaped before the guards hand him$_i$ over to him$_k$ -[the prison director$_k$]'*

**Analysis -** We propose that the antilogophoricity effects responsible for CCR derive from intervention effects with IO clitics due to conflicts of perspectives. First, several independent facts suggest that IO clitics occupy a position encoding point of view: dative clitics like French *lui* have to be animate – just like IOs of English double object constructions; in analyses of PCC based on feature-checking, several observations motivate the assumption that IO clitics, unlike DO clitics, are specified for person (see e.g. Anagnostopoulou 2003); it has been independently observed that dative positions encode point of view, e.g. in Japanese where the verb *kureru* 'give' (vs. *yaru*) is used when the event is described from the point of view of the referent of the dative object (Kuno 1987). Moreover, it has been shown that perspective conflicts lead to ungrammaticality: in particular, several Chinese logophors like *ziji* must corefer when they are clausemates (see Pan 1997, Huang and Liu 2001), i.e. they must refer to the same center of perspective.

More precisely, we assume that logophoric elements must be bound by a logophoric operator (cf. Koopman and Sportiche 1989, Huang and Liu 2001, Anand 2006), and there is at most one logophoric operator in the relevant domain. That's why a clitic cluster is ungrammatical when each clitic refers to a different center of perspective, as in CCR constructions since the antecedent of the DO clitic is a logophoric center and the IO clitic occupies a position encoding point of view. In fact, CCR constructions improve when the two clitics corefer (cf. 7) or when an intervening logophoric center (*Luc* in 8) prevents the DO clitic *la* to be a point of view in the relevant (bracketed) domain, as the more local attitude holder takes precedence.

(7) (?) *Anne$_i$ affirme qu'un fou voulait la$_i$ lui$_i$ présenter.*              [Fr]

    *'Anna$_i$ claims that a madman wanted to introduce her$_i$ to herself$_i$.'*

(8) (?) *Anne$_i$ croit que selon Luc, on va [la$_i$ lui$_k$ recommander pour la promotion - au patron]$_k$.*    [Fr]

    *'A$_i$ believes that according to Luc, they will [recommend her$_i$ to him$_k$ -the boss$_k$- for the promotion].'*

Note that the relevant domain is the phrase minimally containing the clitic cluster DO-IO and excluding the subject (cf. Sundaresan 2012 arguing for perspective phrases of different sizes, not only CPs), as subject -vs. DO- clitics do not create perspective conflicts with IO clitics.

**Relation to PCC -** CCR is a new window into the understanding of PCC: based on the above facts, PCC just like CCR can be argued to derive from a ban on several conflicting centers of perspective in the same domain. In fact, if we transpose sentences like (2) in the direct discourse – the center of perspective becoming a first person – we directly obtain a configuration violating the PCC (e.g. Fr. *\*la lui → \*me lui*). In other words, we suggest that PCC results from a semantic constraint: the domain minimally containing DO and IO clitics cannot include two different centers of perspective (there is at most one logophoric operator by relevant domain), which is the case in configurations violating PCC like *\*me lui*: dative *lui* occupies a position encoding point of view and the first person -the speaker- is inherently a center of perspective. This hypothesis is supported by the fact that *me lui* improves when the first person is read *de re*, not *de se*, e.g. in dream reports:

(9) ? *J$_i$'ai rêvé que j'étais M. Monroe$_m$, que j'étais chez Kennedy$_k$ et que je$_m$ me$_i$ lui$_k$ présentais.*    [Fr]

    *'I dreamed that I was M. Monroe, that I was at Kennedy's and that I$_{MM}$ introduced me$_{dreamer}$ to him$_K$.'*

In sum, our new data reveal that antilogophoricity, not binding restrictions, is at play in CCR, which relates CCR and possibly PCC to perspective conflicts observed e.g. in Chinese.

# What moves where in echo *wh*-questions?

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**1. Introduction.** Traditionally, it is assumed that echo *wh*-questions (henceforth *wh*-EQs) necessarily exhibit *wh*-in-situ (Fiengo 2007; Sobin 2010, a.o.). This paper argues against this view and presents novel evidence for overt *wh*-movement in request-for-repetition *wh*-EQs. It is argued that, as standard long-distance *wh*-movement, echo *wh*-fronting proceeds successive cyclically and hence its legitimacy depends on whether the derivation contains an available escape hatch.

**2. Data**. The English *wh*-EQ in (1b), which repeats a previous *wh*-interrogative utterance (U(WH)), (1a), presents a number of striking properties that would result ungrammatical in an ordinary *wh*-question: (i) *wh*-in-situ; (ii) violation of Superiority; (iii) widest scope for the echo *wh*-phrase (only *who* requests an answer). Notice that, unlike an ordinary *wh*-item (in italics), the echo *wh*-word (in bold and indexed with *E*) acts as a *discourse*, *intersentential anaphora*, referring back to an entity already introduced in the immediately previous utterance, but unheard by the speaker.

(1) a. U(WH): *What* did (mumble) buy? (ENG)  
    b. EQ:    *What* did **who**$_E$ buy?  
    c. EQ: *** Who**$_E$ bought *what*?

(2) a. U(DCL):  Mary bought (mumble).  (ENG)  
    b. EQ:    Mary bought **what**$_E$?  
    c. EQ:    **What**$_E$ did Mary buy?

Overt echo *wh*-movement is blocked in English EQs like (1c), but allowed in EQs reproducing a declarative U (U(DCL)), (2c). However, compare (1) with the Russian *wh*-EQs in (3), which reproduce a previous *wh*-question. In addition to the standard *wh*-in-situ option, (3b), multiple *wh*-fronting languages (henceforth MWF) allow overt movement of the echo *wh*-word: (i) to the leftmost position, above the U's *wh*-phrase, (3c) (in Slavic in general), and (ii) to the immediately preverbal position, (3d) ($^{OK}$ in Russian, Polish; but *$^{/??}$ in Bulgarian):

(3) a. U(WH): *Čto* kupil (mumble)?  
         what bought  
         'What did (mumble) buy?

    b. EQ:  *Čto* kupil **kto**$_E$?    (RU)  
         what bought who$_E$  
    c. EQ: $^?$ **Kto**$_E$ *čto* kupil?  
    d. EQ:  *Čto* **kto**$_E$ kupil?

The data in (1-3) suggest that legitimacy of echo *wh*-movement crucially depends on two factors: (i) the clause-type of the utterance being echoed (declarative *vs.* interrogative); (ii) general pattern of *wh*-movement in ordinary questions (e.g. whether MWF is allowed (e.g. RU) or not (e.g. ENG)).

**3. Proposal**. **3.1.** Extending Cable's (2010) Q-theory to *wh*-EQs, I argue that their derivation involves three crucial elements: (i) an anaphoric echo *wh*-phrase (WhP$_E$) merged at the argument position, (ii) a phonetically null discourse-bound interrogative Q-particle (Q$_E$), merged anywhere in the tree where it c-commands WhP$_E$, and (iii) interrogative E ('echo') head. All three elements bear some instance of the interrogative Q-feature (henceforth [Q$_E$], in order to distinguish from [Q] in canonical *wh*-questions). Adopting Sobin's (2010) insight, I argue that the derivation of *wh*-EQs, unlike the one of standard *wh*-questions, contains two Ā-projections: (i) CP, of the same clause-type (e.g. declarative, interrogative) as the one of the U being echoed; (ii) discourse-bound interrogative EP, which assigns scope to Q$_E$. As shown in (4), EP selects CP as a complement.
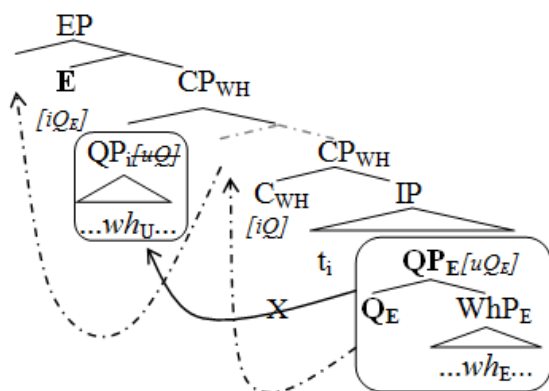
(4) *Wh-ex-situ = Q-projection*
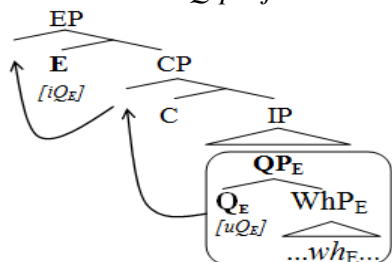


**3.2.** With Cable (2010), I argue that *all* instances of *wh*-movement (including *echo wh*-movement) arise as a secondary effect of Q-movement to the scope position of the question, a syntactic universal. More precisely, echo *wh*-movement is a result of *Q$_E$-projection*, (4): Q$_E$ merges with the echo-inserted WhP$_E$ at the base position and projects a QP$_E$, which immediately dominates both Q$_E$ and its sister. Consequent movement of QP$_E$ into EP pied-
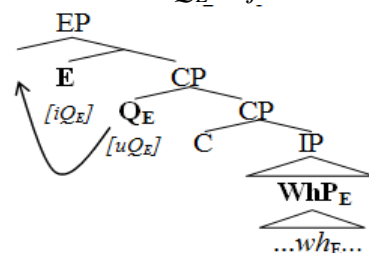
pipes WhP$_E$ (no wh-feature-percolation being necessary). With Bošković (2007), I assume that Ā-Agree is an upward relation between a probe α and a goal β, such that (i) α bears some [uF]; (ii) β has a matching [iF]; (iii) α c-commands β. Therefore, interrogative (echo) movement is triggered by an unvalued instance of the Q$_E$-feature on Q$_E$. In (4), QP$_E$ carrying [uQ$_E$] must move over E bearing [iQ$_E$], in order to agree.

**4. Echo *wh*-movement.** I argue that Q$_E$-movement to EP proceeds successive cyclically, through Spec,CP, used as an escape hatch. If Spec,CP is available as an intermediate landing site for the fronted QP$_E$, echo *wh*-movement is allowed; otherwise, it is blocked. The echo-puzzle in (1-3) then follows straightforwardly. **4.1.** The *wh*-EQ in (2c) is derived along the lines in (4). Since the echoed U is a declarative, a declarative CP is projected in the derivation of a corresponding *wh*-EQ, whose specifier is unfilled. This position can be used as an intermediate landing site for the fronted QP$_E$ on its way to EP; as a result the echo *wh*-item appears at the left edge of the clause. **4.2**. In (1), however, the echoed U is a *wh*-interrogative. As shown in (5), the interrogative C (C$_{WH}$) is projected, which in turn attracts the non-echo QP (containing U's *wh*-word) to Spec,CP.

(5)    *QP$_E$-movement through Spec,CP$_{WH}$*



Therefore, in languages of the English-type, which make use of a single Spec,CP (Richards 2001), echo *wh*-movement is blocked, (1c) (represented by *continuous arrows* in (5)). Nevertheless, as standardly assumed, MWF languages can use multiple specifiers of CP, as opposed to English (Rudin 1988; Pesetsky 2000; Richards 2001, a.o.). The proposed analysis correctly predicts the grammaticality of (3c): in Slavic, QP$_E$ moves into EP through the inner Spec,CP (*dashed arrows* in (5)). I suggest that the 'marginal' (ʔ) status of (3c) (for some native speakers) is due to the feature-sensitive Relativized Minimality effect (Starke 2001): QP$_E$ can be extracted from CP$_{WH}$ over the non-echo QP, since the former is more richly specified than the latter at this point ([uQ$_E$] on QP$_E$ has not been checked yet).

**5. Echo *wh*-in-situ**. Q-based approach to *wh*-EQs uniformly captures the *wh*-in-situ option, which is a result of *Q$_E$-adjunction* (available in D-linked questions in *wh*-fronting languages).

Within Q-theory (Hagstrom 1998; Cable 2010), Q-particle can be merged anywhere in the sentence, from where it c-commands the *wh*-word. I suggest that in EQs with *wh*-in-situ the anaphoric interrogative Q$_E$ is adjoined to CP (Ā-position), requesting for repetition of certain portion of the U, (6). Such Q$_E$ does not project and moves to EP by itself. I show that such view correctly captures a number of echo-challenges: e.g., why the echo *wh*-words are allowed inside islands, (7).

(6)    *Wh-in-situ = Q$_E$-adjunction*



(7)  a. EQ:   You wonder [*who* solved the problem **how$_E$**]?    (ENG)

Moreover, the analysis captures the clause-internal *wh*-fronting in (3d). As standardly assumed, in some Slavic languages the immediately preverbal position for WhP$_{(E)}$ is a result of *wh*-scrambling to a position below CP (FocusP in Bošković 2002; IP in Richards 2001; AspP in Chernova 2013, a.o.). Thus, in (3d), the echo *wh*-phrase appears below the non-echo *wh*-item (which is at Spec,CP), but receives widest scope due to Q$_E$ adjoined to CP and then fronted by itself into EP.

**6.** In sum, this Q-based approach uniformly captures the puzzling echo-properties and suggests that *wh*-EQs are less opposed to ordinary *wh*-questions than it could appear.

# Is the phonetic signal mapped directly to phonological feature categories? Investigating the perceptual basis of vowel height

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Phonological features are abstract linguistic representations named after physical properties of speech sounds. In phonological descriptions of vowel systems, a direct relation is assumed between a phonological feature and its phonetic correlate. The question remains whether such direct relation between features and phonetics exists also in the grammars of language users (Ladefoged, 1980, *Language*). Recent experiments with humans, as well as computer simulations, indicate that listeners map phonetic signal onto phonological feature categories (e.g. Scharinger et al., 2011, *J Cogn Neurosci*; Lin & Mielke, 2008, *UPenn Work Papers Ling*). However, these previous studies did not explicitly compare a feature- and a phoneme-based model of perception.

The present study addresses the feature vs. phoneme issue directly: we test whether listeners map phonetic information onto features or onto phonemes. We computationally implemented a feature and a phoneme model of perception. The implementations modeled the possible grammars of listeners with a typical 5-vowel system (i, e, a, o, u), in which vowels are contrasted by 3 height and 3 backness feature values (high, mid, low; front, mid, back). We simulated how the models discriminate stimuli in the F1-F2 vowel space: for every F1-F2 sample, we computed the probability of scoring "different" for two identical stimuli. Fig. 1 shows that the models yield different discrimination patterns: the phoneme model divides the vowel space into 5 categories, while the features model divides it into 9 categories (i.e. the 9 possible combinations of the height and backness feature values).
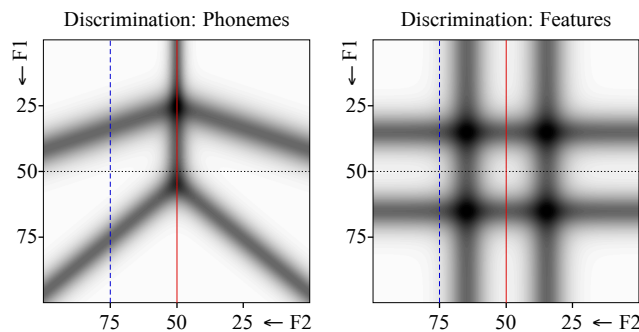


**Fig. 1**: Modeled discrimination of the vowel space. White = low discrimination score, black = high discrimination score. The red solid and the blue dashed line show the central and front continuum, respectively, which are displayed in Fig. 2. Note that F1 and F2 have arbitrary scales from 0 to 100.
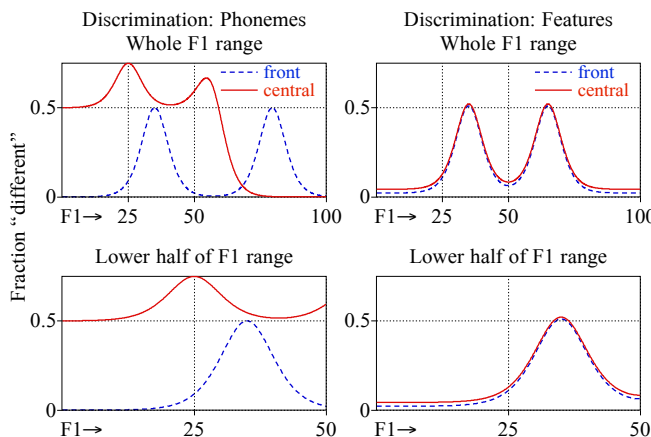


**Fig. 2**: Modeled discrimination of the front and the central continuum. Top = discrimination of the whole F1 range (i.e. including the low feature or the phoneme /a/, cf. 2-peak listeners in Fig. 3). Bottom = discrimination of the lower half of the F1 range (i.e. involving only the high and the mid feature, or the phonemes /i, e, u, o/, cf. 1-peak listeners in Fig. 3).

Fig. 2 shows that the feature model yields similar discrimination on both a front a central continuum: there are peaks of high discrimination between adjacent sounds as well as troughs within which discrimination is near 0. This discrimination result reflects that the model

perceives the same height contrast on the front and on the central continuum: namely, highfront–midfront(–lowfront) and highcentral–midcentral(–lowcentral, respectively). A similar discrimination pattern is seen in the phoneme-model for the front, but not for the central continuum. On the central continuum, the phoneme model has peaks at lower F1 values, because the phoneme /a/ occupies a large part of the central continuum. In addition, the phoneme-model considers two acoustically identical stimuli (at the lower half of the F1 range) to be different in 50% of the time. This pattern arises because the central continuum is exactly at the /i/-/u/ boundary, and the phoneme model has a 50/50 chance of perceiving the same stimulus as either /i/ or /u/. Note that if the central continuum is slightly away from a listener's individual /i/-/u/ boundary, the 50% discrimination is not expected anymore, but the predicted difference in the peak locations persists. Taking into account these different predictions of the two models for the front and the central F1 continuum, we assessed vowel discrimination in human listeners.

In listeners with a 5-vowel system (Czech), we first determined the average F2 of the boundary between front and back vowels (i.e. the F2 value of central continuum), and created three F1 continua: front, back, and central. Stimuli in each of these continua differed along the F1 dimension ranging from 280 to 725 Hz in 130 steps. If humans are feature-listeners, they should have similar discrimination peaks and troughs on the front, back, and central continuum. If they are phoneme-listeners, their discrimination of the central continuum should differ from that of the front and back continua: namely, they should have peaks at higher F1 values.

Participants ($n$=81) were tested in a same-different task with stimuli from one of the three continua, and we subsequently assessed the number of obtained discrimination peaks (i.e. the number of perceived category boundaries), as well as their height, width, and location (i.e. the crispness and location of the category boundaries). Perception on each continuum yielded significant discrimination peaks and the number of peaks was comparable across the three continua: half of the listeners had 1 peak, and about a third of the listeners had 2 peaks (see Fig. 3). In 1-peak listeners, we did not find any significant differences in peak parameters between the central and other continua. In 2-peak listeners, we found that the second but not the first peak was at a lower F1 in the central continuum than in the other continua. The results of 1-peak listeners thus resemble the modeled feature listeners, while the 2-peak listeners resemble partly the modeled feature- and partly the modeled phoneme listeners. Taken together, our findings indicate that listeners may map the incoming phonetic information onto feature categories, but at the same time, this perceptual mapping seems to involve phoneme categories as well.
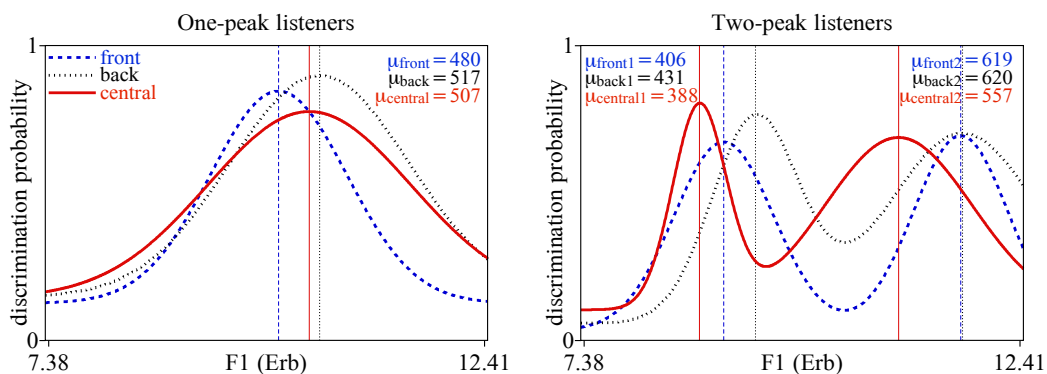


**Fig. 3**: Discrimination of the 3 continua by humans. In the F1 stimulus range, some listeners perceived 2 height categories (high/mid; 1-peak listeners), while others perceived all their 3 native height categories (high/mid/low; 2-peak listeners).

# An argument for genuine object φ-agreement in Inuit: Evidence from mood variance
### Richard Compton, McGill University

**Claim:** I argue that φ-indexing morphology in Inuit includes genuine cases of object agreement exponence, contra recent work (see below) that has called into question the existence of object agreement cross-linguistically and recast apparent instances thereof as pronominal clitics (and thus clitic doubling when an object is present). Evidence for the status of Inuit object-agreement is drawn from mood-variance and portmanteau subject-object agreement morphemes.

In particular, it is shown that while tense-variance—proposed by Nevins (2011) as a diagnostic for differentiating agreement from clitics—is inadequate to diagnose the status of Inuit φ-indexing morphology, mood-variance can instead serve to distinguish real agreement. Finally, I propose that these facts obtain because C—not T—is the locus of agreement in Inuit.

**Background:** Recent work by Preminger (2009), Woolford (2010), Arregi & Nevins (2008), Nevins (2011), and Kramer (to appear) has recast a number of apparent cases of agreement as actually being clitics. In particular, Kramer suggests that further instances of "purported object agreement" (p.30) cross-linguistically may in fact also be clitics. Nevins (2011) goes further, suggesting "an analysis of all cases of object agreement as pronominal clitics in languages with agreement with both subject and object" (p.967). For Inuit, such analyses would mean that the subject/object φ-indexing elements in (1)-(2) would consist (at least in part) of object clitics:[1]

(1)  arna-up        niri-ja-ŋa           aapu
     woman-ERG.SG eat-DECL.TR-**3SG.3SG** apple
     'The woman is eating the apple.'

(2)  taku-ja-git
     see-DECL.TR-**1SG.2SG**
     'I see you (sg.).'

While Nevins (p.959) argues that "morphophonolgical clitichood and morphosyntactic clitichood are orthogonal" and that phonological criteria should not be used to establish syntactic clitichood, he proposes that pronominal clitics can be distinguished from agreement using the criterion of tense-invariance (along with Person-Case Constraints and Omnivorous number). If pronominal clitics belong to the category D, as argued by Nevins and a number of other works cited above (or perhaps pro-φ heads as argued by Déchaine & Wiltschko 2002), we do not expect them to be sensitive to tense. Conversely, genuine agreement can be conditioned by tense (e.g., *she walks* vs. *she walked*).

However, the structure of the polysynthetic verbal complexes found in Inuit is such that tense markers are separated from these φ-indexing morphemes by mood (as in exs. 1–2 above) and may be further separated by additional elements such the perfective marker and negation:

(3)  puijjuraa(q)-gunna(q)-ŋaa(q)-lauq-sima-ŋŋit-tu-ŋa
     swim-can-instead-**DIST.PAST**-PERF-NEG-DECL.INTR-**1SG**
     'I was not able to swim instead.'

Despite the lack tense-variance, which Nevins identifies as crucial to identifying genuine agreement, I argue that all this φ-indexing morphology is agreement—object agreement included.

**Evidence from mood:** While Inuit φ-indexing morphemes are invariant with respect to tense, we instead observe that they are variant with respect to mood. For example, in Eastern Inuktitut we find distinct agreement morphology for 2SG.1SG in the indicative and interrogative moods:

(4)  taku-**va-rma**
     see-**INDIC.TR-2SG.1SG**
     'You (sg.) see me.'

(5)  taku-**viŋa**
     see-**INTERR.TR-2SG.1SG**
     'Do you (sg.) see me?'

While some φ-indexing morphemes are stable across moods, others exhibit distinct forms in particular moods, as illustrated in the following tables summarizing a small subset of the combinations of mood and subject/object in Arctic Quebec Inuktitut and Kangiryuarmiut dialects:

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[1] (1)-(3) elicited from Baffin Inuktitut, Quebec data from Dorais (1988), Kangiryuarmiut from Lowe (1985).

ARCTIC QUEBEC SAMPLE FORMS

|  | INDIC | DECL | INTERR |
|---|---|---|---|
| 3s.3s | **-vaa** | **-jaŋa** | **-vauk** |
| 3s.3D | -vaaŋik | -jaaŋik | **-vagik** |
| 3s.3P | **-vait** | **-jaŋit** | **-vagit** |

KANGIRYUARMIUT SAMPLE FORMS

|  | DECL | INTERR | COND | CONJ |
|---|---|---|---|---|
| 2s.1s | **-jarma** | **-viŋa** | **-guŋma** | **-bluŋa** |
| 2s.3s | **-jan** | **-viuŋ** | **-guŋni** | **-blugu** |
| 2s.1D | -japtiguk | -vitiguk | -guptiguk | **-blunuk** |
| 2s.3D | **-jakkin** | -vigik | -gupkik | -blugik |
| 2s.1P | -japtigut | -vitigut | -guptigut | **-bluta** |
| 2s.3P | **-jatin** | -vigit | -gupkit | -blugit |

Just as there is no principled reason why pronominal clitics of category D should vary with tense, it is also unexpected that they should vary with mood. Conversely, agreement is often conditioned by mood (e.g., Spanish indicative *hago* 'I do' vs. subjunctive *haga* 'I do').

**Evidence from portmanteau:** If these were clitics we expect to be able to isolate separate subject and object clitics in forms coindexing two arguments. However, many are portmanteau morphemes, as illustrated below with forms occurring after the DECLARATIVE mood markers:

|  | OBJECT | | | | | | | | | INTRANS. |
|---|---|---|---|---|---|---|---|---|---|---|
| SUBJECT | 1SG | 1DU | 1PL | 2SG | 2DU | 2PL | 3SG | 3DU | 3PL |  |
| 1SG | — | — | — | **git** | ttik | tsi | **ra** | akka | kka | ŋa |
| 1DU | — | — | — | tti**git** | ttik | tsi | vuk | avuk | vuk | guk |
| 1PL | — | — | — | tti**git** | ttik | tsi | vut | avut | vut | gut |
| 2SG | **rma** | ttiguk | ttigut | — | — | — | it | akkik | tit | tit |
| 2DU | ttiŋa | ttiguk | ttigut | — | — | — | tik | atik | tik | tik |
| 2PL | tsiŋa | ttiguk | ttigut | — | — | — | si | asi | si | si |
| 3SG | aŋa | atiguk | atigut | atit | atik | asi | ŋa | aŋik | ŋit | q |
| 3DU | aŋa | atiguk | atigut | atit | atik | asi | ŋak | aŋik | ŋit | uk |
| 3PL | aŋa | atiguk | atigut | atit | atik | asi | ŋat | aŋik | ŋit | t |

For instance, *ra* uniquely picks out 1SG.3SG, *rma* uniquely picks out 2SG.1SG, and the string *gi(t)* picks out a specific combination of φ-features: 1(…).2SG (*n.b.* 1SG.2SG form). If these were combinations of subject and object pronominals of category D we would not expect them to form portmanteau morphemes with each other (and mood; not shown) (cf. Johns to appear).

**Discussion:** I argue that Inuit agreement is associated with mood. While Chomsky (2004) proposes that φ-features are inherited from C in languages like English, the C head itself (or part thereof; Rizzi 1997) is the locus of agreement in Inuit. This explains (i) the position of agreement, (ii) its form being conditioned by mood, and (iii) the existence of portmanteau mood/agreement. It also accounts for Pittman's (2009) observation that ERG case in Inuit can only be assigned by full CPs, as well as the wide scope of absolutive objects (Wharram 2003).

This paper expands on Nevins' (2011) criteria for distinguishing agreement from clitics, adding mood-variance to the set of properties exhibited by genuine agreement. Nevins' diagnostic of variance is crucial, but what *kind* of variance depends on the locus of agreement (Wiltschko 2011). This paper also defends the existence of object-agreement, corroborating Oxford's (2012) arguments for the existence of object agreement in Algonquian languages. It also offers an alternative to a Pronominal Argument Hypothesis (Jelinek 1984) account of Inuit.

*Selected references*: **Arregi & Nevins** (2008) Agreement and Clitic Restrictions in Basque. **Déchaine & Wiltschko** (2002) Decomposing Pronouns. *LI* 33.3. **Dorais** (1988) Tukilik. **Lowe** (1988) Basic Kangiryuarmiut Eskimo Grammar. **Nevins** (2011) Multiple agree with clitics. *NLLT* 29.4. **Oxford** (2012) Multiple Instances of Agreement in the Clausal Spine. **Pittman** (2009) Complex verb formation revisited. **Preminger** (2009) Breaking Agreements. *LI* 40.4. **Woolford** (2010) Active-stative agreement in Choctaw and Lokota. *ReVEL*.

# Substance use in moderation: Contrast and content in phonological features

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**Two forms of phonetic arson**   While the current notion of 'substance-free' phonology owes its name to Hale & Reiss (2000), its essence is reminiscent of Fudge's (1967: 26) proposal that "phonologists (above all, generative phonologists) ought to burn their phonetic boats and turn to a genuinely abstract framework." In recent work that adopts this view, there are two distinct ways of burning the phonetic boats. Hale & Reiss (2008) claim that UG provides a set of phonological features with which the learner parses phonetic inputs from the beginning of the acquisition process. In their model, phonological features have phonetic substance in that they can be straightforwardly transduced from the phonetic signal, but phonology itself is substance-free in that it has no access to the content of these features. This approach yields transparent representations by permitting arbitrary rules. The other approach to substance-free phonology (e.g. Blaho 2008) rejects the idea of universal, phonetically contentful features. In this view, learners set up feature systems based on phonological patterning, yielding elegant and formally natural computation by allowing arbitrary correspondences between features and their phonetic realizations. In Mielke's (2008: 99) Emergent Feature Theory, for example, a learner faced with a process involving a set of segments that do not constitute a phonetically natural class might posit an abstract feature identifying them as "the segments that do X." These two varieties of substance-free phonology are both motivated in part by the apparent impossibility of accounting for the range of attested phonological patterns using only phonetically definable features (especially universal features as posited by works such as Jakobson et al. 1952; Chomsky & Halle 1968; Clements & Hume 1995) and simple and natural rules. Something, it seems, must give: either the representations or the computation must allow for a greater degree of arbitrariness. Another motivation is the desire to avoid the redundant formal encoding of physiological facts: Hale & Reiss (2000) argue that no insight is to be gained by positing phonetically motivated universal markedness constraints, and Mielke (2008) argues against attributing to UG an inventory of features that could be derived from the properties of the human vocal and auditory apparatus.

**Missing the boat**   Theories in which phonetic substance is altogether banished from phonology, though, can end up looking surprisingly similar to phonetically based theories in the explanations they posit for phonological patterns that *are* phonetically 'natural.' If phonology is oblivious to phonetic content, then the fact that so many phonological patterns make phonetic sense must be attributed to phonetics itself. In the case of substance-free theories, the influence of phonetics can exert itself only through acquisition and diachrony, rather than through phonetically based synchronic rules or constraints, but if phonology is "a genuinely abstract framework," then much of its burden of explanation must be shifted to phonetics. Is anything lost in this transfer? This paper argues that something is lost; that it can be regained through the moderate use of phonetic substance in phonology; and that the banishment of substance has been based in part on unwarranted assumptions about the rigidity of phonological representations.

Mielke's case for emergent features draws support from the existence of phonological patterns involving unnatural classes of sounds. If phonology is "a genuinely abstract framework," it offers little reason for skepticism about such patterns. They may arise diachronically through uncommon combinations of phonetically natural changes, but the synchronic learner can easily represent them. However, Hall (2010) and Godfrey (2012) show that several of the 'unnatural' patterns reported by Mielke are subject to reanalysis either as natural or as combinations of natural patterns with independent motivation. For example, what Mielke treats as deletion of nasals before the unnatural class of nasals and fricatives (to the exclusion of obstruent stops) in Bukusu, Hall (2010) analyzes as independently motivated patterns of nasal effacement before fricatives, nasal place assimilation, and a systematic ban on geminates. There is, then, at least a methodological case to be made for pursuing a theory that forces one to look for naturalness.

**Assumptions about features**    Substance-free phonology is, in part, a reaction to the apparent failures of putatively universal systems of phonetically contentful features. But these failures are not necessarily the fault of substance *per se.* Fudge (1967), for example, cites Bloomfield (1933) and Nida (1949) in noting that organizing tables of phonemes according to their phonological behaviour is often analytically useful but at odds with phonetic reality; rather than following them in dismissing such tables as mere conveniences for the researcher, he dismisses phonetic reality from phonology altogether. In his treatment of Tswana, a feature numbered 1 encompasses the odd-looking class of ejectives, voiced plosives, glottal stop, and *l,* and is associated with a rather baroque realization rule. But if one allows (a) that phonetically meaningful features may be other than those posited by Jakobson et al. (1952), and (b) that the naturalness of any set of phonemes can be evaluated only in light of what it contrasts with, then the class in question can be described as the Tswana obstruents that lack [spread glottis] ([l] being a predictable allophone of /d/).

**Contrast and content**    The proponents of substance-free approaches are entirely correct in observing that the phonetic properties of phonemes do not dictate their phonological behaviour. But there is a way of curtailing the role of substance without eliminating it altogether. Contrastive specification based on a cross-linguistically variable hierarchy of features, as proposed by Dresher (2009), offers a principled explanation for the fact that phonemes that have a particular phonetic property are sometimes ignored by phonological processes that refer to the feature corresponding to that property. Consider an example from Mackenzie (2013). A three-way contrast among implosives and voiced and voiceless plosives may be encoded by either of two hierarchical orderings of [voice] and [constricted glottis]. If [c.g.] takes wider scope, it distinguishes the implosives, and [voice] is relevant only for the plosives; if [voice] takes wider scope, it distinguishes the voiceless plosives, and [c.g.] is relevant only for voiced stops. As Mackenzie shows, both possibilities are attested. Ngizim [voice] harmony requires agreement between plosives, but ignores implosives. Hausa [c.g.] harmony requires agreement between (homorganic) voiced stops, but ignores the voiceless plosives. Under this view, the task of the learner in acquiring phonological representations is to set up a system of features that is just sufficient to differentiate the phonemic inventory and that allows for the encoding of observed patterns. If the features themselves must be phonetically interpretable, then the learner's job is simplified, and the analyst's hypothesis space is constrained. Representations are substantive enough to make 'natural' patterns the norm, but also abstract enough to account for the fact that phonetics does not determine phonological destiny.

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# On the morphosyntax of (in)alienably possessed noun phrases

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**1**    The difference in syntax between alienable and inalienable possession is one of direction of predication. In Den Dikken's (2006) theory of predication, predicates and their subjects are systematically related to one another in an asymmetrical syntactic structure, with one term asymmetrically c-commanding the other and a functional category (the RELATOR) establishing the relationship between the two; the predicate can either be merged in the complement position of the RELATOR (as in (1a), a 'predicate-complement structure') or as the specifier of the RELATOR (as in (1b), a 'predicate-specifier structure'), with the subject merged in the other phrasal position in the small clause.

(1)    a.    [$_{RP}$ SUBJECT [$_{R'}$ RELATOR [PREDICATE]]]
         b.    [$_{RP}$ PREDICATE [$_{R'}$ RELATOR [SUBJECT]]]

This paper's central hypothesis is that alienable possession constructions involve a predicate-complement syntax *à la* (1a) while inalienable possession constructions are built on a predicate-specifier structure of the type in (1b). In both structures in (2), the possessum is the subject of predication.

(2)    a.    [$_{RP}$ POSSESSUM [$_{R'}$ RELATOR [$_{PRED}$ POSSESSOR]]]
         b.    [$_{RP}$ [$_{PRED}$ POSSESSOR] [$_{R'}$ RELATOR [POSSESSUM]]]
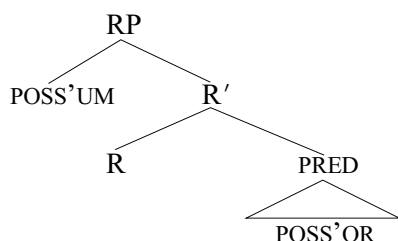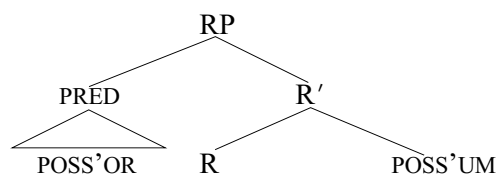


*alienable possession*                              *inalienable possession*

**2**    The allomorphy of the Hungarian possessedness marker (*-a/e*, *-ja/je*) presents our prime empirical case for the analysis based on (2). Though to a large extent phonologically determined, a simple phonological account of the distribution of the *-j-* form and the *-j-*less form of Hungarian possessed nouns is not forthcoming. Most significant is the fact that there are head nouns for which the *-j-* form and the *-j-*less form alternate, with the choice of the *-j-* or *-j-*less form presenting a semantic subregularity involving (in)alienability: (3a) and (4a) denote inalienable possession while the *-j-* forms in (3b) and (4b) denote alienable possession (see Kiefer 1985, Moravcsik 2003:134).

(3)    a.    ablak-a        INALIENABLE        (4)    a.    anyag-a        INALIENABLE
         b.    ablak-*j*a        ALIENABLE                     b.    anyag-*j*a        ALIENABLE
               window-POSS                                            fabric-POSS

Hungarian is by no means unique in making a morphological distinction between two possessive forms and to single the simpler one out for inalienable possession. Haspelmath (2008) points out that '[i]f a language has an adnominal alienability split, and one of the constructions is overtly coded while the other is zero-coded, it is always the inalienable construction that is zero-coded, while the alienable construction is overtly coded'. Data from Acholi, Blackfoot, Dogon, and Mandarin, *i.a.*, will be discussed in depth in this light. The syntax in (2) accounts for this empirical generalization.

**3**      There are two different ways in which alienable possession constructions can be richer than inalienable possession constructions (and sometimes these two ways combine, as in the case of Blackfoot, to be discussed in the paper): the additional material that shows up in alienably possessed noun phrases can be the surface exponent of the P-head of the predicate harboring the possessor in (2a), above, or the realization of a functional head: the RELATOR head of the possessive small clause, or a LINKER head outside it (in the sense of Den Dikken 2006). The Hungarian facts illustrate the latter. Embedding (2b) in a DP and spelling the RELATOR out as the *-j-*-less possessedness marker straightforwardly delivers the surface form of Hungarian inalienably possessed noun phrases with nominative possessors, with the RELATOR being suffixed to the possessum postsyntactically: (5b). In the syntax of Hungarian alienable possession constructions, based on (2a), the predicate inverts with its subject, contingent on raising of the RELATOR to a functional head outside the small clause (the LINKER); this external functional head can itself be spelled out, as *-j-*, yielding (5a) as the output.

(5)      a.      $[_{DP} a [_{FP} [_{PRED} Mari]_i [_{F'} F\text{=-}j\text{-}+\text{RELATOR=-}a [_{RP} ablak [_{R'} t_{REL} t_i]]]]]$ 'Mari's window'
         b.      $[_{DP} a [_{RP} [_{PRED} szoba] [_{R'} \text{RELATOR=-}a [ablak]]]]$                'the room's window'

**4**      If *-j-* is the sign of the LINKER in a Hungarian predicate inversion construction based on (2a), the structure underlying alienable possession, then why *must -j-* be used in *ap-ja* 'his/her father' and *any-ja* 'his/her mother', which are quintessential cases of *in*alienable possession with inherently relational nouns? Our account starts out from the hypothesis that the final *a* of the citation forms of the Hungarian nouns for 'father' (*apa*) and 'mother' (*anya*) is itself an inalienable possession morpheme (i.e., the lexicalization of the RELATOR in (2b)): (6) is the structure underlying *apa* and *anya* (hence *anya* means 'someone's mother'). When *apa/anya* is alienably possessed, (6) serves as the subject of (2a), with the derivation ensuing as in (5a), yielding both *-a* (lengthened to *-á*) and *-ja*: *a világ legjobb ap-á-j-a/any-á-j-a* 'the world's best father/mother'. When *apa/anya* is *in*alienably possessed, (6) is used by itself, with the possessor replacing $pro_{arb}$. If the inflection on the head noun remained the same, non-arbitrarily possessed *apa/anya* would be indistinguishable from the citation form. To mark the difference, *-j-* is used, by analogy. In these cases, the marker *-j-* is not a LINKER.

(6)               $[_{RP} [_{PRED} pro_{arb}\text{-POSSESSOR}] [_{R'} \text{RELATOR=-}a [ap/any]]]$

In the Hungarian expressions for 'his/her father/mother', the specific possessor replaces the implicit arbitrary possessor that would otherwise appear with 'father' and 'mother'. But when these relational nouns are possessed by a first- or second-person possessor, we find a string of *two* possessive markers in a row, one for the inherent possessor of the relational noun (third-person *-a*) and one marking the φ-features of the first- or second-person possessor (1SG *-m*, 2SG *-d*) — *ap-á-m*, *any-á-m* 'my father/mother'. This is similar to what we find in Blackfoot possessed noun phrases with a kinship term possessum, for which Bliss (2013) notes that they can give rise to 'possessor stacking'.

**5**      The syntax of possessed noun phrases is illuminated forcefully by a predicational approach in which inalienable possession is assimilated to attributive modification and in which alienable possession relations can be inverted (giving rise to a LINKER) in the course of syntactic derivation.

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## Cyclic opacity facilitates phonological interpretation

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Cyclic computation has re-emerged in recent years as a core issue [1–3]. Cyclic computation in human language has two key properties: (i) "inside-out-ness": a computation or set of computations is done once for each domain, as defined by the constituent structure, starting from the most deeply nested constituent and working outwards; (ii) "cyclic opacity": the computation for domain $n$ is insensitive to the contents of domain $n-1$, or key parts of it. I offer a proof that cyclic opacity can be seen as a way of accommodating inside-out-ness, taking into account that phonological computations are regular, while syntactic computations are non-regular (mildly context sensitive) [4–9]. I restrict attention to the phonological cycle [10,11], where the opacity facts are best described by a generalization called the Strict Cycle Condition (SCC) [12,13,14]; I provide a formalization of the SCC and demonstrate that the resulting cyclic computation is regular, while a phonological computation satisfying (i) but not (ii) would not be. The SCC is illustrated by the interaction between two Catalan phonological processes shown in (1–5) [13]:

(1) *Glide Formation:* pá i sál $\rightarrow$ pájsál, "bread and salt": $[+\text{hi}, -\text{stress}] \rightarrow [-\text{syll}] / [+\text{syll}] \#_0$—

(2) *Destressing (D):* átom+ík $\rightarrow$ atomík, "atomic": $\text{V} \rightarrow [-\text{stress}] / \#\#\text{X}$—$\text{Y} [+\text{stress}] \text{Q}\#\#$

(3) *Destressing counterfeeds GF:* raím+ét $\rightarrow$ raimét/*rajmét, "grape (dimin.)"

(4) *Destressing feeds GF across cyclic boundaries:* [nó[ínstár]] $\rightarrow$ nojnstár, "not to instate"

(5) *GF is blocked by SCC:* [[[ruín]óz]ísim] $\rightarrow$ ruinuzísim/*rujnuzísim, "very ruinous"

In (5), GF crucially fails to apply to the surface destressed vowel. This is due to the SCC: cyclic reapplication of the phonological grammar if there were no SCC ("fully cyclic reapplication") would predict $[[[\text{ruín}]\text{óz}]\text{ísim}]|_{cyc_1} \rightarrow$ (D) $[[\text{ruinóz}]\text{ísim}]|_{cyc_2} \rightarrow^*$ (GF) $[\text{rujnózísim}] \rightarrow$ (D) $[\text{rujnozísim}]$ ($\rightarrow$ (Reduction) $[\text{rujnuzísim}]$). The SCC requires that a rule on cycle $j$ be triggered by information uniquely available on cycle $j$, whether it be segmental material appearing only in cyclic domain $j$, or more deeply nested material altered by a previous rule of cycle $j$. In this case, the input to GF on cycle 2 is the sequence [ui], an illicit trigger because it is properly in the domain of cycle 0 and is generated (by D of [í]) on cycle 1.

It has been known since [5] that phonological grammars pick out only (a subset of the) regular relations—a robust and non-trivial generalization which contrasts sharply with syntax [8,9]—with the explicit caveat that naive reapplication at each cycle ("fully cyclic") would lead the system to exceed this restriction [5,7]. Given a phonological mapping $R$, (i.e., an entire grammar as would apply at one cycle), it is possible to define a derived grammar $R_{cyc}$ which does not incorporate SCC or anything like it, reapplying $R$ to the whole string at each level of nesting in an input morphosyntactic structure, i.e., $R_{cyc}([[[x][y]z]w]) = R_{cyc}([[R(x)R(y)z]w]) = R_{cyc}([R(R(x)R(y)z)w]) = R(R(R(x)R(y)z)w))$. It is easily shown that this relation is not regular, since, e.g., a single insertion could reapply at the same locus at each cycle so that the number of inserted elements would track the number of surrounding brackets, yielding a language reducible to the properly context-free language $a^n b^n$.

I show that the SCC can be formalized in a way that resolves this. I give here a summary of the reasoning. $R_{dec}$ is a version of the grammar where all non-identity mappings are blocked (i.e., any changes to segments are changed to identity mappings) unless a bracket or a non-identity mapping is found in the environment. (The proof uses a representation of a grammar as a finite set of non-identity mappings as a mathematical convenience, but this by itself is orthogonal to whether derivational or constraint-based theory is the best psychological characterization of the computation: see [5,7,16,17]. I also restrict attention to the distribution of input–output alternations and not static phonotactic generalizations.) The regularity of $(R_{dec})_{cyc}$ is demonstrated by constructing a slightly modified $R_{dec}$, $R_{ext}$, adding, for each non-identity mapping, an ad-

ditional set of changes accounting for all of the finitely many possible cyclic interactions with other changes (segment $A \rightarrow B$ on cycle $i$, then $\rightarrow C$ on a later cycle by a change which is otherwise effectively counterfed). If not for such interactions, $R_{dec}$ would be equivalent to $(R_{dec})_{cyc}$; since there are only finitely many possible cyclic interactions, each can be cast as a distinct (regular) change and incorporated into $R_{ext}$. This construction is repeated until there are no distinct environments to be added, yielding $R_{ext}$. Crucially, the restriction to derived environments guarantees that the number of distinct environments eventually goes to zero. In contrast, the construction would be insufficient to reconstruct $R_{cyc}$ from $R$, where new distinct environments can be created by countercyclic application (e.g., insertion and re-insertion at the innermost cycle), creating unboundedly many cyclic interactions. The grammar so constructed from $R_{dec}$ can be shown to be equivalent to $(R_{dec})_{cyc}$, however, demonstrating that the SCC serves to pull a phonological system interfacing with morphosyntax in an "inside-out" manner back within the biological limits of phonological processing, as the entire cyclic phonological grammar can be compiled into a single regular relation, $R_{ext}$. In short, cyclic opacity is argued to be a compromise between the non-regular nesting structure of the syntax and the limited computational capacity of the phonology. Although cyclic opacity fell out of focus in the phonological literature for some time, [3,18], the current result implies that cyclic opacity in phonology reveals a crucial part of the explanation for the architecture of grammar.

I also offer suggestions on how the SCC might be seen to be an "optimal" compromise. In particular, although for particular grammars other restrictions (or no restrictions) would offer closer approximations to $R_{cyc}$, I speculate that the SCC may be the best general strategy for regularization and provide a criterion that can be used to confirm or deny this conjecture in future research. Finally, I note that the explanation cannot in principle transfer directly to cyclic opacity effects in syntax, first, because cyclic opacity is a much stronger condition in syntax than in phonology, barring interactions beyond a certain distance rather than just requiring an intervening cyclic boundary, and, second, because syntactic computation is not regular in the first place. Nevertheless, the fact that island effects are in general restricted to overt movement [15] suggests that the two may yet be related.

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# Truncation feeds intervention: Two clause type effects in Basque
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In generative literature, clause type effects have typically been modeled in one of two ways—"truncation" whereby embedded clauses are structurally reduced relative to root clauses (Haegeman 2006, Benincà & Poletto 2004), and intervention, by which non-root clauses have additional material that blocks movement available in root contexts (Roberts 2004, Haegeman 2010a,b). We present an analysis of two clause type effects in Basque that suggests that these mechanisms interact, i.e. that truncation feeds intervention.

**1. V≥2.** Basque disallows finite verbs root clause-initially (henceforth "*V1") as illustrated in (1) (Altube 1929, Ortiz de Urbina 1989). Like in Germanic V2, Basque allows for constituents of different categorial and information structural types to serve as first position elements, including foci and negation as in (2) and (3). Word orders that would otherwise violate *V1 can be rescued by insertion of an expletive *ba-* morpheme as in (1). As shown in (2) and (3), expletive *ba-* only appears where it is needed to repair *V1 violations (Ortiz de Urbina 1994, 1995).

(1) *(Ba)dator Omar.　　　　(2) Nor (*ba)dator?　　　　(3) Ez　(*ba)dator Omar.
　　*ba*-comes Omar　　　　　　who *ba*-comes　　　　　　NEG *ba*-comes　Omar
　　'Omar is coming.'　　　　　　'Who is coming?'　　　　　'Omar isn't coming.'

Importantly, Basque differs from Germanic V2 in allowing more than one "first position" element to be stacked to the left to the finite verb, as in (4), where the verb can appear to the right of both a focused constituent and negation. Basque therefore seems

(4) JON ez　omen dator.　　　　　to obey not V2 but rather "V≥2": finite T
　　Jon　NEG EVID come-3SG　　　needn't appear in strictly second position,
　　'JON supposedly isn't coming.'　　but cannot appear clause-initially.

A second way in which Basque *V1 is partially akin to Germanic V2 is that this restriction interacts with clause type (Ortiz de Urbina 1994, Uriagereka 1999). *V1 applies in root clauses (1) and embedded declaratives with the complementizer *-ela* (5). In clauses with the complementizer *-en*, which appears in embedded interrogatives, relatives and temporal adjuncts, V1 is possible and expletive *ba-* is optional, (6). Unlike Germanic embedded V2, Basque *V1 and *ba-*insertion have no pragmatic correlates, i.e. do not vary with Main Point of Utterance interpretation nor Hooper & Thompson's (1973) predicate classes (Truckenbrodt 2006, Julien 2009, Wicklund et al. 2009).

(5) *Uste dut　[datorr-**ela**].　　　　　(6) Egin-go dut　[(ba)datorr-**en**-ean.]
　　think AUX come-**comp**　　　　　　　do-FUT AUX *ba*-come-**comp**-in
　　'They've told me he is coming.'　　　　'I'll see her when she comes.'

**2. Ordering {Aux, Neg, V}.** In Basque, the order of the finite auxiliary and extended verbal projection is sensitive to polarity: in root contexts, affirmative clauses are ordered VP-Aux, while negative main clauses are ordered Neg-Aux-VP, as in (7). Less well described is the fact that this word order alternation interacts with clause type parallel to the *V1 restriction: for embedded declaratives with the complementizer *-(e)la*, the word order is uniformly Neg-Aux-V, as in root contexts (2a); for embedded interrogatives, relatives and temporal adverbials, which take the complementizer *-(e)n*, V-Neg-Aux is obligatory or optional (depending on clause type and dialect), as in the relative clause example in (8b). (See Ortiz de Urbina 1992, Artiagoitia 2003, Etxepare 2003 for brief discussion.) All affirmative embeddings are ordered V-Aux as in root clauses.

(7) a. Anek Jon ikus-i　　du.　　　　　　b. Anek ez　du　　Jon ikus-i.
　　　Ane　Jon see-PERF AUX　　　　　　　Ane　NEG AUX Jon see-PERF
　　　'Ane has seen Jon.'　　　　　　　　　'Ane hasn't seen Jon.'

(8) a. Uste dut [ez de-**la** eror-i.]     b. [Eror-i ez de-**n**] etxea
    think AUX NEG AUX-**comp** fallen     fall-PERF NEG AUX-**comp** house
    'I think (it) hasn't fallen.'     'The house that hasn't fallen.'

**3. Intervention & truncation.** We propose the functional sequence in (9) for (embedded) root clauses. Here, "Force" denotes a clause typing morpheme, in whose spec, the interrogative, relative etc. operators sit. We propose that the locus of variation governing availability of both V1 and V-Neg-Aux is truncation, i.e. whether the clause typing feature is merged as a separate Force head, or whether this feature is merged instead on Fin, the position of the complementizer. In the latter case, the operator will also be (re-)merged in FinP, as in (10).

(9) [$_{ForceP}$ **Op** Force$_{[Type]}$ [$_{FocusP}$ Focus [$_{\Sigma P}$ $\Sigma$ [$_{FinP}$ Fin [$_{TP}$ T . . .     (*V1 & Neg-Aux-V)

(10) [$_{FocusP}$ Focus [$_{\Sigma P}$ $\Sigma$ [$_{FinP}$ **Op** Fin$_{[Type]}$ [$_{TP}$ T . . .     (V1 & V-Neg-Aux)

(11) Move the closest satellite XP, to ForceP. Else, insert *ba-*.

In the spirit of standard approaches to V2, we propose that Basque V≥2, reflects a phonological property of Force, namely the need for phonetic content, which we formalize in the PF rule in (11). Basque V≥2 therefore is a consequence of XP movement to ForceP, but no finite T movement to Force (unlike in true V2). In embedded contexts where Force does not project, the rule does not apply, with the consequence that V1 is possible.

Variation in {Aux, Neg, V} ordering is explainable in similar terms. What the clause types that allow V-Neg-Aux have in common is an operator in the left periphery. We propose that V-Neg-Aux orders reflect the interaction of these operators with negation. Specifically, we propose that *ez* is a negative adverbial merged TP-internally and probed and attracted by a left-peripheral polarity morpheme, $\Sigma$ (Laka 1990). When the operators are in ForceP, as in (9), they will not intervene in *ez*-to-SigmaP movement. When the operators are merged low in FinP as in (10), however, they *will* block this movement. We

(12)
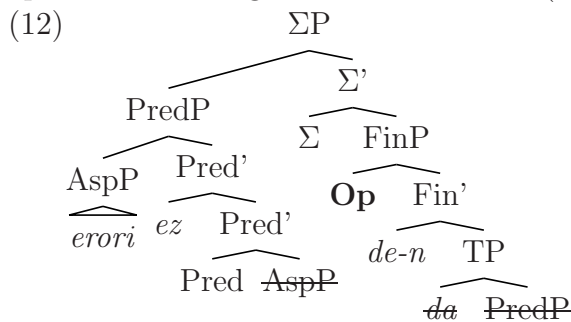


propose that V-Neg-Aux orders reflect a smuggling repair (Collins 2005), whereby the extended VP—here labeled "PredP"—raises with *ez* inside, past the operator in FinP, as in (12). The fact that the main verb and dependents appear to the left of *ez* reflects roll up–raising of the complement of Pred to an outer specifier.

This predicate fronting plausibly also applies in affirmative root word orders like (7) (Haddican 2004, Etxepare & Uribe-Etxebarria 2011). Support for this comes from TP ellipsis sentences, as in (13). Here, the auxiliary in the second sentence is silent, plausibly as a banal case of TP ellipsis, following PredP extraction.

(13) Jonek lau galdera jarri ditu, eta Anek [$_{\Sigma P}$ [$_{PredP}$ bi erantzun] $\Sigma$ [$_{TP}$ ~~ditu~~].
    Jon four questions put has and Ane two answer
    'Jon has asked four questions and Ane has answered two.'

Support for an affirmative feature in PredP responsible for PredP fronting in (7a) and (13) comes from affirmative polarity focus sentences such as (14). Here, the extended VP raises to a left peripheral focus position and co-occurs with an affirmative denial interpre-

(14) [$_{FocP}$ [$_{PredP}$ Etorri] [$_{TP}$ da Iker]].     tation, suggesting the raised verbal con-
    come AUX Iker     stituent is the locus of the affirmative fea-
    'Iker HAS (indeed) come.'     ture.

Summarizing, our unified approach to two clause type effects in Basque suggests that truncation feeds intervention. The analysis also partially reconciles Basque *V1 with V2.

# The Differential Representation of Number and Gender in Spanish

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**General outline.** The goal of this paper is to test the hierarchical organization of phi-features with a special emphasis on number and gender in Spanish. We investigate **(i)** whether number and gender belong to the same category space in the phi-feature hierarchy (as in Harley & Ritter 2002) or one feature dominates the other (e.g., Cowper 2005), and **(ii)** whether number and gender evidence single- or multi-valued systems for their respective features (cf. Harris 1991 for gender). Given the lack of consensus on these issues based on primary data, we approach questions (i) and (ii) experimentally, using the phenomenon of agreement attraction: a situation where ungrammatical sequences are perceived as grammatical when one of the NPs is erroneously identified as determining agreement.

(1) The key to the **cabinets** <u>are</u> on the table. (Bock et al., 2001)

By comparing agreement effects across number and gender, we address point **(i)**: depending on whether number and gender features are equally active/visible in linguistic representations, we can determine whether these categories have the same cognitive strength. Within a single class of features, we address point **(ii)**: depending on the visibility of specific feature values, we determine whether the category of number (and, separately, gender) is structured as single- or multi-valued. We find that number but not gender features yield attraction effects, evidencing the higher accessibility of number features. This result motivates the dominance of number over gender in the phi-feature hierarchy (cf. Antón-Méndez et al. 2002; Carminati 2005 for similar conclusions based on different data). Turning to (ii), we find that plural drives attraction while singular is functionally inert. We thus confirm the single-valued representation system for number: [PL] vs. unspecified. Within the gender category, masculine and feminine behave on par in agreement, motivating the multi-valued representation system for gender: [M] vs. [F] (pace Harris 1991).

To further evaluate Harris' hypothesized single-value Spanish gender system, we extended the scope of our study beyond monolingual controls to heritage Spanish speakers. Here we do find evidence of a single-valued representation system for gender ([F] vs. unspecified). Thus, heritage Spanish speakers reinterpret gender as a simpler, single-valued system, which is consistent with the simplification feature systems elsewhere outside of L1 (gender in heritage Russian: Polinsky 2008; Sekerina 2012; gender in Spanish-German code-switching: Gonzalez-Vilbazo 2008; gender in Italian L2 learners of Spanish: Dussias et al. 2013; gender in Chinese L2 learners of Spanish: Dowens et al. 2011).

**Experiments.** Adjectives in Spanish inflect for gender and number and, crucially, can be used predicatively so as to allow for intervening material between the adjective and its subject noun. Consider the sentences in (2). Note the predicative use of the adjective, as well as the intervening noun (in a prepositional phrase) between the subject noun and its predicate. Agreement on the adjective is determined by the features of the head noun (shown in bold).

(2) a.  Considero **el libro** en los tableros excelentemente escrito

b.  Considero **los libros** en la mesa excelentemente escritos

c.  Considero **las cartas** en el tablero excelentemente escritas

d.  Considero **la carta** en las mesas excelentemente escrita

Only a handful of verbs in Spanish embed small clauses (Contreras 1987): *considerar* 'consider' in (2), *dejar* 'leave' and *ver* 'see'. Within each item, we manipulated the number (SG vs. PL) and gender (M vs. F) of NP1, NP2, and ADJ; this manipulation yields 64 sentences: $2_{NP1\text{-}NUM} \times 2_{NP1\text{-}GEN} \times 2_{NP2\text{-}NUM} \times 2_{NP2\text{-}GEN} \times 2_{ADJ\text{-}NUM} \times 2_{ADJ\text{-}GEN} = 64$. Given that we are interested in the behavior of grammatical gender, that is, the gender a noun leaves the lexicon specified for, our gender manipulation on nouns required the use of different lexical items for masculine vs. feminine values. Within an item, we matched the meaning of these nouns as closely as possible (as with *tablero* 'table' and *mesa* 'table'). Stimuli were normed to avoid potential ambiguity such that NP2 could agree with ADJ; 60 subjects who did not take part in the experiment consistently rated the likelihood of this unintended parse low (average: 2 out of 5). Stimuli were recorded by

an adult male native speaker. We recruited 126 participants through Amazon's Mechanical Turk crowdsourcing service. Subjects listened to one version of each item and rated its acceptability on a scale from 1 (*completamente inaceptable* 'completely unacceptable') to 5 (*completamente aceptable* 'completely acceptable'). The results were split by the number/gender value for NP1. There was a strong main effect of grammaticality, which means that all the subjects recognize agreement violations in both number and gender. **NUMBER:** Native speakers showed pronounced agreement attraction with a NP1 in the SG and NP2 (attractor) in the PL (p=0.05). The effect in heritage speakers was similar however weaker. **GENDER:** Neither group showed attraction effects. The two groups differed in their rating of grammatical structures; the native speakers' ratings were comparable for grammatical agreement in M and in F while the heritage speakers rated agreement in F significantly higher than agreement in M (p=0.001).

**Discussion.** Number and gender thus reveal different patterns with respect to agreement attraction, which suggests that they are not equal in the phi-feature hierarchy, with number outranking gender on the phi-feature hierarchy.

The difference between number and gender can be accounted for with two independently motivated assumptions: (3) the φ-probe only searches for a goal with certain features (relativized probing); (4) agreement in XP occurs with the highest phi-feature (Matushansky 2013; Preminger 2014). In addition to these assumptions, we adopt the Distributed Gender Hypothesis (Kramer 2013; Steriopolo & Wiltschko 2008): there are at least two gender features, natural gender, projected at the periphery of a DP, and grammatical gender, projected below N-level (either as a property of *n* or as property of roots). Since all the nouns in this study were inanimate, none of them were specified for natural gender and all had grammatical gender. The structure of the DPs is therefore as follows: (5) $[_{DP} ...[_{NumP} ...[_{NP} ... [\sqrt{P}_{\{Gender\}}]$. The absence of attraction is explained by the observation that grammatical gender is inaccessible from the nominal periphery. Since natural gender is projected at the DP periphery we predict that it could cause attraction effects and leave this for a future study.

With respect to feature representation, we find that for both native and heritage speakers, number is structured as a single-valued opposition where PL is specified and SG is inert (underspecified). The explanation for such a contrast between SG and PL may reside in the morphological visibility of the plural. The featural representation of gender is different across native and heritage speakers. For native speakers, gender is a multi-valued feature, with both M and F equally specified; native speakers rate grammatical agreement with gender at a distance equally high for M and F. The multi-valued opposition in Spanish gender casts doubt on Harris' (1991) analysis of Spanish gender. However, heritage speakers' representation of gender is consistent with Harris' analysis because in this group only F is specified. We consider and reject the explanation that the change from multi-valued to single-valued representation of gender in heritage speakers is due to the influence of English, which lacks gender altogether. Single-valued F-based gender is also found in L1-Italian/L2- Spanish speakers (Dussias et al. 2013) and in Spanish-German code-switching (Gonzalez-Vilbazo 2008). Thus, non-native speakers of Spanish reanalyze the multi-valued representation of gender as a single-valued opposition because it offers a more constrained set of options.

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# Opaque reflexes of cyclic movement: Ordering final vs. intermediate steps

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**Claim** I argue that final and intermediate steps in a movement chain must be triggered by different types of features. Evidence comes from opacity effects that show that these movement types can apply at different points of the derivation: When interleaved with Agree, one movement type applies before and the other after Agree. The empirical basis for this claim are morphological reflexes of successive-cyclic movement: Looking at the typology of patterns of such reflexes, we can see that in some languages final movement steps feed Agree whereas intermediate steps counter-feed them (or vice versa). I show that analyses of opacity working on the basis of enriched representations cannot be formulated in Minimalism; (re)ordering of elementary operations, however, provides a simple analysis for cross-linguistic variation. In general, the paper argues for a more fine-grained approach to elementary operations: Merge not only needs to be ordered with respect to Agree; different types of Merge have to be distinguished. Being based on the timing of operations, the approach argues for a strictly derivational model of grammar.

**Background** (i) Counter-feeding opacity: It cannot be read off of the surface representation why a rule B has not applied although its context is created by the application of a rule A. (ii) In recent years, it has been argued on the basis of feeding and bleeding interactions that, if a head triggers both Merge and Agree, these operations have to be ordered. The order is assumed to be language-specific (e.g. Bruening 2005, van Koppen 2005, Heck & Müller 2007, Halpert 2012, Kalin & van Urk 2012, Richards 2013). (iii) Under this view, the data I look at present a paradox: We have evidence for both Merge before Agree and Agree before Merge *in a single language*. Solution: There are two types of Merge that can be ordered differently relative to Agree. And indeed, the split is systematic: It is between final and intermediate movement steps.

**Data**: In a number of languages, Ā-movement leaves a morphological reflex on an element, e.g. the C head. In one type of language, this reflex occurs on the C head of every clause crossed by overt movement (pattern I, e.g. C-agreement in Kinande). This has been taken as evidence for the successive-cyclic nature of movement. However, there are more patterns. Pattern II: The reflex only occurs on the C head of the clause where the Ā-moved phrase surfaces but not in intermediate clauses (e.g. *no*-marking in Duala, C-agreement in Chamorro), (1-a). Pattern III: The reflex only occurs on the C head of intermediate clauses but not in the clause where the Ā-moved phrase surfaces (e.g. *ke*-stranding in Dinka, C-agreement in Wolof *an*-constructions), (1-b). The patterns are illustrated in (2) for a reflex R on C, triggered by long wh-movement:

(1)     *PII (no-marking in Duala) and PIII (class-Agr on C with the moved phrase in Wolof)*:

    a.   njika buna o  ta  **no** o  kwalane mba na  o  mende **(\*no)** timba
        which day  you PST NO you tell     me that you FUT   (NO) return
        'When$_i$ did you tell me that you would return t$_i$?'         *Duala, Epée 1976*

    b.   K-an  l-a-ñu/**(\*k-u)**-ñu     wax **k-u** jigéén j-i   foog **k-u** ma dóór?
        CL-who EXPL-a-3PL/(CL-u)-3PL say  CL-u woman CL-DEF think CL-u 1SG hit
        'Who$_i$ did they say that the woman thinks that I hit t$_i$?'         *Wolof, Torrence 2012*

(2)     *Patterns of reflexes of successive-cylic movement*:

    a.   PI: [$_{CP1}$ XP$_{wh}$ [$_{C'}$ **C-R** ... [$_{CP2}$ **C-R** ... [$_{CP3}$ **C-R** ... t$_{XP}$ ]]]]
    b.   PII: [$_{CP1}$ XP$_{wh}$ [$_{C'}$ **C-R** ... [$_{CP2}$ C ... [$_{CP3}$ C ... t$_{XP}$ ]]]]
    c.   PIII: [$_{CP1}$ XP$_{wh}$ [$_{C'}$ C ... [$_{CP2}$ **C-R** ... [$_{CP3}$ **C-R** ... t$_{XP}$ ]]]]

**Opacity** As for PII, it has been assumed that there is no reflex in intermediate clauses because there is no movement through the embedded SpecCP positions (e.g. Epée 1976, Schneider-Zioga 1995, Cheng 2006), either due to base-generation of the wh-phrase or because movement applies in one fell swoop. This analysis cannot account for all languages with PII: Base-generation is out because the relevant movement is island-sensitive and shows cross-over effects (see e.g. Biloa 1993 on Duala); movement in one fell swoop cannot handle languages in which a PI and a PII reflex co-occur, triggered by a single instance of movement (e.g. Chamorro: wh-agreement = PI, C-agreement = PII): This movement would have to apply successive-cyclically

(for PI) and in one fell swoop (for PII) at the same time. Conclusion: At least in some PII languages there is evidence for successive-cyclic movement. Hence, we have opacity: Movement usually feeds agreement on C, but counter-feeds it on intermediate C heads (vice versa for PIII).

**Opacity by enriched representations** Some authors acknowledge intermediate movement steps in languages with PII. They account for the difference between PI and PII as follows: (i) There are two different types of traces – one that can trigger agreement (PI) and one that cannot (PII) (Haïk 1990, Biloa 1993, Ouhalla 1993); (ii) Agreement between the moved phrase and C applies at S-structure, traces do not count as controllers in PII languages but they do so in PI languages (Chung 1998); (iii) Constraints on traces in PII languages: The relevant features are deleted on traces, hence agreement is no longer possible (cf. Haïk 1990, see Collins 1993 for a related proposal). These accounts cannot be easily transfered to Minimalism (a) if traces do not exist (Epstein & Seely 2002), and/or (b) if all constraints are imposed by the interfaces and thus can't refer to traces (Chomsky 2001), (c) since there is no designated S-structure anymore. Replacing traces with a multidominance approach to movement does not help for (i) / (iii): PII cannot be produced because there is only a single representation of the moved phrase. Deleting features on it automatically affects all positions in the structure to which it is linked (no distinction between intermediate and final landing sites). The only reanalysis that works is to adopt the copy theory of movement and to apply constraints on intermediate copies (presupposing that they can be distinguished from final copies). I will instead present an analysis that doesn't require constraints on intermediate representations and that is compatible with various Minimalist approaches to movement. Furthermore, it provides a unified account of all patterns, which is lacking so far.

**Analysis** *Assumptions*: [A1] The reflex is the phonological realization of an Agree relation between C and the moved XP. [A2] Agree is triggered by probe features [∗F∗] and applies upwards in a Spec-head configuration (accounting for the absence of a reflex with wh-in-situ in the languages that have it, e.g. Duala, cf. Baker 2008). [A3] Intermediate movement steps are triggered by designated features, the edge features [•EF•]; final movement steps are triggered by criterial features, e.g. the wh-feature on C [•WH•]. [A4]: If a head triggers more than one operation, the operation-inducing features are ordered on a stack; only the topmost feature is accessible. [A5]: If a probe [∗F∗] doesn't find a goal, it is valued and deleted by default (Preminger 2011). *Core idea*: Due to [A2], movement that applies before Agree *feeds* Agree between the XP in SpecCP and C. If movement to SpecCP applies after Agree, it comes *too late* to feed Agree (*counter-feeding*). Due to [A5], the derivation converges nevertheless. If final and intermediate movement steps apply at different points relative to Agree, only the step applying early feeds Agree (and leads to a reflex). *Derivations*: There are four permutations of the three operation-inducing features, leading to the aforementioned patterns: PI [•WH•], [•EF•] ≻ [∗F∗]; all movement steps feed Agree. PII: [•WH•] ≻ [∗F∗] ≻ [•EF•]; only final movement steps feed Agree. PIII: [•EF•] ≻ [∗F∗] ≻ [•WH•]; only intermediate movement steps feed Agree. PIV (complete absence of a reflex): [∗F∗] ≻ [•WH•], [•EF•]; no movement step feeds Agree. *Discussion*: All reorderings lead to attested patterns (in contrast to earlier claims on the interaction of Merge with downward Agree, Author (2012)). The analysis is incompatible with approaches that assume that all movement steps are triggered by the same feature (cf. McCloskey 2002, Abels 2012): This feature must be ordered either before or after Agree. The implementation of this distinction with edge vs. criterial features is just *one* option; it also works e.g. with feature-driven vs. non-feature-driven movement. It's also irrelevant *how* intermediate steps are represented (copies, multidominance, nothing left); it's only relevant *when* they apply.

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# Internal and external possession in the diachrony of Greek
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**1. The theoretical relevance** In many languages both internal and external possession constructions (IPC and EPC respectively) are available: while in IPCs (1a) the possessor is syntactically and semantically an element of DP, in EPCs (1b) the possessor surfaces as a syntactic dependent of the verb, and entertains semantic relations both with the noun phrase and the verb. There are various types of EPCs (Haspelmath 1999, Deal 2013, ms): I focus on the construction, frequent in Indo-European languages, where (i) IPC and EPC are not semantically equivalent: while IPC is typically underspecified with respect to the semantic relation between head and dependent (the dependent can be interpreted as possessor, but also as agent or patient), EPC is subject to stricter semantic constraints and entails possessor affectedness; (ii) evidence for the possessor's syntactic relation with the verb in EPCs is represented by its DP-external surface position and verb-dependent case marking.

(1)  a.  der Arm **des      Mannes**        'the man's arm'          (German)
         the arm  the:GEN man:GEN

     b.  Er       hat       **dem   Mann**   den      Arm      gebrochen
         he:NOM have:3SG the:DAT man:DAT the:ACC arm:ACC broken:PTCP
         'he broke the man's arm'

For this type of EPC I assume a movement-based, control analysis (Lee-Schoenfeld 2006, Deal 2013, ms, following Hornstein's 1999 analysis of control as movement between $\theta$-positions not constrained by the Theta-Criterion): the possessor is base-generated in the DP, receives the possessor $\theta$-role but can escape Case assignment and is attracted to a DP-external Applicative position, where it is assigned dative and an additional affectee $\theta$-role. I argue that the derivational relationship between IPC and EPC can be exploited diachronically and propose a reanalysis process in the history of Greek, with far-reaching consequences on its morphosyntax: in New Testament Greek (NTG, 1st cent. CE) an original IPC with a DP-peripheral genitive possessor is reanalyzed as EPC by assuming a new movement operation. The reanalysis is triggered by semantic, morphosyntactic, and prosodic factors, and the study of the diachronic process may shed light on the building blocks of possession patterns.
**2. External possession in Greek** In Greek, at all stages, possession can be expressed internally and externally. Up to the Koiné (of which NTG is a variety), there is a distinction in case parallel to e.g. German. In Standard Modern Greek (SMG), instead, dative and genitive are syncretic, and therefore there is no case distinction between IPC and EPC (2).

(2)  a.  to  daktilo **tu**      'his finger' (SMG)
         the finger   he:GEN

     b.  o    skilos **tu**      dhangose to       daktilo    'the dog bit his finger'
         the dog   he:GEN bit:3SG   the:ACC finger:ACC

Nonetheless IPC and EPC are syntactically and semantically distinct in SMG, and EPC obeys constraints that have been observed cross-linguistically (Guéron 2005): EPC (a) is limited to eventive transitive/unaccusative predicates that affect their internal argument and impose a benefactive/malefactive reading on the possessor; (b) obeys locality restrictions:

possessors must be contained in the same minimal clause as the possessed DP; (c) expresses inalienable possession, and the possessum (body parts, kinship terms, familiar objects) must be singular. If the possessor is plural, the interpretation of the possessum is distributive.

**3. From DP to VP** The origin of the SMG pattern can be traced to NTG, where an old genitive-marked IPC becomes reanalyzed as a new EPC, thus representig a first step in the genitive-dative syncretism. In SMG adnominal genitives are post-N, non-iterable and immediately adjacent to the N head (NG). In Classical Greek (CG) four different DP-internal possessive constructions are available: besides NG, also a post-N genitive with definiteness doubling (DD), a pre-N genitive (GN), and a further pre-N construction where the genitive is DP-peripheral, preceding the overt determiner (PER). While all these constructions are still attested in NTG, the post-N patterns increase substantially in frequency, and realise over 90% of the IPCs in the Gospels (Manolessou 2000, Gianollo 2011). Most of the exceptions to the post-N order are represented by PER constructions like (3).

(3) kai apekopsen **autou** to     ōtarion to     dexion     (Io 18.10)
    and cut.off:3SG he:GEN the:ACC ear:ACC the:ACC right:ACC
    'and he cut off his right ear'

In CG genitives could be displaced to a DP-peripheral position for focus (Manolessou 2000, Horrocks & Stavrou 1987). This interpretation is rarely attested in NTG: much more frequently the PER genitives are backgrounded pronominal clitic forms. Moreover, PER genitives systematically show the semantics of EPCs: they denote affected animate possessors of body parts or kinship terms; of the 59 instances in the Gospel of John, 48 belong to objects of transitive Vs or post-V subjects of passive and unaccusative predicates. Most frequently the verb precedes the object, and the genitive clitic occurs in between (4); the clitic can also be discontinuous with respect to the DP and surface in clitic clusters at the left periphery.

(4) kai eutheōs     ekatharisthē     **autou** ē     lepra     (Mt 8.4)
    and immediately was.cleansed:3SG he:GEN the:NOM leprosy:NOM
    'and immediately his leprosy was cleansed'

**4. The reanalysis** Given the new grammar for adnominal genitives, pre-N genitives 'stand out' in NTG. I propose that, under neutral information-structure conditions, the PER configuration becomes available only to clitic elements. These are reanalyzed as being moved to a DP-external position, the thematic specifier of either a Low Applicative, specialized for transfer-of-possession relations (Pylkkänen 2002, Cuervo 2003) or a High (= pre-V) Applicative position (Lee-Schoenfeld 2006), where differences in the interpretation of datives are derived contextually. Given the independent availability of V-to-C in NTG (and SMG, cf. Horrocks 1990 and Condoravdi & Kiparsky 2001), either analysis is compatible with the data. Three local syntactic conditions are singled out favoring the reanalysis in NTG: besides (i) the different grammar for internal possession, also (ii) an ongoing change in the positioning of clitics (from clausal second position to TP-clitics, Condoravdi & Kiparsky 2001) and (iii) a more rigid verb order, and thus a more consistent post-V positioning of objects (Taylor 1994, Horrocks 1997). DP-peripheral genitive clitics end up being adjacent to the verb, and the phrasing with the verb is strengthened by encliticization and consequent stress readjustment. A new EPC arises: the genitive clitic occupies a 'dative' position in the clause, being reanalyzed as an argument of the verb.

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### VOICING CONTRASTS IN SHONA: TOWARDS AN ACCOUNT OF CONSONANT MUTATIONS

A phonological representation in which voicing is defined acoustically (periodicity) is relatively straightforward, and may be all that is needed in many cases. In some phonological systems, however, voicing seems to also pattern along articulatory dimensions (oral stricture, glottal aperture, etc). Deriving these facts from the representation is not a trivial matter, and remains an unsettled issue in phonological theory (see Botma 2011 for a recent review). In this paper I present an analysis of two intricate patterns of consonant mutations found in Shona (Bantu, S10. Fortune 1984) that sheds new light on this complex issue. I argue that a closer look at Shona phonological system reveals that surface voicing is the (secondary) consequence of at least two underlying articulatory contrasts –Spread Glottis (SG) and Stricture Voicing (SV)[1], and that consonant mutations should be analyzed in terms of these contrastive features.

**First,** I discuss the relation between laryngeal configuration and voicing, and present three arguments that support the claim that SG is phonologically active in Shona[2]

| | CLASS 9/10 | | | CLASS 5 | |
|---|---|---|---|---|---|
| 1.a | $_{10}$**m$^{ɦ}$**asa *mats* | cf. $_{11}$ru-**p$^h$**asa *mat* | 5. a | $_5$**ɓ**adza *hoe* | cf. $_6$ma-**p$^h$**adza *hoes* |
| b | $_{10}$**n$^{ɦ}$**ivi *sides* | cf. $_{11}$ru-**t$^h$**ivi *side* | b | $_5$**ɗ**ama *cheek* | cf. $_6$ma-**t$^h$**ama *cheeks* |
| 2.a | $_9$**$^m$b**ek$^h$ero *crattle-skin* | | 6. a | $_5$**ɓ**ik$^h$ir-o *cooking place* | cf. $_{14}$k$^h$u-**ɓ**ik$^h$ir-a *to cook* |
| b | $_9$**$^n$d**ik$^h$i *small (cl. 9)* | cf. $_1$mu-**ɗ**ik$^h$i *small (cl. 1)* | b | [i]$_5$**ɗ**o *spots* | cf. $_6$ma-**ɗ**o *spot* |
| 3.a | $_9$**$^n$z**ive *knowledge* | | 7. a | $_5$**z**iso *eye* | cf. $_6$ma-**z**iso *eyes* |
| b | $_9$**n$^{ɦ}$**u *thing (cl.9)* | cf. $_7$tʃi-**n$^{ɦ}$**u *thing (cl. 7)* | b | [i]$_5$**ŋ**a *chap* | cf. $_6$ma-**ŋ**a *chaps* |
| c | $_{10}$**$^n$d**imi *tongues* | cf. $_{11}$ru-**r**imi *tongue* | c | $_5$**r**ur-o *wild person* | cf. $_{14}$k$^h$u-**r**ur-a *be untamed* |
| d | $_9$**$^m$b**aʋaʋarir-o *intention* | cf. $_{14}$k$^h$u-**ʋ**aʋarir-a *to intend* | d | [i]$_5$**ʋ**u *soil* | cf. $_6$ma-**ʋ**u *soils* |
| 4. | $_9$**$^n$z**ou *elephant* | | 8. | $_5$**z**uro *evenings* | cf. $_6$ma-uro *evenings* |

<u>Inventory</u>: Shona has pairs of consonants that contrast only in terms of the laryngeal feature SG (/m/ vs /m$^{ɦ}$/, /n/ vs /n$^{ɦ}$/). A laryngeal component is also clearly involved in the production of other (breathy voiced consonants) (b$^{ɦ}$, d$^{ɦ}$, v$^{ɦ}$) although in this case the nature of the contrast is more complex than a simple laryngeal specification. <u>Voice Onset Time</u>: I provide experimental evidence that voiceless stops are phonetically aspirated, and argue that this reflects an SG specification. This sheds some light on the otherwise puzzling realization of some underlying Cw sequences which surface as affricates [p$^x$],

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[1] This is essentially the same as what is generally referred to as Sonorant Voicing, or Spontaneous voicing in the literature. I use the term stricture voicing here to reflect the fact that it is assumed to be an articulatory feature, associated with the degree of oral constriction, which, along with glottal aperture, controls the amount of air that can flow though the glottis, and hence permits vocal fold vibration.

[2] Subscript digits indicate noun class. [i] represents an epenthetic vowel that is inserted to satisfy minimal word requirements (Mudzingwa 2010).

assuming that SG is involved in frication (Vaux 1998). <u>Class 9/10 mutation</u>: [NASAL] mutation of stem-initial voiceless stops (1) results in breathy nasals, a fact that is straightforwardly accounted for under the proposal.

**<u>Second,</u>** I discuss the relation between oral stricture and voicing, and present three arguments that support the claim that SV is phonologically active in Shona. <u>Inventory</u>: An SG contrast is not sufficient to capture the Shona's rich inventory of stops, in particular the contrast between breathy voiced ($b^ɦ$, $d^ɦ$) and voiceless aspirated stops ($p^h$, $t^h$), and the existence of contrastive implosives (ɓ, ɗ) and prenasalized stops ($^mb$, $^nd$, $^ŋg$). I argue that these additional levels of contrast better correspond to SV (Clements and Osu 2002). <u>Class 5 mutation</u>: the mutated counterpart of voiceless stops (5) are implosives, which I take as evidence for an (autosegmental) SV specification of the class 5 prefix[3]. Not surprisingly, stem-initial implosives are themselves not affected by class 5 mutation (6), as their SV specification is redundant with that of the prefix. By the same token, I argue that the class 5 SV specification is redundant when the stem's initial segment is a voiced fricative (7.a) and nasal (7.b), and vacuous when it is a rhotic (7.c) or an approximant (7.d). For vowel-initial stems (8), on the other hand, the addition of an SV feature cannot be considered redundant, as class 5 prefixation causes a voiced fricative to be inserted (Lafon 1984). I take this as evidence for the fact that vowels cannot be specified for SV. <u>Class 9/10 mutation</u>: I propose that NASAL is a special type of SV, and that the realization of the class 9/10 class prefix follows the distribution of SV. For segments that are not underlyingly specified for (but compatible with) SV like voiceless stops (1), an SV specification must be provided for NASAL to be realized (as breathy nasals rather than, say prenasalized voiceless stops). Not surprisingly, for segments that are underlyingly specified for SV (2), the nasal mutation readily obtains, in the form of (pre)nazalization. Vowels are assumed to be incompatible with SV, hence the realization of the class 9/10 prefix as a separate prenasalized voiced fricative (4).

Finally, I discuss some complications relative to voiceless fricatives and labialized segments, which fail to undergo mutation. I propose that the incompatibility of SV with vowels carries over to secondary articulation, and argue that this incompatibility can result either in blocking ($C^w$) or in repair (vowels). I speculate that something similar may be occurring with initial voiceless fricatives, provided that we accept that they may be internally complex (as suggested the so-called "whistled fricatives" (Shosted 2006, Pongweni 1990), which simultaneously involve a tong tip and a lip rounding gestures, and contrast both with [s] and [$s^w$]. I conclude by summarizing the proposed distribution of SG and SV across different types of segments, and discussing how what superficially looks like a simple voicing feature can in fact be the result of fairly complex interaction of several distinct articulatory contrasts[4].

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[3] Which is consistent with the fact that the class concords are usually phonologically related to the class prefixes, which is [ri-] in class 5, and with the Proto-Bantu reconstruction of this prefix (*ri).

[4] <u>Cited works:</u> **Botma, B. (2011)** Sonorants. *The Blackwell Companion to Phonology*. Oostendorp et al (eds). **Clements, G. N. & Osu, S. (2002).** Explosives, implosives and nonexplosives: The linguistic function of air pressure differences in stops. Laboratory phonology (7), 299–350. **Fortune, G. (1984).** *Shona grammatical constructions*. Harare **Lafon, M. (1994).** Shona Class 5 revisited: A case against *ri as class 5 nominal prefix. *Zambezia* XXI, 51-80. **Mudzingwa, C. (2010).** *Shona Morphophonemics: Repair Strategies in Karanga and Zezuru,* PhD Dissertation University of British Columbia. **Pongweni, J. (1990).** *Studies in Shona phonetics: An analytical review.* Harare: University of Zimbabwe Publications. **Shosted, R. (2006).** Just put your lips together and blow? Whistled fricatives in Southern Bantu. *Proceedings of ISSP 2006*. **Vaux, B. (1998).** The laryngeal specification of fricatives. LI (29). 497–511.

# Localizing Voice in bivalent voice systems: passive and middle in Sanskrit and Greek

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**Introduction:** Bivalent voice systems like those of Classical Greek (CG) and Vedic Sanskrit (VS) distinguish between active and non-active voice in their agreement morphology. Non-active morphology cross-linguistically occurs in the same environments: 1) anticausatives, 2) reflexives/reciprocals, 3) dispositional/generic middles, 4) mediopassives, 5) passives. Alexiadou & Doron (2012) argue that in bivalent systems, a voice head $\mu$ (middle) is merged in these environments. In trivalent voice systems, the first four functions take the $\mu$ head, while the passive arises through merger of a separate head $\pi$. In their account, $\mu$ and $\pi$ are in complementary distribution and merge below the agent-introducing projection vP. I argue that VS and CG provide evidence that $\mu$ and $\pi$ merge in different structural positions and only one of them, $\pi$, affects valency.

**Background:** In VS and CG, Voice and Tense together are morphologically expressed through different sets of verbal agreement markers:

|     | 3sg.nonpast.act. | 3sg.nonpast.mid. | 3sg.past.act. | 3sg.past.mid. |
| --- | --- | --- | --- | --- |
| VS  | *-t-i* | *-t-e* | *-t-$\emptyset$* | *-t-a* |
| CG  | *-t/s/e-i* | *-t-a-i* | *-$\emptyset$* | *-t-o* |

Both VS and CG have a basically bivalent voice system in which the non-active voice can have a (medio)passive reading. In bivalent environments, the passive is morphologically indistinguishable from other functions associated with non-active agreement morphology. However, in some tense/aspect stems, separate morphology is available for the passive, creating a trivalent system. In VS, a passive can be formed in the imperfective stem by adding the suffix *-yá-*. In CG, the passive suffix *-thē-* is available in the aorist and the future. In these tense/aspect stems, the passive interpretation of the middle is blocked. Ex. (1) illustrates this for VS (c indicates the class/theme vowel).

(1)  a.  *bhár-a-ti* — carry-c-3SG.NONPAST.ACT — "carries sth."
     b.  *bhár-a-te* — carry-c-3SG.NONPAST.MID — "carries sth. for oneself/*is being carried"
     c.  *bhri-yá-te* — carry-PASS-3SG.NONPAST.MID — "is being carried"

(1) c. is an agentive passive in which passive and middle morphology descriptively co-occur. Evidence that it is the suffix *-yá-* that passivizes and not the middle morphology comes from deponents, verbs that always take the middle endings, but are syntactically active and transitive. Agentive deponents in VS can passivize using the suffix *-yá-*. Both the syntactically active deponent and its corresponding passive take the middle endings.

(2)  a.  *î̆ṭ-ṭe* "praises" — *īḍ-yá-te* "is being praised"
     b.  *rábha-te* "seizes" — *rabh-yá-te* "is being seized"

**Analysis:** The co-occurrence of passive and middle morphology in (1) c. suggests that the passive and middle voice heads occupy different structural positions. I argue that the passive head $\pi$ merges below vP at the same level as other stem-forming suffixes, while the middle voice head Voice merges above vP *iff* v does not introduce an agent argument (in the spirit of Embick (1998)'s rule for the assignment of non-active voice: V → V-VOC[NonAct]/_ No

external DP, "Non-active voice is assigned when $v$ does not introduce an external argument"). If vP introduces an agent, no Voice head is merged and active morphology emerges by default (Alexiadou & Doron 2012). I assume that Voice carries an interpretable feature [NONACT] which values the uninterpretable Voice feature on the verb (following Bjorkman 2011). In a VS imperfective passive, $\pi$ is merged low and prevents the merger of an external argument in the specifier of v. Voice is therefore merged, resulting in non-active morphology through agreement with the verb, as in (3).

(3)    pres.pass. bhri-ya-te "is being carried"
    $[_{TP}\ T_{NONPAST}\ [_{Voice}\ Voice_{NONACT}\ [_{vP}\ \emptyset\ [_{\pi P}\ \text{-}yá\text{-}_{\pi}\ [_{RootP}\ bhr_{[uINFL\_]}]\ ]\ ]\ ]\ ]\ ]$

More evidence for low $\pi$ vs high Voice comes from the fact that Vedic has an unaccented suffix -ya- besides passivizing -yá- that acts like a stem-forming or "verbalizing" suffix (cp. Harley 2009). These can form minimal pairs such as *múc-ya-te* "escapes" — *muc-yá-te* "is released"; *kṣī́-ya-te* "perishes" — *kṣī-yá-te* "is destroyed". Co-occurence of both suffixes is not possible (*-ya-yá-), indicating that they occupy the same stuctural position. Middle morphology is derived by the same mechanism in both cases: Voice$_{NONACT}$ is merged because v does not introduce an external argument, in the case of *kṣī́yate* "perishes" because this is an unaccusative verb that does not have an external argument, in the case of *kṣīyáte* "is destroyed" because the passive suppresses the merger of the external argument in the specifier of vP. If passive and middle/Voice are not in complementary distribution and active is simply the absence of middle/Voice we furthermore predict that under certain circumstances, passive and active morphology can co-occur. This is the case in CG. While the future passive behaves like the VS imperfective passive (passive and middle morphology co-occur), in the aorist passive we find the passive suffix -*thē*- combining with the *active* endings, cp. the underlined endings:

|      | 3sg.act. | 3sg.mid. | 3sg.pass. |
|------|----------|----------|-----------|
| fut. | lou-se-i "will wash" | lou-se-<u>tai</u> "will wash herself" | lou-thē-se-<u>tai</u> "will be washed" |
| aor. | e-lou-se-<u>Ø</u> "washed" | e-lou-sa-to "washed herself" | **e-lou-thē-<u>Ø</u>** "was washed" |

This suggests that -*thē*- cannot be selected by Voice, and active morphology surfaces by default:

(4)    *e-lou-thē-Ø*: $[_{TP+AGR}\ T_{NONPAST}\ ([_{vP}])\ [_{\pi P}\ \text{-}th\bar{e}\text{-}_{\pi}\ [_{RootP}\ lou_{[uINFL]}]\ ]\ ]\ ]$

The future marker -*se*- on the other hand can be selected by Voice, as a result of which the future passive surfaces with middle endings.

**Implications:** Structurally separating the passive from the middle captures the intuition that they are functionally different: The passive is usually said to affect valency by absorbing the external argument, whereas middle morphology is not valency-reducing, but emerges as the result of previous syntactic operations. Reducing the Voice head to $\mu$/middle means that no special rules are needed to predict active morphology, which emerges in the absence of the Voice head. Strictly bivalent voice systems may lack a passive head entirely and use only Voice/$\mu$ (cp. Alexiadou & Doron for Modern Greek).

**References: Alexiadou**, Artemis, and Edit **Doron**. 2012. The syntactic construction of two non-active Voices: Passive and middle. *Journal of Linguistics* 48: 1-34. **Bjorkman**, Bronwyn. 2011. *BE-ing default: The morphosyntax of auxiliaries*. Ph.D. dissertation, MIT. **Embick**, David. 1998. Voice systems and the syntax/morphology interface. In *Papers from the Penn/MIT Roundtable on Argument Structure and Aspect*, May 1997 (MITWPL). **Harley**, Heidi. 2009. The morphology of nominalizations and the syntax of vP. In *Quantification, definiteness and nominalization*, 320-42. OUP.

# NPIs in Questions, Disjunction and Ellipsis
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Partly building on [8]'s insight, this paper proposes an ellipsis-based fully unified syntactic and semantic analysis of Y/N (yes/no)-questions, alternative questions, and the nucleus of Strongly Exhaustive WH-questions. The proposal has the following noteworthy ramifications: In their syntax, all Y/N questions and the *nuclei* of Strongly Exhaustive WH-questions contain an overt or covert negation and may therefore host NPIs that occur in its scope.

**NPIs in questions.** The acceptability of weak NPIs (e.g., *any*, *ever*) in a Y/N- interrogative and in the nucleus of a WH-interrogative (see (1)), has long posed a serious challenge for theories that say that NPIs need a DE (downward entailing) licensor (e.g. [7]).

(1)    Did Mary <u>ever</u> read SS? / Which students have <u>ever</u> read SS     (SS = *Syntactic Structures*)

Furthermore, the mere presence of a question operator does not seem to suffice to license NPIs, otherwise NPIs should be also acceptable in alternative questions as well as in all embedded *wh*-questions. However, alternative questions can never host NPIs, regardless of their syntactic position, as we consistently attested from our informants (contra [9]).

(2)      a. Did John <u>ever</u> play chess or checkers?          (* alternative reading/ ✓Y/N-reading)
         b. Did Mary or John bring <u>anything</u> to the party? (* alternative reading/ ✓Y/N-reading)

Moreover, in embedded questions, their acceptability depends on the embedding verb (C.f. [2].)

(3)    a.    John **wonders** <u>which students</u> had <u>ever</u> read SS.
       b.    *It **surprised** John <u>which students</u> had <u>ever</u> read SS.

**A new idea.** New empirical facts suggest a novel solution to the problem, within the DE-hypothesis. We observe that an NPI is acceptable when it follows *whether or not*, but not when it is "trapped" between *whether* and *or not*, <u>under plain intonation of *or not*</u>:

(4)    a. *Mary wondered *whether* her students had <u>ever</u> read SS *or* **not**.
       b. Mary wondered *whether or* **not** her students had <u>ever</u> read SS.

The contrast in (4) correlates with [6]'s observation that ellipsis of *any* in declarative clauses is acceptable only when the overt *any* is in the negated clause.

(5) a. *Mary didn't buy ~~any books about linguistics~~ but John did buy <u>any</u> books about linguistics
    b. Mary bought ~~any books about linguistics~~ but John did**n't** buy <u>any</u> books about linguistics.

**Analysis: 1.Y/N questions as alternative questions.** We propose a unified ellipsis-based syntactic approach to alternative questions such as *Did John play chess or checkers* and Y/N questions such as *Did John play chess* (cf. [8] and [3]). On this view: **A.** *whether or not p-*questions (like (7)) and *whether p or not*-questions (like (8)) have the same underlying form but differ in the ellipsis site; and **B.** *whether p*-questions have two ellipsis options, one like (7) and the other like (8), where *or not* is omitted for conversational reasons later in the derivation.

(6)    Surface schema: *whether p or q*   (I know whether John played chess or checkers)
       Underlying:       [… [whether 1 ?[[John played chess] or₁ [John played checkers]]]]
       W/ellipsis:       [… [whether 1?[[John played chess] or₁ [~~John played~~ checkers]]]]
(7)    Surface schema: *whether or not p*  (I know whether or not John played chess or checkers)
       Underlying:       [… [whether 1 ? [[John played chess] or₁ [not John played chess]]]]
       W/ellipsis:       [… [whether 1 ?[[~~John played chess~~] or₁ [not John played chess]]]]
(8)    Surface schema: *whether p or not*    (I know whether John played chess or not)
       Underlying:       [… [whether 1  ?[[John played chess] or₁ [not John played chess]]]]
       W/ellipsis:       [… [whether 1 ? [[John played chess] or₁ [not ~~John played chess~~]]]]
(9)    Surface schema: *whether p*    (I know whether John played chess)
       Underlying:       [… [whether 1 ? [[John played chess] **or₁** [**not** John played chess]]]]
       (i) w/ellipsis, cf. (7): [… [whether 1 ?[[John played chess] ~~or₁~~ [~~**not** John played chess~~]]]]
       (ii) w/ellipsis, cf. (8): [… [whether 1 ? [[~~John played chess~~] (**or₁** [**not**) John played chess]]]]

We adopt [10]'s indefinite view of *or* (hence its index above) and assume that quantification and unselective binding by a coindexed *whether₁* is done in the two-step fashion shown in (10).

(10) a.   $[[q \ or_1 \ r]]^{g,w} = [\lambda w'. \ g(1) = [[q]] \ or \ g(1) = [[r]] \ and \ g(1)(w') = 1]$

   b.   $[[?]]^{g,w} = [\lambda q_{st}. \ \lambda p_{st}. \ p = q]$ 　　　　　　　　　　　　(see [5])

   c.   $[[whether]]^{g,w} = [\lambda S_{<st, stt>}. \ \lambda p_{<st>}. \ \exists r_{<s,t>} \ s.t. \ S(r)(p) = 1 \ \& \ p(w) = 1]$

   d.   $[[whether \ 1 \ ? \ [[John \ played \ chess] \ or_1 \ [John \ played \ checkers]] \ ]]^{g,w} =$
       $[\lambda p. \ p = $ 'that John played chess' or $p = $ 'that John played checkers' $\& \ p(w) = 1]$

**2. WH-questions.** Building on [1], we analyze the Strongly Exhaustive reading of a WH-question, such as in *John knows which student read SS,* as containing a *whether-or-not*-question, as shown in (11a); its Weakly Exhaustive one doesn't contain *whether-or-not* (see (11b).)

(11) a. "Strong" reading: For every student x, John knows whether x read SS or x didn't read SS
   $[[ \ [which \ students] \ 1 \ [whether \ 2 \ ? \ [t_1 \ read \ SS \ or_2 \ not \ t_1 \ read \ SS]] \ ]]^{g,w} = \lambda p.$ there is an x such that x is a student in w, p = 'that x read SS' or p = 'that x didn't read SS', & p(w)=1

   b.   "Weak" reading: For every student x who read SS, John knows that x read SS
   $[[ \ [which \ students] \ 1 \ [? \ [t_1 \ read \ SS]] \ ]]^{g,w} = \lambda p.$ there is a x such that x is a student in w, p = 'that x read SS' & p(w)=1

 (12)  $[[which \ students]]^{g,w} = \lambda Q. \ \lambda w. \ \lambda p. \ \exists x \ [x$ is a student in w & Q(x)(p) = 1 & p(w)=1}

Evidence form Italian appears to corroborate this view. Italian *or not* in *whether or not* is *o meno* (see (13a)). (13b) shows that *or not* may overtly occur in Italian WH-questions:

(13)   a. Mario si domanda se verrai **o meno.** 　　　 b. M. si domanda chi sia o meno venuto.
       Mario wonders　if (you) will come or not　M wonders　who has or not　come

**Predictions.** An overt NPI is licensed only under a covert or overt *or not*. Therefore they are always excluded from alternative questions, which contain no negation (see (6)), and, while both (14b) and (15b) adhere to the grammatical pattern, (14a) and (15a) do not.

(14)  Did Mary's students ever read SS?
   a. *whether Mary's students <u>ever</u> read SS ~~or not Mary's students ever read~~ SS 　　 cf. (9(i))
   b. whether ~~Mary's students ever read SS~~ (**or not**) Mary's students <u>ever</u> read SS 　 cf. (9(ii))

(15)  Mary wondered whether her students ever read SS.
   a. *…whether her students <u>ever</u> read SS ~~or not her students ever read SS~~ 　　　 cf. (9(i))
   b. …whether ~~her students ever read SS~~ (**or not**) her students <u>ever</u> read SS 　　 cf. (9(ii))

In addition, the contrast in (4), with an overt *or not*, is predicted on a par with (15).

(16)  *[Mary wondered whether her students <u>ever</u> read SS or not ~~her students ever read SS~~]
     [Mary wondered whether ~~her students ever read SS~~ or not her students <u>ever</u> read SS]

Finally, only "strongly exhaustive" WH- are predicted to license NPIs. Following [2]/[4], we assume that *wonder* selects for strongly exhaustive questions and *surprise* exclusively selects for weakly exhaustive questions (*find out* is context-dependent). Hence the contrasts in (3).

(17)  *… surprise [which students]₁ [? [t₁ **ever** read SS]]
     … wonder [which students]₁ [whether₂ [~~t₁ read SS or₂ not~~ t₁ **ever** read SS]]

**Further consequences.** Languages whose ellipsis options are different from English are correctly predicted to have different NPI-licensing patterns in questions containing *or not*.

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# Stay in shape!

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***1. Introduction.*** In recent generative literature, cross-linguistic variation in passive symmetry—the (non-)availability of theme passivisation out of double object constructions (DOCs)—has typically been explained in terms of locality (Anagnostopoulou 2003, McGinnis 1998, Ura 1996). According to this model, in languages without theme passivisation, theme-raising to T is blocked by the intervening goal. Languages *with* theme passivisation differ minimally in the availability of short theme movement to an outer spec of the same projection hosting the goal, enabling the theme to subsequently raise to T without crossing the goal, as in (1).

(1) [$_{TP}$ theme T... [$_{XP}$ ~~theme~~ goal X ... [$_{YP}$ Y ~~theme~~]]]      (the locality approach)

In support of this approach, Anagnostopoulou (2003) notes a cross-linguistic correlation within Mainland Scandinavian between the availability of theme-goal orders in passive contexts and theme-goal orders in object shift (OS), as in (2) and (3), respectively, from Norwegian. In Norwegian/Swedish, which allow theme-passives, *some* speakers accept theme-goal orders in OS. In Danish, theme-goal orders are disallowed in both contexts. Anagnostopoulou takes this correlation as evidence that short theme movement feeds theme passivisation.

(2) ***Passive***      (3) ***Active OS***      (4) ***Active non-OS***

a. Per ble gitt boken.    a. Jeg ga ham den ikke.   a. Jeg har ikke gitt ham den.
    P. was given book.the      I gave him it not        I have not given him it
    'P. was given book.the.'     'I didn't give him it.'      'I haven't given him it.'

b. Bok-en ble gitt Per.     b%Jeg ga den ham ikke.    b%Jeg har ikke gitt den ham.

***2. An experiment.*** Anagnostopoulou's approach makes a strong prediction about cross-speaker variation: speakers should accept (2b) iff they accept (3b). We test this with an acceptability judgment experiment with 505 native speakers of Norwegian. The experiment crossed object order (*theme-goal/goal-theme*) with context (2)-(4). Subjects judged four lexicalisations of these six conditions via a web-based application. Results revealed a much stronger correlation between the two active (OS and non-OS) conditions than between either of the active conditions and the passive condition, where the effect was negligible. Assuming a structure for DOCs with the goal merged above the theme, these results suggest that theme movement above the goal in active non-OS contexts feeds theme-goal orders in OS, i.e. speakers accept the latter iff they accept the former. Importantly, theme-goal orders in active OS and non-OS contexts appear *not* to feed theme-goal orders in passives.

An initially appealing approach is that some movement permutes the objects low in the structure and a constituent containing these objects in the order theme-goal raises them in OS contexts. The fact, however, that shifted objects can be separated by an extra-VP adverb, as in (5), suggests they do not raise as a constituent.

(5) Jeg ga ham sjølsagt den ikke.        We propose that these facts are best ex-
    I gave him obviously it not      pressed not in terms of locality but in terms of
    'Obviously I didn't give it to him.'     shape conservation, i.e. derivational constraints
on linearization of syntactic objects following Fox & Pesetsky's (2005) Cyclic Linearization proposal (see also Aanagnostopoulou 2005). Fox & Pesetsky propose that precedence relations among syntactic objects are established phase-by-phase, as in (6). Extra-phasal movement cannot permute the linear order of two syntactic objects, since this would entail conflicting ordering relations for the phonology.

(6) a. [$_{\text{Phase2P}}$ X Y [$_{\text{Phase1P}}$ ~~X Y~~ ]]          b. *[$_{\text{Phase2P}}$ Y X [$_{\text{Phase1P}}$ ~~X Y~~ ]]

We propose that theme-goal orders in active contexts reflect optional movement of the theme to an outer spec of Appl, as in (7). We further assume that, in active but not passive contexts, little-v is a phase head Chomsky 2000, and that transitive-v therefore freezes the order of arguments in its c-command domain. In OS, which targets an extra-phasal position, the order of objects must therefore match the order established vP-internally.

(7) [$_{\text{TP}}$ T [$_{\text{vP}}$ v [$_{\text{VP}}$ V [$_{\text{ApplP}}$ theme goal Appl ~~theme~~]]]]

Theme-passivisation is not fed by this short theme movement. Rather, theme vs. goal-passivisation reflects variation in whether the "extra" probe in applicative structures is located on Appl or a linker head above ApplP, where it probes the goal (Baker & Collins, 2006). In passives, where v is not a probe, the T will probe and attract the theme across the previously probed goal, as in (8). This entails that the goal does not defectively intervene for theme movement to T (Broekhuis 2007, Bruening 2012). These assumptions now correctly express the facts that (i) theme-goal orders in OS are possible only for speakers who allow theme-goal orders vP-internally; and (ii) theme-goal orders in passives are independent of this movement.

(8) [$_{\text{TP}}$ theme T [$_{\text{vP}}$ v-passive [$_{\text{VP}}$ V [$_{\text{LkP}}$ Lk [$_{\text{ApplP}}$ goal Appl ~~theme~~ ]]]]]

**3. British English.** A challenge for this analysis is to explain the divergence of these data from Haddican & Holmberg's (2012) results from British English (BrE) showing a cross-speaker correlation in acceptance of theme-goal orders in active and passives. That is, acceptance of (9) correlates with acceptance of (10).

(9) She gave it me.                    (10) The ball was given the girl.

Theme-goal active DOC sentences like (9) are only possible with weak themes, and are best for many speakers with *it* as the theme rather than *them*. Importantly, object *it* in English can *only* be weak, while its counterparts in Norwegian need not be:

(11) a. *I saw IT.                    b. *Peter came with it and a bottle of wine.

(12) a. Jeg så   DEN.                 b. Per kom  med den og   en flaske vin.
    I    saw it                           P.   came with it    and a   bottle wine
    'I saw IT.'                         'P. came with it and a bottle of wine.'

We take this difference between BrE and Norwegian to relate to shape conservation effects in these languages. In both languages, theme vs. goal passivisation is determined by the presence of a linker head, as in (8). However, in BrE, theme-goal active DOCs do not involve raising of the theme to spec, Appl, as in Norwegian, but rather (i) the presence of a linker head above Appl, and (ii) incorporation of weak pronouns into their probes following Roberts (2010). BrE *it* is a $\phi$P, consisting exclusively of $\phi$-features. Following Agree, its features are a subset of the features of the $\phi$-probe v, and are spelled out in the position of v by ordinary chain reduction/copy deletion (the analysis of object clitics in Roberts 2010). The corresponding Norwegian pronoun, even in its weak form, is a DP, and therefore not incorporable. Theme-goal orders like (9) reflect incorporation of the theme into v across the previously probed goal as in (13). The cross-speaker correlation in acceptance of (9) and (10) therefore reflects the variable presence of the linker morpheme.

(13) [$_{\text{TP}}$ T [$_{\text{vP}}$ v-*it* [$_{\text{VP}}$ V [$_{\text{LkP}}$ Lk [$_{\text{ApplP}}$ goal Appl ~~it~~ ]]]]]

**4. Summary.** Our data support an object symmetry effect not described previously, namely a correlation in object order preferences in active OS and non-OS contexts. Object order preferences in active OS and non-OS contexts correlate more closely across speakers than in passive and OS contexts, a result mispredicted by Anagnostopoulou (2003) but readily explained by Cyclic Linearization.

# Agreement in Copula Clauses: Evidence for a dual mechanism of Agreement

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**Summary** In this paper we present novel data from German and other Germanic languages to show that C-related agreement occurs more generally in Germanic than is typically assumed, and can be detected even in the absence of agreement morphology on complementizers (C[omplementizer] A[greement]) or "I[nversion] A[greement]" (where a distinct type of morphology appears on the verb just in case it is in C and is agreeing with a subject immediately below it). The data are drawn from agreement patterns observed in S[pecificational] C[opular] C[lauses]. While it is well-known that the agreement found in these clauses varies *between* languages, we demonstrate that in fact there is a robust pattern of *intra*-language variation in Germanic that has gone undocumented. We argue that the observed pattern provides further support for a general dual mechanism of T and C agreement, even in the absence of overt independent morphology for C-agreement, and that it also contributes to a better understanding of the derivation of SCCs cross-linguistically.

**Agreement in Germanic** Data from CA and IA suggest that languages may show subject agreement both in the T-domain and in the C-domain. While CA and IA have been documented in a number of Germanic dialects (see Bayer 1984; Zwart 1997; Ackema and Neeleman 2004; van Koppen 2005), our data show that the underlying agreement mechanism is also detectable in Standard German, a language that does not have specific morphology for complementizer agreement. The crucial data come from SCCs, where there are two nominative DPs that can act as goals for agreement. Data from our production and rating studies show that in German agreement with the second DP (DP2) is strongly preferred (like Italian, but unlike English or French), both in root and embedded clauses (that is, this is not simply a V2 phenomenon—Table 1, (a) and (b)). However, the new observation is that in V2 clauses with an initial nonsubject XP (c) the preference is reversed (in production) or cancelled out (in rating).

|  |  | %DP2 | R-sg | R-pl |
|---|---|---|---|---|
| a. | Die Ursache des Feuers war/waren vielleicht brennende Kerzen. <br> the cause of.the fire was/were maybe burning candles | 82% | -.48 | .42 |
| b. | Er fragte zuerst, ob die Ursache des Feuers brennende Kerzen war/waren <br> He asked first if the cause of.the fire burning candles was/were | 88% | -.54 | .03 |
| c. | Meiner Meinung nach war/waren die Ursache des Feuers brennende Kerzen. <br> in my opinion was/were the cause of.the fire burning candles | 30% | -.12 | .002 |

Table 1: Results of production study (fill-in-the-blanks) and thermometer rating study (z-scores: -1 (bad) to 1)

**Analysis** We argue that German (and Dutch) allow for two processes of syntactic subject verb agreement: low agreement of the probe T when the verb does not raise to C and agreement of the probe C when the verb moves to C, similar to what we find in IA (see e.g. Höhle's (1997) *Inversionsformen* and Zwart's (1997) double agreement) and CA (see van Koppen 2005; Ackema and Neeleman 2004 among others).

Concerning SCCs, we follow Heycock (2012) in arguing that SCCs are a type of equative that nevertheless involves "inversion" of the two DPs (DP1 is merged in a position below DP2). In a root clause in German we take it that it is possible for the lower DP (*das Problem*) to cross the underlying subject and move directly to Spec,CP.

(1)    $[_{CP} [_{DP}$ das Problem $]_i$ sind$_V$ $[_{TP} [_{VP} [_{PrP} [_{DP}$ deine Eltern $]$ Pr $t_i ]$ $t_V ]$ T+t$_V ] ]$

Agreement can be established directly from T, probing the highest DP below it (the underlying subject *deine Eltern* 'your parents'), as standardly assumed.

In an embedded clause, we can see from examples like (b) that the lower DP can invert to a lower position, between V/T and C. Standard German shows no morphological expression of CA, so we see no agreement in the C position; as before, the verb shows agreement with the highest DP below it (the underlying subject *deine Eltern* 'your parents').

In root clauses in which an initial adverbial occupies the Spec,CP position, inversion clearly targets this same low position; but since in this case the verb moves above the position occupied by DP1 (*das Problem* 'the problem'), this gives rise to a configuration in which the two probes can find two different goals: DP1 is closest to C, and DP2 to T. C-agreement with DP1 is thus possible (and, in production, preferred).

(2)     $[_{CP}$ XP ist$_V$ $[_{DP}$ das Problem $]_i$ $[_{VP}$ $[_{PrP}$ $[_{DP}$ deine Eltern $]$ Pr t$_i$ $]$ t$_V$ $]$ T+t$_V$ $]$

Note that the apparent impossibility of C-agreement with DP1 followed by subsequent movement of DP1 to Spec,CP (as shown by the very low acceptability/production of DP1 agreement in the configuration in (a) in Table 1) exactly mirrors the phenomenon of "inversion agreement" standardly argued to be a case of C-related agreement (see e.g. Ackema and Neeleman 2004).

Although it is marginally possible to front true predicate nominals to what appears to be a similar position immediately below C, this does not appear to induce C-related agreement:

(3)     Meiner Meinung nach sind/*ist ein gutes Team die Frauen.
        my      opinion  after are/*is   a    good  team  the women

We will argue, following Rochemont and Culicover (1990); Broekhuis (2008); Ramchand (2013) among others, that this predicate inversion actually targets a larger constituent, so that the nominal contained within it is not closer to the C head than DP2 is.

**Consequences and Extensions** The new data presented here constitute a contribution to the recent lively discussion of the status of agreement as—in at least some cases—a post-syntactic process (see discussion in e.g. Bobalijk 2008; Ackema and Neeleman 2004; van Koppen 2005; Bošković 2009; Bhatt and Walkow 2013). Further, we will argue that they shed light on the analysis of SCCs and the cross-linguistic variation they show in their agreement. Our analysis argues for "inversion," but not of a predicate (as we will show, DP1 agreement cannot be taken to be agreement with a predicate); and it derives the variation in agreement from the interaction of this inversion with independently motivated differences in landing sites within the T domain—which we demonstrate by a comparison with Dutch—and the dual mechanism of agreement that we argue is generally available.

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# The [ATR]/laryngeal connection and emergent features

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In this paper I argue that the connection between [ATR] values in vowels and laryngeal specifications in consonants (e. g. Trigo 1991, Vaux 1996) provides evidence for emergent phonological features and thus for a non-universal mapping between phonological representations and phonetic realisation. I argue that [ATR] specifications that are active in vowel-consonant interactions are not necessarily redundant specifications that follow from the phonetic properties of relevant segments but rather may arise emergently in a process of phonologisation.

The phonological connection between 'tense' (or [(+)ATR]) vowels and voiced consonants is phonetically grounded in pharynx expansion, which is implicated both in tongue root advancement and voicing. Diachronically, it has been suggested (e. g. by Vaux 1996, 2009) that [ATR] can become phonologically active because it is made available to the computation as a redundant feature associated with voiced obstruents. Although this account appears plausible at least from a diachronic perspective, it can only work when a number of synchronic assumptions are accepted. For instance, it requires the participation of redundant features to the phonological grammar and the availability of a mechanism that ties certain phonetic properties of voiced segments specifically to the (normally vocalic) feature [ATR]. The latter assumption in particular is much more easily available if the feature set is universal and includes both the feature [ATR] itself and the relevant phonetic correlates.

In this paper I discuss a case of the phonologisation of vocalic tenseness from length and its interaction with laryngeal features in Welsh that appears to lead to the paradoxical outcome of [ATR] ('tense') vowels causing following stops to devoice.

In most varieties of Welsh, long vowels are realised as tense while short vowels are realised as lax (Jones 1984, Mayr & Davies 2011). However, we find an exception from this generalisation in many southern dialects (e. g. Awbery 1986), where long mid vowels in particular are tense before a non-high vowel in the following syllable but lax otherwise:

(1)  a.  [ˈɡwɛːdʊχ] *dywedwch* '(you) say'
     b.  [ˈɡweːdoð] *dywedodd* '((s)he) said'

Although the phonetic roots of this pattern could lie in a trade-off duration in inherent length (cf. Crosswhite 2000), its sensitivity to the undoubtedly phonological feature of height appears to justify its classification as a phonological rather than phonetic process. The phonological status of the phenomenon, however, implies that tenseness must have undergone phonologisation and entered the computation as a feature that is at least partially independent from length.

A further development is seen in south-eastern dialects that show the phenomenon of 'provection', traditionally described as a lenis ('voiced') stop becoming fortis ('voiceless') following a stressed vowel (Greene 1967, S. E. Thomas 1983, C. H. Thomas 1993):

(2)  a.  [ɡwrɛˈɡəsa] *gwregysau* 'belts'
     b.  [ˈɡwrekɪʃ] *gwregys*   'belt'

I analyse the phenomenon as involving the feature used for laryngeal contrast in Welsh, [spread glottis] ([SG]), which interacts with vowel length. The roots of the interaction, and the fact that provection only affects stops, lie in the restricted distribution of long vowels in Welsh, which are only allowed before a small number of consonants (Awbery 1984). In particular, long (and thus phonologically tense) vowels may appear before lenis stops, and thus all contexts for provection

are associated with (historically) long vowels. I suggest that in dialects with provection the tense/lax contrast was reintepreted in terms of the non-redundant laryngeal feature [SG] rather than having any connection with quantity.

Crucially, as noted by S. E. Thomas (1983), provection is not neutralising: the 'devoiced' stop in a form like (2-b) is different from a lexical fortis stop in lacking aspiration. I suggest that provection involves a double link of the feature [SG] spanning the stressed vowel and the following stop; the lack of positive VOT in such doubly linked structures is paralleled by its lack in fricative-stop sequences. Thus, the paradox of [ATR] vowels causing a devoicing of following consonants can be resolved in terms of top-down pressures on phonologisation.

The existence of cases such as this one shows that the phonological patterning of [ATR]-type features and laryngeal specifications is not necessarily guided by the presence of '[ATR]-like' properties in the signal: the top-down pressures exerted by the system can lead to phonetically unexpected phonologisations. Although the better-grounded association of [ATR] with voicing is of course possible, and frequent, the theory of phonology must also allow for cases where the phonetic interpretation of phonological structures is more arbitrary. The data discussed in this paper thus contribute to the body of evidence that is compatible with a theory where phonological features are emergent, and non-arbitrary grounding is not a principle of grammar but derives from other sources (Mielke 2007).

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# On the importance of being silent or pronounced; English *-able* and Japanese *-rare* potentials compared

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Can current syntactic understanding provide any new insights into the problem that certain constructions typically distribute differently across languages? For example, in quite a few languages, such as Japanese, Russian, Hindi, Turkish, and Spanish, 'potentiality' or 'ability' is commonly expressed by the passive morpheme (see Shibatani 1985, Kazenin 2001). In other languages like English, on the other hand, it is expressed by a distinctive potential morpheme, and its distribution is much more restricted compared to that of the former type of languages. What underlies this crosslinguistic distributional differences? We pursue this question by comparing Japanese potential *-(rar)e* constructions with English potential *-able* constructions:

(1)  Kono  hon-ga      yom-e-ru.
     this  book-NOM   read-(RAR)E-PRES    *'This book is readable.'*

We will show how particular distributional differences fall out from the syntactic derivation, where the specific lexical properties of the atoms ('LI's) that the constructions are built out of, interacts with very general, independently motivated principles. Crucial for our demonstration are the following assumptions: (i) syntax is decompositional and strictly derivational, (ii) 'LI's−the atoms of syntactic structures−are tiny and can be phonologically silent, (iii) a first merged complement cannot remerge with the head (Kayne 2005, Abels 2003).

**The basic problem:** In addition to canonical verbal passives, Japanese passive voice *-rare* occurs in contexts like (1) and (2), where it gives rise to a modal potential reading.

(2)  John-ga  sasimi-o     tabe-**rare**-ru.
     John-NOM  raw.fish-ACC  eat-RARE-PRES      *'John is able to eat raw fish.'*

(1), with theme being a subject, translates into English *'-able'* passives containing a 'weak' (i.e. bound) adjective *-able*, but (2) does not (*John is eatable (raw fish)*) with *John* the agent. Instead, the English counterpart of (2) must resort to a 'strong' adjective or a different modal (i.e. *John {is able to/can} eat (fish)*). Thus, though both *-(rar)e* and *-able* occur in the same canonical modal passives, the distribution of *-(rar)e* potentials is much wider than that of the 'weak' *-able* potentials. The question is how to understand this distributional difference. The answer we pursue is that it reduces to the different lexicalization patterns of the two languages.

**Proposal:** The idea is that 'weak' potential constructions consist of two heads−one responsible for passivization and the other responsible for the modality interpretation, but not both of the heads need to be lexically realized. As evidenced by the appearance of *-rare* in canonical passives, Japanese lexicalizes the passive head Voice in the potential construction, while the modality head MOD remains silent. Conversely, English *-able* passives visibly spell out Mod, but contain a silent passive VOICE. We will show how this difference in lexicalization patterns ultimately leads to convergence of more merge configurations in Japanese than in English.

**Japanese *-rare* potentials:** We motivate the following uniform lexical properties of Japanese *-rare*. *Rare* is bound: it has an EPP[+V] feature that attracts a VP. Assuming, with Abels (2003) and Kayne (2005), that an immediate complement cannot second merge with *-rare*, the only road to convergence is to strand the *v*P and move the complement of *v* (i.e. VP), satisfying its lexical properties under second merge. This yields Collins' (2005) smuggling analysis for the canonical passive: [ [$_{VP}$ DP V ]$_i$ [ [$_{vP}$ DP ~~VP~~$_i$ *v*] *rare*] ]. VP movement smuggles the internal DP over the external one, bringing the internal DP closest to the nominative *-ga* position. Support for this proposal comes from the distribution of *-rare*. Namely, *-rare* cannot combine with simple unergative verbs in the passive. (Impersonal passives are impossible in Japanese.)

(3)  *John-ga    (Mary-ni) {hatarak/oyog/hashi} -**rare**-ta.
      John-NOM Mary-DAT work/swim/run        -RARE-PST
      Int. *'John was {worked/swum/run} (by Mary).'*

Once we assume that simple unergatives combine a lexical root with *v*, lacking the VP shell, the distribution is exactly what we expect. The derivation fails since these verbs do not have a lower VP layer that could satisfy the EPP[+V] of *-rare*. The EPP feature of *-rare* in effect forces the presence of at least two VP shells, with the lower shell containing a verb. This also means that an unergative could combine with *-rare* as long as it is not a direct complement of Voice but embedded under another verbal layer. The prediction is borne out in potential contexts.

**Japanese Potentials contain a silent MOD:** Though a canonical passive is unavailable for simple unergatives like *hatara-ku* 'work,' *oyog-u* 'swim,' *hashir-u* 'run,' *-rare* can in fact combine with such verbs. The combination obligatorily gives rise to an ability reading, however.

(4)  John-ga {hatarak/ oyog/ hashir}- **(rar)e**-ru.
      Int. *'John is able to {work/swim/run}.'* **John is {worked/swum/run}.'*

This follows immediately if the Japanese potential construction not only contains *-rare*, but also a silent modality head MOD, responsible for the ability meaning. Crucially the merge order must be [*-rare*>MOD>*v*] in cases like (2) or (4); MOD strands, and its complement−the *v*P−undergoes second merge to satisfy the EPP[+V] of *-rare*. 'John' subsequently extracts from the *v*P and moves to the nominative *-ga* position, resulting in agentive potentials. In contrast, potential passives like (1) must involve the merger of [MOD>rare>*v*>V] (as in the English *'can be read'*). Therefore, *-rare* potentials in (1) and (4) show that two different merge orders are available with respect to Japanese potentials. Naturally, the unavailability of agentive potentials like (2) or (4) in English suggests the lack of merge order [Voice>Mod>*v*] *'*John is sleepable.'* We could make this follow by encoding the requirement of a passive Voice complement into the lexical entry of bound *-able*. The important question is, however, whether this crosslinguistic difference can be derived, rather than just stipulated.

**Lexicalization pattern interacting with Phase** As stated earlier, Japanese potentials visibly spell out Voice (*-rare*) but contain a silent MOD. Conversely, English *-able* passives visibly spell out Mod, but contain a silent passive VOICE. We say that this difference in lexicalization patterns in the two languages is indeed responsible for the difference in merge order availability. Unlike silent MOD in Japanese, English *-able* is 'bound,' which we encode as EPP[+V]. The availability of [Mod>Voice>*v*>V] in both languages means that lexicalization of *-rare* or of *-able* does not matter for that merge order (*The book is readable (1)*). In this derivation, VP is attracted to Voice, stranding *v*, and subsequently to Mod, satisfying the EPP[+V] of *-able*. On the other hand, [VOICE>*able*>v>V] fails to converge in English. Why? If Voice is a phase head (Collins 2005), the bound morpheme property of *-able* must be satisfied in the same spell-out domain as *-able*, i.e. complement of Voice. This will freeze the VP to the left of *-able* and leave the EPP [+V] property of Voice unchecked, resulting in blocking internal merge of the theme to the nominative *-ga* position. The syntax simply does not allow for any other derivational path. Under the current proposal, the difference between potential constructions in Japanese and English resides not in structural make-up, but in different lexicalization patterns. This illustrates a more general research program, which seeks to derive distributional differences in construction types from the barest possible ingredients: what is pronounced (and bound) and what is silent. The syntactic derivations restrict what distributions can emerge to those that converge. This view is superior to an alternative one which simply stipulates these properties in the lexical entry.

**References:** *Abels, K. (2003) Successive cyclicity, anti-locality, & adposition stranding, UConn. Kayne, R. (2005) Movement & silence. OUP. Collins, C. (2005) A smuggling approach to the passive in English. Syntax 8, 81-120.*

# Acoustic correlates of articulation-based distinctive features in perception:
## Evidence from Korean

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The present study is concerned with the direct relationship of articulation-based phonological distinctive features, through their acoustic correlates, to perception, based on recent articulatory, acoustic and perception experiments on the three-way laryngeal contrast in Korean consonants.

The recent MRI studies (Kim, et al. 2005, 2010a, 2011) have shown that, in parallel to glottal position (or height), lip closure or linguo-palatal contact/constriction, pharyngeal width and tongue movement show the same variation in the order of lenis < aspirated (<) fortis consonants with the latter two series being longer than the former in Korean. Based on these findings, Kim, et al. (2010a, 2011) have proposed that not only glottal position (or height) but also lip closure or linguo-palatal contact/constriction, pharyngeal width and tongue movement are incorporated into the feature [tense] and that the feature is defined as the tensing of both the primary articulator (lips, tongue blade or dorsum) and the vocal folds in Korean consonants. The feature [tense] in Kim, et al. (2010a, 2011) is newly modified from the traditional feature [tense] in Jakobson, Fant and Halle (1952), Jakobson and Halle (1956) and C.-W. Kim (1965), according to whom the tension of the overall vocal tract is incorporated into the feature [tense]. In addition to the tensing of both the primary articulator and the vocal folds, Kim, et al. (2005, 2010a, 2011) have found the other independent parameter of glottal opening in the production of Korean consonants, in that the glottis opens from small to large in the order lenis (<) fortis < aspirated consonants in both word-initial and word-medial positions. This has led to the proposal that the parameter of glottal opening is incorporated into the feature [spread glottis] in line with Halle and Stevens (1971). Thus, aspirated and fortis consonants are specified as [+tense] and lenis as [-tense] in terms of the tensing of the primary articulator and the vocal folds, and aspirated consonants as [+s.g.] and lenis and fortis as [-s.g.] in terms of glottal opening, as shown in (1). The acoustic correlate of the feature [s.g.] is aspiration or Voice Onset Time (VOT) (i.e., the time between the release of a consonant and the onset of voicing in a following vowel), in that aspirated consonants, whose glottal opening is larger than lenis and fortis ones, are expected to have longer VOT than the other series in both word-initial and word-medial positions in Korean. The acoustic and aerodynamic correlates of the feature [tense] are oral closure or constriction duration, F0 and intraoral air pressure (Kim, et al. 2010b).

(1) The laryngeal feature specification of Korean consonants (Kim, et al. 2005 2010a, 2011)

|                   | lenis | aspirated | fortis |
| ----------------- | ----- | --------- | ------ |
| [tense]           | -     | +         | +      |
| [spread glottis]  | -     | +         | -      |

The acoustic correlates of the articulation-based laryngeal features [tense] and [s.g.] have been found to play a role in Korean adaptation of English and French words and also in Korean speakers' perception of Japanese voiced and voiceless plosives. First, the Korean adaptation of the English and French [s] shows that the L2 [s] is borrowed as either /s/ or /s'/ under the two conditions: (a) the single fricative [s] is borrowed as the fortis /s'/ and (b) the [s] in consonant clusters as the lenis /s/ into Korean, as in (2). Phonetic studies of the English and French [s] report that oral constriction duration is shorter in [s] in consonant clusters than in the single [s]

(Klatt1974 for English; O'Shaughnessy 1981 for French). In Korean, the fortis fricative /s'/ is longer in constriction duration than its lenis /s/ both word-initially and -medially (Kim, et al. 2010b, 2011; Kim and Park 2011), and the difference in constriction duration between the two types of fricatives is perceived distinctively by Korean speakers in some recent perception studies (S. Kim1999; Lee and Iverson 2006).  Given the phonetic and perception studies as well as the laryngeal feature [±tense], we suggest in line with H. Kim (2009) that the subphonemic constriction duration difference in the English and French [s] is interpreted in Korean adaptation in terms of the feature [±tense].  Therefore, the long duration of the single [s] in English and French is parsed for a cue to the [+tense] fricative /s'/, and the short one of [s] in consonant cluster as a cue to the [-tense] fricative /s/.

(2)  Korean treatment of the English and French [s]

a.  the single [s] into the fortis /s'/

| | i.   English words | Korean adapted forms |
|---|---|---|
| | salad | s'æl.lʌ.tɨ |
| | tissue | tʰi.s'ju |
| | bus | pʌ.s'ɨ |
| | ii.  French words | Korean adapted forms |
| | Sartre | s'a.li.tʰi.lɨ |
| | Essentiel | ɛ.s'aŋ.s'i.ɛl |
| | Provence | pʰɨ.lo.paŋ.s'ɨ |

b. the [s] in consonant clusters into the lenis /s/

| English words | Korean adapted forms |
|---|---|
| sky | sɨ.kʰa.i |
| disco | ti.sɨ.kʰo |
| test | tʰɛ.sɨ.tʰɨ |
| French words | Korean adapted forms |
| Strasbourg | sɨ.tʰɨ.la.sɨ.pu.li.kɨ |
| Pasteur | pʰa.sɨ.tʰwɛ.li |
| Jospin | tso.sɨ.pʰɛŋ |

Second, the Korean treatment of the voicing contrast in Japanese plosives (H. Kim 2008) provides further evidence for articulation-based distinctive features via their acoustic correlates in perception.  In a recent perception experiment (H. Kim 2013) where 160 Korean speakers participated, Japanese voiceless plosives in word-medial position were mostly perceived as either aspirated or fortis in free variation, and voiced ones as lenis, as shown in (3).  This suggests that the difference in closure duration between Japanese voiced and voiceless plosives is parsed for cues to the Korean feature [±tense].  Thus, long closure duration of word-medial Japanese voiceless plosives is categorized as either aspirated or fortis ([+tense]), and short closure duration of Japanese voiced plosives as lenis ([-tense]).

(3)  Korean treatment of word-medial Japanese (a) voiceless and (b) voiced plosives

| | Japanese words | Korean adapted forms | |
|---|---|---|---|
| a. | [kjoo.to] | kjo.t'o ~ kjo.tʰo | 'Kyoto' |
| | [too.kjoo] | to.k'jo ~ to.kʰjo | 'Tokyo' |
| b. | [ka.bu.ki] | ka.pu.k'i ~ ka.pu.kʰi | 'Kabuki play' |
| | [ha.ne.da] | ha.nɛ.ta | 'Haneda (Airport)' |
| | [ta.ma.ne.gi] | ta.ma.nɛ.ki | 'onion' |

Third, the same perception experiment (H. Kim 2013) has also shown that the difference in VOT between word-initial Japanese voiced and voiceless plosives is parsed for cues to the Korean feature [s.g.] with the secondary role of F0 in terms of the feature [tense]: Japanese voiceless plosives were perceived as aspirated ([+s.g., +tense]) and voiced ones as lenis.

**Selected references**

Kim, H., Maeda, S., Honda, K., 2010a. Invariant articulatory bases of the features [tense] and [spread glottis] in Korean: New stroboscopic cine-MRI data. *Journal of Phonetics* 38, 90-108.

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LOW SENTENCE STRUCTURE IN FRENCH
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**0. Intro.** In this talk we will provide a new 'low' analysis for verb - nominal subject (VS) word order in French (1). We will argue against Kayne and Pollock's (2001) (K&P) 'high' analysis, in which the postverbal S is in a high left-peripheral position, and IP is moved pass it through remnant movement.

(1)    *l' homme à qui a téléphoné <u>ton ami</u>*
        lit. The man to who have telephoned your friend (K&P 2001: 107)

**1. The postverbal S is not in Rizzi's (1997) left periphery. 1.1.** From the fact that indefinites as *quelqu'un* appear neither in a left-dislocated (2a) nor in postverbal S position (2b), K&P conclude that postverbal Ss are in the same left-peripheral position as left-dislocated constituents.

(2)    a.    * <u>*Quelqu'un*</u>*, il mangera ce gâteau.*        lit. Someone, he will eat that cake.
        b.    * *Quel gâteau a mangé* <u>*quelqu'un*</u>*?*        lit. Which cake has eaten someone?

We will show that the ungrammaticality of (2b) does not reduce to that of (2a), but is due to an independent constraint on postverbal Ss in interrogatives. This is corroborated by the fact that such indefinites are attested in other contexts for VS, e.g. relatives (3), and that some types of constituents occur in postverbal S position (4), but not in a left-dislocated position (5).

(3)    *L'air que fredonnait <u>quelqu'un</u> m'a soudain rappelé mon enfance.*
        lit. The tune that was humming a passer-by reminded me of my youth. (Kampers-Manhe 2004)

(4)    *... quand s'affrontaient <u>différentes milices</u>, il n'y avait plus de loi ni d'ordre.*
        lit. .. when clashed different militias, there not was no longer law nor order. (*Le Monde*)

(5)    * <u>*Différentes milices*</u>*, elles s'affrontaient…* lit. Different militias, they clashed …

**1.2.** Since standard cases of VS (1a,3,4) do not have the contrastive/corrective intonation and interpretation typically associated with the left-peripheral Focus position (Rizzi 1997, Kiss 1998, Belletti 2004), there is no reason to assume that VS involves a left-peripheral Focus position. **2. The verb phrase does not undergo remnant movement.** The fact that the postverbal S in SI can be followed by other complements (6), is a further indication that no remnant movement of TP took place (see Belletti 2004 for similar arguments for Italian VS), together with the fact that quantifiers do not float in VS (see §3.3.).

(6)    a.    *le livre que veut conseiller <u>mon professeur</u> aux étudiants* (Marandin 2001)
                lit. the book that wants to recommend my professor to the students
        b.    *Que dira <u>Pierre</u> à Micheline?* lit. What will say Peter to Micheline? (Korzen 1983)

**3. Proposal.** We will argue that the postverbal S in French VS is low in the sentence structure: it is not in its original VP-internal position (which would also be incompatible with a cartographic approach), and not in the preverbal subject position, but in an IP-internal Focus or Topic position (Cecchetto 1999, Belletti 2004). The fact that verbal elements such as participles precede the postverbal subject, will be accounted for by a smuggling approach similar to what is advocated for in Collins (2005).

**Arguments: 3.1.** Just as in Italian (Belletti 2001/2004, Cardinaletti 2001), the postverbal S follows low adverbs (Cinque 1999) (7), which is an indication of its IP-internal position:

(7)    *la tâche qu'ont <u>bien</u> fait les étudiants <u>*bien</u>*    [ex. to be read with neutral intonation]
        lit. the task that have well done the students well

**3.2.** The postverbal S did not move through one of the preverbal subject positions advocated for in Cardinaletti (2004) (SpecSubjP -SpecEPPP - SpecAgrSP*). The fact that VS in French can never be constructed as the answer (A) to a question (Q) as in (8), shows that the "subject-of-predicate feature" has not been checked in preverbal S position (SpecSubj):

(8)    Q:    # *Que sais-tu à propos des grosses araignées?*
                'What do you know about big spiders?'
        A:    *En septembre apparaissent les grosses araignées.* (Simon, *Frantext* corpus)
                lit. In September appear the big spiders.

Moreover, if postverbal Ss moved through the preverbal S position, then the checking of phi-features (presumably in SpecAgrP) should be the same as in SV. However, the S in VS can only be $3^{rd}$ (but not $2^{nd}$) person singular or plural (9a), in contrast with the S in SV word order (9b):

(9)    a.    VS    * *L'aventure que vivez <u>Marie et toi</u> fait scandale*.
                        lit. The adventure that live$_{2p}$ Mary and you$_{2p}$ is scandalous.
        b.    SV    *L'aventure que <u>Marie et toi</u> vivez fait scandale*.

This is naturally accounted for if the subject stays in a low position (and did not move through the preverbal position), checks its phi-features against those of AgrS via covert movement (Chomsky 1995) or long-distance Agree (Chomsky 2000, 2001) (cf. Ledgeway 2010: 270) and AgrSP is the place where number features are checked (whereas person-features are checked in SubjP), see Shlonsky (2000).

**3.3.** It is well known that the quantifier *tous* can float in SV (10a), but not in VS (10b) (Sportiche 1988, Déprez 1988/1990, Koopman & Sportiche 1991).

(10)    a.    *L'homme à qui <u>les linguistes</u> ont <u>tous</u> parlé, c'est Jean.*
                    lit. The man to whom the linguists have all spoken, it is John.
        b.    * *L'homme à qui ont <u>tous</u> parlé <u>les linguistes</u>, c'est Jean* (Hulk & Pollock 2001: 8)
                    lit. the man to whom have all spoken the linguists, it is John
        c.    * [$_{CP}$ *à qui* [$_{I°}$ *ont* [$_{AdvP}$ *tous* [*parlé* [$_{SpecFocP}$ <u>les linguistes</u> [$_{SpecVP}$ t ]]]]]]

We will argue in favor of Doetjes' (1992) analysis, according to which these elements are in an adverbial position and bind a trace in argument position. Given this, and assuming standard Relativized Minimality, the ungrammaticality of (10b) is predicted: in (10c), the binding relation between *tous* in AdvP and the trace in SpecVP is blocked by the intervening *les linguistes*, which is in a low IP-internal Foc-position.

**3.4. The interpretation of the postverbal S and the distribution of VS in main clauses**. **3.4.1.** It is well-known that VS in French, except in cases of 'elaborative VS' (Marandin 2001), must be licensed by the presence of some type of preverbal element. We will first show that this element must either be **(i)** a spatio-temporal topic, as in locative inversion (8A), or a **(ii)** wh-element (11a) or preposed contrastive focus (12a). The distinction between these two sets of contexts is independently confirmed by the fact that VS alternates with SV in the contexts in (i), but *not* in the contexts in (ii), as shown in (11b) and (12b).

(11)    a.    *Quand sont venus <u>Pierre et Paul</u>?*    lit. When came Peter and Paul ?
        b.    * *Quand <u>Pierre et Paul</u> sont venus?*    lit. When Peter and Paul came ?

(12)    a.    *Il [Alexandre] écrivait avec une sorte de distraction concentrée, comme on crayonne sur le bloc du téléphone: on écoute de moins en moins et c'est le dessin qui s'impose. AINSI écrivait <u>Alexandre</u> (...)* (Pennac, *Frantext* corpus)
        b.    [same context] … * *AINSI <u>Alexandre</u> écrivait*.

**3.4.2.** On the basis of question-answer tests, we will show that the postverbal S in the (i)-contexts has a (non-contrastive) focus interpretation (13), whereas the postverbal S in the (ii)-contexts is not the focus of the sentence (14b) but part of the background of the sentence-initial focus (14a).

(13)    Q :- *Qu'est-ce qui apparaît en septembre ?*    lit. What appears in September?
        A:    - *En septembre apparaissent les grosses araignées*. (Simon, *Frantext* corpus)
                    lit. In September appear the big spiders.

(14)    [Question to be asked in the context in (12)]
        a.    Q : - *Comment écrivait Alexandre?*    lit. How did Alexander write?
                A: - *AINSI écrivait <u>Alexandre</u>*.                lit. SO/IN THIS WAY wrote Alexander.
        b.    Q: - *Qui écrivait ainsi?*                lit. Who wrote in this way?
                A: - # *AINSI écrivait <u>Alexandre</u>*.        lit. SO/IN THIS WAY wrote Alexander.

**3.4.3.** We will conclude from this that postverbal Ss in the (i)-contexts are in an IP-internal Focus position, whereas those in the (ii)-contexts are in an IP-internal Topic position.

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# Intraparadigmatic cyclic and roll-up derivations in the Old Norse reinforced demonstrative
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## 1. Background and data

The North and West branches of Germanic share a morphological innovation known as the reinforced demonstrative (RDem), usually glossed as 'this'. It was formed in Proto-Northwest Germanic by combining the distal demonstrative 'that' (Dem) with the particle *-si. The etymology of this particle is verbal, being derived from an imperative interjection 'look! see!' (cf. Gothic *saiƕ, sai*, Old High German *see, se*, ON *sé, se*; see the OED). This combination of Dem and *-si[1] is the historical basis for the different RDem paradigms we see attested in the daughter languages (Old Norse, Old English, Old Frisian, Old Saxon, Old High German). Typically, the evolution of RDem involved the emergence of a new stem, such as *þes-* or *þis-*, which was inflected with strong adjective endings (Haugen 1982: 100-1, EWAhd II: 611, 613).

This paper discusses the RDem paradigm of Old Norse (ON) (c. 1050-1300) in particular. It focuses on the internal syntax of the 24 forms in (1). The boxed forms in (1) display an RDem stem *þess-* plus regular strong adjective endings. The ON strong adjective endings (of the *n*-type class) are given in (2).

(1)     *Old Norse reinforced demonstrative paradigm*

|  | **F.SG** | **M.SG** | **N.SG** | **F.PL** | **M.PL** | **N.PL** |
|---|---|---|---|---|---|---|
| **NOM** | **þessi** | **þessi** | þetta | þess-ar | þess-ir | **þessi** |
| **ACC** | þess-a | þenna | þetta | þess-ar | þess-a | **þessi** |
| **GEN** | þess-ar | þessa | þessa | þess-a | þess-a | þess-a |
| **DAT** | þess-i | þess-um | þess-u | þess-um | þess-um | þess-um |

 (2)     *Old Norse strong adjective endings*

|  | **F.SG** | **M.SG** | **N.SG** | **F.PL** | **M.PL** | **N.PL** |
|---|---|---|---|---|---|---|
| **NOM** | -Ø | -r | -t | -ar | -ir | -Ø |
| **ACC** | -a | -n | -t | -ar | -a | -Ø |
| **GEN** | -rar | -s | -s | -ra | -ra | -ra |
| **DAT** | -ri | -um | -u | -um | -um | -um |

Note that initial *r* is missing in the endings of the F.GEN.SG, F.DAT.SG, and GEN.PL: *þess-ar* (< *þess-rar*), *þess-i* (< *þess-ri*), *þess-a* (< *þess-ra*). This is not surprising in the context of ON phonology: inflectional *r* was highly vulnerable to assimilation with *s* (e.g. *laus-r* 'loose-M.NOM.SG' > *lauss*).[2]

The non-boxed forms fall into two categories. The bolded forms in (1) all surface as *þessi* and do not overtly show their adjective endings: there is no adjectival *-r* visible in M.NOM.SG *þessi*, nor can we see adjectival *-Ø* in F.NOM.SG / N.NOM/ACC.PL *þessi*. The non-boxed, non-bolded forms, on the other hand, all show their adjective endings word-internally and in geminated form: M.ACC.SG *þe-nn-a* (ending *-n*), N.NOM/ACC.SG *þe-tt-a* (ending *-t*), and M/N.GEN.SG *þe-ss-a* (ending *-s*). These forms end with a morpheme *-a*, which is an additional reinforcer morpheme (a so-called 'secondary reinforcer') that arose in the North Germanic branch only (not in West Germanic).

## 2. Descriptive templates

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[1] This earliest stage in the development of RDem is attested in Runic Norse (c. 800-1050): F.NOM.SG **susi** (*súsi*) (< NWGmc *sō-si*), M.NOM.SG **saR:si** (*saʀsi*) / **sasi** (*sási*) (< NWGmc *sa-si*), M.ACC.SG **þansi** (*þansi*) (< NWGmc *þa-n-si*), N.ACC.SG **þatsi** (*þatsi*) (< NWGmc *þa-t-si*), M.DAT.SG **þaimsi** (*þæimsi*) (< NWGmc *þai-m-si*).

[2] It is also conceivable that this is deletion, meaning that the cluster *ssr* reduces to *ss*. I will not take a stand on whether this is assimilation or deletion, as nothing in my proposal hinges on this.

The basic structural template of the boxed forms may be thought of as *þess*-K (where '-K' means 'strong adjective ending'). Further decomposition is possible. The element *þe-* is the *i*-umlauted allomorph of the ON Dem stem *þa-* (cf. Dem forms N.NOM/ACC.SG **þa-t**, M.ACC.SG **þa-nn**, N.NOM/ACC.PL **þa-u**). There is reason to believe that the reinforcer component -*ss*- is responsible for this *i*-umlaut (consider for instance that -*ss*- ultimately comes from *-*si*, which is known to have conditioned *i*-umlaut; Nielsen 2000: 237, n.3). The reinforcer -*ss*- may therefore be represented instead as -*ss$^i$*-, where the 'floating' *i* induces *i*-umlaut.[3] Thus the template of the boxed forms is more precisely *þa-ss$^i$*-K (> *þe-ss*-K). Similarly, the non-boxed, non-bolded forms can be represented as *þa-nn$^i$-a* (> *þe-nn-a*), *þa-tt$^i$-a* (> *þe-tt-a*), and *þa-ss$^i$-a* (> *þe-ss-a*).

For the template of the bolded (*þessi*) forms, I will first need to discuss the phonology of floating *i* in ON. It will be seen that it is deleted in most environments, but surfaces word-finally (i.e. *þa-ss$^i$* > *þe-ssi*). The phonology of floating *i* will also provide us with a test for the position of -K in *þessi*. In the end, the three templates in (3) emerge from the RDem paradigm.

(3)　(a)　boxed forms:　　　*þa-*　-*ss$^i$*　-K　=> *þess-um*, *þess-u*, etc.
　　 (b)　bolded forms:　　　*þa-*　-K　-*ss$^i$*　=> *þessi*
　　 (c)　non-boxed/non-bolded:　*þa-*　-**KK$^i$**　-*a*　=> *þenna*, *þetta*, *þessa*

A final refinement we can make to (3) is to recognize that all three templates display gemination: gemination of -*s* in (a) and (b), and gemination of -K in (c); see (4).

(4)　(a)　boxed forms:　　　*þa-*　-*s*　-**C$^i$**　-**K**
　　 (b)　bolded forms:　　　*þa-*　-**K**　-*s*　-**C$^i$**
　　 (c)　non-boxed/non-bolded:　*þa-*　-**K**　-**C$^i$**　-*a*

Note that the reinforcers -*s* and -*a* are in complementary distribution: they never cooccur within the same RDem form. Thus I assume that -*s* and -*a* are two flavors of the same syntactic head.

## 3. Derivations: Cinque (2005) and the U20 perspective

In total, we have four basic ingredients in ON RDem: *þa-* (D), inflection (K), a consonant geminator -*C$^i$* (call this R$_1$), and the reinforcers -*s/-a* (call this R$_2$). There are 24 possible combinations of the four heads D, K, R$_1$, and R$_2$. Only one of these 24, however, can be the correct underlying functional sequence. I will systematically narrow down the 24 possible orders using a number of tests, the most important test being that the correct fseq must be able to derive the three templates in (4) by U20 rules, i.e. leftward movement only; only XPs move; only structures that contain NP may move (Cinque 2005). Once the correct fseq has been found, the precise derivations for (4a-c) are discussed: (4a) and (b) have 'cyclic'-type derivations, and (4c) has a 'roll-up' derivation. Interestingly, the lexicalization of R$_2$ as -*s* or -*a* seems to depend on whether the derivation is cyclic or roll-up. The ON RDem paradigm therefore provides support for Cinque's (2005) system.

I will also discuss why we only see three kinds of structures in the ON RDem paradigm, even though a full 13 structures should be syntactically derivable by U20 rules. I will show that in addition to syntactic constraints, there are morphological and phonological constraints at stake as well. Only three structures (the ones in (4)) survive all these constraints.

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[3] This move is meant to parallel Gibson & Ringen (2000), who posit that those morphemes in modern Icelandic which induce *y*-umlaut have a floating bundle of [+round, -back] features in their phonological structures.

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**Dependent Case and Object-Conditioned Differential Subject Marking**

   Within the Dependent Case model (Marantz 1991 *a.o.*), nominative-accusative and ergative-absolutive alignments are symmetrical. They are both *dependent cases*, whose realization is dependent on the presence of another nominal in a local domain. Baker &Vinokurova (B&V) (2010) show that dependent case theory can capture specificity-based Differential Object Marking (DOM). In Sakha, *specific* DPs occupy a higher structural position than non-specific DPs, they posit that only this higher position is within the domain of dependent case assignment. Given the symmetry of ergative and accusative cases, an obvious prediction is made: ergative-absolutive languages should exist in which ergative case is marked only on subjects of transitive clauses whose *objects* are specific. In this paper, I show that this prediction is confirmed by Niuean. Furthermore, I argue that commonly held analyses of ergative case as lexical case, assigned by $v^0$ (e.g. Woolford 1997, Legate 2008) are incapable of capturing object-conditioned Differential Subject Marking (DSM) providing further evidence that the Agree model of case assignment should be reconsidered.

   In Sakha (Turkic), accusative case is only realized on definite/specific direct objects:

(1) a. Erel kinige-**ni** atyylas-ta     b. Erel kinige atyylas-ta
   E. book-**ACC** bought       E. book bought
   'Erel bought the book.'       'Erel bought a book/books.'

Overt accusative-marking and specificity co-vary with the position of the direct object relative to VP-level adverbs indicating that definite/specific DPs are structurally higher:

(5) a. Masha salamaat-*(**y**) *turgennik* sie-te  b. Masha *turgennik* salamaat-(#**y**) sie-te
   M. porridge-**ACC** *quickly* ate    M. *quickly* porridge-**ACC** ate
   'Masha ate the porridge quickly.'   'Masha ate porridge quickly.'

B&V adopt an analysis of these facts in terms of short movement of the direct object outside of the VP, which allows the direct object to escape the scope of existential closure (following Diesing 1992). In the dependent case model, these facts are derived by B&V as follows: when movement of the direct object out of VP occurs, the direct object is brought into the same phase as the subject, but into a position that is c-commanded by the subject. This qualifies the direct object for accusative case assignment. If the direct object remains VP-internal, it is separate from the subject by the VP-level phase boundary. In this position, the conditions for dependent case assignment are not satisfied and accusative case is not assigned.

   As noted above, we predict the existence of ergative languages which behave like Sakha. Only definite/specific DPs, which have moved outside of the VP, will establish the requisite local c-command relation with the subject for ergative assignment. In other words, we expect to find languages where the case marking of the subject is conditioned by the specificity of the object. This prediction is borne out by Niuean (Oceanic). Case marking on the subject, interpretation of the object, and structural position of the object can be shown to co-vary. Niuean transitive clauses have two word orders – VSO or VOS. The difference can be attributed to the specificity of the object (Massam 2001). When the object is non-specific, it remains in the VP, and will front with the rest of the VP yielding VOS word order as in (3):

(3) a. ne inu *kofe* **a**  Sione    b. takafaga *ika* **a**  ia
   PST drink coffee **ABS** S.       hunt  fish **ABS** he
   'Sione drank coffee.'        'He is hunting fish.'

When the object is specific, it vacates the VP so that after VP-fronting, the direct object remains in a position structurally lower than the subject yielding VSO order.

(4) a. ne inu **e** Sione **e** *kofe*    b. takafaga e  ia **e** *tau ika*
   PST drink **ERG** S. **ABS** coffee     hunt   **ERG** he **ABS** PL fish
   'Sione drank the coffee.'      'He is hunting the fish.

Not only do the different word order patterns have ramifications for the interpretation of the object, but, the position of the direct objects affects the realization of ergative case on the

subject as predicted. When the direct object is VP-internal, ergative case cannot be realized on the subject, because the c-command relation between subject and object is not local. When the object shifts, the c-command relation between subject and object is local yielding dependent ergative case on the subject. The result provides confirmation of the Dependent Case model. Furthermore, I argue that the Agree model cannot capture the facts.

Within the Agree model of Case assignment, Woolford (2003 *et seq*.) and Legate (2008) *a.o.* posit that ergative case is lexical case assigned by $v^0$ to its external argument (EA). To capture the Niuean facts, an ABS=DEF analysis ties the specificity of the object to the lexical case assigned to the subject. Transitive $v^0$ not only assigns ergative case, but must Agree with the direct object to value its φ-features. If, following Massam (2001), non-specific nominals are NPs, they lack φ-feature and cannot be goals. In this scenario, the derivation does not converge – ensuring that ergative can *only* be assigned when the direct object is a definite DP. However, this assumption is contradictory to Legate's proposal. In her analysis of Niuean, $T^0$ never values its φ-features in transitive clauses. As Legate herself notes, positing two distinct versions of $T^0$ is "adequate, but unsatisfying". Instead, she posits that the derivation converges regardless of $T^0$'s ability to find an appropriate goal. It is quite contradictory to then conclude that in the same language $T^0$ can probe and fail, but $v^0$ cannot. Furthermore, Preminger (2011) provides convincing arguments that attempting to probe is sufficient for the derivation to converge. If φ-agreement can fail, then parameterizing $v^0$ cannot do the job. Either transitive or unergative $v^0$ should successfully Merge in (3-4) yielding variable case-marking on the subject regardless of the object's specificity.

Woolford (2013) posits that $v^0$ assigns ergative case to *all* EAs, but that this case is obscured when agreement between $T^0$ and the EA overwrites ergative with nominative. In this model, ergative is only realized in constructions which block nominative assignment to the subject. One such environment is when object shift places the direct object between the base-position of the subject and $T^0$ as in (5).

(5)    [$_{TP}$ $T^0$ DP-accusative [$_{vP}$ DP-ergative $v^0$ [$_{VP}$ $V^0$ ~~DP-acc~~]]]

In this position the already accusative-marked direct object will be a defective intervener blocking the assignment of structural nominative case to the subject. In this case lexical ergative case is realized on the subject. Problematic for this proposal is that, in Niuean, the subject appears to the left of the specific object. This suggests that the configuration in (5) is not the final state of the derivation. Rather, it appears that $T^0$ is able to probe past the case-marked direct object to trigger movement of the subject to Spec-TP. It is not clear why the object-shifted DP could act as a defective intervener for case-assignment, but not EPP. Furthermore, it is clear from Icelandic (an IP-V2 language; Rognvaldsson & Thraínsson 1989) that object shift does not place the direct object in a position above the subject. When the EA remains *in-situ*, shifted direct objects appear to their right.

(6) a.   í gær     las Jón bækurnar ekki          b.     *í gær    las  bækurnar Jón ekki
         yesterday read J.   the.books not                 yesterday read the.books J.   not
         'John didn't read books yesterday.'            ('John didn't read books yesterday')

Finally, (5) suggests that no language should have consistent ergative-marking. This is not the case, and (5) would need to be parameterized without clear independent motivation.

The nature of ergative and accusative case within Dependent Case theory naturally captures both object-conditioned DOM (Sakha) and DSM (Niuean). The Agree model, currently cannot capture object-conditioned DSM. At best, it must be significantly altered.

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# Focus intervention effects and the quantificational domain of focus operators
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**1 Introduction** A number of recent studies (Beck 2006, Cable 2010, Mayr 2013) suggest that the semantic composition of a *wh*-question is hampered when a *wh*-phrase comes in the scope of a focus operator (1), triggering focus intervention effects (FIEs). (All examples in this abstract come from Mandarin; see Beck 2006, Tomioka 2007, Yang 2012, a.o., for crosslinguistic data).

(1)  ?*Ta    zhi    rang    [Lee]$_F$  jian    shei?
      he    only    allow    Lee    meet    who
      'Who is the person x such that he allows *only Lee* to meet x?'

However, Aoun & Li (1993) report that a focus operator can associate with an in-situ *wh*-phrase in its scope without triggering FIEs, as shown in (2) (also Eilam 2011, Xie to appear). Systematic association of focus operators and *wh*-phrases (FWHA) can be found in other languages, including Turkish and Bengali.

(2)  Ta    zhi    rang    shei  jian    Lee?
     he    only    allow    who  meet    Lee
     'Who is the person x such that he allows *only x* to meet Lee?'

Based on the contrast between FIEs and FWHA, we propose that FIEs are due to *the inappropriate quantificational domain of a focus operator*, rather than the direct interference of a focus operator with the interpretation of a *wh*-question. We show that this proposal not only connects FWHA and FIEs, but also extends them to multiple *wh*-questions and contrastive topic constructions, enriching the empirical paradigm of FIEs.

**2 Proposal** We propose that FIEs arise iff a focus operator scopes over a constituent that provides a set of sets as the quantificational domain for the focus operator.

2.1 Framework In Rooth's (1985, 1992) focus semantics, a sentence has two values—an ordinary value and a focus value. Kratzer (1991) proposes a designated assignment function $h$ to derive focus values. Specifically, a focused phrase has an ordinary value (3a), and bears a focus index evoking a secondary value, i.e., a distinguished variable by the application of $h$ (3b). The focus value of the focused phrase corresponds to the set of secondary values that is derived via quantifying over $h$ (3c).

(3)  a. $[\![[Lee]_{F1}]\!]^g = Lee$;   b. $[\![[Lee]_{F1}]\!]^{g,h} = h(1)$;   c. $[\![[Lee]_{F1}]\!]^f = \{[\![[Lee]_{F1}]\!]^{g,h} \mid h \in H\}$

Adopting Hamblin's (1973) semantics, we assume that a *wh*-phrase does not bear a focus index but denotes a set of alternatives as its ordinary value (4a). Due to the lack of the focus index, the secondary value of a *wh*-phrase is equal to its ordinary value (4b).

(4)  a. $[\![who]\!]^g = \{x_{<e>} \mid x \text{ is a person}\}$;   b. $[\![who]\!]^{g,h} = [\![who]\!]^g$

2.2 Deriving FIEs The LF structure of (1) is (5) (the English gloss is used throughout for simplicity). Following the flexible functional application (FFA) (Hagstrom 1998), *who* is composed in a pointwise manner. As a result, the ordinary value of VP1 is a set of properties (6a). The secondary value of VP1 is (6b), in which the assignment function $h$ is activated to interpret [Lee]$_{F1}$ as a distinguished variable. Therefore, the focus value of VP1 is (6c), which is a set of sets of properties.

(5)  [$_{CP}$ [$_{IP}$ he [$_{VP2}$ only [$_{VP1}$ allow [Lee]$_{F1}$ meet who]]]]

(6)  a.  $[\![VP1]\!]^g = \{\lambda y.\ y \text{ allows Lee to meet } x \mid x \in \{John, Peter, \ldots\}\}$
    b.  $[\![VP1]\!]^{g,h} = \{\lambda y.\ y \text{ allows } h(1) \text{ to meet } x \mid x \in \{John, Peter, \ldots\}\}$
    c.  $[\![VP1]\!]^f = \{\{\lambda y.\ y \text{ allows } h(1) \text{ to meet } x \mid x \in \{John, Peter, \ldots\}\} \mid h \in H\}$

According to Kratzer (1991), the focus value of a given constituent provides the quantificational domain for a focus operator. In (6), therefore, *only* takes $[\![VP1]\!]^f$ as its quantificational domain. At the level of the ordinary value, the composition of *only* with VP1 is facilitated by the FFA, which results in a new set (7).

(7)  $[\![VP2]\!]^g = [\![only\ VP1]\!]^g$

$= \{\lambda y. \forall P \in \llbracket \text{VP1} \rrbracket^f [P(y) \to P(y) = y \text{ allows } x \text{ to meet Lee}] \mid x \in \{\text{John, Peter, ...}\}\}$

$= \begin{cases} \lambda y. \forall P \in \llbracket \text{VP1} \rrbracket^f [P(y) \to P(y) = y \text{ allows John to meet Lee}], \\ \lambda y. \forall P \in \llbracket \text{VP1} \rrbracket^f [P(y) \to P(y) = y \text{ allows Peter to meet Lee}], ... \end{cases}$

Note that the quantificational domain of *only* is inappropriate. In (7), *only* should quantify over properties, but *its quantificational domain is a set of sets of properties*. The composition is illicit, giving rise to FIEs.

**2.3 Deriving FWHA** The LF structure of (2) is (8). Since no focused phrase is contained in the scope of *only*, the secondary value of VP1 is equivalent to its ordinary value, i.e., a set of properties (9).

(8) [CP [IP he [VP2 only [VP1 allow who meet Lee]]]]

(9) $\llbracket \text{VP1} \rrbracket^g = \llbracket \text{VP1} \rrbracket^{g,h} = \{\lambda y. \, y \text{ allows } x \text{ to meet Lee} \mid x \in \{\text{John, Peter, ...}\}\}$

Although $h$ is not used to compute VP1, $\llbracket \text{VP1} \rrbracket^{g,h}$ still denotes a set of alternatives by virtue of containing *who*. *Only* can directly take $\llbracket \text{VP1} \rrbracket^{g,h}$ as its quantificational domain. At the level of the ordinary value, *only* is applied to each member of the set in (9), resulting in a new set (10).

(10) $\llbracket \text{VP2} \rrbracket^g = \llbracket only \text{ VP1} \rrbracket^g$

$= \{\lambda y. \forall P \in \llbracket \text{VP1} \rrbracket^{g,h} [P(y) \to P(y) = y \text{ allows } x \text{ to meet Lee}] \mid x \in \{\text{John, Peter, ...}\}\}$

$= \begin{cases} \lambda y. \forall P \in \llbracket \text{VP1} \rrbracket^{g,h} [P(y) \to P(y) = y \text{ allows John to meet Lee}], \\ \lambda y. \forall P \in \llbracket \text{VP1} \rrbracket^{g,h} [P(y) \to P(y) = y \text{ allows Peter to meet Lee}], ... \end{cases}$

The quantificational domain of *only* is a set of properties, hence the composition is successful.

**3 Multiple *wh*-phrases** Our analysis predicts that FIEs do not arise when a focus operator scopes over multiple *wh*-phrases. Consider (11).

(11) Ta zhi [VP song-le    shei shenme    shu]?
     he only      send-Asp   who what       book
     'Who is the person x and what is the book y such that he *only* sent x y?'

Our account views (11) as a subcase of FWHA. Since the two *wh*-phrases denote sets of alternatives at the ordinary semantic level, the two sets can interact with each other. According to the FFA, such interaction yields a set rather than a set of sets, resulting in the single-pair interpretation (see Hagstrom 1998, Erkardt 2007). The denotation of the VP in (11) is (12), i.e. a set of properties. Hence, $\llbracket \text{VP} \rrbracket^{g,h}$ in (12) can serve as an appropriate quantificational domain for *only*.

(12) $\llbracket \text{VP} \rrbracket^g = \llbracket \text{VP} \rrbracket^{g,h} = \{\text{sent } x \, y \mid x \in \llbracket \text{who} \rrbracket^g, y \in \llbracket \text{what book} \rrbracket^g\}$

**4 Contrastive topic (CT)** Our analysis also predicts that FIEs could appear in a wider context than *wh*-questions. This is borne out by CT constructions in Mandarin. Constant (2010, 2011) argues that the focus value of a CT construction denotes a set of sets. In (13a), for example, the second clause denotes a set of sets of propositions as its focus value, as in (13b).

(13) a. Mama meitian hen wan cai hui   jia, [S [Baba]CT ne, gancui jiu [bu   hui   jia]F].
       mother everyday very late just return home father     NE simply just not return home
       'Every day, mom comes home very late, and Dad does not even come home at all.'

     b. $\llbracket S \rrbracket^f = \begin{cases} \{\text{Mom comes home late, Mom does not come home, ...}\} \\ \{\text{Dad comes home late, Dad does not come home, ...}\} \end{cases}$

Suppose that a focus operator scopes over the CT construction, it should take the set of sets in (13b) as its domain and trigger FIEs. (14) shows that this is indeed an illicit composition.

(14) *Zhiyou [S [baba]    ne, gancui jiu [bu     hui     jia]F]
      only      father    NE simply just not     return   home
      'Only Dad NE, does not even come back at all.'

**5 Summary and implications** We have developed a novel compositional semantics for FIEs, which enables us to reconcile the conflict between FIEs and FWHA, and envision a fuller picture of FIEs beyond *wh*-questions. Our analysis implies that *wh*-phrases do not bear any semantic focus feature (see also Ishihara 2003, Eckardt 2007), hence differing fundamentally from non-*wh* focused phrases.

# Why nominative is special: stem-allomorphy and case structures

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Finnish nouns like *ihminen* 'person' show a stem alternation between *-nen* in the Nom and *-s(e)-* in all other cases, e.g. Gen *ihmi-se-n*. Unlike with other stem alternations (e.g. the 'consonant gradation' in Nom *katu* 'street' vs. Gen *kadu-n*), the conditioning with *-nen* can't be stated phonologically, but must make reference to case categories. Such alternations are found in many languages, but with an apparent restriction: in Nom-Acc languages, case-sensitive stem allomorphy may distinguish Nom from all other cases, but may **not** distinguish among any of the other cases. Where non-Nom cases differ in stem shape, this seems to be triggered by the phonology of the endings, not their category. So *katu* also has Part *katu-a*, because the stem weakening is triggered in closed syllables, but with *ihminen*, all non-Nom cases have the stem *ihmi-s(e)-*, including the Part *ihmi-s-tä* (Table 1). Why should Nom be special? One possibility is that the alternations are sensitive not to case per se, but to the presence of a suffix, and Nom tends strongly to endinglessness across languages. While this may be at work in some examples, it cannot be the whole story. First, in languages like Icelandic and Latin, Nom **is** marked by a suffix, yet is still singled out for special stem treatment. E.g. Icelandic *mað-ur* 'man' has the Nom ending *-ur* but has the irregular stem *mað-*, distinct from the *mann-* found in the other case forms (Table 2). Similarly, Latin *senex* 'old (man)' has the regular overt Nom ending *-s* for the 3rd declension added to a stem *senec-*, distinct from the stem *sen-* found in all other case forms (Table 3). Second, in Tamil, Noms are endingless, but so is one form of the Gen, yet with nouns that show a case-based stem alternation, the endingless Gen patterns with the non-Nom cases. E.g. nouns like *maram* 'tree' have a Nom stem in *-m*, vs. *-tt-* elsewhere (Table 4). The endingless Gen is crucially *mara-tt-∅*, thus the alternation must be conditioned by case, not by the mere presence of any ending. Another possibility is that Nom, as the least marked case category, is simply most susceptible to irregularity, i.e. this is part of the often observed pattern that irregularity is most common in the most frequent forms. Indeed, such a state of affairs might be expected as the outcome of sound changes mangling the stems of Nom forms, which due to their frequent endinglessness are often in absolute final position. Changes of this sort (in Proto-Indo-European) are e.g. responsible for the alternation found in Latin 'man', Nom *hom-ō*, Gen *hom-in-is*. Such an explanation would lead us to expect a tendency, i.e. that the Nom would be most frequently distinguished, but that the other cases would sometimes have irregular stems as well. However, a survey of all noun declension patterns in Finnish, Icelandic, Latin and Tamil (and a preliminary survey of patterns in Russian) has turned up a series of alternations that distinguish Nom from all others, but **no** other kinds of case-based stem irregularity. In each language this pattern could be accidental, but its replication across all four, representing three families and both agglutinative and fusional types, suggests something more systematic. If this stands up as a solid cross-linguistic generalization, it is analogous to what Bobaljik (2012) uncovers for stem suppletion in comparatives and superlatives, and can tell us something about the nature and structure of case categories: **some** case distinctions can trigger stem allomorphy, but others can't. I propose that we can make sense of this if we adopt Caha (2009)'s proposal that the cases correspond to nested structures, such that Acc is Nom plus a piece of structure, Gen is Acc plus a further piece etc. (Tree 1). Thus all cases but Nom have the head labeled B in common, and it is the presence of B that can trigger non-Nom stem forms. So far, this parallels Bobaljik's account of the fact that comparative and superlative suppletion always go together, in terms of the superlative being built on top of the comparative (Tree (2)). But we must go one step further, because while Bobaljik found examples with distinct suppletive stems in comparative and superlative (Latin *bonus* ∼ *melior* ∼ *optimus*), I have found no such patterns for case, e.g. with distinct stems for Nom, Acc and Gen. I.e.

stem allomorphy is sensitive to whatever distinguishes Acc (and all other cases) from Nom, but not to whatever distinguishes Gen from Acc etc. I propose that this is a locality effect, due to an Embick (2010) style cyclic node between B and C in Tree (1). When the form of the stem is determined, B is visible, but C (and the others) is not. This can be derived if we assume that Nom actually involves the **lack** of a case head (overt 'Nom' suffixes must thus realize something else, perhaps 'dissociated morphemes', Embick and Noyer, 2001) so that B is the first head above the position where stem exponence is realized, and that there is a phase boundary above B, corresponding to that proposed for PP by e.g. Abels (2003); Řezáč (2008) on syntactic grounds. We thus have converging morphological and syntactic evidence for cross-modular locality domains. The only exceptions that I have found are nouns like Latin *iter* 'journey', where the split falls between Nom and Acc (both *it-er*) and all other cases (Table 3). However, this occurs only when Acc is fully syncretic with Nom (i.e. not just sharing a stem shape, this applies also to Russian nouns like *mat'* 'mother', stem *mater-* outside the Nom/Acc). Note that this favors accounts of such syncretisms involving the underlying features as opposed to just their surface realization. That is, the 'Acc' forms of nouns like *iter* must be structurally Nom, at least at the stage of the derivation when stem allomorphy is determined, rather than being structurally Acc, but realized by an underspecified Nom/Acc exponent.

### Table 1: Finnish

|        | 'street'  | 'person'     |
|--------|-----------|--------------|
| **Nom**  | katu      | ihmi-nen     |
| **Gen**  | kadu-n    | ihmi-se-n    |
| **Part** | katu-a    | ihmi-s-tä    |
| **Iness**| kadu-ssa  | ihmi-se-ssä  |

### Table 2: Icelandic

|        | 'horse'  | 'man'    |
|--------|----------|----------|
| **Nom**  | hest-ur  | mað-ur   |
| **Acc**  | hest     | mann     |
| **Gen**  | hest-s   | mann-s   |
| **Dat**  | hest-i   | mann-i   |

### Table 3: Latin

|        | 'old man' | 'man'      | 'journey'  |
|--------|-----------|------------|------------|
| **Nom**  | senex     | hom-ō      | it-er      |
| **Acc**  | sen-em    | hom-in-em  | it-er      |
| **Gen**  | sen-is    | hom-in-is  | it-iner-is |
| **Dat**  | sen-ī     | hom-in-ī   | it-iner-ī  |

### Table 4: Tamil

|        | 'tree'                    |
|--------|---------------------------|
| **Nom**  | maram                     |
| **Acc**  | maratt-ai                 |
| **Dat**  | maratt-ukku               |
| **Gen**  | maratt-ooḍa/maratt-∅      |

(1)

```
            Comitative
            /\
         F  Instrumental
            /\
         E  Dative
            /\
         D  Genitive
            /\
         C  Accusative
            /\
         B  Nominative
            /\
          A   NP
              /\
              ...
```

(2)

```
            s
           /\
        SPRL  c
              /\
           CMPR  a
                 |
                ADJ
```
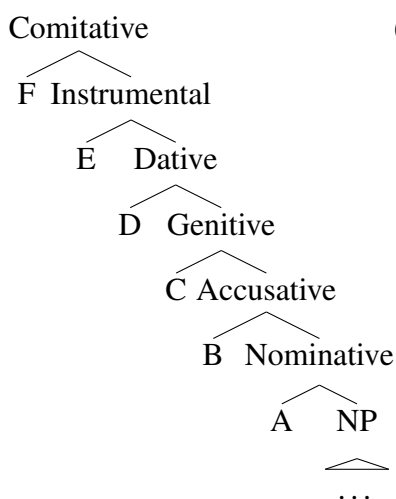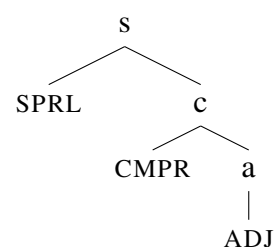
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# Predicative Possession Constructions Vary in the 1st-Merge Position of the Possessor: An Existence Proof from Cochabamba Quechua

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**1 Introduction.** In this talk, I employ evidence from Cochabamba Quechua (Quechuan, Bolivia- see Lastra 1968; van de Kerke 1996) to argue that **a major syntactic parameter of variation in possession constructions is the first-merge position of the possessor** (see also Boneh & Sichel 2010; Levinson 2011). This means that it cannot be the case that all predicative possession constructions cross-linguistically share an underlying source (Freeze 1992; Kayne 1993; den Dikken 1998), with surface variation resulting from movement. **2. The data.** Cochabamba Quechua has no transitive verb HAVE, in the sense of a transitive verb that conveys a range of alienable and inalienable possession relations. Instead, it has three BE-based possession constructions. Of interest here are the two constructions based around the existential BE verb *tiya-*, exemplified in (1) and (2) (all data are from original fieldwork carried out in Cochabamba, Bolivia).

(1) Noqa-qta    iskay pana-s-*(niy)    tiya-n.    (2) Noqa-qta iskay pana-s    tiya-pu-wa-n.
    I-GEN        two   sister-PL-1POSS BE-3SUBJ   I-GEN two  sister-PL BE-APPL-1OBJ-3SUBJ
    'I have two sisters.'                          'I have two sisters.'

(1) and (2) have in common that they are existential constructions, as shown by the verb root *tiya-*, and by the fact that the verb displays 3rd person singular default subject agreement (agreeing neither with the 1st person possessor nor with the 3rd plural possessee- see Hastings 2004). Also, the case marking of the possessor and possessee (respectively genitive and nominative) is the same in both. Furthermore, the two constructions appear to be thematically identical, i.e. they can convey the exact same subset of "possession" relations (kinship, permanent ownership, abstract properties, and, with some degree of deviance, body-parts/part-whole relations). The constructions also match up with respect to the subtypes of possession relation that they cannot convey (temporary possession, psychological states, diseases, and physical sensations). For space reasons, only examples involving permanent ownership and diseases are provided here.

(3) Juan-pata  wasi-n            tiya-n.    (4) Juan-pata  wasi      tiya-pu-ø-n.
    Juan-GEN  house-3POSS      BE-3SUBJ    Juan-GEN    house    BE-APPL-3OBJ-3SUBJ
    'Juan has a house.'                      'Juan has a house.'
(5) *Juan-pata  soroqchi-n         tiya-n.    (6)*Juan-pata  soroqchi tiya-pu-ø-n.
    J.-GEN altitude.sickness-3POSS BE-3SUBJ    J.-GEN  altitude.sickness BE-APPL-3OBJ-3SUBJ
    'Juan has altitude sickness.'                'Juan has altitude sickness.'

**3. The Present Approach.** Despite these morphosyntactic and semantic similarities, I will argue that these two constructions differ in terms of where the possessor argument is first-merged. In particular, I argue that in (1) the possessor is first-merged inside the possessee DP, much as argued for similar constructions in Hungarian by Szabolcsi (1981) and in Japanese by Tsujioka (2002) (there is evidence that, just as in Hungarian and Japanese, the possessor subsequently raises out of the possessee DP in (1), but I do not review this evidence here for space reasons). In (2), on the other hand, the possessor is introduced in the specifier of a high applicative head in the sense of Pylkkänen (2008) (realized by the suffix –*pu*). The structure of (1) is therefore as (partially) depicted in (7); the structure of (2) is given in (8) (abstracting away from head-finality, and from movement of the object clitic -*wa* in (2); note I assume a 'Big DP' analysis of clitic doubling, although nothing crucial hinges on this).

(7) [$_{vP}$ tiya-$_v$ [$_{DP}$ [$_{DP}$ noqa-qta]  [$_{D'}$ -niy$_D$ [$_{NumP}$ iskay pana-s ] ] ] ]
(8) [$_{ApplP}$ [$_{DP}$[$_{DP}$ noqa-qta] [$_{DP}$ -wa- ] ] [$_{Appl'}$ -pu$_{Appl}$ [$_{vP}$ tiya-$_v$ [$_{DP}$ iskay pana-s ] ] ] ]

The structures in (7) and (8) yield an immediate account of three core differences between (1) and (2). Exemplification is omitted here for space reasons.

(i) **The morpheme *–pu* appears in construction (2), but not in construction (1).** This follows from (7)-(8) since *–pu* is the high applicative morpheme elsewhere in the language, where it has benefactive/malefactive semantics (it does not have any benefactive meaning in (2), however, a point to which I return). (ii) **The possessor in (2) must be clitic-doubled, but the possessor in (1) may not be**. This is explained by the structures (7)-(8) because the object of a verb, including an applied object, must be clitic doubled in Cochabamba Quechua, whereas clitic doubling of DP-internal possessors is generally impossible. (iii**) DP-internal possessor agreement is obligatory in (1), but not (2).** This follows from the representation in (7), according to which (1) involves first-merging the possessor inside the possessee DP, given the fact that DP-internal possessors obligatorily trigger such agreement in Cochabamba Quechua. The fact that there is no such agreement requirement in (2) is accounted for if the possessor is not in fact first-merged internal to the possessee, as claimed by the structure in (8).

Recall that these two constructions are semantically identical in terms of the possession relations they can express. This too can be explained, despite the basic syntactic difference depicted in (7)-(8), assuming (a.) that **possession related thematic roles are introduced DP internally**, following Szabolcsi (1981,1994), Kayne (1993); and (b.) that **argument-introducing heads may be interpreted 'expletively' under certain circumstances**, following Schaefer (2008); Wood (2012)- in other words, such heads may fail to introduce a theta-role so long as the resulting structure successfully composes at the semantic interface. The idea is that *pana* 'sister' in (1) and (2) is interpreted as a relation along the lines of λx∃y[sister-of(y,x)]. This relation can be saturated inside the DP itself, as it is in (1). Alternatively, it can be "passed up the tree" and satiated in spec, ApplP, as it is in (2), so long as Appl itself is interpreted expletively (consistent with this, recall that *–pu* does not have its usual benefactive meaning in (2)). Such an approach is possible if thematic roles are read off of syntactic structure at LF, in accordance with Kratzer (1996) and others. **4. Against a movement approach.** Any movement approach to the alternation between (1) and (2) would have to start from the assumption that the possessor begins the derivation inside the possessee DP, and either stays there, yielding (1), or raises into spec-ApplP, yielding (2) (the ApplP would then be a raising Appl, in the sense of Paul & Whitman 2010). However, such an approach immediately encounters severe difficulties: (i) why isn't DP-internal possessor agreement obligatory in (2) also, given it is otherwise always obligatory when a possessor is first-merged DP-internally?; (ii) why would this putative movement step make clitic doubling obligatory in (2), when it is impossible in (1)?; (iii) what would motivate the movement step deriving (2), given that a DP-internal possessor is clearly able to be licensed in-situ? **5. Conclusion and extension to HAVE constructions.** The conclusion that truth-conditionally identical possession constructions can vary in terms of the first-merge position of the possessor, in combination with a Kratzerian approach to argument structure in which thematic roles are read-off the output of syntax, extends easily to HAVE constructions/languages. These will be constructions in which the possessor is introduced neither inside the possessed DP, nor in the specifier of ApplP, but higher still- in Spec-VoiceP. This means that HAVE in this perspective is the transitive form of BE (see Hoekstra 1984, 1994). Note that we immediately solve an abiding mystery in the typology of predicative possession: why HAVE constructions are rarer than BE constructions (only 26% of languages have HAVE, according to WALS- see Stassen 2013). The solution follows from the fact that Voice is the highest head in the thematic domain; this means that there are many ways of merging a possessor into the structure which lead to BE (anywhere below VoiceP), but only one way to merge a possessor into the structure which yields HAVE (into spec-VoiceP). Therefore, HAVE's rarity no longer looks anomalous.

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**Predicative Possession Builds on Top of Attributive Possession: Evidence from Icelandic**

In this talk, we argue that the syntactic expression of possession in the clause is directly related to the syntactic expression of possession DP-internally. We defend this claim in light of recent research on DP-internal possession in Icelandic, a language whose rich array of predicative possession constructions make it an ideal empirical domain for investigating this connection between the clausal and nominal realms.

**1. DP internally**, there are three basic constructions for expressing possession: Construction A involves a bare NP followed by a possessive pronoun; Construction B involves a definite-suffixed noun followed by a possessive pronoun; Construction C involves a definite-suffixed noun followed by a PP expressing the possessor. The table in (1) shows the distribution of concrete, kinship, body part, and abstract possession among these constructions.

| (1) | **A:** NP - POSS. PRON | **B:** NP-DEF - POSS. PRON | **C:** NP-DEF - PREP - PRON |
|---|---|---|---|
| **Concrete** ('my book') | # bók   mín <br> book  my | bók-in      mín <br> book-DEF  my | * bók-in    hjá mér <br> book-DEF at   me |
| **Kinship** ('my sister') | systir mín <br> sister my | * systir-in   mín <br> sister-DEF  my | * systir-in   hjá mér <br> sister-DEF at  me |
| **Body part** ('my eyes') | # augu mín <br> eyes  my | % augu-n    mín <br> eyes-DEF  my | augu-n     í    mér <br> eyes-DEF  in   me |
| **Abstract** ('my idea') | hugmynd mín <br> idea         my | * hugmynd-in  mín <br> idea-DEF      my | hugmynd-in   hjá mér <br> idea-DEF      at   me |

For reasons of space, we will set aside a number of complex issues, including speaker variation for body part possession, special interpretations of concrete possession in Construction A, etc. The shaded boxes reflect the "core" cases that we will focus on. **2.** For **clausal possession**, there are again three basic forms. We will focus here on two: verb *hafa* 'have₁' and the verb *eiga* 'have₂/own'. (We set aside the *vera með* 'be with' construction; see Levinson 2011 for recent discussion.) In (2) we show the distribution of *hafa* and *eiga* across the same categories of possession shown in (1). (Note that (2d) with *hafa* is grammatical, *pace* Levinson 2011; see also Irie 1997.)

(2) a. **Concrete**
    Þeir       {*hafa/eiga}    stóra bók.
    they.NOM {*have₁/have₂} big    book.ACC
    'They have a big book.'

   b. **Kinship**
    Þeir       {*hafa/eiga}    systur.
    they.NOM {*have₁/have₂} sister.ACC
    'They have a sister.'

   c. **Abstract**
    Þeir       {hafa/*eiga}    ekki hugmynd.
    they.NOM {have₁/*have₂} not   idea.ACC
    'They have no idea.'

   d. **Body part**
    Þeir       {hafa/*eiga}            augu.
    they.NOM {have₁/*have₂}          eyes.ACC
    'They have eyes.'

**3.** Despite numerous complications in the description and analysis of clausal and DP-internal possession by themselves, let alone the relationship between the two domains, the following generalizations seem to hold:

(3) **Generalization 1:** Clausal possession can be expressed with *eiga* only if DP-internal possession cannot be expressed with a PP.

(4) **Generalization 2:** Clausal possession can be expressed with *hafa* only if DP-internal possession can be expressed with a PP.

We derive these generalizations by assuming that *hafa* and *eiga* have no lexical content of their own (Ritter & Rosen 1997), but are rather light verbs that spell out little v; the choice between the two spellouts depends on the properties of the complement of v (Folli & Harley 2013), which in this case contains the possessum.

**4.** We assume, following much work in the literature, that there is more than one way to build possessive structures DP internally. Specifically, we assume that DP-internal possessors may

be merged as predicates of a DP-internal small clause (**Option A)**, or as specifiers in a nominal projection (**Option B**); the pre-movement configurations are shown in (5) and (6).

(5) **Possessor Option A**: [_DP_ D [_PredP_ POSSESSUM [ Pred POSSESSOR ]]]

(6) **Possessor Option B**: [_DP_ D [_nP_ POSSESSOR [_n'_ n-POSSESSUM ]]]

To build clausal possession, a DP-internal possession structure forms the complement of a light verb $v$. *Hafa* and *eiga* are suppletive manifestations of the same transitive $v$. Which allomorph is chosen depends on the type of attributive possession structure is embedded under this $v$, as follows (suppletion notation from Bobaljik 2012):

(7) a. $v$ -> *hafa* /___ Pred  b. $v$ -> *eiga*

In other words, if $v$ embeds a PredP substructure, then *hafa* results. Otherwise, we get *eiga*. As additional evidence that the presence of PredP is crucial for the selection of *hafa*, consider the fact that *hafa* can productively take small clause complements, whereas *eiga* cannot.

(8) Hann  hafði það upp úr   henni.  = [_vP_ he [_v'_ v(=*hafa*) [_PredP_ it out of her ]]]
     he.NOM had it   up  out.of her       'He got it out of her.'

**5. Body part possession**, DP-internally, is built as in (9). The nP then moves to SpecDP, as proposed by Julien (2005). In clausal contexts, the same basic structure is built, but D is not merged, and Pred raises and incorporates into v.

(9) [_DP_ D-DEF [_PredP_ [_nP_ eyes ] [_Pred'_ Pred [_PP_ in [_DP_ me ]]]]]

(10)   [_vP_ [_DP_ they]_i [_v'_ Pred+v(=*hafa*) [_PredP_ [_nP_ eyes ] [_Pred'_ <Pred> [_PP_ IN [_DP_ PRO_i ]]]]]]]

At this point, the question that arises is why we fail to see the PP in clausal contexts; that is, why do we not see '*they have blue eyes in them*'? There are two possibilities: (i) P incorporates into Pred before Pred incorporates into v; this licenses Predicate Inversion (Den Dikken 2006), so the DP complement of P is moved to SpecvP, where it is spelled out; (ii) incorporation of Pred allows the raising and licensing of a null *pro*-predicate, as indicated (pre-movement) in (10). Either option will suffice for present purposes, although we have independent reasons to believe that (ii) is correct. A slightly modified version of this analysis extends directly to **abstract possession**, as in (2d). **6.** For **kinship and concrete possession**, no PredP small clause can be formed DP internally, so the structure in (6) is used; see (11).

(11)   [_DP_ D [_PossP_ my [_Poss'_ Poss [_nP_ <my> sister ]]]]

Again following Julien 2005, the possessor merges in SpecnP and moves to SpecPossP, followed by movement of nP to SpecDP (not shown). (Note that we cannot go into the distribution of the definite suffix here.) We assume that Poss introduces possessive semantics, so that the interpretation of (11) is as in (12).

(12) a. ⟦Poss'⟧=λxλy.sister-of(y,x)          b.      ⟦PossP⟧=λy.sister-of(y,speaker)

     c. ⟦DP⟧ = ιy. sister-of(y, speaker)

Since kinship/concrete possession does not involve Pred DP-internally, *hafa* does not spell out v in clausal contexts. In clausal contexts, we argue that the nP merges without a DP/nP-internal possessor, though the Poss head is still merged, so the structure is as in (13).

(13)   [_vP_ [_DP_ I ]_i [_v'_ v(=*eiga*) [_PossP_ Poss [_nP_ sister ]]].

Despite no possessor being merged in SpecPossP, the Poss head still introduces a possession relation semantically; this relation is saturated by the DP merged in SpecvP. The v head is a purely syntactic element in this case, and adds nothing to the interpretation. The interpretation of (13) is shown in (14).

(14)   a. ⟦PossP⟧ = λxλy.sister-of(y,x)       b. ⟦v'⟧ = λxλy.sister-of(y,x)

     c. ⟦vP⟧ = λy.sister-of(y,speaker)  →_existential-closure ∃y.sister-of(y,speaker)

**7. Conclusion**. While there are some details that will be elaborated upon in the course of the talk, the foregoing should be enough to get across the basic idea: DP-internal possessive syntax and semantics directly feeds clausal possessive syntax and semantics, and this explains Generalizations 1 and 2 in (3)-(4).

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**\*{t, t}**

*Keywords: labeling algorithm (LA), Full Interpretation (FI), Internal Merge (IM), trace/copy*

**[1] Introduction:** This paper puts forward a novel constraint that bans syntactic objects (SOs) of the form {*t, t*}, where the two *t*'s are both traces/copies created by Internal Merge (IM). I will first argue that (1) can be straightforwardly deduced from the interplay of Chomsky's (2013) labeling algorithm (LA) and the principle of Full Interpretation (FI). I will then show that the effect of (1) can be observed in a variety of phenomena, including copular sentences, *kind*-constructions, predicate-fronting and criterial freezing (Rizzi 2006).

(1)　　**\*{t, t}**: SOs whose two members are both copies/traces created by IM are ruled out.

**[2] LA + FI ⇒ \*{t, t}:** Chomsky (2013) argues that in the best case scenario, the mechanism of labeling/head-detection in bare phrase structure reduces to minimal search of a lexical item (LI) for each SO (2a), with the proviso that traces of IM are invisible to this search algorithm (2b).

(2)　　a.　The head of an SO Σ is the most prominent lexical element within Σ.
　　　　b.　If $\alpha$ in {$\alpha, \beta$} undergoes IM, the original occurrence ('trace', informally speaking) of $\alpha$ becomes invisible to LA, and so LA just singles out the head of $\beta$ as the head of {$t_\alpha, \beta$}.

(2a) can readily detect the head LI X for any SO of the form {X, YP}. In contrast, no LI can immediately stand as the most prominent within SO = {XP, YP} (where both XP and YP are phrasal), and hence SOs of this form cannot be assigned headedness via (2a). If we assume with Chomsky that headedness is a necessary condition for an SO to receive appropriate interpretation, then every structure {XP, YP} must resort to IM of either XP or YP to satisfy FI, defining headedness via (2b). Therefore, {X, YP}, {$t_{XP}$, YP} and {XP, $t_{YP}$} are permitted by LA and FI. However, this line of reasoning leaves the head of {$t_{XP}, t_{YP}$} undefined, and hence such a headless SO constitutes an inescapable case of FI-violation. In this manner, \*{t, t} can be derived from the simplest formulation of LA and FI.

**[3] Copular sentences:** Moro (2000) argues that the copular construction has an underlying small clause structure {DP$_1$, DP$_2$} as shown in (3a). Moro's theory of dynamic antisymmetry, or its label-based reformulation proposed by Chomsky (2013), can account for why at least one of the DPs must move out of (3a), but they don't explain why the movement of *both* DPs results in unacceptability, as shown in (4). This shortcoming can be overcome by \*{t, t}.

(3)　　Small clauses within copular constructions (Moro 2000):
　　　　a.　{BE {[DP1 some pictures of the wall], [DP2 the cause of the riot]}}
　　　　b.　→　[ [DP1 some pictures of the wall] [was {$t_{DP1}$, [DP2 the cause of the riot]}]]
　　　　c.　→　[ [DP2 the cause of the riot] [was {[DP1 some pictures of the wall], $t_{DP2}$}]]

(4)　　a.　\*[which picture of the wall]$_i$ do you think that [the cause of the riot]$_j$ was {$t_i, t_j$}?
　　　　b.　\*[which cause of the riot]$_j$ do you think that [a picture of the wall]$_i$ was {$t_i, t_j$}?

Note that the acceptability of the following examples with *what* is unexpected in this approach.

(5)　　a.　[what] do you think that [the cause of the riot] is t?　　　　　　　　(Moro 2006)
　　　　b.　[what] do you think that [a picture of the wall] is t?

I adopt Moro's (2006) assumption that *what* in those examples actually moves out of an abstract DP/*n*P-structure of the form {*n*/D, {what, ⊘$_{NP}$}}, located in a predicative *n*P/DP position (cf. *a <u>wonderful</u> girl*, *[<u>what</u>$_i$ a $t_i$ girl] you are!*). The presence of the *n*/D head effectively circumvents the problem of \*{t, t}:

(6)　　what$_j$ . . . [the cause of the riot]$_i$ . . . [ $t_i$　[*n*/D [ $t_j$ ⊘ ] ] ]

**[4] *Kind*-constructions:** A similar case can be made with regard to the *kind*-construction, for which Kayne (1994), Moro (2000) a.o. propose a similar {XP, YP} structure in (7). Again, \*{t, t} can provide a novel explanation for why (8c-d) are deviant.

(7)　　[[of [XP books] [YP this type]]]
　　　　a.　→　[ [XP books]$_i$　[of $t_i$ [YP this type]]]
　　　　b.　→　[ [YP this type]$_i$　[of [XP books] $t_i$]]

(8)　　a.　[*Which type of books*]$_i$ did John read $t_i$?
　　　　b.　*Which books*$_i$ did John read [$t_i$ of {$t_i$, this type}]?
　　　　c.　\*[*Which type(s)*]$_j$ did John read [*(many) books*]$_i$ of {$t_i, t_j$}?
　　　　d.　\*[*Which book*]$_i$ did John read [*this type*]$_j$ of {$t_i, t_j$}?

**[5] Predicate-fronting:** Huang (1993) argues that predicate-fronting always pied-pipes a predicate-internal trace of the subject, and that this assumption can provide a natural account of the contrast in (9a-c). The remaining question is, however, why syntax cannot choose to move *v*'/A' instead of *v*P/AP as in (10), which would strand the subject trace and should therefore be able to feed anaphor binding at the
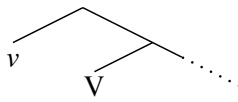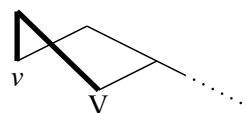
moved position. It has been common to stipulate that only XP or $X^0$ can move, but no such label-based stipulation is formulable in the theory of bare phrase structure (projection-free syntax) (cf. Collins 2002, Chomsky 2013). Again, this derivation is excluded by $*\{t, t\}$: movement of $v'/A'$ out of $\{t_{\text{subject}}, v'/A'\}$ yields a configuration $\{t, t\}$.

(9)  a.  [$_{\text{DP}}$ *those pictures of himself$_{i/j}$*], *John$_i$* thinks [$t_{\text{DP}}$ *Bill$_j$* will buy $t_{\text{DP}}$].
     b.  [$_{\text{vP}}$ $t_j$ *criticize himself$_{*i/j}$*], *John$_i$* thinks [$_{\text{vP}}$ *Bill$_j$* would not $t_{\text{vP}}$].
     c.  [$_{\text{AP}}$ $t_j$ *how proud of himself$_{*i/j}$*] does *John$_i$* think [$_{\text{AP}}$ *Bill$_j$* will be $t_{\text{AP}}$]?

(10)  * [$_{v'/A'}$ v/A ... himself], ... *John* ... [$_{v'/A'}$ v/A ... himself] ... *Bill$_j$* ... [$_{\text{vP/AP}}$ $t_j$ [$_{v'/A'}$ v/A ... himself]].

**[6] Criterial freezing:**  It is well known that phrases moved into 'criterial' positions constitute islands for extraction, as exemplified by (11) (Rizzi 2006). However, the theory of 'criterial freezing' must provide some means to exclude the derivation in (12), where a wh-element moves out of DP *before* the latter moves and becomes an island. This goal can be achieved by $*\{t, t\}$.

(11)  a.  *Who$_i$* did you see [pictures of $t_i$]?
      b.  **Who$_i$* were [pictures of $t_i$]$_j$ seen $t_j$?

(12)  a.  {Wh, {D, [ ... Wh ... ] }}

      b.  * ... Wh ... {D, [ ... $t_{\text{Wh}}$ ... ] } ... {Wh, {D, [ ... $t_{\text{wh}}$ ... ] }}

**[7] Head-movement:**  V may head-move to $v$ in addition to IM of object, as in *who$_{\text{DP}}$ did you see$_V$-v* $\{t_V, t_{\text{DP}}\}$?. Obviously, we don't want $*\{t, t\}$ to exclude this sort of derivation. In order to keep the explanatory force of $*\{t, t\}$ while permitting simple examples like this, I propose that head-movement is *not* an instance of IM (viz merger of $\alpha, \beta$ one of which is a proper term of the other), but rather some sort of post-syntactic PF-movement (Chomsky 2001, Boeckx and Stjepanović 2001) or 'sideward remerge' resulting in 'multi-dominance' as in (13) (see Citko 2005, cf. Bobaljik and Brown 1997), hence irrelevant to $*\{t, t\}$ formulated in terms of IM as in (1). I further propose that $*\{t, t\}$ may actually offer an explanation of why head-movement cannot take the form of IM, and therefore why its application has almost no semantic interpretations that are typically tied to IM.

(13)  a.  {$v$, {V, ...}}          b.  i.  {$v$, {V, ...}}
                                          ii. {V, $v$}

      a'.        $\longmapsto$
                 Merge(V, $v$)     b'.

**[8] Conclusion:**  We saw that the interplay of LA (2) and FI straightforwardly yields $*\{t, t\}$, and that this constraint in turn derives a number of empirically adequate accounts of copular sentences, *kind*-constructions, predicate-fronting, criterial freezing and head-movement. These results corroborate Chomsky's hypothesis that labeling/endocentricity is an emergent property of efficient computation, keeping closely to the goal of the minimalist program.

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# Bare Adjunction as "Two-Peaked" Structure

**Synopsis**: This paper explores phrase structure building of adjuncts. We propose that adjuncts have no labels ('Unlabeled Adjunct') due to inapplicability of *Labeling Algorithm* (LA; Chomsky 2008) to {XP,YP} generated by External Merge (EM), but they can be labeled ('Labeled Adjunct') via *Feature Sharing* (FS; Chomsky 2013). Specifically, given a natural assumption on Narrow Syntax that Merge targets labeled nodes only (Chomsky 2000), derivations including Unlabeled Adjunct inevitably result in a "two-peaked" structure (Epstein, Kitahara, and Seely (EKS) 2012), while ones with Labeled Adjunct a "one-peaked" structure. It will be shown that the proposed analysis is not only empirically strong but also theoretically desirable in that it can deduce various classic adjunct/complement asymmetries and possibly eliminate adjunct-specific operations/stipulations from syntax.

**Proposal**: The logic of our claim consists of three steps. First, since innovation of *Segment* (May 1985, Chomsky 1986), the defining character of adjuncts is {XP,YP} created by EM; e.g. {VP,PP}/{NP,PP}=verbal/nominal modifiers, {VP,CP}/{NP,CP}=adverbial/relative clauses. Second, since Chomsky's (2008) LA has nothing to say about EMed {XP,YP} (LA: (i) In {H,α}, H an Lexical Item selected from Numeration, H is the label., (ii) If α is Internally Merged to β forming {α,β}, then the label of β is the label of {α,β}.), the resultant structure of adjunction remains unlabeled. Note here that the absence of labels for adjuncts has been explicitly defended in important work by Chametzky (1996, 2000), Hornstein and Nunes (2008), and Hornstein (2009), but our idea crucially differs from them in that unlabelability is strictly governed by LA and FS, not optionality of the independent operation *Labeling*. Finally, the label of EMed {XP,YP} can be determined iff two phrases share some prominent feature [+F] (Chomsky's (2013) FS; see also Narita and Fukui (2012) for the relevant discussion of *feature prominence*). Our proposal is schematically summarized as in (1).
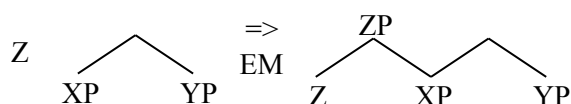
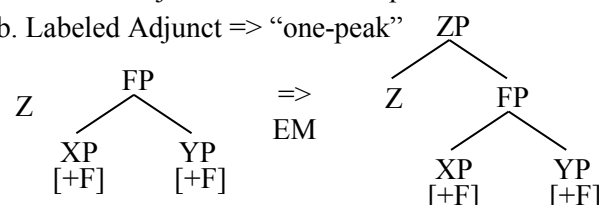(1) Adjuncts (EMed {XP,YP} in general) are bare of labels due to LA but can get labeled via FS.
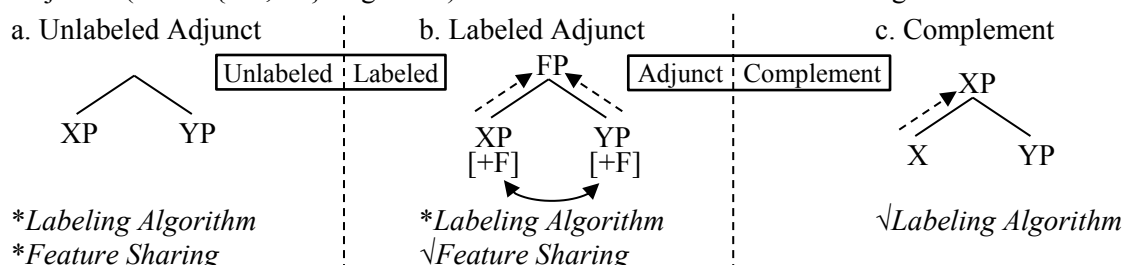


What does this difference in labeling yield? Now suppose that only labeled nodes are accessible to Merge (Chomsky 2000). Interestingly, given this natural assumption on Narrow Syntax, the next Merge of Z creates significantly different structures depending on the Unlabeled/Labeled partition. In (1a), on the one hand, since the unlabeled syntactic object is inaccessible to Merge, Z is combined with one of two phrases in accord with its selectional property, hence a "two-peaked" structure (EKS 2012). In (1b,c), on the other hand, a standard "one-peaked" structure is generated because Merge of Z can target the entire labeled syntactic object. This state of affairs is recapitulated in (2). Consider two different derivations below, in which X, Y, and Z can be instantiated by V, P, and T, respectively.

(2) Unlabeled Adjuncts result in "two-peak" while Labeled Adjuncts deliver "one-peak".



In short, the proposed theory is a hybrid approach between Chomsky's (2008, 2013) LA/FS and EKS's (2012) "two-peaked" structure. Furthermore, it can be regarded as a natural extension of EKS's analysis of subjects, which share {XP,YP} with adjuncts (Kayne 1994, Uriagereka 1999).

**Explanandum**: The target of explanation is adjunct/complement asymmetries such as island, reconstruction, intervention, scrambling/ellipsis, etc. The proposal can unify the seemingly unrelated asymmetries based on the Unlabeled/Labeled bifurcation in (1). The descriptive generalization that adjuncts in some feature transaction are visible to Narrow Syntax will be discussed.

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***Island***: Huang (1982) originally proposes the *Condition on Extraction Domain* (CED) that complements do not constitute an island (3a) while non-complements like adjuncts do (3b).

 (3) a. **Who** did you believe [that John saw *t*]?    b. *?**Who** did John get jealous [after I talked to *t*]?

However, there are interesting exceptions to CED. Borgonovo and Neeleman (2000) and Miyamoto (2012) observe that some adjuncts are transparent for extraction in English (4a) and Japanese (4b).

 (4) a. **What** did John arrive [whistling *t*]?                            (√Extraction)
      b. **Kinoo toochaku-shita-yori** kyou gakusei-ga [*t* oozei] toochaku-shita.    (√Extraction)
        yesterday arrive-did-than    today student-Nom many arrive-did
        'Today more students arrived than *e* arrived yesterday.'

Their generalization is that islandhood of adjuncts disappears iff they have an Asp-feature-transaction with the clausal spine (cf. Truswell 2007). Crucially, for the present discussion, this Asp-feature is relevant for labeling adjuncts via FS. We contend here that extraction out of Unlabeled Adjunct/"two-peak" is banned because the Probe in the left periphery cannot c-command/Agree with the Goal in YP (2a,3b), whereas there is no problem with extraction out of Labeled Adjunct/"one-peak" (2b,4). The correlation between extraction and feature-transaction is further verified with overt morphology in Czech (Boeckx 2003), Hungarian (Den Dikken 2009), and Tagalog (Rackowski and Richards 2005).

***Reconstruction***: Speas (1990) find an asymmetry in reconstruction between two types of adjunct (5).

 (5) a. In **Ben**$_i$'s office, **he**$_i$ is an absolute dictator.  b. *In **Ben**$_i$'s office, **he**$_i$ lay on his desk.

She suggests that only φ/θ-checked adjuncts are visible to Condition C/c-command as in (5b), not (5a). Assuming that φ/θ-formal features count as prominent for the purpose of FS, this reconstruction data also fall under the proposed analysis because visibility of adjuncts relies on the existence of labels.

An apparent problem with our claim is the adjunct/complement asymmetry documented by Lebeaux (1988). This is because, while both Nominal Complement Clauses (NCC) and Relative Clauses (RC) are a strong island (Complex NP Constraint), only RCs are assumed to show anti-reconstruction (6).

 (6) a. Which story [$_{RC}$ that **John**$_i$ wrote] did **he**$_i$ like?        (√Condition C/*Extraction)
    b. *Whose claim [$_{NCC}$ that **John**$_i$ is nice] did **he**$_i$ believe?      (*Condition C/*Extraction)

Nevertheless, our biconditional prediction about extraction/reconstruction is actually borne out. In this respect, Lasnik (1998) argues against Lebeaux (1988) that NCCs are reconstructed if pragmatically controlled (7). Moreover, Donati and Cecchetto (2011) maintains that NCCs are in fact an adjunct because of islandhood, θ-Criterion exemption, and constituency.

  (7) How many arguments [$_{NCC}$ that **John**$_i$'s theory was correct] did **he**$_i$ publish?    (√Condition C)

The impossibility of extraction/reconstruction in RCs and NCCs, both of which are {NP,CP}, is correctly predicted under the current proposal that adjuncts with no FS are invisible to c-command.

***Intervention***: Haegeman (2013) uses functional heads to analyze intervention in adjunct/argument asymmetries. On the assumption that Spec-Head agreement is recaptured by FS/Criteria (Rizzi 2013), Haegeman's paradigm is explained with Labeling and Relativized Minimality.

***Scrambling/Ellipsis***: Bošković and Takahashi (1998) treats the fact that adjunct scrambling in Japanese is possible only when anchored by features like Neg and Wh. This follows from FS without acyclic LF-lowering. Under Oku (1998), the same logic extends to argument ellipsis.

**Theoretical Implications**: If our analysis is tenable, we may (i) eliminate syntactic operations specific to adjuncts such as *Late-Merge* (Fox and Nissenbaum 1999, Stepanov 2001) or *Pair-Merge*/*Simplification* (Chomsky 2004), keeping Merge simplest; Merge (α,β) => {α,β}, (ii) capture Chomsky's (2004) original insight that adjuncts are "on a separate plane", (iii) derive inertness of adjuncts regarding Locality of Selection/c-command without *Segment*-levels, and (iv) show that labeling through set-intersection is allowed by UG as one logical possibility (Citko's 2008 *Project Both*; see Chomsky 1995, Ch.4 for the contrary view). These are a theoretically welcome result under the tenet of Minimalist Program, especially *Bare Phrase Structure* (Chomsky 1994).

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# Ellipsis in Appositives and the Syntax of Parenthesis

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**Synopsis.** Parenthetical expressions raise delicate questions about the division of labor between sentence grammar and discourse grammar. This paper sheds light on their nature by investigating the crosslinguistic syntax of non-restrictive nominal appositives (as in *I met an old friend, <u>John Smith</u>, at the pub today*). I argue that parentheticals of this kind have an underlyingly clausal syntax (*I met <u>John Smith</u> at the pub today*), masked by ellipsis under identity with the host clause. This analysis is shown to lend support to a conception of parentheticals as "orphan constituents," i.e. as integrated into their host clauses not syntactically but only discursively [3, 7]. This is a welcome result, as it implies a material simplification of UG *vis-à-vis* the specialized machinery required for syntactic treatments of parenthesis [8, 9, 4].

**Background.** Non-restrictive appositives (NAPs) manifest various properties that distinguish them from non-parenthetical constituents (including adjuncts) [1, 2]: they are optional, truth-conditionally vacuous 'supplements,' prosodically isolated from their host clause (comma intonation), can have independent illocutionary force, fail to satisfy or violate V2, are strong islands for subextraction into the host, etc.

(1)  a.  I met an old friend, *John Smith*, at the pub today.
     b.  John saw someone, *(perhaps) his mother?*, near his house.
     c.  *$What_i$ did John receive a gift, *a book about $t_i$*, for his birthday?

Facts of this kind have led researchers to relegate the relation between parentheticals and their hosts entirely to discourse [3, 7], or, alternatively, to devise specialized modes of structure-building to accomodate the disjunct nature of parentheticals, such as de Vries' *Par-Merge* or Potts' COMMA-feature [8, 9, 4].

Problematic for either approach is the fact that NAPs do seem to permit certain syntactic interactions with their hosts. For instance, in languages with morphological case, (non-predicative) NAPs systematically match their anchor in case (2), and host-internal elements are capable of binding into NAPs (3).

(2)  a.  Ja      videl doč'      Lavrova, *Katju*,      včera     v Moskve.
         I.NOM saw   daughter.ACC Lavrov's Katja.ACC yesterday in Moscow
         'I saw Lavrov's daughter, Katja, in Moscow yesterday.'                      (Russian)
     b.  Ich habe meinem Nachbarn, *dem      Peter*, gestern     geholfen.
         I   have my.DAT neighbor   the.DAT Peter  yesterday helped
         'I helped my neighbor, Peter, yesterday.'                                   (German)

(3)  a.  Every $man_i$ talks to one person, *(probably) $his_i$ mother*, at least once a week.
     b.  $Juan_i$ encontró algo       raro,    *un libro sobre sí $mismo_i$*, en la   tienda.
         Juan found     something weird a   book about himself    in the store
         'Juan found something odd, a book about himself, at the store.'            (Spanish)
     c.  *$Er_i$ hat Susanne, *$Peters_i$ Mutter*, gestern     in der Stadt getroffen.
         he  has Susanne  Peter's mother yesterday in the city   met
         *'He ran into Susanne, Peter's mother, in the city yesterday.'            (German)

Reflecting *bona fide* syntactic relations, such facts (and others I discuss, such as scope connectivity) are at odds with the aforementioned indications of the extra-sentential status of NAPs. They also sharply distinguish NAPs from other types of parentheticals, which strictly preclude external dependencies:

(4)  a.  Every $guest_i$, $he_{k/*i}$ had just arrived, complained about the food.
     b.  $Nadie_i$ estaba preparado, como $él_{k/*i}$ admitió   más tarde, para las bajas temperaturas.
         nobody was     prepared   as    he    admitted later     for  the low    temperatures
         'Nobody was, as he later admitted, prepared for the low temperatures.'    (Spanish)

A theory of NAPs must explain what distinguishes a case like (3a) from clausal parentheticals as in (4), and more generally how connectivity in NAPs can be reconciled with their parenthetical nature.

**Proposal.** The starting point of my analysis is the observation that the grammatical ambivalence of NAPs parallels that of 'afterthoughts' (5) and fragment responses (5b). These, too, are extra-sentential constituents manifesting the same range of connectivity effects [5, 6], as shown below.

(5)    a.    Ich habe meinem.DAT Nachbarn gestern geholfen, *dem.DAT Peter.*                    (cp. (2b))
       b.    A: Who does every man$_i$ talk to at least once a week? – B: *(Probably) His$_i$ mother.* (cp. (3a))

Building on deletion analyses of these constructions [5, 6], I argue that NAPs have an underlying full clausal structure parallel to their host clause. On the surface, this clausal structure is masked by phonological reduction (ellipsis) of redundant material, retaining a fronted focal constituent (= the NAP):

(6)   [$_{host}$ every man talks to one person$_i$ ● at least once a week]                          (= (3a))

[$_{NAP}$ *his$_k$ mother$_i$* [~~every man$_k$ talks to *t* at least once a week~~]]]

Clausal ellipsis in NAPs straightforwardly explains connectivity as a result of parallelism of the two clauses: *his mother* in (3a) is bound and assigned case within the elliptical clause in (6), not from within the host clause, in accordance with its extra-sentential status. As part of a separate clause, the NAP is nevertheless structurally external to the host, accounting for the parenthetical properties of NAPs, such as comma intonation (reflecting clausal boundaries), 'invisibility' for V2, opacity for extraction, etc. Where no such clausal parallelism obtains, as in cases like (4) and predicative appositives (which I address briefly), connectivity is obviated. The deletion analysis accounts directly for further properties of NAPs, such as the possibility of NAP-internal sentence adverbs (as in (1b), (3a)) and their negatability:

(7)    A: I saw one of my neighbors, *Peter*, last night. – B: No, that was (your neighbor) John you saw.

   Importantly, this analysis of the *internal* syntax of NAPs has direct implications for their *external* syntax, i.e. their relation to the host. To see this, consider the following schematic representation of (6) = (3a) after linear interpolation of the elliptical NAP clause ($\Delta$ represents deleted structure):

(8)   [$_{host}$ every man talks to one person [$_{NAP}$ *his mother* $\boxed{\Delta}$ ] at least once a week]

Assume, hypothetically, that the elliptical NAP is syntactically integrated into its host clause [9, 4]. Given that the meaning of $\Delta$ is recovered under identity with the host, this entails that $\Delta$ is contained in its own antecedent. Syntactic integration of NAPs thus leads to a regress problem, rendering deletion antecedent-contained and hence irresolvable.

   I show that that there is no general ban against parentheticals entering into ellipsis resolution, and that the same identity conditions hold here as in other cases of clausal ellipsis [5] (prohibiting syntactic deviations such as voice mismatches), and hence that recoverability of deletion is irreconcilable with the assumption of structural integration. The conclusion, thus, must be that NAPs are not structurally embedded within their hosts, but linearly interpolated in production only. Time permitting, I will discuss some implications of this result for putatively semantic theories of NAPs [8].

**Conclusion.**    Research on parenthesis has traditionally sought to relegate the phenomenon to either side of the grammar vs. discourse divide. Focusing on NAPs, whose syntactic interaction with their hosts is unusual among parentheticals, this paper shows that matters are more complex. NAPs are elliptical 'reformulations' of their host clause, akin to afterthoughts and fragment responses; hence, the internal syntax of NAPs falls squarely within the purview of sentence grammar. Ellipsis under identity with the host however entails that their interpolation cannot be syntactic, given that deletion is recoverable.

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**Title: Indexicals and the long-distance reflexive *caki* in Korean**

**Introduction** It has been found that indexicals in the complements to attitude verbs can be interpreted with respect to the reported context instead of the actual speech context in many languages, such as Amharic (Schlenker 1999), Zazaki (Anand and Nevins 2004), Uyghur (Sudo 2012), Nez Perce (Deal To appear), etc., a phenomenon known as 'indexical shift'. The main goal of this paper is, first, to show that Korean is also a language that indexicals can optionally shift under certain attitude predicates, and to propose that there are two different *monsters*, i.e. context-shift operators, for person and adverbial indexicals, given the different properties of the two types of indexicals. This paper also presents novel data on the interactions between the indexicals and the long-distance reflexive/logophor *caki*: context-shift operators cannot intervene between *caki* and an antecedent of *caki*, which I dub the 'IS (indexical shift)-Blocking Effect.'

**Indexicals in Korean** I first show that both the $1^{st}/2^{nd}$ person pronouns and the temporal/locative adverbials, e.g. *yeki* 'here', *onul* 'today', *ece* 'yesterday', etc., are indeed indexicals in Korean, since they cannot co-vary with a quantifier unlike the expressions 'the speaker', 'same day', etc. (Kaplan 1989). Then, I present evidence that indexicals can shift in an indirect speech. For example, the shifted interpretation in (1) cannot be due to direct quotation, given the fact that the wide scope interpretation of the *in-situ* wh-phrase in the embedded clause is available.

(1) a. Mary-ka      **nay**-ka **nwukwu**-lul  cohahanta-ko malhayss-ni?
     Mary-Nom    I-Nom who-Acc      like-C          said-Q
     'Who did Mary say {I like, Mary likes}?'
   b. New York-eyse Mary-ka      **nwuka   yeki**-eyse thayenassta-ko malhayss-ni?
     New York-in   Mary-Nom  who-Nom here-at    be.born-C        said-Q
     'In New York, who did Mary say was born {here, in New York}?'

**Person vs. Adverbial indexicals** Based on this, I provide new data that show contrasts between the person and adverbial indexicals in Korean. First, while the person indexicals can be shifted only under the predicates of communication, e.g. 'say', 'tell', 'claim', etc., the adverbial indexicals are shiftable under other attitude verbs as well, such as 'think', 'believe', etc. Second, the person and adverbial indexicals do not have to shift together, while each type of indexicals must shift together. Unlike the two person indexicals in (2), the person and adverbial indexicals can shift independently so that there is a four-way ambiguity in (3).

(2) *Context*: John and Mary are having a conversation.
     John: Tom-i      Sue-eykey [**nay**-ka    **ne**-lul    cohahanta-ko] malhayssta.
           Tom-Nom Sue-to        I-Nom        you-Acc like-C            said
      Lit. 'Tom said to Sue that I like you.'
     a. 'I' = John, 'you' = Mary  (Neither Shift)      b. 'I' = Tom, 'you' = Sue  (Both Shift)
     c. *'I' = Tom, 'you' = Mary (*Speaker* Shift)     d. *'I' = John, 'you' = Sue (*Addressee* Shift)

(3) *Context*: John and Mary are having a conversation in Seoul.
     John: New York-eyse Tom-i       [**nay**-ka **yeki**-eyse thayenassta-ko] malhayssta.
           New York-at    Tom-Nom I-Nom  here-at    be.born-C          said
      Lit.'Tom said in New York that I was born here.'
     a. 'I' = John, 'here' = Seoul (*Neither* Shift) b. 'I' = John, 'here' = New York (*Adverbial* Shift)
     c. 'I' = Tom, 'here' = Seoul (*Person* Shift)  d. 'I' = Tom, 'here' = New York (*Both* Shift)

Third, when occurring in the same clause as the long-distance reflexive/logophor *caki*, person indexicals do not receive the shifted interpretation (4), but adverbial indexicals can (5).

(4) *Context*: John and Mary are having a conversation.
     John: Tom-i       Sue-eykey [**caki**-ka     **ne**-lul   cohahanta-ko] malhayssta.

   Tom-Nom Sue-to  caki-Nom you-Acc like-C   said
   'Tom$_i$ said to Sue that he$_i$ likes {Mary, *Sue}.'
(5) *Context*: John and Mary are having a conversation in Seoul.
  John: New York-eyse Tom-i  [**caki**-ka **yeki**-eyse thayenassta-ko] malhayssta.
    New York-at  Tom-Nom caki-Nom here-at be.born-C  said
    'In New York, Tom$_i$ said that he$_i$ was born {in Seoul, in New York}.'

***Two Monsters*** Following Anand & Nevins (2004) and Anand (2006), I assume that indexical shift is the result of a context-shift operator that overwrites the context parameter on the interpretation function. However, given the different properties of the two types of indexicals, especially the fact that they do not have to shift together, I argue that there are two separate operators, $OP_{PER}$ and $OP_{ADV}$, for person and adverbial indexicals in Korean (Deal To appear). $OP_{PER}$ only overwrites the author and hearer coordinates of the context parameter with those of the index parameter, while $OP_{ADV}$ overwrites the location and time coordinates (6).

(6) **Semantics of the two context-shift operators**
  a. $OP_{PER}$: $[[\textbf{OP}_{\textbf{PER}} \textbf{[α]} ]]^{<Ac, Hc, ...>,i,g} = [[\textbf{α}]]^{<Ai, Hi, ...>,i,g}$
  b. $OP_{ADV}$: $[[\textbf{OP}_{\textbf{ADV}} \textbf{[α]} ]]^{<..., Tc, Lc>,i,g} = [[\textbf{α}]]^{<..., Ti, Li>,i,g}$

Also, I argue that the non-compatibility between *caki* and the person indexicals only is due to the negative presupposition of *caki* as third person pronouns, i.e. [-1$^{st}$ person, -2$^{nd}$ person] (Schlenker 2003). Given the fact that *caki* cannot have either the 1$^{st}$ or 2$^{nd}$ person pronoun as its antecedent, I assume that *caki* has a third person feature. Then, when both *caki* and 'you' in (4) are interpreted relative to the reported context by the shift together constraint, the sentence is infelicitous because *caki* cannot refer to the speaker of that context while 'you' refers to the hearer of the same context. This analysis correctly predicts the same pattern for the 3$^{rd}$ person pronoun in the example like (4), and the compatibility between adverbial indexicals and *caki* (5).

**Interactions between shifted indexicals and *caki*** I introduce another interesting interaction between shifted indexicals and *caki* in the cases where they occur in a sentence with multiple embedded clauses. That is, *caki* and its antecedent cannot be intervened by the reference of a shifted person or adverbial indexical. In (7a), when the indexical 'I' is interpreted relative to the context of the highest clause, the subject in the intermediate clause, 'Bill', can be the antecedent of *caki*. In (7b), however, when *caki* finds its antecedent in the highest clause, 'John', the indexical must not pick up reference from the intermediate clause, 'Bill'. To capture this phenomenon, I propose an empirical constraint, namely the 'IS-Blocking Effect' (8).

(7) [John-i  [Bill-i  [**caki**-uy emma-ka **na**-lul silhehanta-ko] malhayssta-ko] malhayssta.
  John-Nom Bill-Nom caki-Gen mom-Nom I-Acc hate-C   said-C   said
  a. 'John$_i$ said that Bill$_j$ said that his$_j$ mother hates me (=John, *Bill, Speaker).'
  b. 'John$_i$ said that Bill$_j$ said that his$_i$ mother hates me (=*John, *Bill, Speaker).'

(8) **IS-BLOCKING EFFECT**: *Caki* and its antecedent cannot be intervened by a context-shift operator in an intermediate clause that derives indexical shifting.
  *[$_{CP1}$ **NP$_1$** ... [$_{CP2}$ NP$_2$... ***OP*$_{PER/ADV}$** [$_{CP3}$ ***caki*$_1$**... ind$_2$...]]]

Unlike *caki* that is always interpreted *de se*, the 3$^{rd}$ person pronoun can be interpreted either *de re* or *de se* in Korean, as in many other languages. When *caki* is replaced by 'he' in (7), the 1$^{st}$ person pronoun can be shifted to 'Bill', while 'he' refers to the matrix subject, 'John', unlike *caki* in (7b). Interestingly, 'his mother' can only get a *de re* reading but not a *de se* reading in this case. Given this, I also suggest that this effect might be extended to more general cases regarding *de se*.

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# A configurational account of Finnish case

This paper presents a configurational account of Finnish morphological case wherein CP and *v*P phases serve as the local domains for case competition (CC). I argue that a DP with unmarked case located at the edge of a phase partakes in CC in both that phase and the next highest phase. This model accounts for two otherwise disjoint phenomena in Finnish: nominative-genitive CC and the object-case alternation between partitive and nominative/genitive.

**Data:** At the clausal level, the external argument (EA), the internal argument (IA), and measure and multiplicative adjuncts compete for nominative case wherein the highest DP is nominative and all other lower DPs are genitive. In constructions where there is no EA, e.g. passives and imperatives, or the EA is lexically case-marked, e.g. necessive and existential constructions, the highest DP—i.e. the IA, unless it is lexically case-marked—is nominative. For example, in (1a), the EA is nominative because it is higher than the two adjuncts; note that the IA *Kekkoseen* has been assigned lexical case by *luottaa* 'trust' and therefore does not partake in CC. When (1a) is passivised in (1b-c) where the EA has been removed, the highest adjunct is nominative.

(1)  a.  **Tarja** luotti Kekkose-en [**yhde-n vuode-n**] [**kolmanne-n kerra-n**]
         T.NOM trusted.3SG K-ILL one-GEN year-GEN third-GEN time-GEN
         'Tarja trusted Kekkonen for a year for a third time'

   b.  Kekkose-en luote-ttiin [**yksi vuosi**] [**kolmanne-n kerra-n**]
       K-ILL trust-PASS.PAST one.NOM year.NOM third-GEN time-GEN
       'Kekkonen was trusted for a year for a third time'

   c.  Kekkose-en luote-ttiin [**kolmas kerta**]
       K-ILL trust-PASS.PAST third.NOM time.NOM

       'Kekkonen was trusted for a third time'                          (Maling 1993)

The case of the IA is also contingent on the telicity of the eventuality. In an atelic eventuality, the IA is partitive (2a). In a telic eventuality, the IA is nominative or genitive (2b), depending on the outcome of nominative-genitive CC as discussed above.

(2)  a.  Ammui-n **karhu-a**          b.  Ammui-n **karhu-n**
         shot-1SG bear-PTV               shot-1SG bear-GEN

         'I shot at the/a bear'          'I shot the/a bear'   (Kiparsky 1998)

The algorithm that assigns structural case in Finnish is in (3). The challenge remains to implement this algorithm in the syntax, for which I adopt the configurational case model.

(3)  *Finnish structural-case algorithm:*
   1.  Assign partitive to the IA if the eventuality is atelic.
   2.  Assign nominative to the structurally highest DP with unvalued case.
   3.  Assign genitive to all remaining DPs with unvalued case.

**Configurational case model:** The calculus of morphological case proceeds along Marantz's disjunctive case hierarchy (4).

(4)  lexical case → dependent case → unmarked case                     (Marantz 1991)

First, each lexical head assigns the respective idiosyncratic lexical case to its sister; this accounts for quirky case. Second, for each pair of remaining DPs with unvalued case within some local domain, one DP in the pair is assigned dependent case (NOM-ACC languages: the lower, ERG-ABS languages: the higher); this is known as *case competition*. Third, any DP whose case is still unvalued is assigned unmarked case.

**Proposal:** I assume that the relevant local domain for case assignment is the phase wherein each phase type has its own dependent and unmarked cases. Additionally, I propose that unmarked case is the result of a DP not having been assigned lexical or dependent case, that is *unmarked case is not assigned, but a default*. From the general assumption in Phase Theory that elements at the edge can partake in operations in the next phase (Chomsky 2001), it follows that a DP not yet assigned case located at the edge of a phase partakes in CC in both that phase and the next highest phase. This proposal allows the configurational case model to handle case assignment that spans two domains, e.g. Finnish object case.

**Application:** At the $v$P-phase level, genitive is the unmarked case and partitive is the dependent case. Following Kratzer (2004), $v^0$ optionally bears a [TELIC] feature which yields a telic interpretation of the eventuality. When $v^0$ bears [TELIC], it establishes an Agree relationship with the IA that causes it to raise to [Spec, $v$P]; otherwise, the IA remains in-situ. When the EA is merged in [Spec, $v$P], the phase is complete. If the IA has remained in-situ, it is assigned dependent partitive case because the EA is higher. However, if the IA has raised to [Spec, $v$P], it is at the same structural position as the EA such that neither is assigned dependent case. If they remain in [Spec, $v$P], they will both be marked for genitive (which surfaces in participial constructions, see Vainikka 1989). This is schematised in (5) and (6) for an atelic and telic eventuality respectively, where dashed lines represent dependent case assignment.

(5) $\left[_{v\text{P}} \textbf{EA}\ v^0 \left[_{\text{VP}} \text{V}^0\ \textbf{IA} \right]\right]$ \qquad (6) $\left[_{v\text{P}} \textbf{EA}\ \textbf{IA}\ v^0_{[\text{TELIC}]} \left[_{\text{VP}} \text{V}^0\ \underline{\ \ } \right]\right]$

At the CP-phase level, nominative is the unmarked case and genitive is the dependent case. The EA, the IA if raised by [TELIC], and measure and multiplicative adjuncts compete for nominative case. The EA raises to [Spec, TP] for the EPP such that it is the structurally highest DP in the phase. The case algorithm assigns dependent genitive case to the raised IA and any adjuncts. The EA surfaces with unmarked nominative case. This is schematised in (7) and (8) for an atelic and telic eventuality respectively, where subscripts indicate the resulting case.

(7) $\left[_{\text{CP}} \text{C}^0 \left[_{\text{TP}} \textbf{EA}_{\text{NOM}}\ \text{T}^0 \left[_{v\text{P}} \underline{\ \ }\ v^0 \left[_{\text{VP}} \text{V}^0\ \textbf{IA}_{\text{PTV}} \right]\right]\right]\right]$ \hfill *Atelic eventuality*

(8) $\left[_{\text{CP}} \text{C}^0 \left[_{\text{TP}} \textbf{EA}_{\text{NOM}}\ \text{T}^0 \left[_{v\text{P}} \underline{\ \ }\ \textbf{IA}_{\text{GEN}}\ v^0_{[\text{TELIC}]} \left[_{\text{VP}} \text{V}^0\ \underline{\ \ } \right]\right]\right]\right]$ \hfill *Telic eventuality*

If there is no EA, e.g. in a passive, and the eventuality is telic, the IA raises to [Spec, TP] for the EPP and therefore surfaces with unmarked nominative case, as schematised in (9).

(9) $\left[_{\text{CP}} \text{C}^0 \left[_{\text{TP}} \textbf{IA}_{\text{NOM}}\ \text{T}^0 \left[_{v\text{P}} \underline{\ \ }\ v^0_{[\text{TELIC}]} \left[_{\text{VP}} \text{V}^0\ \underline{\ \ } \right]\right]\right]\right]$ \hfill *Passive*

**Implications & Extensions:** This proposal widens the empirical coverage of the configurational case model to cover case assignment that spans two domains. This paper shows CP-$v$P phase interaction, but it also can account for $v$P-DP phase interaction, such as Finnish and Estonian numeral constructions where the numeral reflects the DP's structural case and the NP is partitive. Moreover, this analysis of Finnish case accounts for more data and posits fewer stipulations than analyses based on the standard Chomskyan functional-head model, e.g. Vainikka & Brattico (to appear) and Nelson (1998). Therefore, this paper provides further support for the configurational case model, which has independent empirical motivation from quirky subjects and nominative objects in languages like Icelandic (Bobaljik 2008, Preminger 2011, a.o.).

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**The Case of Segmental Clomplexity in Aphasia and in Acquisition of French:**
**Evidence for Element Theory**

***Introduction.*** As proposed by Jakobson (1941[1968]), we can draw a parallel between acquisition of the phonological system and language disorders in aphasia. It is the observation of this parallel between those two systems that defines and allows us to understand the notion of scale of complexity – and markedness – for the phonological system architecture. We propose to explore the processes of substitution as far as French-speaking aphasics and children are concerned. To explain these phenomena, we argue that Element Theory -ET- (Harris, 1994, Scheer:1998 and Backley:1993, 2011), as we shall see, can provide a direct measure of complexity and markedness. For these reasons, we propose that our data in aphasia and acquisition can inform us about the differing complexity patterns of Places of Articulations and can bring new elements to a definition of Element Theory. We propose to compare two models on the basis of data: Backley's (2011) and Scheer's (1998).

***Experimental conditions.*** We consider the experimental results based on a sample of 20 aphasics (7 Broca, 6 Wernicke, 4 Conduction and 3 Transcortical) of the stroke unit in *Centre Hospitalier Universitaire* and 20 children between 2,1 and 3,8 years. An experimental protocol composed of 40 items was tested using a naming task and repetition task. We have extracted all substitutions cases. ***Results*** In table1, you will find a list of some examples.

|  | Productions | | |
|---|---|---|---|
| **Target** | **Labial /P/** | **Coronal /T/** | **Dorsal /K/** |
| **Lab.** | *serpent* 'snake': /sɛʁpɑ̃/ [sɛʁmɑ̃] *barbe* 'beard': /baʁb/ [baʁp] | *pastèque* 'watermelon': /pastɛk/ [tatɛk] *sport* 'sport': /spɔʁ/ [stɔʁ] | *aspirateur* 'vacuum': /aspiʁatœʁ/ [askyʁa] *remorque* 'trailer': /ʁømɔʁk/ [mɔ̃kɔʁ] |
| **Cor.** | *corde* 'rope': /kɔʁd/ [ʃɔp] *tortue* 'tortoise': /tɔʁty/ [tɔʁp] | *serpillière* 'mop': /sɛʁpijɛʁ/ [tɛʁpijɛʁ] *tortue* 'tortoise': /tɔʁty/ [tɔʁdy] | *pastèque* 'watermelon': /pastɛk/ [pakɛk] *cartable* 'satchel': /kaʁtablə/ [kaʁkwab] |
| **Dor.** | *parking* 'parking' : /paʁkiŋ/ [tapin] *scarabée* 'beetle': /skaʁabe/ [paʁape] | *cartable* 'satchel': /kaʁtablə/ [tatab] *capuche* 'hood': /kapyʃ/ [tapyʃ] | *aspirateur* 'vacuum': /aspiʁatœʁ/ [katœʁ] *escargot* 'snail': /ɛskaʁgo/ [gegago] |

Substitutions are not random. Most of the time, children and aphasics produce more substitutions of place of articulations (PoAs), but substitutions of manner are not very significant. In graphic1 and 2, you will find the results for PoAs substitutions.



Substitutions of Place (in %) — Children / Aphasic's patient
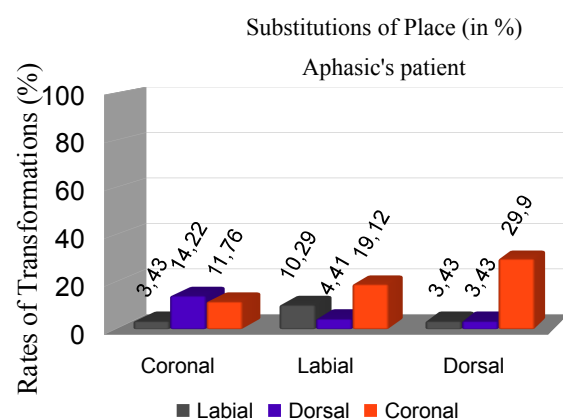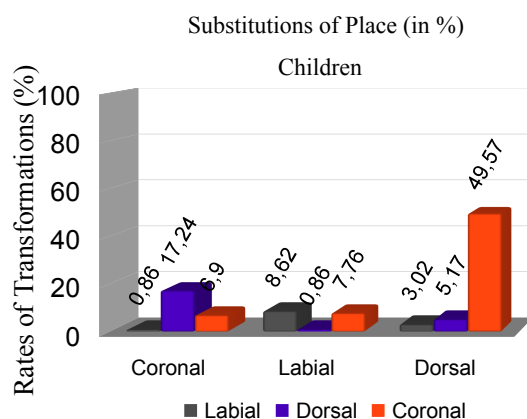
If we consider the most substituted class among phonological disorders in aphasia, we obtain that: coronals are substituted in 29.41% and dorsals in 36.76%. coronals are the major substituents – in 60.78%. Moreover, in acquisition, dorsals are mostly substituted – 57.76%, labials are substituted in 17.24% and coronals are substituted in 25%. Apparently, as for

aphasics, coronals are the most common substituents – 64.22% of the cases and dorsals appears more complex than others because they undergo the greatest number of transformations. In both cases, coronals are the most common substitutes whatever the nature of the consonant, which tends to support the view that *coronals* have a special status (Avery & Rice, 1989, Béland & Favreau, 1991, Scheer, 1998, Kirk, 2008, Rice, 2009, *inter alia)*. In addition, we want to discuss a strange case of substitution called: coalescence (Kirk & Demuth: 2003). In this case, both members of clusters merged into a third member, which can be considered a type of substitution. We would like to propose an explanation for these cases.

***Discussion.***We assume that our data will also allow us to confront the different models of ET. Backley propose that labials are more complex (where{U}is head). *Per contra*, in Scheer's model, dorsals are more complex than labials. coronals do not contain an element for melodic substance, they contain only little {v} for the rest position of the tongue.

|  | coronal /T/ | labial /P/ | dorsal /K/ |
|---|---|---|---|
| Scheer (1998): | {vʔh} | {Bʔh} | {vUʔh} |
| Backley (2011): | {Iʔ} | {Uʔ} | {Uʔ} |

Unlike Backley's representation, Scheer's model does reflect our data. However, Scheer's model does not explain why labials and coronals should have the same complexity.

We propose that this complexity results from the number of elements involved **and** the nature of the specification used to define segments. We think that aphasia and acquisition inform us about the complexity scale of PoAs. Moreover, we propose an explanation for this scale of complexity.

|  | coronal /T | labial /P/ | dorsal /K/ |
|---|---|---|---|
| stops | {vʔh} | {Uʔh} | {IUʔh} |

As proposed by Scheer (1998), coronals are not specified because they do not contain an element which represents this articulatory property. [coronal] class does not contain a melodic substance/element of place, so it is less complex. Moreover, this is the reason why coronals are acquired earlier by children and why they are often the target of phonological processes such as assimilation or epenthesis. For these reasons, we postulate that coronals are "unspecified" and less complex. Contrary to coronal, dorsals appear to be more marked and more specified for children and aphasics: they contain two elements of PoAs: the union of {I} and {U}. Labials are less complex than dorsals but specified, (contrary to coronals) because it includes only one element of PoA, which is{U}, for labiality/graveness, whence their relative stability in acquisition and in pathology. Substitutions are the result of adjustments and parameter-setting. The discussion of these data highlights some important aspects of the ET. This kind of analysis of data in acquisition and pathology will improve the current theoretical models based on unary elements.

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**A. The Problem**. The Bantu language Kinande has a particle called the *linker* (Mutaka 1986) that occurs between arguments of the verb and sometimes also between arguments of the verb and adjuncts. The linker (LK) agrees in noun class with the DP that immediately precedes it:

| (1) a. Jacky aha  ekitabu **kyo** Nadine | b. Jacky aha Nadine  **y'**  ekitabu |
|---|---|
| Jacky gave 7book  7LK Nadine | Jacky gave 1Nadine  1LK' book |
| 'Jacky gave the book to Nadine.' | 'Jacky gave Nadine a book.' |

Baker and Collins (2006) propose that the purpose of the linker is to license the Case of a following nominal expression in the verb phrase. One of the reasons they are led to their Case theoretic solution is because the linker does not occur if there is just a single internal argument, as in (2), but does occur if there are two internal arguments (1):

| (2)a.*Kambale agula ekitabu *kyo* | b.*Kambale agula  *kyo* ekitabu | c. Kambale agula  ekitabu |
|---|---|---|
| K.     3s.buy book.7 LK.7 | Kambale 3s.buy LK.7 book.7 | Kambale 3s.buy book.7 |
|  |  | 'Kambale bought the book.' |

However, a Case theoretic solution cannot be entirely correct as demonstrated by the new observation that the linker can be followed by adverbs and other expressions whose distribution is not regulated by Case:

| (3)a.Kámbalé átuma ebarúhá **yó lubálúba** | b. abana    mobakaya okokalasi **ko    ba-tya** |
|---|---|
| Kambale sent  9letter   9LK  quickly | 2children 2went   17school  17LK 2thus |
| 'Kambale sent the letter quickly.' | 'The children went to school thus (e.g. without eating)' |

These data indicate that the other approach to the linker in the literature, namely Richards (2009, 2010), also falls short. Richards proposes that the distribution of the linker is regulated by a condition he calls *distinctness*. Under Richards' approach, the linker occurs because two noun phrases within the same spell out domain are too similar to each other for the grammar to linearize them—they both bear the label DP. For the grammar to resolve this, Richards conjectures that the phrase headed by the linker provides a phase boundary when there are two DPs such that one DP is spelled out in the domain of the phase and the other is spelled out in the higher phase. However, if *distinctness* in Kinande cares only about labels, then the same examples that show Baker and Collins' (2006) Case theoretic proposal is empirically wrong (3) also show that Richards' (2009, 2010) *distinctness* account cannot work to account for the linker in Kinande. This is because the examples in (3) involve XPs with distinct labels: DP and AdvP. Since the labels are distinct, the linker phrase should not occur in these examples; nonetheless, it does.

**B. The Proposal**. I propose, together with Richards, that the linker plays a role in linearization. However, I analyze the challenge to linearization in these constructions as being one involving the labeling of symmetrically merged XPs (Chomsky 2013), rather than identical labels. I demonstrate that symmetry exists in constructions marked by the linker if, as Chomsky (2013) argues, the labels of phrases are determined by a Labeling Algorithm (LA) based on minimal search. I assume Chomsky's (2013) extension of Moro's dynamic antisymmetry such that movement alters a syntactic object so that the syntactic object can be labeled. The linker provides a super-ordinate position that can be targeted by one of the XPs to break the underlying point of symmetry. I demonstrate that linkers head constructions involving semantic predication. I also establish that the linker has properties of a copula. More specifically, it behaves like a *linker* in the sense of Den Dikken (2006). *Linkers* in Den Dikken's sense are involved in copular predicate inversion constructions. Following Hedberg (1988, 2007) they create a topic–focus structure.

Therefore, I propose that the particular type of symmetry breaking that linkers are involved in results in copular (inversion) constructions.

LA projects a label based on minimal search. Results of the LA are indicated below. When there is symmetry, movement removes an object from consideration for labeling, what remains is projected.

This tree illustrates that given a high applicative construction and one additional XP within the verb phrase, after the movement of heads, a point of symmetry, indicated by the question mark for a label, exists with respect to the two XPs:



**C. The Evidence**. Copular inversion structures have the following properties that linker constructions share:

i) Only post *inverted copular*/post linker position can carry contrastive focus.
(4) a. The culprit is JOHN;                    b.*The CULPRIT is John
(5) a. aha'ekitabu **kyo** banda ;            b.*aha banda          **b'**ekitabu
   gave 7book 7LK CHILDREN            gave 2CHILDREN  2LK'book
   'He gave the book to the CHILDREN (not to the adults).'

ii) The linker and equative/specificational copula are morphologically identical in Kinande
(6)  a. agulira Barack Obama **y'**ekitabu  (linker)
       3sg.buy.appl B. O.     1LK'7book
       'He bought Barack Obama a book.'
   b. Barack Obama   **y'**      omupresident (equative copular)
     1Barack Obama 1LK 1president
     'Barack Obama is the president.'
   c. omupresident **yo**    Barack Obama  (specificational copular)
     1president      1LK  1Barack Obama
     'The president is Barack Obama.'

iii) Adjectives cannot invert in copular inversion constructions and adverbials cannot invert in linker constructions, even when they have phi-features.
(7)a. Mary is beautiful.                       b.*beautiful is Mary.
(8)a. watuma   ekitabu **ky'**eyo             b.*watuma   eyo        **y'**ekitabu
   2sg-send  7book  7LK'20there           2sg-send  20there  20LK'book
    'You sent the book there.'

iv) Copular inversion constructions are immune to Minimal Link Condition (MLC) effects and so are linker constructions. Baker & Collins (2006) specifically propose that the MLC does not hold in linker constructions in Kinande.
(9) John is the culprit → The culprit is [John ~~is~~ ~~the culprit~~ ]
(10) agulira    [   LK Marya [~~ir~~ [ ~~gul~~ ekitabu ] → agulira [Marya   LK ~~Marya~~ [~~ir~~ [ ~~gul~~ ekitabu ]
   3sg.buy.appl  LK  Mary ~~appl~~ ~~-buy-~~ 7book
   agulira [   LK Marya [~~ir~~ [ ~~gul~~ ekitabu ] → agulira [ekitabu  LK Marya  [~~ir~~ [ ~~gul~~ ~~ekitabu~~ ]
    'He bought a book for Mary.'              3sg.buy.appl book LK Mary ~~appl~~ ~~-buy-~~ ~~book~~

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All gradience is not created equal
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In recent years, the idea that manner of articulation is a structural property (e.g. Steriade 1993, Golston & van der Hulst 1999, Pöchtrager 2006) has occasionally been offered for more widespread consumption, but remains outside the mainstream. In this presentation, I will discuss the conceptual merits of this viewpoint for modeling the phonetics-phonology interface, and present a framework in which this claim may be implemented on a larger scale.

Much has been made of the gradient properties of speech, which have been used as evidence both for and against abstract phonological representations. The traditional line of reasoning is that abstraction serves as an information reduction strategy to help learners cope with an overload of gradient information. More recent work (e.g. Flemming 2001) has suggested that gradience does not preclude the derivation of categorical phonological entities, or even that phonological categories are not primitive but eventually emerge on the basis of gradient input (e.g. Bybee 2001).

While gradience is an inherent aspect of speech that phonological models choose either to incorporate or ignore, little attention has been given to its characterization and, if possible, categorization. In the acoustic domain, we may distinguish two types of gradience. Gradient spectral information may be found in the resonance properties of the vocal tract as well as voice source characteristics. For instance, two instances of a vowel such as /u/ may show a difference in F2 frequency resulting from contextual variability, speech rate, prosodic position, or other factors. Temporal gradience may be observed in largyngeal contrasts and quantity distinctions; voice onset time (VOT) in stops shows differences on the basis of consonant place of articulation and vocalic context, among countless other factors. Gradience in both the spectral and temporal domains is readily quantifiable and transfers easily to descriptions of both place and laryngeal features.

In the case of manner contrasts however, the acoustic signal appears to be somewhat more categorical in nature, characterized by acoustic 'landmarks' (Stevens 2002). Consider stops, which are perceived on the basis of a (near) silent closure period. Although stops may be realized with incomplete closure (Crystal & House 1988) that is quantifiable on a gradient continuum, this does not necessarily entail sufficient frication noise for the perception of another manner category (fricatives). That is, despite gradient realization, stop closure is inherently privative. While place, laryngeal, and manner contrasts may all be associated with gradient phonetic detail, the phonetics of manner has unique consequences with regard to the categorization of the speech signal. Manner is an inherently more 'phonological' specification. Since prosodic structure has also been claimed to be 'phonological' rather than phonetic (e.g. Steriade 1997), equating manner with structure restricts the primary domain of the phonetics-phonology interface to place and (some languages') laryngeal contrasts.
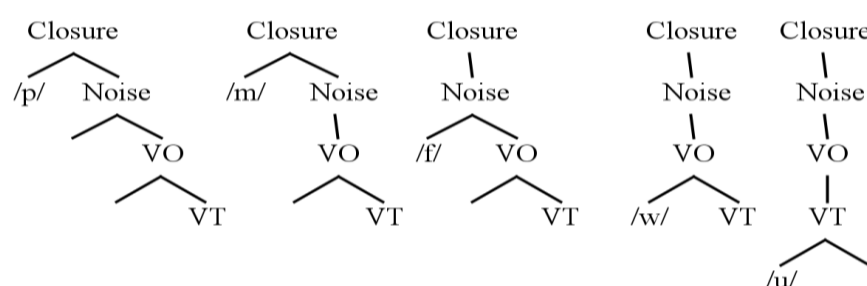
A structural view of manner is implemented in the Onset Prominence representational environment (OP; Schwartz 2013), in which prosodic constituents and segmental representations are constructed from the same representational materials. In (1) we see the primitive building block of OP structures, a hierarchy of phonetic events derived from a stop-vowel sequence. Manner of articulation, incorporating sonority and consonantal strength, is

encoded in terms of the active (binary) nodes in the a given segmental tree. This is shown in (2), which provides structures for a labial stop, nasal, fricative, approximant, and vowel. The segmental symbols are shorthand for place and laryngeal specifications, which we claim to be a primary locus of gradience in the phonetics-phonology interface.

(1) The Onset Prominence representational hierarchy

Closure
  Noise
    Vocalic Onset
      Vocalic Target
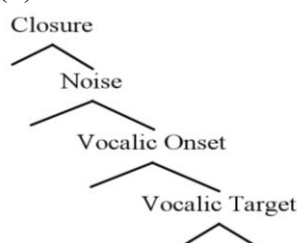
(2) Manner of articulation in the OP environment

Closure /p/ — Noise — VO — VT

Closure /m/ — Noise — VO — VT

Closure — Noise /f/ — VO — VT

Closure — Noise — VO /w/ — VT

Closure — Noise — VO — VT — /u/

We will explore the empirical implications of this model for a variety of phonological issues, including (time permitting) consonant strength and lenition, phonotactics, place perception, and the realization of laryngeal contrasts, which are ambiguous with regard to the melody-structure divide (Pöchtrager 2006, Topintzi 2010). The OP framework allows for a purely phonological perspective on what is often called 'phonetic implementation', allowing for a minimalist phonetics-phonology interface (Harris 2004) in which phonetic detail may nevertheless be expressed.

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## Gender & PRO

Gender agreement of predicates and quantifiers in infinitives suggests, **(i)**, that movement analyses of control (Hornstein 1999, etc., Kayne 2002) do not eliminate the need for PRO, and, **(ii)**, that, in gender languages, PRO is like any other DP in having a Gender head that must be specified, either from within the DP or from the context (the latter being the case for DP<sub>PRO</sub> as well as for overt personal pronouns). We illustrate this with facts from Icelandic, Italian and Polish. Much as case agreement in Icelandic infinitives (Sigurðsson 1991, 2008; see also Landau 2008), the gender agreement facts studied here suggest that PRO is partly feature independent, thus irreducible.

The question of how the Icelandic case facts bear on movement approaches to control has been widely debated, without any clear consensus (see, e.g., Landau 2003, Boeckx & Hornstein 2004). Quantifiers and adjectival predicates in infinitives have another property, though, that indicates that PRO may have "a life of its own": They show obligatory gender agreement even in the absence of an overt controller, as in (1) (where, for simplicity, the NOM case of the predicate *þreytt/þreyttur* is not glossed).

(1)  Það   var     leiðinlegt   [að   vera svona **þeytt/þreyttur** í   gær].         *Icelandic*
     it    was.3SG annoying     to    be   so    tired.F.SG/M.SG  in  yesterday
     'It was annoying (for me) to be so tired yesterday.'

Gender agreement of this sort is widespread, commonly seen in for example Romance and Slavic languages, as exemplified in (2) and (3).

(2)  È      stato fastidioso  [essere così **stanca/stanco**   ieri].        *Italian*
     is.3SG been  annoying    be     so   tired.F.SG/ M.SG   yesterday

(3)  Okropnie (mi)      było    [być tak **zmęczoną/zmęczonym** wczoraj].   *Polish*
     annoying  (me.DAT) was.3SG be   so   tired.F.SG/ M.SG             yesterday

On a specific reading, as in (1)–(3), FEM.SG is obligatory for a female speaker, whereas MASC.SG is obligatory for a male speaker. This phenomenon is distinct from default gender marking in infinitives with generic or arbitrary reading (MASC.SG in Icelandic and Polish, MASC.PL in Italian, cf. Rizzi 1986). It is parallel to gender agreement in simple finite clauses with a "non-overtly gendered gender antecedent", such as 1<sup>st</sup> and 2<sup>nd</sup> person pronouns (and pro), as in (4) (parallel facts obtain in Italian and Polish):

(4)  Ég var     **þreytt/þreyttur** í   gær.                          *Icelandic*
     I   was.3SG tired.F.SG/M.SG   in  yesterday
     'I was tired yesterday.'

The intriguing question raised by these facts is, plainly:   How  does  the  gender  feature penetrate the predicates in (1)–(4)?

We propose an analysis with the following premises: **(i)**, adjectival predicates and quantifiers do not agree "on their own"; like attributive adjectives they agree with a gender-valued DP, either an overt or a silent one; **(ii)**, the gender-valued DP in question is PRO in (1)–(3) and the (non-overtly-gender-marked) 1SG pronoun *ég* 'I' in (4)); **(iii)**, Gender is not a lexical feature but a parametric functional feature (Kayne 2006; as other macro-parameters, the Gender Parameter 'generates' many hierarchically arranged micro-parameters, cf. Roberts & Roussou 2001, Biberauer et. al 2010, but we set that aside here).

Gender languages, we argue, have an unvalued Gender feature, $G_\alpha$, in the left edge of any DP:

(5)  [<sub>DP</sub> … $G_\alpha$ … [<sub>NP</sub> … ]]

The value of $G_\alpha$ can be decided in a number of ways. First, if NP contains a lexical root, such as French feminine *mer* 'sea' or Italian masculine *mare* (cf. Kayne 2006) the noun containing the root ($[_N \sqrt{}\text{-n}]$), enters an idiomatic DP-internal Agree relation with $G_\alpha$ (("$[_N \sqrt{}\text{-mer}]$ agrees with $G_{FEM}$", etc.). Second, if NP does not contain any lexical root, as in personal pronouns and PRO/pro, the value of $G_\alpha$ is decided under control, either by an overt or a covert antecedent.

We see valuation of $G_\alpha$ under overt control across CP-boundaries at work in (6)–(7).

(6)  Mynd**in**$_i$  er skemmtileg. Ég sá  **hana**$_j$/*hann$_j$/*það$_j$ í gær.       *Icelandic*
     movie-the.F is fun.F      I   saw "her".F/*M/*N        in yesterday
     'The movie is fun. I saw **it** yesterday.'

(7)  María$_i$ er skemmtileg.  Ég sá  **hana**$_j$/*hann$_j$/*það$_j$ í gær.       *Icelandic*
     Mary  is  fun.F        I   saw  her.F/*M/*N            in yesterday
     'Marie is fun. I saw **her** yesterday.'

Gender semantics is invisible in the local syntactic derivation of the sentence "I saw her/it yesterday". That is, the pronoun *hana* 'her/it' enters the derivation as a lexically empty and a featurally non-specified DP-shell of the form (5), copying the formal value FEM.SG from its overt antecedent in the course of the derivation, regardless of its semantic interpretation (cf. Kratzer 1998, in a different framework). At the semantic (C-I) interface, the FEM.SG value is interpreted as referring to a female being in (7); in (6) it is not.

A Gender antecedent (as e.g. *myndin* in (6)) and a gendered pronoun referring to it can be separated by a number of full CPs (this is not demonstrated here due to space limitations). The Gender D-edge feature is like an antenna, downloading or copying gender marking from its closest plausible antecedent (we will explicate the notion "closest plausible"). When the antecedent is non-overtly gender marked, as the pronoun *ég* 'I' in (4), the gender algorithm nevertheless interprets it as gendered, passing the so interpreted gender value on to the predicate (*þreytt(ur)* in (4)) under Agree. The same applies to PRO in the infinitives in (1)–(3).

What is the gender interpretation of *ég* in (4) and of PRO in (1)–(3) based on? We adopt the idea that the C-domain is rich (Rizzi 1997), and that it contains a Speaker feature as a C-probe, entering a +/− Agree relation with Spec-T (see Bianchi 2006, Giorgi 2010, Sigurðsson 2011, reviving some of the basic insights in Ross 1970). We also argue that it is this feature that is the gender antecedent of *ég* in (4) and of PRO in (1)–(3). This is sketched for PRO in (8) (SP$_G$ = "Speaker Gender", set by pragmatic context scanning, cf. Sigurðsson 2011).

(8)  [$_{CP}$ … SP$_G$ … [$_{TP}$ PRO … tired]]
         └──────┘ └────┘
          *Agree*   *Agree*

The facts in (1)–(3) and (6)–(7) show, (**i**), that PRO can be syntactically feature specified even in the absence of an overt controller, and (**ii**), that gender can be controlled and copied from outside of CP – crucially, though, via phase edges. Evidently, movement approaches to control (reducing controlled PRO to a copy) do not eliminate the need for PRO and control.

The Speaker feature in the C-domain and the Gender feature in the D-domain are edge linkers in the sense of Sigurðsson 2011. Extending Sigurðsson's approach we argue that all phases are equipped with edge linkers that enable syntax to compute elements of a phase in relation to the next phase up or to the speech act context (adopting the suggestion that DPs are phases, see Chomsky 2007, inter alia). We also argue that edge linkers have visible phase-internal effects (e.g., gender agreement) but are themselves invisible at the phase edge by necessity. We present evidence from Germanic, Romance and Slavic languages that the D-edge Gender feature itself is never lexicalized although it may have radically visible phase-internal effects.

# Disentangling *own*: evidence from association with focus
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The possessive marker *own* exhibits a complicated behavior that gives rise to a wide range of subtle meaning differences. Accordingly, the theoretical literature has proposed a number of different (and, for the most part, informal) characterizations of this element. In, e.g., (1), *own* has been argued to turn *her* into a reflexive possessive pronoun (Higginbotham 1985), whereas in (2) *own* is usually described as some sort of 'emphatic possessive' (Baker 1995). This paper uses (primarily) data from association with focus to disentangle the various effects that *own* gives rise to and argue that there are at least two distinct items; *own_R*, a marker of strong reflexivization, and *own_IP*, a marker of strong/ inalienable possession.

(1)   Zelda painted her own room.          (2)   Zelda's own room is bigger than Lucie's.

**Own_R.** Focused Local Reflexivizers (LR) in the scope of Focus Association Operators (FAOs) like negation in (3), license two types of alternatives; Subject Alternatives (SA, {x praised John}) and Object Alternatives (OA, {John praised x}). Spathas (2010) generates these alternatives by treating LR as a reflexivizing function (4) that contrasts with other arity reducing operations, like Passivization and Anti-Passivization (5). Similarly, focused *own* gives rise to SA ({x painted John's room}) and Possessor Alternatives (PA, {John painted x's room}) (6). We capture the alternatives in (6) by treating *own* as a reflexivizer that operates on the complex derived predicate *λxλy. y painted x's room*, which is created after QR of *own_R* above the head introducing the external argument (7) (cf. the QR treatment of LR in Lechner 2012). Safir (1996) a.o. expresses the intuition that SA support the idea that *own* is an 'intensifier', as, e.g., (1) can be paraphrased by the use of the anti-assistive intensifier *herself* in (8). Spathas (2012, 2013) shows that anti-assistive intensifiers, but not reflexivizers, license SA under Conventionally Associating Operators like *only* (Bevaer&Clark 2008). Crucially, *own_R* does not license SA under *only* (9). Notice also that SA cannot be attributed to *her own* being a possessive reflexive interpreted as a designated bound variable, since focused pronouns, which do license bound variable readings, do not license SA (10).

(3)   a. Zelda didn't praise herSELF. Oscar praised her.     *SA*

   b. Zelda didn't praise herSELF. She praised Oscar.     *OA*

(4)   [[herself]]=$\lambda R_{eet}\lambda x.R(x)(x)$ (5) a.[[PASS]]=$\lambda R\lambda x\exists y.R(x)(y)$ b.[[Anti-P]]=$\lambda R\lambda x\exists y.R(y)(x)$

(6)   a. Zelda didn't paint her OWN room. Oscar painted her room.          *SA*

   b. Zelda didn't paint her OWN room. She painted Oscar's room.     *OA*

(7)   [$_{vP}$ own$_1$ [$_{vP}$ v [$_{VP}$ V [$_{DP}$ her [$_{D'}$ [$_D$ 's t$_1$] [$_{NP}$ room]]]]]]

(8)   Zelda painted her room herself (i.e. without help).

(9)   a. Zelda only painted her OWN room. #No one else painted her room.          **SA*

   b. Zelda only painted her room herSELF. No one else painted her room.     *SA*

(10) Zelda didn't paint HER room. #Oscar painted her room.          **SA*

Unlike LR, however, which can license strict readings in similar environments, *own_R* never licenses strict readings in (11). We claim that *own_R* not only reflexivizes the derived predicate but in addition turns it into a Strong Reflexive relation, i.e. a *necessarily* reflexive relation (12) (based on the definition of Strong Reflexivity in Moulton 2005). Given (12), *own_R* is predicted to be redundant with complex predicates that are inherently strongly reflexive (13) and to force a self-as-other reading of ambiguous predicates (14).

(11) a. Only ZELDA painted her own room. #No one else painted Zelda's room.

   b.*Zelda painted her own room, because Lucie did <paint Zelda's room>.

(12) [[own_R]]= $\lambda R\lambda x\lambda e\lambda w.R(x)(x)(e)(w)$ & $\forall y\forall z\forall e'\forall w'. R(y)(z)(e')(w')=1 \rightarrow y=z$

(13) *Zelda lost her own mind.          (14) Zelda opened her own eyes (with her hands).

Our account predicts *own_R* to be subject oriented. As predicted, no SA arises when the antecedent of the pronoun is not the subject (15). Also, assuming that *own_R* will land to the first landing site available for compositional interpretation, we predict *own_R* to be strictly

local. As predicted, the choice of local vs non-local antecedent leads to distinct interpretations. In particular, only the local antecedent gives rise to SA, (16) vs. (17).

(15) Zelda$_1$'s brother didn't paint her$_1$ OWN room.

    #Lucie's brother/Lucie painted Zelda's room.

(16) Zelda$_1$ didn't ask Lucie$_2$ to paint her$_1$ OWN house.

    #Oscar asked Lucie to paint Zelda's house.

(17) Zelda$_1$ didn't ask Lucie$_2$ to paint her$_2$ OWN house.

    She asked Oscar to paint Lucie's house.

***Own$_{IP}$.*** The entry in (12) does not cover the cases where reflexivization of a derived predicate is not possible. As in (7), we assume that in these cases too, *own* merges with the Possessive head *'s* (Safir 1996), a definite article which introduces a Possession Relation (Barker 1995, 2011) represented in (18) as a free, contextually resolved variable R. For DPs with relational nouns (*Zelda's brother*), we assume the entry in (19). The contribution of *own$_{IP}$* is to strengthen R into a *necessary* relation, i.e. to turn a relation R of 'alienable possession' into a relation of 'inalienable possession' (20). According to (20), the strengthening can apply regardless of the content of R. *Own$_{IP}$*, then, does not specify R as a relation of literal 'possession' (contra Nishiguchi 2008); in, e.g., (21) the relation R can be any salient relation. Similarly, *own$_{IP}$* cannot be taken to signal focus on the possessor (contra Nishiguchi 2008); the existence of salient alternative possessors is neither a necessary nor a sufficient condition to license *own$_{IP}$* (even though use of *own$_{IP}$* immediately excludes the possibility that the possessed individual can have alternative possessors.) Since possessive DPs with and without *own$_{IP}$* are extensionally equivalent, use of *own$_{IP}$* requires that the (in)alienability of R is at issue. E.g., (2) is only felicitous if we assume that Zelda is in some alienable possession relation R with some other room, e.g. Lucie's. Similarly, the context in (22) (Zribi-Hertz 1996, (77)) does not make salient alternative possessors of John's dog, but alternative animals (dogs among them) with which John can be in some fleeting relation. In (23), where own appears in the scope of an intensional transitive verb, the speaker does not simply express a wish to be in some possessive relation R with a room, but to be in an inalienable possession relation with a room. As in the case of *own$_R$*, we predict that use of *own$_{IP}$* will be degraded if the relation R is already inalienable, i.e. if the NP is a kinship term or a body-part. This prediction appears to be borne out, as long as care is taken to exclude a parse with *own$_R$*. Consider (24). In a context in which the speaker looks at the hand of the hearer and notices that it is smaller than his, (24) is degraded. In a context where the speaker and the hearer have been given pictures of hands, however, (24) is felicitous. We assume that in this case the relational noun has been detransitivized (Barker 1995), before combining with the determiner in (19). Notice that the account does not predict that the hand in (24) cannot be the speaker's actual hand; what it predicts is that the relation R that links the speaker and the hand is not the body-part relation, but some alienable relation.

(18) $[\![$ 's $]\!] = \lambda P_{et}\lambda y\iota x.P(x)$ & $R(x)(y)$      (19)    $[\![$ 's $]\!] = \lambda R_{e,et}\lambda y\iota x.\ R(x)(y)$

(20) $[\![$'s own$]\!] = \lambda P\lambda y\lambda e\lambda w\iota x.P(x)(w) \& R(x)(y)(e)(w)$ & $\forall z\forall e'\forall w'.\ R(x)(z)(e')(w')=1 \rightarrow z=y$

(21) My own cloud is nicer than yours.

(22) My friend John$_1$ already knew that Mary$_2$ disliked animals, but he has been taking tranquillizers since he heard the awful news: John's sister$_2$ hates his$_1$ own dog as well.

(23) I am tired of sharing. I want my own room.      (24) My own hand is bigger than yours.

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# In support of an articulated event-layer

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The goal of this talk is to argue, based on evidence from the Dravidian language Tamil, that the syntax and semantics of transitivity, 'get'-like middles, and passives is distributed across three distinct heads. These heads are contiguous and have the following rigid ordering: VOICE < 'GET' < PASSIVE, with VOICE being closest to the verb-root and PASSIVE being furthest away. Thus, event semantics is distributed across an articulated *v layer*, much like the articulated C layer proposed within cartographic proposals (Rizzi, 1997), than encoded on a single *v* head. Tamil is highly inflected and agglutinative; a finite verb consists of the verb-root + a sequence of functional morphemes which, furthermore, have a rigid relative ordering, thus transparently reflect the underlying clausal hierarchy above V. Transitivity alternations are typically marked by a systematic voicing distinction on the morpheme (boldfaced below) directly following the verb-root: thus, unaccusative (1) has voiced *-nʤ-* whereas transitive (2) has voiceless *-čč-*:

(1) Paanæ   oɖæ-**nʤ**-adŭ/*oɖæ-**čč**-adŭ.
    Pot[NOM] break-INTR.PST-3NSG/*break-TR.PST-3NSG
    "The pot broke."

(2) Sri     paanæ-jæ oɖæ-**čč**-aan/*oɖæ-**nʤ**-aan.
    Sri[NOM] pot-ACC   break-TR.PST-3MSG/*break-INTR.PST-3MSG
    "Sri broke the pot."

Given that this morphophonological alternation directly tracks alternations in transitivity, I propose that it encodes a position related to the introduction of the external argument, very much like the Voice head in (Kratzer, 1996). (3) represents a more complicated variant of (1)-(2), showing evidence for further articulation above the verb-root:

(3) Paanæ   Sri-aal    oɖæ-**kk**a-paʈ-ʈ-adŭ/*oɖai-**g**a-paʈ-ʈ-adŭ.
    Pot[NOM] Sri-INSTR break-TR-PASS-PST-3NSG/*break-INTR-PASS-PST-3NSG
    "The pot was broken by Sri."

(3), the passivized variant of (2), shows that the passive has to be built on the transitive variant of the verb; it thus supports the view (Embick, 2004) that passives, while lacking a true external argument like unaccusatives, are more "agentive" in some sense. Crucially furthermore, (3) shows that the passive is a distinct morpheme added above the transitivity morpheme, a fact that is most straightforwardly captured by modelling the passive on a separate head from Voice. Now consider the reflexive structure below:

(4) Sri$_i$     tann-æ$_{\{i,*j\}}$ aɖi-ččŭ-kko-ŋɖ-aan/*aɖi-čč-aan.
    Sri[NOM] ANAPH-ACC hit-TR-*koɭ*-PST-3MSG/*hit-TR.PST-3MSG
    "Sri$_i$ hit himself$_{\{i,*j\}}$."

In the typical case, co-argument reflexivity in Dravidian is only possible under the presence of a morpheme *koɭ* suffixed onto the verbal stem, as (4) shows for Tamil. *koɭ* also marks unaccusatives, lending apparent credence to the popular view that reflexivity is a species of voice phenomenon (see proposals in Alexiadou, Anagnostopoulou, and Everaert, 2004), based on the observation that reflexives and unaccusatives are crosslinguistically often identically marked. E.g. Lidz (2001) proposes a voice-based treatment of *koɭ* in the related Dravidian language Kannada. However, closer inspection reveals that *koɭ* (at least in Tamil) realizes a head distinct from Voice: I. *koɭ*-suffixation on unaccusatives is fully optional (compare (1) with (5)); II. the verb is marked as unaccusative even before *koɭ*-suffixation, as indicated by the phonological

voicing on the transitivity morpheme in (5); III. *koɭ* marks not only reflexives and unaccusatives but may also optionally mark a (non-reflexive) transitive, as in (6):

(5) Paanæ    oɖæ-**nʤŭ**-ko-ŋɖ-adŭ/*oɖæ-**čču̯**-ko-ŋɖ-adŭ.
    Pot[NOM] break-INTR-*koɭ*-PST-3NSG/*break-TR-*koɭ*-PST-3NSG
    "The pot got broken." (rough translation)

(6) Sri    paanæ-jæ oɖæ-**čču̯**-ko-ŋɖ-aan/*oɖæ-**nʤŭ**-ko-ŋɖ-aan.
    Sri[NOM] pot-ACC   break-TR-*koɭ*-PST-3MSG/*break-INTR-*koɭ*-PST-3MSG
    "Sri got the pot broken." (rough translation)

Sundaresan (2012) shows that *koɭ* introduces a "middle-like" semantics (one nevertheless divorced from Voice) similar to that of *get* in GET-passives (McIntyre, 2011) which, furthermore, is precisely what is needed to allow co-argument reflexivity to obtain in structures like (4). But at this juncture, it suffices to note that: (i) *koɭ* realizes a head that is projected above Voice; (ii) the semantics of reflexivity and middles is not (always) encoded on Voice but on a head above Voice. Now consider what happens when we string all these morphemes together:

(7) Paanæ    Sri-aal    oɖæ-čču̯-koɭɭæ-paʈ-ʈ-adŭ/*oɖæ-čču̯-paɖæ-ko-ŋɖ-adŭ.
    Pot[NOM] Sri-INSTR break-TR-*koɭ*-PASS-PST-3NSG/*break-TR-PASS-*koɭ*-PST-3NSG
    "The pot got broken by Sri."

(7) yields evidence for an even finer level of articulation, showing: (i) that the semantics of voice, middles, and passives are encoded on distinct, but contiguous, syntactic heads, and (ii) by the mirror principle, Passive is projected above the head *koɭ* spells out, which in turn is projected above Voice. The Tamil data thus presents crucial evidence that there isn't a single head (= *v* or Voice) responsible for encoding the semantics of transitivity, middles, and passives; rather, this is distributed across (at least) three distinct heads. Thus, it makes sense to think of *v* as a layer or domain (much like with C), consisting of different heads manipulating various aspects of the event semantics, as proposed e.g. in Adger (2007) and Ramchand and Svenonius (2013). An important question to be resolved is whether this is merely a property of Tamil and Tamil-like languages, i.e. whether languages are actually parametrized with respect to whether reflexivity, anticausativity and passivization are encoded in Voice, or represents a universal fact about UG. Evidence for the former would involve showing e.g. that passives, reflexives, and unaccusatives have systematically different meanings or have different possibilities for being combined with each other in the voice-based vs. Tamil-like languages. But the UG-alternative is stronger and perhaps more attractive. Potential empirical support for it even in languages like English and German (without clear morphological evidence for the distinct heads) comes from GET-passive structures, which show ambiguity between "agent"-like and "patient"-like readings (e.g. "Susi got her teeth pulled out."). Simple voice-based approaches must posit underspecification or syncretism to explain these facts but these fall out naturally under the current approach which divorces the semantics of Voice from that of GET. Adopting this alternative doesn't necessarily force us to posit a large number of null heads in languages like English either; since the relevant heads form a contiguous sequence, we could instead propose that the overt morphology that does appear in these languages "spans" (Ramchand, 2008) a range of these heads.

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# Upward P-cliticization, accent shift, and extraction out of PP
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This paper reveals an effect syntactic movement has on prosodic parsing of proclitics and their hosts. I explore certain accent shifts from hosts to proclitics present in Bosnian/Croatian/Serbian (BCS) (1) and establish a novel correlation between the mobility of the host and the accent shifts. I show that this correlation gives a way to tease apart two alternative analyses of P-adjunction to the host suggested for constructions involving extraction of "P+AP" complex, and that the winning analysis can be extended to certain cases of apparent phasal complement extraction.

**Accent & LBE.** Bosnian is a pitch-accent language in which prominent syllables carry either a *falling tone* (indicated by a grave accent mark [ˋ] above the vowel in (1)) or a *rising tone* (indicated by an acute mark [ˊ]). Bosnian prepositions (proclitics) can take over the falling accent from the first syllable of the following adjective (1a), the option without the shift being also available. When two adjectives modify a noun, the shift is degraded if both adjectives are descriptive (1b), but allowed if they belong to different classes: descriptive + possessive (1c); quantifier + possessive (1d) (possessives and some quantifiers are morphologically adjectives in BCS). The accent shift in (1a,c,d) results in a rising tone on P.

(1) a. **ú_sta:roj** kući (~u st**à:**roj kući) c. **ú_sta:roj** bratovoj      kući
      in_old    house  (in old house)    in_old    brother.poss house
    b. *\***ú_sta:roj** velikoj kući        d. **ú_svakoj** bratovoj      kući
        in_old  big      house            in_every brother.poss house

Significantly, there is a correlation between this accent shift and left-branch extraction (LB) of adjectives, which BCS allows (2a). When two adjectives modify a noun, LB is degraded if both are descriptive (2b), but allowed if the adjectives belong to different classes (2c-d).

(2) a. Sta:ru$_i$ je voljela t$_i$ kuću.        **cf.(1a)**  c. Sta:ru$_i$ je voljela t$_i$ bratovu kuću.        **cf. (1c)**
      old    is loved      house                old    is loved    brother.poss house
    b. *Sta:ru$_i$ je voljela t$_i$ veliku kuću. **cf.(1b)**  d. Svaku$_i$ je voljela t$_i$ bratovu      kuću. **cf. (1d)**
      old    is loved      big   house              every is loved      brother.poss house

Given the striking parallelism between (1) and (2), which shows that the accent shift is possible only in contexts where LB is also possible, we reach the generalization in (3).

(3)      A proclitic (preposition) can take over the accent from its host only if the host is allowed to move independently.

For the accent to shift, the P and its host must be one prosodic word, i.e. P needs to incorporate into the host prior to accent assignment. Given this requirement, (3) can tease apart analyses of P-cliticization and extractions from PPs. BCS prepositions are involved in apparent non-constituent extraction where the "P+AP" moves out of PP, referred to as "extraordinary LB" (e-LB).

(4) a. [Ú_sta:roj]$_i$ je živjela t$_i$ (bratovoj)      kući.    b. *[Ú_sta:roj]$_i$ je živjela t$_i$ velikoj kući.
        in_old      is lived    (brother.poss) house        in_old      is lived    big      house

Based on a number of parallelisms between ordinary LB and e-LB, Borsley & Jaworska (1988) and Bošković (2012) argue (4a) involves ordinary LB, where P adjoins to the moving adjective. Bošković offers two alternatives for this P-adjunction, downward vs. upward P-cliticization, both of which seem equally plausible without (1). However, the accent shift facts provide us with a way of teasing them apart. First, *downward P-cliticization* involves P-lowering to its host, AP. This would be enough to capture the availability of accent shift in (1a,c,d), but nothing would prevent P-lowering in (1b). If P-lowering were sufficient for the accent to shift, then AP-rising being blocked in a certain context (cf. 2b) should not affect it, so the ungrammaticality of (1b) cannot be captured. In contrast, with the *upward P-cliticization* analysis in which the host first moves to a position c-commanding P (e.g. SpecPP) and then P adjoins to it, we correctly capture the grammaticality of (1a,c,d) and (4a) where AP-rising out of NP is otherwise allowed (cf. 2a,c,d), creating the conditions for P-adjunction and accent shift. And, crucially, we also capture

the ungrammaticality of (1b) and (4b), where AP rising is blocked and the accent shift is blocked as well. P+AP can either stay in SpecPP, yielding (1a,c,d); or move further, yielding (4a).

**Extension.** In the absence of adjectives, P takes over the accent of the noun following it (5).

(5) **ú_kući**    (~u kùći)

    in_house  ( in house)

We have seen P can take over the accent from an adjective only if the AP moves to its Spec. Then, the only way for P to take over the accent from its NP host should be if the NP raises to SpecPP and P adjoins to it in this position. Just like P+AP can undergo "extraordinary LB" out of SpecPP (4a), it seems extraction of P+NP out of SpecPP should then also be available in BCS.

(6) $P_j$+$NP_i$........[PP $t_j$+$t_i$ [P' $t_j$  $t_i$ ]]

The extractions (4a/6) are cases of movement from PP-islands that is disallowed if P stays in situ.

(7) a. *Sta:roj$_i$ on živi [u $t_i$ kući].          b. *Sta:roj$_i$ kući  on  živi [u  $t_i$] .

       old      he lives in   house              old       house he  lives in

(7a) shows LB across a P is disallowed, but if the P also moves LB is possible (4a). Bošković (2012) treats this contrast as an instance of a more general mechanism of rescue by PF-deletion. It's been noticed that a locality violation can be rescued if the island is not pronounced in PF (Ross 1969; Chomsky 1972; Merchant 2001). Based on cases where D-to-V incorporation in Galician rescues movement out of island DPs, Bošković (2012) argues a derivation can be saved if merely the head of an island is removed by copy deletion, i.e. if it moves from its base position. He accounts for the contrast in (4a)/(7a) as follows: AP-movement to SpecPP causes a locality violation (7a) (see Bošković 2012 for details of the violation), but the head of the PP-island moves from its base position (incorporates into AP) in (4a), so its copy in $P^0$ is removed, rescuing the derivation. The account of (7b) is parallel to (7a) in the system, i.e. extraction of NP out of the PP is disallowed in SC, and the derivation crashes because the head of P is in situ in (7b). What follows from the system is that if the P attaches to the NP moving out of the PP, the derivation should be rescued and the hypothetical extraction in (6) should be allowed. Given that the result of (6) resembles movement of the whole PP, the question is whether we can ever detect such extraction. Interestingly, precisely this mechanism can be used to capture certain cases of phasal-complement extraction that Bošković's contextual approach to phases fails to account for. Bošković (in press) argues that the highest projection in the extended domain of a lexical head functions as a phase. Within the nominal domain, DP is a phase in languages with articles, but DP is missing in languages without articles (Corver 1992; Zlatić 1997; Bošković 2005), so NP is a phase in BCS. The system predicts extraction of a complement of N should be blocked in BCS, due to the interaction of the PIC, which requires extraction out of a phase to proceed through the edge (Spec or adjunct) and *anti-locality* (Bošković 1994/2005; Grohmann 2003; Abels 2003), which bans movement steps that are too short. Bošković argues a moving element has to cross at least one full phrase. Indeed, genitive-marked complements of N are immobile (8a). This, however, is not the case with P-complements (8b), a serious problem for the system since PP is also a phase.

(8) a.*[Kojeg      studenta]$_i$  gledaš [NP slike  $t_i$ ] b. [Na koje    pitanje]  želiš  [NP odgovor t$_i$ ]?

     which.GEN student.GEN look-at    pictures      to  which question want      answer

However, the upward P-cliticization analysis, where the AP/NP host moves to SpecPP and P cliticizes to it, easily captures the apparent N-complement extraction in (8b), unifying it with extraordinary LB. Parallel to the AP in (1a,c,d)/(4a), *which question* in (8b) moves to SpecPP, violating anti-locality. P then cliticizes to the NP in SpecPP, and the derivation is rescued since the PP-phase is headed by a trace (Bošković shows other anti-locality violations can also be rescued this way). What seems to be PP-extraction is then a moving NP, which carries the cliticized P, its movement proceeding through phasal edges without violations.

Abels, K. (2003) Successive cyclicity, anti-locality, and adposition stranding. ~ Bošković, Ž. (in press) Now I'm a phase, now I'm not a phase. LI 45. ~Riđanović M. & Aljović N. (2009) On the shift of Bosnian accent from host to proclitic: New insights.

# POSSESSIVE CONSTRUCTIONS IN TURKISH: PPs IN DISGUISE

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The possession relation in Turkish is expressed by a structure called the genitive possessive construction (GP), where the possessor bears the genitive case and the possessee an agreement marker (1). There are two other related constructions in Turkish: (i) The possessive-free genitive construction (PFG) (2) and (ii) the genitive-free constructions, also known as the possessive compounds (PC) (Tooru 1996, Göksel&Kerslake 2005) as in (3):

**(1)** Kadın-**ın**    doktor-**u**  (GP)  **(2)** Kadın-**ın** doktor  (PFG) **(3)** Kadın   doktor-**u** (PC)
    woman-gen doctor-3ps.poss       woman-gen doctor               woman doctor-3ps.poss
    The doctor of the woman         The doctor of the woman    Women's doctor (gynecologist)

The aim of this paper is to analyze the semantic and syntactic functions of the two different markers, namely, the genitive (GEN) and the possessive agreement (POSS) observed in the structures in (1-3). We will specifically argue that GEN introduces a relation between two entities and a moment in time, as also observed in Daakaka by von Prince (2012), parallel to a stage-level interpretation. POSS, on the other hand, is not a regular agreement marker as has been proposed in the literature on Turkish (Kornfilt 1984, 1997, Özsoy 1994, Yükseker 1998, Arslan-Kechriotis 2006, 2009, Göksel 2009). We will claim that it is the morphological reflex of a complex head, which consists of a P head defining the semantics of the relation established between the two entities and the head of nP changing the category of PP into a nominal construction. Thus, we argue that POSS in constructions (1) and (3) implies the presence of a PP. The relation POSS is associated with unlike GEN has no temporal value, thus, is parallel to an individual-level interpretation.

In the literature on Turkish, GEN has always been associated with definiteness and specificity (Barker, Hankamer & Moore 1990, Erkman-Akerson & Özil 1992, among others). This semantic property of the genitive is well-illustrated in PFG constructions where the only marking is GEN as in (2). PFGs require specific discourse contexts, where the possessor has a presuppositional and a clearly defined referent. Therefore, the genitive noun in PFG's cannot be indefinite or quantified (4a-b) unlike GPs (5a-b). PFGs are incompatible with restrictive relative clauses (6a), while GPs are compatible. In terms of scope, they behave parallel to definite nouns, hence always take wide scope at the clausal level (7a), unlike GPs, which can also take narrow scope (7b):

**(4)** a. *Bir kız-ın ev            b. *Herkes-in        ev
      a   girl-gen house              everybody-gen house
**(5)** a. Bir kız-ın ev-i          b. Herkes-in ev-i
      a   girl-gen house-3ps.poss     everybody-gen house-3ps.poss
      A girl's house                Everybody's house
**(6)** a. *Uyu-yan kız-ın kitap      b. Uyu-yan kız-ın kitab-ı
      sleep-part girl-gen book        sleep-part girl-gen book-3ps.poss
                                      The book of the girl who is sleeping
**(7)** a. Her kız   ben-im iki soru-yu cevapla-dı.          (two>every, *every>two)
      every girl I-gen  two question-acc answer-past
      Every girl answered the two (specific) questions of mine
    b. Her kız ben-im iki soru-m-u cevapla-dı.             (two>every, every>two)
      every girl I-gen  two question-acc answer-past
      Every girl answered two questions of mine

The genitive noun in PFGs has an underspecified relation to the head noun, which needs to be defined by the discourse (8). Therefore, PFGs are not used in situations where the genitive

noun holds a specific relation to the head noun, such as location (9a-b) in space and time or a thematic relation as in result nominals (9c), which always require the possessive marker:

**(8)** Ali-nin araba
Ali-gen car
Ali's car (the car he owns/he likes/he saw in the gallery/he is related to in some way)

**(9)** a. İstanbul-un müze-ler-*(i)    b. Nisan-ın yağmur-lar-*(ı)  c. Şişe-nin açacak-*(ı)
Istanbul-gen museum-pl-3ps.poss April-gen rain-pl-3ps.poss bottle-gen opener-3ps.poss
Istanbul's museums          Rains in April          The opener of the bottle

Such well-defined relations between the genitive and the head-noun are only expressible in the presence of POSS. We argue that Larson and Cho (2003)'s proposal that the relation between two nominals in possessive phrases is similar to the relations established by prepositions can also be extended to the constructions in (1) and (3) which involve POSS. The ambiguity observed in (10) below provides the main motivation for this proposal, which implies that to get the (i) reading at some point in the derivation the genitive and the head noun should both be within the scope of the adjective 'eski' assumed to be above the PP layer. We argue that it is the P head that defines the type of relation established between the genitive and the head noun. The PP is in turn embedded under an nP, which recategorizes it as nominal. When P head raises into n head, this is morphologically spelled out as POSS as shown in (11a).

**(10)** Ali-nin eski araba-sı
Ali-gen old car-3ps.poss
i.        Ali's former car
ii.       Ali's car which is old

**(11)** a.
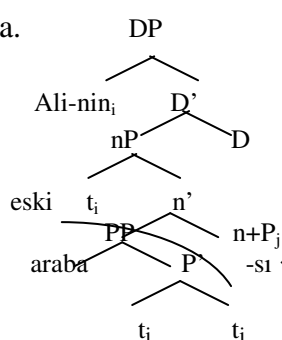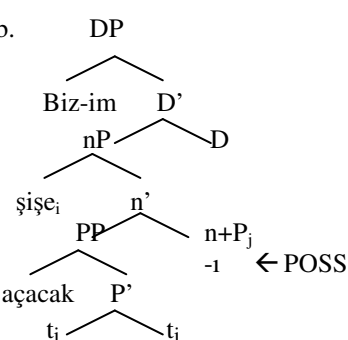


Thus we assume that in constructions which involve POSS morphology, there is always a specific interpretation for the relation betweeen the two nouns paraphrasable into an abstract postpositional relation. As illustrated by the PC examples in (12), the relation between the two nouns can be expressable by a preposition relation, e.g. *in/at, for, of, about,* etc.

**(12)** a. İstanbul müze-ler-i        b. Şişe açacağ-ı        c. Nisan yağmur-lar-ı
Istanbul museum-pl-3ps.poss    bottle opener-3ps.poss    April  rain-pl-3ps.poss
Istanbul museums            Bottle opener          April showers/rains
The museums of Istanbul      Opener for bottles      Rains in April

In the structures in (11) above, we assume that the DP domain is the discourse related layer, where GEN comes into play. While the possessors starting from the PP domain can raise into this layer (11a), NPs which have no specific relation to the head noun as in PFGs can be directly merged into this structure at the DP level. (13) represents a PFG construction where the genitive  pronoun is directly merged into Spec, DP, which embeds a PC involving a PP layer as depicted in (11b). Thus, while the PP defines the relation between the bottle and the opener, the genitive pronoun merged at the DP layer simply introduces an underspecified relation to the bottle opener, which needs to be specified by the discourse.

**(13)**  Biz-im şişe açacağ-ı
we-gen bottle opener-3ps.poss
our bottle opener

To conclude, while the Turkish GEN provides support for von Prince's linker genitive analysis for Daakaka, we propose a new account for the possessive marker in Turkish, where it is not a regular agreement marker but a reflex of the presence of a nominalized PP relation.

# ON THE EVIDENCE CONDITION OF YES/NO QUESTIONS IN ENGLISH

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**Observations**

Standard analyses of questions, based on Hamblin (1958, 1973), identify the meaning of $?p$, the yes/no question whose possible answers are $p$ and $W\backslash p$, with the set $\{p, W\backslash p\}$. It has been pointed out that this approach fails to capture the differences between the various "wordings" of $?p$ in terms of their felicity conditions (cf. Ladd 1981, Büring and Gunlogson 2000, Gunlogson 2003, Romero and Han 2004, Rooy and Safarova 2003, Safarova 2005, Truckenbrodt 2006, Krifka 2012, Sudo 2013). This paper is concerned with one of these felicity conditions. Specifically, it proposes an account for the "evidence condition" of yes/no questions (cf. Büring and Gunlogson 2000), i.e. an account for how the presence of contextual evidence with respect to $p$ or $W\backslash p$ determines which morpho-syntactic variants of $\{p, W\backslash p\}$ are felicitous. As an illustration, consider the two expressions in (1).

(1)  a.  Is John married?  b.  Is John single?

According to the standard analysis, both express one and the same question which is (2).

(2)  $\{\{w \mid \text{John is married in } w\}, W\backslash\{w \mid \text{John is married in } w\}\}$

However, it is clear that these expressions are not interchangeable in all contexts of use. Suppose, for example, that the speaker sees John wearing a wedding ring. She can then ask (1a), say to "double check" or express surprise at what she sees, but it would be quite strange for her to ask (1b), for whatever purpose. Note that the contrast persists in a situation where the evidence is less direct, for example where the speaker hears someone say "John is picking up his wife from the airport." The conclusion, then, is that (1a) is felicitous, while (1b) is not, in contexts where there is evidence, direct or indirect, that John is married. This difference, it turns out, exists not only between (1a) and (1b) but also between many other pairs of expressions. Thus, we can observe that every sentence in (3a), but no sentence in (3b), is felicitous in a context where there is evidence that John is married, even though all sentences in (3) express the question in (2).

(3)  Context: the speaker hears someone say "John is picking up his wife"
  a.  Is John married? / Is John not single? / Isn't John single? / John is married? / John is not single? / John isn't single?
  b.  #Is John single? / #Is John not married? / #Isn't John married? / #John is single? / #John is not married? / #John isn't married?

Let us call the proposition denoted by the declarative sentence underlying a yes/no question (i.e. the TP constituent) the "prejacent" of the question and formulate the following generalization.

(4)  <u>Biased Context Generalization (BCG)</u>: A sentence expressing the yes/no question $\{p, W\backslash p\}$ is infelicitous if the prejacent of the question is $W\backslash p$ and there is contextual evidence for $p$

Now consider a "neutral context," one in which the speaker has no evidence as to whether John is married or single. It seems that in such a context, a natural way to make an inquiry about John's marital status is to ask one of the questions in (5a). The questions in (5b), on the other hand, would be quite unnatural in this case.

(5)  Context: the speaker has no evidence about John's marital status
  a.  Is John married? / Is John single?
  b.  #Is John not married? / #Is John not single? / #Isn't John married? / #Isn't John single? / #John is married? / #John is single? #John is not married? / #John is not single? #John isn't married? / #John isn't single?

We can thus formulate another generalization about the evidence condition of yes/no questions.

(6)  <u>Neutral Context Generalization (NCG)</u>: In contexts where there is neither evidence for $p$ nor evidence for $W\backslash p$, a sentence expressing the question $\{p, W\backslash p\}$ is only felicitous if it (i) shows subject auxiliary inversion and (ii) contains no negation

**Deriving the two generalizations**

**1.** Following many works, we assume that yes/no questions are headed by "question morpheme" Q denoting the function '$\lambda p.\{p, W\backslash p\}$' which maps a proposition to the set containing it and its negation (cf. Katz and Postal 1964, Baker 1970, Karttunen 1977). We propose that the English lexicon contains a silent evidential marker E whose semantics is purely presuppositional: $[\![E]\!]^c(p) = p$ if there is evidence for $p$ in $c$ (i.e. if $K_c \subseteq p$), undefined otherwise. Thus, E presupposes what epistemic *must* asserts (cf. Fintel and Gillies 2010). We assume that both Q and E are heads in the C domain, and hence that the structure of a yes/no question is either [$_{CP}$ Q [$_{CP}$ E TP]] or [$_{CP}$ Q TP]. The BCG can then be derived from the preference rule in (7) which we claim can be made to follow from Heim's (1991) principle of Maximize Presupposition (cf. Singh 2011).

(7)    E-Rule: Expression $\phi$ is infelicitous in context $c$ if there is another expression $\psi$ such that (i) $[\![\psi]\!]^c = [\![\phi]\!]^c$ and (ii) $\psi$ contains E but $\phi$ does not

Proof of the BCG: Let $c$ be a context where there is evidence that $p$ is true and $\phi$ be a sentence expressing the question $\{p, W\backslash p\}$ whose prejacent is $W\backslash p$. Thus, $\phi$ would be either [Q TP] or [Q [E TP]] with $[\![\text{TP}]\!]^c = W\backslash p$. Suppose $\phi = $ [Q TP]. Then there is an alternative expression $\psi = $ [Q [E TP′]] with $[\![\text{TP}′]\!]^c = p$ such that (i) $[\![\psi]\!]^c = [\![\phi]\!]^c = \{p, W\backslash p\}$ and (ii) $\psi$ contains E but $\phi$ does not. Hence, $\phi$ is infelicitous in $c$ by virtue of the E-Rule. Suppose $\phi = $ [Q [E TP]]. Then $\phi$ is infelicitous in $c$ as well, as it presupposes, by virtue of the definition of E, that there is contextual evidence for $W\backslash p$, and consequently constitutes a presupposition failure. $\square$

**2.** To derive the NCG, we assume that Q triggers head-movement (cf. Chomsky 1981). In addition, we propose the preference rule in (8) which concerns the use of negation and which we claim can be made to follow from Grice's Maxim of Manner (cf. Katzir 2007). We write "LEX($\alpha$)" to refer to the set of lexical items contained in $\alpha$.

(8)    Neg-Rule: Expression $\phi$ is infelicitous in context $c$ if there is another expression $\psi$ such that (i) $[\![\psi]\!]^c = [\![\phi]\!]^c$ and (ii) LEX($\psi$) = LEX($\phi$)$\backslash\{$Neg$\}$

Proof of the NCG: Let $c$ be a context where there is evidence for neither $p$ nor $W\backslash p$, and let $\phi$ be a sentence expressing the question $\{p, W\backslash p\}$. Suppose $\phi$ does not exhibit subject auxiliary inversion. Then $\phi$ must contain E which itself moves to Q and which blocks T-to-C movement by virtue of Travis's (1984) Head Movement Constraint. But then $\phi$ will give rise to presupposition failure due to the presence of E and hence be infelicitous in $c$. Suppose $\phi$ contains negation, i.e. $\phi = [_{CP}$ Q $[_{TP}$ Subject Neg VP]]. Then there is an alternative $\psi = [_{CP}$ Q $[_{TP}$ Subject VP]] such that (i) $[\![\psi]\!]^c = [\![\phi]\!]^c$ and (ii) LEX($\psi$) = LEX($\phi$)$\backslash\{$Neg$\}$, and $\phi$ is infelicitous in $c$ by virtue of the Neg-Rule. $\square$

**Other issues**

**1.** Note that yes/no questions exhibiting subject auxiliary inversion can also be used in a biased context, i.e. in a context where there is evidence for one of the two answers to the question (cf. Gunlogson 2003 and the discussion above). To predict this, we need to assume that E <u>can</u> trigger head-movement. Concretely, we say that E comes in two varieties, affixal (E$_{[+\text{af}]}$) and non-affixal (E$_{[-\text{af}]}$), and is thus somewhat similar to T in English (cf. Lasnik 2000). Given this assumption, a yes/no question can involve T-to-E followed by E-to-C movement. What is crucial is that a yes/no question <u>without</u> subject auxiliary inversion <u>must</u> contain E, specifically E$_{[-\text{af}]}$. In addition, our account presupposes that heads are all interpreted at their base position, which means we assume that head movement has no semantic effect, probably because it is a PF-operation (cf. Chomsky 2001, Boeckx and Stjepanović 2001, Schoorlemmer and Temmerman 2012).

**2.** It is claimed in Büring and Gunlogson (2000) and Roelofsen et al. (2013) that yes/no questions of the form [AUX'nt $\phi$], for example **isn't John married**, can be used in a neutral context, i.e. one where the speaker has no evidence for any of the answers to the question. This claim is not compatible with our account, and we believe it is empirically incorrect. We argue that the examples on which the above mentioned authors base their claim are open to another interpretation in which they actually constitute supporting evidence for our theory. Due to lack of space, we will have to leave the presentation of our argument for the talk.

**Baker, C. L. (1970)** Notes on the Description of English Question: The Role of an Abstract Question Morpheme. **Boeckx, C. & S. Stiepanovic (2001)** Head-ing toward PF. **Büring, D & C. Gunlogson (2000)** Aren't positive and negative polar questions the same? **Chomsky, N (1981)** Lectures on Government and Binding. **Chomsky, N. (2001)** Derivation by phase. **von Fintel, K & A. Gillies (2010)** Must...stay...strong! **Gunlogson, C. (2003)** True to Form: Rising and Falling Declaratives as Questions in English. **Hamblin, C. L. 1958** Questions. **Hamblin, C. L. (1973)** Questions in Montague English. **Heim, I. (1991)** Articles and Definiteness. **Karttunen, L. (1977)** Syntax and semantics of questions. **Katz, J. & P. Postal (1964)** An Intergrated Theory of Linguistic Descriptions. **Katzir, R. (2007)** Structurally-defined alternatives. **Krifka, M. (2012)** Negated polarity questions as speech act denegations. **Ladd, R. (1981)** A first look at the semantics and the pragmatics of negative questions and tag questions. **Lasnik, H. (2000)** Syntactic Structures Revisited: Contemporary Lectures on Classic Transformational Theory. **Roelofsen, F, N. Venhuizen & G. W. Sassoon. (2013)** Positive and negative polar questions in discourse. **Romero, M. & C-H. Han (2004)** On negative yes/no questions. **van Rooy, R. & M. Safarova (2003)** On polar questions. **Safarova, M. (2005)** The semantics of rising intonation in interrogatives and declaratives. **Schoorlemmer, E. & T. Temmerman (2012)** Head movement as a PF phenomenon: Evidence from identity under ellipsis. **Singh, R. (2011)** Maximize presupposition! and local contexts. **Sudo, Y. (2013)** Biased polar questions in English and Japanese. **Travis, L. (1984)** Parameters and Effects of Word Order Variation. **Truckenbrodt, H. (2006)** On the semantic motivation of syntactic verb movement to C in German.

**Building Alternatives**

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Inferences that result from exhaustification of a sentence S depend on the set A of alternatives to S. We will give a characterization of A which accounts for inference patterns that pose a challenge for other proposals. This is an example of such patterns:

(1)     Bill went for a run and didn't smoke. John (only) went for a run.
          Inference: ¬[John went for a run and didn't smoke]

(2)     Bill passed some of the tests and failed some. John (only) passed some of the tests.
          *Inference: ¬[John passed some of the tests and failed some]

While (1) can imply that it is not the case that John went for a run and didn't smoke (i.e. that John smoked), (2) cannot imply that it is not the case that John passed some of the tests and failed some (i.e. that John passed all of the tests). (The sequence in (2) is odd. We believe the reason for its oddness is that it cannot have the inference.) To derive the inference of (1), the exhaustification of $S_1$ = **John went for a run** must be relative to a set A that includes the sentence $S_1'$ = **John went for a run and didn't smoke** (to license the inference) and excludes $S_1''$ = **John went for a run and smoked** (so that the inference is not canceled out). To explain the <u>lack</u> of an inference in the case of (2), exhaustification of $S_2$ = **John passed some of the tests** must be relative to a set A that includes both $S_2'$ = **John passed all of the tests** and $S_2''$ = **John passed some of the tests and failed some** (so that $S_2'$ and $S_2''$ cancel each other out). In both cases, $S_i'$ and $S_i''$ are symmetric alternatives to $S_i$: $S_i' \wedge S_i''$ is a contradiction and $S_i' \vee S_i''$ is equivalent to $S_i$ (Fintel and Heim 1997). Our theory must "break symmetry" in the case of (1) (i.e. define A in such a way that it can contain $S_1'$ but not $S_1''$) without breaking symmetry in the case of (2). Assuming that A = F(S) ∩ C, where F(S) is the set of formally defined alternatives of S and C a contextual restriction (Rooth 1992), symmetry can be broken by imposing conditions on F(S) and/or C.

   Fox and Katzir (2011), henceforth F&K, advance a theory in which symmetry is broken in F(S) alone. They propose that F(S) be regarded the set in (3), where $F_R(S)$ is the set of sentences derived from S by replacement of F-marked constituents with expressions of the same semantic type.

(3)     *Formal alternatives (F&K)*: F(S) = $F_R(S)$ ∩ {$S' \mid S' \preceq_c S$}

The relation '$x \preceq_c y$' is to be understood as 'x is no more complex than y in discourse context c.' Here is the definition.

(4)     a.     $E' \preceq_c E$ if $E' = T_n(...T_1(E)...)$, where each $T_i(x)$ is the result of replacing a constituent of x with an element of SS(E,c), the substitution source of E in c
          b.     SS(E,c) = {x | x is a lexical item} ∪ {x | x is a constituent uttered in c}

(3)&(4) yield, correctly, that the sequence in (2) does not license ¬$S_2'$ as an inference since the formal alternatives of $S_2$ in (2) include both $S_2'$ (generated by replacing **some** in $S_2$ with **all**, taken from the lexicon) and $S_2''$ (generated by replacing **passed some of the tests** in $S_2$ with **passed some of the tests and failed some**, taken from the disourse context). (3)&(4) can also break symmetry: $S_2$ <u>outside a context</u> licenses ¬$S_2'$ as an inference. This is predicted: the formal alternatives of $S_2$ in this case include $S_2'$ (same as above), but not $S_2''$ (since **passed some of the tests and failed some** is neither in the lexicon nor in the context). Problematically, however, (3)&(4) fails to predict that the sequence in (1) <u>does</u> license ¬$S_1'$ as an inference: the formal alternatives of $S_1$ in (1) include both $S_1'$ (generated by replacing **went for a run** in $S_1$ with **went for a run and didn't smoke**, taken from the context) and $S_1''$ (generated by replacing **didn't smoke** in $S_1'$ with **smoked**, also

taken from the context; note that (4a) allows for successive replacements). Even worse, given what has been said the inference in (1) is licensed only if symmetry can be broken in C.

At first glance, a strategy to explain the contrast between (1) and (2) by breaking symmetry in C is to appeal to the notion of a "pragmatic scale" (cf. Klinedinst 2004). It seems much easier to construct an evaluative scale on which $S_1''$ is ranked lower than $S_1'$ (e.g. a healthiness scale), than it is to construct a scale on which $S_2''$ ranks lower than $S_2'$. However, a draft dodging context makes available, and salient, a scale on which $S_2''$ ranks lower than $S_2'$ (i.e. a scale measuring the degree of luck of a draft dodger). But even this context cannot support the relevant inference for (2):

(5)     In the draft for the Korean war, Bill has been dealt a better hand than John. He passed some of the military fitness tests and failed some, while John (only) passed some of the tests.
        *Inference: ¬[John passed some of the tests and failed some]

We conclude that a solution to the problem at hand in terms of pragmatic scales is not tenable and that a refinement of F&K's approach is called for instead. As it turns out, we only need to make a minimal adjustement. We propose to impose the constraint in (6) on F&K's concept of F(S):

(6)     *Atomicity*: Expressions in the substitution source are syntactically atomic

Atomicity breaks symmetry in (1). The derivation of $S_1''$ proceeds as follows (where AT marks the atomic expressions): **John went for a run $\to$ John [$_{AT}$ went for a run and didn't smoke] $\to$ John [$_{AT}$ went for a run and [$_{AT}$ smoked]]**. The second step violates Atomicity so that $S_1''$ cannot be derived. It is still possible to derive from $S_1$ the alternative **John smoked**, which is contradictory to $S_1'$, too. However, this is not a problem for our analysis since **John smoked** can be excluded from A: A={$S_1,S_1'$} satisfies the three conditions in (7) (equivalent to F&K's hypothesis that A is restricted to the set of relevant sentences which is closed under negation and conjunction).

(7)     *Conditions on A (F&K)*: (i) A $\subseteq$ F(S) , (ii) S $\in$ A, and (iii) there is no $S'$ in F(S)\A such that $S'$ is in the Boolean closure of A

Atomicity does not break symmetry in (2): F($S_2$) = {**pass some**, **pass all**, **fail some**, **fail all**, **pass some $\wedge$ fail some**}. To get the non-attested inference, A must be the set N = {**pass some**, **fail some**, **fail all**, **pass some $\wedge$ fail some**}. However, N does not qualify, as F($S_2$)\N contains **pass all** which, being equivalent to **pass some $\wedge$ ¬fail some**, is in the Boolean closure of F($S_2$).

F&K's theory has another problem: given (3)&(4) and the assumption that exhaustification also involves logically independent alternatives (Spector 2006), (8) cannot be explained (Romoli 2012a).

(8)     They did [$_{NegP}$ not [$_{VP}$ pass all of my students]]
        Inference: ¬[They didn't pass some of my students]

(3)&(4) predict both $S_3'$ = **they didn't pass some of my students** and $S_3''$ = **they passed some of my students** to be formal alternatives of (8). Atomicity solves this problem, too: it rules out $S_3''$, as its derivation involves replacing NegP with VP and **all** in the then atomic VP with **some**.

The Atomicity constraint makes the substitution source a sort of numeration. If we further impose the condition that the derivation of F(S) must proceed from bottom up, we can account for the "switching problem" (Romoli 2012b): **Some of my students did all of the readings** cannot imply ¬[all of my students did some of the readings], while **None of my students did all of the readings** can imply that all of my students did some of the readings. Atomicity and the bottom-up constraint make the syntactic derivation of formal alternatives strikingly similar to the syntactic derivation of sentences, suggesting that the former might be a "cooptation" of the latter.

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# Dutch A-Scrambling Is Not Movement: Evidence from Antecedent Priming

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Early research on scrambling argued for a uniform A'-movement analysis, but further empirical discoveries (Webelhuth 1989, a.o.) provided evidence for A-related scrambling, analyzed as movement (Vanden Wyngaerd 1989, Mahajan 1990, a.o.), base generation (Neeleman 1991, Bayer & Kornfilt 1994, a.o.), or a combination of both (Zwart 1993).

   A-scrambling in Dutch typically displaces a discourse-given constituent across an adjacent adjunct. Thus, in (1), mention of *dat boek van Haegeman* in the question singles out (1a), where scrambling fails to apply, as contextually inappropriate answer:

(1)      Hoe zit het met je review van dat boek van Haegeman?
         'How are you progressing with your review of that book by Haegeman?'
         a.      #Nou, ik denk dat  ik (eerst) zorgvuldig  het boek van Haegeman  ga lezen.
                 *Well, I  think that I  (first) carefully     the book by  Haegeman  go read*
         b.      Nou, ik denk dat  ik (eerst) het boek van Haegeman zorgvuldig  ga lezen.
                 *Well, I  think that I  (first) the book by  Haegeman  carefully     go read*
                 'Well, I think that I will (first) carefully read Haegeman's book.'

A-scrambling involves movement or variation in the base-position of the adjunct 'crossed' by the scrambling. The first type of proposal assumes that the adjunct has a unique attachment site and that the object moves across it ((2a)). By contrast, the second type of proposal assumes that the adjunct may be attached above or below the surface position of the object ((2b), (2c), (2d)). Such analyses may nevertheless also involve A-movement if it is assumed, in line with UTAH, that the object is generated as a complement of V ((2b), (2d)).

 (2)    a.      OV – fixed adjunct (Mahajan 1990, De Hoop 1992, a.o.)
                $[_{AgrOP} DP_1 [_{AgrO'} [_{VP} Adjunct [_{VP} t_1 V]] AgrO ]]$
        b.      OV – flexible adjunct (Vanden Wyngaerd 1989)
                $[_{AgrOP} <Adjunct> [_{AgrOP} DP_1 [_{AgrO'} [_{VP} <Adjunct> [_{VP} t_1 V]] AgrO ]]]$
        c.      OV – flexible adjunct (Neeleman 1991, 1994, Bayer & Kornfilt 1994, a.o.)
                $[_{VP} <Adjunct> [_{VP} DP [_V <Adjunct> V]]]$
        d.      VO – flexible adjunct (Zwart 1993)
                $[_{AgrOP} <Adjunct> [_{AgrOP} DP_1 [_{AgrO'} AgrO [_{VP} <Adjunct> [_{VP} V t_1]]]]]$

The literature on A-scrambling has not produced conclusive arguments for either a movement or a base-generation approach. There are good reasons for this: A-movement does not exhibit any syntactic reconstruction. In theory, one should be able to use scope as a diagnostic for the presence of a trace of A-scrambling (May 1979, Lebeaux 1998, Fox 1999). In practice, this is problematic: an A-scrambled indefinite – the primary candidate for diagnosing reconstruction – receives a specific reading and will thus fail to demonstrate scope interaction even if it were to reconstruct (Kerstens 1975, De Hoop 1992, a.o.). Other scrambled QPs take surface scope.

   The present study aims to address this analytical stalemate through psycholinguistic experimentation using cross-modal priming (CMP; Swinney, Onifer, Prather, & Hirshkowitz 1979): participants listen to sentences on headphones while a word or non-word string appears visually on a screen; they then perform a lexical decision on the word they see. As displaced constituents are mentally reactivated at their corresponding gap sites, lexical decisions for target words related or identical to the semantic head of the displaced

constituent should be facilitated at the gap site, in comparison to lexical decisions to unrelated words. Previous studies of A'-movement (Love & Swinney 1996, Nakano, Felser & Clahsen 2002) have found reactivation at the gap, while previous studies of A-movement (Osterhout & Swinney 1993, Friedmann et al. 2008) have found delayed reactivation some 800 ms after the gap.

Here we use CMP to investigate whether an A-scrambled direct object in Dutch gives rise to antecedent reactivation effects in the position where a movement theory would postulate a trace. We report on three experiments, concerned with sentences in which an object has A-scrambled across an adjunct (exps. 1 and 3; stimulus example in (3); ** indicates purported gap location) and sentences in which the object has undergone WH-movement (exp. 2).

(3)　　Context: Gisteren heeft een overvaller een winkelier met een mes om het leven gebracht. ('Yesterday, a robber killed a shopkeeper with a knife.')
Stimulus:

| Brechtje | hoorde | dat | hij | de | winkelier | meer | dan | vijfentwintig | keer ** |
|----------|--------|-----|-----|-----|-----------|------|-----|---------------|---------|
| *Brechtje* | *heard* | *that* | *he* | *the* | *shopkeeper* | *more* | *than twenty-five* | | *times* |

| gestoken | heeft | na | de | kassa | leeg | gehaald | te | hebben. |
|----------|-------|-----|-----|-------|------|---------|-----|---------|
| *stabbed* | *has* | *after* | *the* | *till* | *empty* | *got* | *to* | *have* |

'Brechtje heard that he stabbed the shopkeeper more than twenty-five times after having emptied the till.'
Identical target: *winkelier* 'shopkeeper'; unrelated target: *kandelaar* 'candlestick'

For exps. 1 and 2, there were six experimental conditions in a 3x2 design with the factors Location (pre-gap, gap, and post-verbal) and Target Type (identical, unrelated). The gap location was at the putative trace position, the pre-gap location 500 ms prior to it and the post-verbal location 750 ms after it. If displaced constituents are reactivated at their canonical pre-verbal positions, the size of the priming effect should be larger at the putative trace position than at the pre-verbal control position. If direct objects in Dutch originate in the post-verbal position, however, or if priming in A-movement is generally delayed, then the priming effect should be largest at the post-verbal test positions.

In line with expectations, exp. 2, our baseline experiment, found reactivation of WH-moved objects at verb onset. A'-movement should leave a trace and, Dutch being an OV language, its location should be at verb onset. This result also tallies with previous CMP studies.

In exp. 1 (A-scrambling) no evidence was found for reactivation at the hypothetical preverbal gap location (((2a), (2b))). There was also no evidence for a delayed reactivation about 750 ms downstream from the hypothetical gap location, as previously found with the trace in the complement position of passives and unaccusatives. The post-verbal probe point in exp. 1 was on average only 200 ms away from verb offset. The lack of reactivation at this point therefore also provides evidence against a post-verbal trace (as in (2d)).

Exp. 3 was a follow-up to exp. 1 that looked for the delayed reactivation of a potential post-verbal trace at 700 ms from verb offset. No such delayed reactivation was found, providing further evidence against a post-verbal trace in the structures under investigation.

Taken together, these results are inconsistent with a full-on cartographic analysis of Dutch A-scrambling in which the scrambled category is merged as a pre-verbal or a post-verbal complement and subsequently positions itself with respect to a (fixed) adjunct. Instead, they suggest an analysis of A-scrambling that allows the object to merge with the verbal projection either before or after the adjunct (analysis (2c); see Bayer & Kornfilt 1994, Neeleman 1991, 1994, and Fanselow 2001, 2003 for proposals along these lines).

# On the relation between C and T, Ā-movement, and "marked nominative" in Dinka
*Coppe van Urk, MIT*

**Summary:** The traditional view of C and T is that they are merged with different features and so perform different roles within the clause. A number of authors have suggested, however, that the features of T are derivative of C (e.g. Stowell 1982; Chomsky 2008; Miyagawa 2010). Chomsky (2008) proposes that the features of T are always inherited from C. In this paper, I provide evidence for this approach from the Nilotic language Dinka (South Sudan), in which the features of C and T are not segregated, but both present on C. As a result, Ā-dependencies go hand in hand with changes in case and φ-agreement, so that φ-agreement consistently targets Ā-moving phrases. To provide evidence that T performs no licensing work in Dinka, I analyze an unusual case alternation with subjects, in which the subject is in the unmarked case when initial, but in a dedicated, morphosyntactically marked case otherwise, referred to as "marked nominative" (König 2006, 2008; Dimmendaal 2012). I argue that "marked nominative" reflects the insertion of a case-assigning P (Rezac 2011), a repair used whenever Ā-movement of a non-subject targets Spec-CP, depriving the subject of its usual case assigner, C.

**1. Ā-movement, case, and agreement.** Dinka (Nilotic; South Sudan) has CP-level V2 (Andersen 1991, 2002; Van Urk & Richards, to appear). However, the XP that moves to Spec-CP triggers φ-agreement on a prefix on the 2nd-position verb/auxiliary (the auxiliary *cé* below):

(1)a.  Mî̤ir    **a**-cé   yín tí̱ŋ.        b.  Mî̤ir    **a**-cá̱   tí̱ŋ.
        giraffe.ABS **3S**-PRF you see           giraffe.ABS **3S**-PRF.1S see
        'A giraffe saw you.'                 'A giraffe, I saw.'

This is true across all types of Ā-movement, including focus and *wh*-movement, even when long-distance (2) (plural XPs trigger *ke* at each *v*P-edge, see Van Urk and Richards, to appear):

(2)  Yeyíŋà **e-ke**-yíi    ke tà̱a̱k, e-ke-cíi    Áyèn    ke gá̱m kità̱p?
     who.PL **PST-PL**-IMPF.2S PL think PST-PL-PRF.NS Ayen.NOM PL give book.ABS
     'Which people were you thinking that Ayen had given a book to?'

In addition to this, as evident in (1a–b), the XP in Spec-CP is assigned case, so that it *always occurs in the unmarked case* (called the *absolutive* here, following Dimmendaal 1983).

**2. Dinka C as a case assigner.** These orders are not base-generated. Dinka shows abundant evidence for intermediate movement (Van Urk and Richards, to appear) and a distinct strategy of resumption. Also, these movements show reconstruction and are island-sensitive. I suggest instead that, in Dinka, the features of C and T are not segregated, but present on the same head (Chomsky 2008; Miyagawa 2010). This means that, in addition to hosting Ā-dependencies, *Dinka C is a case assigner*, so that an Ā-moved XP triggers φ-agreement and case at C.

**3. Subjects and "marked nominative".** If the φ-probe ordinarily associated with T is on C and targets XPs undergoing Ā-movement, we expect that Ā-movement of a non-subject should interfere with subject licensing. In fact, non-initial subjects surface in a special, morphosyntactically marked case, referred to as "marked nominative" (e.g. König 2006, 2008) (3a–b).

(3)a.  **Ayén**   a-cé  cuín    cám.      b.  Cuín    a-cíi  **Áyèn**   cám.
        Ayen.ABS 3S-PRF food.ABS eat          food.ABS 3S-PF.NS Ayen.NOM eat
        'Ayen ate food.'                     'The food, Ayen ate.'

I will show the distribution of this case is unlike familiar cases. Instead, I propose that it represents a repair, to license a subject left caseless because C is agreeing with a different XP.

**4. "Marked nominative" ≠ ergative.** The presence of "marked nominative" is not linked to transitivity or semantic properties of the verb, surfacing even with unaccusatives (4a–b).

(4)a.  **Galám** a-cé  dhuò̱ŋ.        b.  Cé **gálàm**   dhuò̱ŋ?
        pen.ABS 3S-PRF break            PRF pen.NOM break
        'The pen broke.'                'Did the pen break?'

**5. "Marked nominative" ≠ nominative.** "Marked nominative" is also unlike nominative, however. Not only is it morphosyntactically marked (the absolutive surfaces in all default contexts), it is assigned by some prepositions (Andersen 2002) (5a–b).

(5)a. Yín nhiàr ɣɔ̀n è **Máyèn**.
    you love house.LNK P Mayen.NOM
    'You love Mayen's house.'

b. Cuín a-cîi cám (ne **Áyèn**).
    food 3S-PF.PAS eat P Ayen.NOM
    'The food was eaten by Ayen.'

In addition, note that Dinka has a distinct passive (5b), in which the subject appears finally.

**6. PCC repairs.** I suggest a parallel between "marked nominative" and repairs for the Person-Case Constraint (PCC) (Rezac 2011). The PCC bans 1st/2nd person DPs in the context of certain DPs. In some languages, this can be repaired by realizing one of these in an oblique form. In French, for example, a pronominal indirect object may be realized as the locative clitic *y* or in a full PP *à eux* just in the context of a PCC violation (6a–d) (Couquaux 1975).

(6)a. Je la leur/*y ai présenté.
    I 3P.CL 3P.CL/Y have introduced
    'I have introduced them to them.'

c. Je vous %y/*leur ai présenté.
    I 2P.CL LOC/3P.CL have introduced
    'I have introduced you to them.'

b. *Je l'ai présenté à eux.

d. Je vous présenté à eux hier.

Similar repairs are found in Chinook, Basque, and Finnish (Rezac 2011). Rezac (2011) argues that, in these cases, K or P structure is added as a Last Resort to license a DP.

**7. "Marked nominative" as P-insertion.** Along the same lines, I propose that ***"marked nominative" is assigned by a silent preposition***, inserted to license the subject when another XP moves to Spec-CP (depriving the subject of its usual case assigner, C). This is a Last Resort operation, at the end of a phase, to rescue a caseless nominal, just like PCC repairs (*cf.* Béjar and Rezac 2011, Halpert 2012). This proposal explains the case alternation and the oblique-like distribution of "marked nominative". Dinka actually only has one structural case, the absolutive, which therefore serves as the structural default. "Marked nominative", in contrast, is strictly a prepositional case, sometimes assigned by an overt P and sometimes by a silent one.

**8. Non-finite contexts and *yes-no* questions.** Evidence for this proposal comes from the availability of "marked nominative" in non-finite clauses. In clauses headed by the irrealis/future auxiliary *bé*, which lack tense contrasts, "marked nominative" is still available (7).

(7) Bo̱l a-cé Ayén lɔ̂ŋ [bé **Ádìt** jà̱l].
    Bol.ABS 3SG-PRF Ayen.ABS encourage.TR IRR Adit.NOM leave
    '(lit.) Bol encouraged Ayen for Adit to leave.'

In contrast, the availability of absolutive *does* vary by clause type and hinges on properties of C. It is absent in non-finite clauses without active C/T (6), and in *yes-no* questions (e.g. 4b).

**9. Subjects are not merged as PPs.** Further support for the Last Resort nature of "marked nominative" comes from PPs. PPs become nominal when moving to Spec-CP, but, unlike with subjects, this involves the suffix *-ne*, an allomorph of P, on the 2nd-position verb/auxiliary (8).

(8) **Pà̱l** a-cé-**ne** Áyèn cuín cám.
    knife.ABS DCL.SG-PRF-PREP Ayen.NOM food.ABS eat
    'With a knife, Ayen ate food.'

**Conclusion:** This paper argues that the features of C and T need not be strictly separated, since they are merged on the same head in the Nilotic language Dinka. Because the $\varphi$-features of T are on C, Ā-movement co-occurs with $\varphi$-agreement and case assignment. Since T itself plays no licensing role in Dinka, non-initial subjects require a repair, "marked nominative" case.

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**The atoms of phonological representation: features vs gestures**
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Is the Phonetic Form of human language underlyingly organised in terms of distinctive features, or articulatory gestures? In terms of their inventory of primitives Distinctive Feature Theory (DFT; Jakobson, Karcevsky, and Trubetzkoy 1928) and Articulatory Phonology (AP; Browman and Goldstein 1986) are with a minor exceptions largely interchangeable (Zsiga 1997), but I argue that they differ significantly with respect to the empirical predictions made by the theoretical frameworks within which they are generally embedded. In this regard DFT is to be preferred, insofar as (when situated within a conventional generative model such as Rule-Based Phonology (RBP, Kenstowicz 1993)) it correctly predicts the existence of three classes of effects ruled out by AP:

1. **non-conservatism.** By disallowing insertion of gestures (Browman and Goldstein 1992), AP but not DFT + RBP predicts that processes of insertion, enhancement, and inversion should be impossible, but each exists:
   - insertion operations such as (i) epenthesis and (ii) filling in of underspecified features. (i) British English "intrusive r" (e.g. *yeh, I did* → [jɛɹɑɪdɪd]) is one of many examples of epenthesis which cannot be attributed to gestural misphasing, the usual strategy invoked to deal with epenthesis in AP. (ii) Hwang et al. 2010 find psycholinguistic evidence for (underlying) underspecification of voicing in English coda obstruents that can be shown to receive voicing values by the end of the derivation.
   - enhancement effects, such as insertion of nasality in domain-final voiced obstruents (Jones 2001).
   - inversion processes, such as exchange rules (e.g. height exchange in Brussels Flemish, Zonneveld 1976) and dissimilations (e.g. Modern Greek continuancy dissimilation, Tserdanelis 2001). DFT predicts the possibility of exchange and dissimilation rules by virtue of employing binary features, whereas such processes are predicted to be impossible by AP, whose subsegmental primitives are privative or at least non-binary.

2. **granularity.**
   - By having *fewer* representational primitives, AP wrongly predicts that the elements present in DFT but absent in AP, such as [atr] and [distributed], will not be phonologically active.
   - By *combining* the equivalents of several features in single gesture packages, AP predicts that its equivalents of these features will always pattern together in phonological processes and never show autosegmental behavior. For instance, DFT allows for spreading and delinking of stricture and manner features such as [cont] and [cons], whereas AP does not. Kaisse 1992 provides arguments for [cons] being able to spread autosegmentally, as do Olson and Schultz 2002 for [son].
   - By *dividing* the functions of some features across several different gestures and parameters, AP predicts that these features will never show coherent autosegmental behavior. The DFT feature [cont], for example, has at least four functional equivalents in AP, {closed} and {crit} for coronals, and {wide} and {narrow} for dorsals. The above-mentioned Greek continuant dissimilation shows that [cont] acts as a coherent feature.

3. **relativised locality.** By virtue of its linear, surface-driven representational structure, AP predicts that all spreading should be strictly local, whereas DFT allows for non-contrastive intervening material to be ignored (Calabrese 1995). Nevins and Vaux 2004 provide phonetic and phonological evidence for Karaim consonant harmony doing precisely that.

# Animating the Narrow Syntax

Martina Wiltschko (UBC) & Elizabeth Ritter (Ben Gurion University & University of Calgary)

**Problem:** Both Folli and Harley (2008) and Ramchand (2008) assume that animacy is outside the narrow syntax, and that it constitutes part of encyclopedic knowledge. This assumption appears to be correct for languages like English, where (with the exception of 3rd person pronouns) animacy has no direct morpho-syntactic expression in either nominal or verbal inflectional paradigms. However, it is problematic for Algonquian languages, such as Blackfoot, which clearly manifest animacy distinctions in both nominal and verbal paradigms. Observe that the form of the nominal plural marker depends on whether the noun is animate or inanimate (1); and that the form of the stem final morpheme on verbs depends on transitivity and animacy of one of the arguments (2):

(1)

| NOUN CLASS | PLURAL SUFFIX | EXAMPLE |
|---|---|---|
| animate | *-iksi* | *saahkomaapi-**iksi*** 'boys' |
| inanimate | *-istsi* | *míín-**istsi*** 'berries' |

(2)

| VERB CLASS | | ARGUMENT | EXAMPLE 'to terminate, end' |
|---|---|---|---|
| transitive animate | (TA) | object | *ssik-**áaaatsi*** |
| transitive inanimate | (TI) | object | *ssik-**áaa'tssíoo*** |
| intransitive animate | (AI) | subject | *ssik-**oo*** |
| intransitive inanimate | (II) | subject | *ssik-**áaa'si*** |

Thus, there is no doubt that animacy is a grammatically active feature in Blackfoot. This raises the following questions: (i) How do we represent the difference between Blackfoot and English? (ii) What are the grammatical consequences of this difference?

**Background:** Following Ritter & Wiltschko 2009, Wiltschko in press, we assume that UG provides a UNIVERSAL SPINE - a set of hierarchically organized functional categories, each with an associated interpretive function, but no intrinsic content, i.e. no formal features. Cross-linguistic variation arises from different language-specific choices in the features that substantiate these functions, and that structural parallels between DPs and CPs follow from the assumption that both types of constituents are realizations of the same universal spine.

(3)
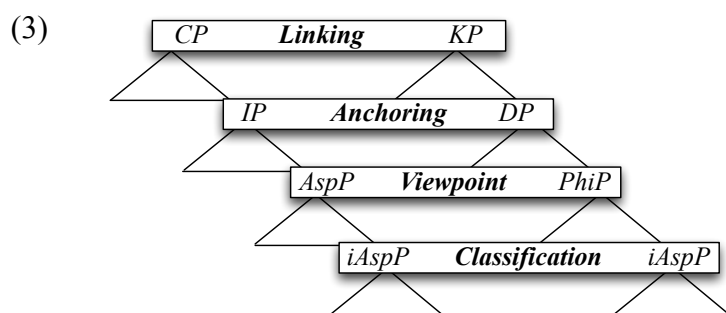


The challenge for this model is to identify the interpretive functions that define the categories of the universal spine, and to determine the formal features that realize these categories.

**Proposal:** We interpret the facts in (1) and (2) as evidence that animacy constitutes the ontological basis for aspectual classification in both the nominal and the verbal domain in Blackfoot. In this respect, it contrasts with English where boundedness constitutes the ontological basis for such classification, cf. Bach, 1986; Gruber, 1967; Harley, 2003; Jackendoff, 1991, Magerdoomian 2008. Given the Universal Spine hypothesis, we attribute this contrast to variation in the formal feature that substantiates, inner Aspect (iAsp), the category responsible for the classificatory function. *i*Asp is a category of the verbal spine (cf. Travis 2010, MacDonald 2008) and of the nominal spine (cf. Wiltschko 2012). According to

our proposal, both nominal and verbal *i*Asp are specified for [animate] in Blackfoot and [bounded] in English.

**Analysis:** The feature [bounded] underlies the classification of both nominal and verbal constituents in English. As a nominal feature it gives rise to the distinction between count and mass nouns; as a verbal feature it gives rise to the distinction between telic and atelic predicates. The hypothesis that Blackfoot lacks the feature [bounded] predicts that there will be no evidence of either count-mass or telicity. These predictions are borne out. For the nominal domain, Wiltschko (2012) shows that all nouns can be pluralized, including nouns that refer to substances; Blackfoot determiners are not sensitive to the distinction between count and mass nouns; Blackfoot has no strategies for reclassifying mass nouns (e.g. two *drops* of blood); and the availability of bare NP arguments is not correlated with the count mass distinction. For the verbal domain, Ritter & Rosen (2009) show that the alternation between transitive and intransitive predicates fails to signal a shift in telicity, nor does it give rise to an imperfective paradox. Moreover, the language makes no distinction between time frame (in X time) and durative (for X time) adverbials.

**Consequences:** The proposal that nominal and verbal inner Aspect can be substantiated by either the feature [bounded] or the feature [animate] has consequences for the featural makeup of adjacent functional categories. For English, there is a well-known dependency between the mass/count distinction in *i*Asp and number marking in *Phi* such that [+bounded] nominals display a [±plural] contrast whereas [-bounded] nominals display no such contrast (4).

(4)

|  | iAsp | Phi | Example |
|---|---|---|---|
| count nouns | [+bounded] | [+plural] or [-plural] | *spoon/spoons* |
| mass nouns | [-bounded] | default [-plural] | *sugar/*sugars* |

Strikingly, we find a similar dependency between the features in iAsp and Phi for Blackfoot. However, in this language iAsp is substantiated by [animate] and Phi by [±proximate]. In this case the dependency manifests itself in that only [+animate] nominals display a [±proximate] contrast whereas [-animate] nominals display no such contrast (5).

(5)

|  | iAsp | Phi | Example |
|---|---|---|---|
| animate nouns | [+animate] | [+proximate] or [-proximate] | *imitaawa/imitaayi* 'dog' |
| inanimate nouns | [-animate] | default [-proximate] | *owááyi* 'egg'/**owááwa* |

The analysis of animacy as iAsp is superior to the widely held view that animacy is a type of gender (Corbett 1991, Frantz 2009). In particular, if animacy were a form of gender, the existence of animacy based verb-classification would be completely unexpected. Moreover, such a treatment would also miss the complementarity between [±animate] in Blackfoot and [±bounded] in English. Thus, while [±animate] is indeed outside the narrow syntax of English, it is part of the narrow syntax of Blackfoot. The difference between the featural make-up of iAsp in English and Blackfoot provides support for the Universal Spine Hypothesis according to which functional categories are substantiated on a language-specific basis.

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# Focus structure and NPI-licensing

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It is well-known that the NPI *any* must stay in downward-entailing (DE) contexts. However, *any* can also be licensed within the c-commanding domain of *only*, as in (1a). In particular, any part of the *any*-phrase can not be focused (Wagner 2006), as in (1b-d). Previous studies (von Fintel 1999, Wagner 2006, Hsieh 2012) attribute the licensing effect in (1a) to the S(trawson)-DE condition. However, this condition is neither necessary nor sufficient (Crnič 2011, Gajewski 2011). In this paper, I extend the exhaustification theory from Krifka (1995) a.o. to capture the anti-licensing effects in (1b-c), and propose a deletion theory on *only* to explain the ungrammaticality in (1d).

(1)   a. Only JOHN$_F$ read any paper.
      b. *John read only ANY$_F$ paper.
      c. *John read only [any PAPER]$_F$, (he didn't read every book).
      d. *John read only any PAPER$_F$, (he didn't read any book).

The core of the exhaustification theory is a covert operator *O*, which affirms the prejacent and negates all the alternatives that are not entailed by the prejacent. To explain the licensing condition of *any*, Chierchia (2006, 2013) proposes that the weak NPI *any* has domain (D) alternatives that are obligatorily activated by a feature [+D]. The [+D] feature must agree with a c-commanding *O*. Accordingly, the reason why an NPI has to be licensed in a DE context is because negating all the D-alternatives in a non-DE context leads to a semantic contradiction to the assertion.

(2)   $O(p) = p \wedge \forall q \in \mathscr{A}lt(p)[p \nsubseteq q \rightarrow \neg q]$

(3)   a. *O* [John read any$_{[+D]}$ paper]
      b. Assertion: $\exists x \in D[P(x) \wedge R(j,x)]$   c. D-ALT $= \{\exists x \in D'[P(x) \wedge R(j,x)] \mid D' \subseteq D\}$

In response to the licensing effect in (1a), Krifka (1995), Lahiri (1998) and Chierchia (2013) argue that (1a) asserts the exhaustification inference (4a) and presupposes the prejacent inference (4b). The assertion creates a DE context in the unfocused part, and the presupposition is irrelevant for weak NPI-licensing (Gajewski 2011). Thus, by assuming the LF (4c), they conclude that *any* is licensed in the unfocused part of *only*, as it would be in any DE contexts.

(4)   a. Assertion (exhaustification inference): $\forall y \exists x \in D[\text{paper}_w(x) \wedge \text{read}_w(y,x)] \rightarrow y = j$
      b. Presupposition (prejacent inference): $\exists x \in D[\text{paper}_w(x) \wedge \text{read}_w(j,x)]$
      c. $O_D$ [only [John$_{[+F]}$ read any$_{[+D]}$ paper ]]

Following the exhaustification theory, I show that (1b-c) are bad because *any* is evaluated in an upward-entailing (UE) context. For instance, in both the following LFs for (1c), *any* is computed in a UE context (within the scope of *only* and above *only*, respectively), yielding a contradiction.

(5)   a. only [$_{\text{Restriction}}$ $\lambda x$. John read $x$] [$_{\text{Scope}}$ any$_{[+D]}$ paper ]
      b. $O_D$ [ [any$_{[+D]}$ paper]$_i$ [only [$_{\text{Restriction}}$ $\lambda x$. John read $x$] [$_{\text{Scope}}$ $x_i$ ] ] ]

However, the current exhaustification theory has two remaining problems. First, it can not explain the ungrammaticality of (1d), where *any* is not focused. Second, according to the *relativized minimality principle* (Rizzi 1990, 2001), the feature-checking relation is not held in the LF (6b): to avoid G-triviality, *only* has to check off the [+F] feature across the NPI *any$_D$*.

(6)   a. Mary only gave any$_D$ funding to JOHN$_F$.
      b. $O_D$ only [Mary gave any$_{[+D]}$ funding to JOHN$_{[+F]}$]

The focus-movement theory proposed by Wagner (2006) is quite attractive. Wagner assumes that, in the case of VP-*only*, focus association involves covert movement of the focus constituent to the complement position of *only*. By virtue of this movement, in (6b), *only* checks off only the

[+F] feature on *JOHN*; it doesn't c-command *any*, leaving it to be checked by $O_D$. Besides, this approach also predicts the ungrammaticality of (1d): $D^0$ is a phrase head, thus it is not allowed to move its complement *paper* alone (Abels 2003). As a consequence, either the focus is interpreted in-situ, as in (7a), or the focus projects over the whole DP, as in (7b-c). All the LFs evaluate [+D] in a UE context, yielding a contradiction and making the sentence G-trivial.

(7)  a.  Only [John read any$_{[+D]}$ paper$_{[+F]}$]                                        No movement

b.  Only [$_{restriction}$ $\lambda x$. John read $x$ ] [$_{scope}$ any$_{[+D]}$ paper]                 Move DP

c.  $O_D$ [ [any$_{[+D]}$ paper]$_i$ [only [$_{Restriction}$ $\lambda x$. John read $x$] [$_{Scope}$ $x_i$ ] ] ]     Move DP

However, Wagner's (2006) proposal has the following problems. First, moving focus into the complement position of *only* violates the *Extension Condition* (Chomsky 1995): all movement operations extend the root of the structure that they apply to. Second, In (8), the direct object should be allowed to evacuate the VP, and the remnant VP subsequently associate with *only* (fn. in Wagner 2006). Third, (9a) has no island, and should be predicated as grammatical (cf. (9b)).

(8)  *John only CUT any vegetables.

(9)  a.  *John only saw any pictures of MARY.   b.  Who did you see pictures of?

Alternatively, I propose that the LF of (6a) has two copies of *only*, one as an adjunct of VP, and one as an adjunct of DP. In (6a), since interpreting the VP-*only* yields G-triviality (for the same reason as in (7a)), it is forced to delete the VP-copy and use the DP-copy to check off the [+F] feature. The argument of the VP-*only* (i.e. $C_1$, notation from Rooth 1996) decides the quantification domain, and creates a DE environment that licenses *any*. The present theory explains the ungrammaticality of (1d) without facing the problems in Wagner (2006). First, (1d) and (9a) are bad because their LFs have no position for *only* that c-commands focus without c-commanding *any*, as illustrated by (10a) and (10b), respectively (cf. (11a) is good because (11b) is acceptable). Second, (8) is bad because *only* cannot attach to a single head.
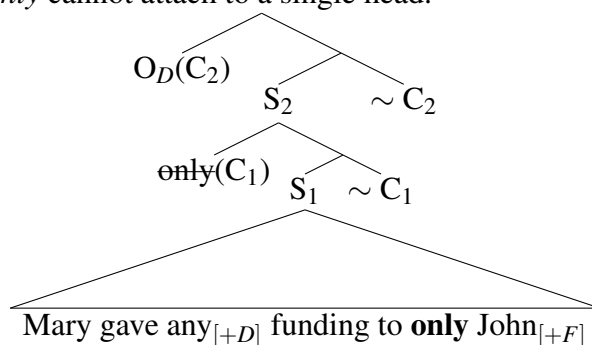


(10)  a.  John read a (*only) PAPER.   b.  John saw a picture (*only) of (*only) MARY.

(11)  a.  John only saw any pictures from MARY.   b.  John saw any pictures only from MARY.

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<p style="text-align:center">Degree Words: Modifiers or Functional Head Elements?</p>
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DegP (Degree Phrase), as a functional projection (e.g., Corver 1997), has been shown to be semantically convenient, since it represents gradable XP (<d, <e,t>>), which is different from other predicates (<e,t>); and it also seems to be syntactically harmless, since it does not make troubles to our current understanding of syntactic computation in general. However, the elements that are most likely to be considered to establish DegP, i.e., degree words, have been treated as modifiers of other categories (AP or stative VP) traditionally. So long as the traditional analysis remains unchallenged, we are not confident in the independent status of DegP in syntax. This is similar to the situation that if articles were modifiers of NPs, they would not head DP. The goal of this talk is to show that in Mandarin Chinese, degree words must head an independent functional projection, since they behave differently from modifiers in syntax.

Fact ❶ Degree words are in complementary distribution with reduplicate adjectives. In languages such as Austronesian languages, intensification is encoded by reduplication of adjectives, instead of degree words. In Chinese, both strategies are available, but they never co-occur.

(1)  Daiwei gezi    {gaogao de/ hen    gao/*hen gaogao}.
     David   height tall-RED PRT/very tall/    very tall-red    'David's height is tall.'

Only a functional head that selects X, rather than a modifier of X, may be in complementary distribution with certain morphology of X. For instance, the presence of a modal excludes an aspect inflection on a verb, and the former must be in a functional head position.

Fact ❷ Degree words show independent selection properties. In syntax, if X is an independent category, it selects a special type of element, and the selection is not covered by other categories; and moreover, it is selected by certain types of element, but not other types. It is well recognized that degree words are combined with gradable stative XP only, and this constraint is not seen on other elements. In addition, a phrase with a degree word may not occur in a position that is exclusively for nominals in the language. The causee position following the causative marker *ba* (2a), the theme position preceding the passive marker *bei* (2b), and the argument position preceding the raising verb *kanqilai* 'seem' (2c) are such positions.

(2)  a.    Wo ba (*hen) chengshi dang-zuo yi zhong meide.
           I  BA   very honest   regard-as one CL     virtue 'I regard to be honest as a virtue.'
     b.    Dui guke      (*hen) rexin bei laoban renwei feichang zhongyao.
           to   customer very warm PASS boss    think   very      important
           'To be warm to customers is regarded as very important by the boss.'
     c.    (*hen) naixin kanqilai bing    bu-nan.
           very   patient seem   rather not-difficult    'To be patient seems not to be difficult.'

If the nominal positions belong to the domain of D, the data above indicate that D does not select a degree word expression. The contrast in (2) indicates that an XP and its combination with a degree word have different syntactic distributions, falsifying an adjunct analysis of degree words.

Fact ❸ Degree words block the A-not-A yes-no question dependency. An A-not-A form is licensed by a question feature in Infl/C (Huang 1982; Soh 2005). (3a) shows that the adverb *pingchang* 'usually' may precede the A-not-A form of *qu* 'go', whereas (3b) shows that the degree word may not precede the A-not-A form of *xihuan* 'like'.

(3)  a.    Daiwei pingchang qu-bu-qu juyuan?         b.    Daiwei (*hen) xi-bu-xihuan juyuan?
           David   often       go-not-go theater              David   very   like-not-like theater
           'Does David often go to the theater?'               'Does David like the theater?'

Fact ❹ Degree words have an independent question form. *Duome* 'how much' is used for asking the degree of a gradable property. It is different from the question forms for manner modifiers,

such as *ruhe* 'how' and *zenyang* 'how'.

(4)  a.  Daiwei (you) {duome/*zenyang} gao?　　b.  Daiwei {zenyang/*duome} zuofan?
　　　　David  have  how/how　　　　tall　　　　David  how/how　　　　cook
　　　　'How tall is David?'　　　　　　　　　'How does David cook?'

Fact ❺ Degree words may have a place-holder. Generally speaking, different degree words express different values of the degree of a gradable property. However, *hen* 'very' has two versions: one may bear stress and may have the suffix –*wei* if it precedes a disyllabic form (Hou 1998), functioning as an intensifier like English *very*; and the other neither bears stress nor takes -*wei*, not expressing any specific degree (XHXL 1982: 243). The occurrence of the second use of *hen* excludes a possible comparative reading, as seen in (5b). No modifier denotes an underspecified meaning, or has a place-holder, and thus degree words are not modifiers.

(5)  a.  Daiwei gao.　　　　　　　　　　b.  Daiwei hen gao.
　　　　David  tall　　　　　　　　　　　　David very tall
　　　　'David is taller than others.'　　　　'David is tall.'

　　While arguing for the Deg head status of degree words, I falsify three alternative analyses of *hen* 'very'. The POS-marker analysis (Sybesma 1999; Kennedy 1999) is challenged by the fact that in the absence of a degree word, examples like (6a) encode POS, but the construction rejects *hen*, as seen in (6b). My account of (6b) is that the measure phrase specifies a value denoted by the adjective and thus the whole phrase may not be selected by *hen* (*pace* Corver 2009: 72).

(6)  a.  Na du qiang gao-da　san  mi.　#Tai ai　le.
　　　　that CL wall tall-reach three meter　too short PRT
　　　　'That wall is as tall as three meters. #It's too short.'
　　b.  *Na du qiang hen gao-da　　san mi.
　　　　　that CL wall very tall-reach three meter

The predicate-creator analysis (Huang 2006) claims that Chinese adjectives denote <e>, and they are changed into type <e,t> by *hen*. The analysis however does not capture the facts that in many constructions adjectives function as predicates without *hen* (Liu 2010) and that like degree words in all languages *hen* selects gradable expressions only (6b). The V-creator analysis (Grano 2012) claims that *hen* provides [V] to adjectives. However, the cluster *hen*-Adj does not behave like a verbal element: it may not undergo A-not-A formation (*hen-bu-hen*) and may not license a complement to its right (Huang et al. 2009: 22), as seen in (7). The analysis also has Huang's second problem. Also, it cannot explain data like (8), where even a VP needs *hen*.

(7)  a.  *Zhe ge gongzuo (hen) heshi　ni.　　b.  Zhe ge gongzuo [dui ni] [hen heshi].
　　　　　this CL job　　very　suitable you　　　this CL job　　to you very suitable
　　　　　　　　　　　　　　　　　　　　　'This job is suitable for you.'

(8)  Daiwei e　　de *(hen) xiang chi yi　ge mantou.
　　David hunger DE very　want eat one CL bun 'D was so hungry that he wanted to eat a bun.'

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