

THE UNIVERSITY OF CHICAGO

GEORGIAN MORPHOSYNTAX AND FEATURE HIERARCHIES IN NATURAL
LANGUAGE

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE DIVISION OF THE HUMANITIES
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

DEPARTMENT OF LINGUISTICS

BY
THOMAS R. WIER

CHICAGO, ILLINOIS

JUNE 2011

In Memoriam

GRACE FLOWERS KNIGHT
(1908-2002)

and

DR. THOMAS PERCY WIER, JR.
(1919-2002)

TABLE OF CONTENTS

LIST OF TABLES	<i>vii</i>
PROLEGOMENON	<i>viii</i>
A WORD ABOUT PRONUNCIATION AND TRANSCRIPTION	<i>xi</i>
GLOSSING CONVENTIONS	<i>xiii</i>
1 Feature Theory and the architecture of Grammatical Systems	1
1.1 Posing the Question	1
1.2 Towards a general theory of features: claims and framework assumed	3
1.3 Overview of the thesis	18
PART I: GEORGIAN MORPHOSYNTAX	22
2 A Modular Sketch of Georgian Grammar	23
2.1 The Separationist Hypothesis and Georgian Morphology	24
2.1.1 Previous critiques of the morpheme	25
2.1.2 Nonsequentiality	27
2.1.3 Branchedness and Templatistic morphology	29
2.1.4 Nominal and verbal morphology	33
2.2 Grammatical Functions	38
2.2.1 The distribution of case and agreement	39
2.2.2 Reflexivization and other forms of binding	45
2.2.3 Suppletion for animacy or number of grammatical function	48
2.2.4 Tests for GF-status	51
2.3 Constituency	55
2.4 Conclusions	59
3 Modular Mismatches: Inversion and Pseudo-antipassivization	60
3.1 Harris (1981) on Inversion	61
3.1.1 The Conceptual foundation of Relational Grammar	62
3.1.2 Formalization of tests for termhood in RG	63
3.1.3 Inversion	64
3.1.4 <i>Tav</i> -reflexivization	67
3.1.5 Suppletion for number and animacy of initial direct objects	69
3.1.6 The Person-Function constraint	71
3.1.7 Further complications	73
3.1.8 Preliminary conclusions	79
3.2 Palmer (1994) and (Pseudo-)Antipassivization	80
3.2.1 Palmer's tests for transitivity	84
3.2.2 Further tests for GF-status	86
3.2.2.1 Passivization	87
3.2.2.2 Causativization	89
3.2.2.3 Person-Function Constraint facts	91
3.3 A Different Analysis of case and agreement	92
3.3.1 Summary of the problem	92

3.3.2	Split-S languages and Unaccusativity	93
3.3.3	Nonsyntactic approaches to unaccusativity	98
3.3.3.1	Argument-structural approaches and LMT	98
3.3.3.2	Differences between Wier (2005) and Blevins (2008)	102
3.3.3.3	Conceptually-based arguments: Holisky (1981)	105
3.3.3.4	An analysis drawing on Argument structure and Role structure	112
3.3.4	Accounting for diverging patterns: Inversion redux	118
3.3.5	Accounting for diverging patterns: the case array of the present series	124
3.4	Conclusions	130
PART II:	FEATURE HIERARCHIES IN NATURAL LANGUAGE	132
4	Morphological hierarchies and the autonomy of morphology	133
4.1	The basics of affix competition in Georgian	134
4.1.1	The present and aorist series	135
4.1.2	The Present-Perfect and the Pluperfect	141
4.1.3	Summary of Morphological Hierarchies	143
4.2	Distributed Morphology and Inflectional Blocking	144
4.2.1	The architecture of Distributed Morphology	144
4.2.2	Georgian as a case-study in featural operations	146
4.3	Amorphous morphological theories, part 1: Anderson (1992)	153
4.3.1	Morphosyntactic Representations	156
4.3.2	Word-Formation Rules	161
4.4	Stump (2001) and the Pāṇinian Principle	163
4.4.1	How a Realizational Rule works: features, set-theory, and unification	165
4.4.2	How a Realizational Rule works: rule blocks and rule Interaction	167
4.4.3	Stump's analysis of Georgian and problems with Pāṇinian Determinism	172
4.5	Assessment of Amorphous Theories	178
4.5.1	Advantages	178
4.5.2	General problems with Georgian: Anderson	181
4.5.3	General problems with Georgian: Stump	182
4.5.4	The problem of syntactic noun-incorporation	185
4.5.5	The problem of 'No-Phrase-Constraint' violations	191
4.5.6	Amorphous morphology and violations of anaphoric islands	198
4.6	Conclusions	203
5	Feature geometries as constraints on morphological hierarchies	204
5.1	On the modular autonomy of feature specifications	205
5.1.1	Person marking manifested in choice of preverbs	208
5.1.2	Different modular mappings of number morphology	210
5.1.3	How 'a-morphous' morphological features map onto syntax	213

	and semantics	
5.2	Rule blocks, non-Pāṇinian rule ordering and Feature Geometries	215
5.2.1	Features as labels of natural classes	216
5.2.2	Early views	217
5.2.3	Cysouw (2001)	218
5.2.4	Harley and Ritter (2002)	222
5.2.5	Nevins (2007)	227
5.3	Morphological features in Georgian	229
5.3.1	The morphological status of SAPs in Georgian	229
5.3.2	The morphological status of non-SAPs	233
5.3.3	The role of feature geometries as constraints on realization rule interaction	236
5.4	Conclusions	237
6	Syntactic hierarchies: the formal manifestation of functional traits	239
6.1	Bonet (1994) and the equivalence of grammatical function and surface case	240
6.1.1	Bonet (1994)'s account of the Georgian data	242
6.1.2	Problems with Bonet (1994)	245
6.2	Person-Function Constraint Patterns across the Kartvelian family	247
6.2.1	The case marking system of Svan and the PFC	248
6.2.2	The case marking system of Mingrelian and the PFC	256
6.2.3	Preliminary conclusions	261
6.3	Haspelmath (2004) and the Ditransitive Person-Role Constraint	262
6.3.1	Harmonic vs. Disharmonic associations	262
6.3.2	Problems with the role-based account	266
6.3.3.	The PFC as a Constraint over Grammatical Functions	268
6.4	Syntactic Features in Georgian	271
6.4.1	The absence of syntactic third person	271
6.4.2	Feature Geometrical representation	273
6.5	Conclusions	274
7	Feature hierarchies as epiphenomena of markedness	275
7.1	Silverstein (1976): 'Hierarchy of Features and Ergativity'	275
7.2	Criticisms of Filimonova (2005) and Bickel (2008)	282
7.2.1	'Likelihood of being A or P'	283
7.2.2	Reverse-markedness encodings	285
7.2.3	Scalar continuity	289
7.2.4	Bickel (2008)	290
7.3	Problems with Filimonova's and Bickel's critiques	297
7.4	A Neo-Silversteinian analysis of feature hierarchies as Feature Geometrical Metaprinciples	304
7.4.1	The Covariation Principle	305
7.4.2	The Dominance Principle	308
7.4.3	The Intermodular Interface Principle	311
7.5	Conclusions	313

8	Epilogue	314
	References	321

LIST OF TABLES

	<i>Page</i>
2.1 A typology of morphological processes	25
2.2 Georgian case-arrays across different conjugations	40
2.3 Basic agreement.	40
2.4 Derived agreement	41
2.5 Aorist screeve paradigm of <i>xedva</i> ‘see’	43
2.6 Pluperfect screeve paradigm of <i>xedva</i> ‘see’	43
 3.1 ‘Version’ markers	 65
3.2 Case assignment across series and conjugational class	74
3.3 Four different passivization strategies	87
3.4 Derived medial verbs	107
3.5 Case distribution across screeves and series	125
 4.1 Present screeve paradigm of <i>xedva</i> ‘see’	 135
4.2 Aorist screeve paradigm of <i>xedva</i> ‘see’	137
4.3 ‘Version’ markers	140
4.4 Present perfect screeve paradigm of <i>xedva</i> ‘see’	141
4.5 Pluperfect screeve paradigm of <i>xedva</i> ‘see’	142
4.6 Criteria for distinguishing clitics vs. affixes	149
4.7 Correlative chart of pronominals in Georgian	200
 5.1 Aorist screeve paradigm of <i>cema</i> ‘give’	 209
5.2 Aorist screeve of <i>gageba</i> ‘understand’	216
5.3 Frequencies of common and semi-common paradigmatic structures, ordered to structural characteristics	220
 6.1 The distribution of case across series and conjugational classes in Svan	 249
6.2 Svan agreement patterns	250
6.3 Case patterns in Mingrelian across conjugations and series.	258
6.4 Alignment of person and roles	263
6.5 Alignment of features and ditransitive grammatical functions	270
 7.1 Feature specification of noun phrases	 277
7.2 Bandjalang split-system	280
7.3 Dhirari split system	281
7.4 Gumbaynggir split-system	281
7.5 Verb agreement with RH-sensitive alignment splits	292
7.6 Split ergativity in Puma	294
 8.1 Local hierarchy variation in different Algonquian languages	 319

PROLEGOMENON

The emperor and philosopher Marcus Aurelius began his often profound but always humane little book of meditations *έις ἑαυτόν* (to himself) with a thoughtful recollection of all the people in his life — including at least one grammarian! — who had contributed to making him who he was. I could not possibly hope to achieve that aim, so I will here note only a few of the wonderful people that helped me along the way.

I can only begin with an expression of deepest thanks to the faculty of the University of Chicago's linguistics department, and most especially the members of my dissertation committee: Amy Dahlstrom, Victor Friedman, Jerry Sadock and Michael Silverstein. In ways more than I can properly articulate, I became a different kind of thinking person by working with them and learning from them about things both fascinating and, often, mysterious about human language. Their attitudes towards empiricism and questioning widely unquestioned orthodoxies, but also their warm and understanding spirits outside the classroom at departmental Teas and elsewhere made my stay in Chicago an immensely rewarding one on many levels.

Next to them surely come those people who, though not on my committee, are those who helped me delve into the baffling and often willful Georgian language. Howard Aronson generously came out of a well-deserved retirement to teach me both Georgian and Old Georgian, and had the patience to point out assumptions I didn't even realize I was making which affected one's understanding of the logical system underlying Georgian (such as whether there is always such a system in the first place). I thus had the honor of being his last student. Paul Manning always gave me a witty and insightful look at the Georgian language and people. Though she barely knew me, Alice Harris kindly gave encouragement and sent me a copy of her great work on Georgian Syntax for free, which, even where I disagree in a few points, remains a

foundational work for me and all others working on the language. Kevin Tuite was always willing to answer questions I might have with an open (and very knowledgeable) mind and send me helpful materials. And of course, the entire Georgian linguistic community, in Georgia and out, including: Rusudan Asatiani, Marine Ivanishvili, Eteri Soselia and the others at the Oriental Institute in Tbilisi; the many scholars at the Chikobava Institute who helped me do fieldwork, especially Mari Mardeilashvili; Thomas Gamqrelidze; Nino Amiridze; René Lacroix; Olya Gurevich; and no doubt others I am forgetting. They each left a distinct imprint on my thinking and aided me in countless very practical ways.

I also must express my thanks and appreciation to and for all those people who made my time at the Max-Planck Institute for Evolutionary Anthropology in Leipzig a rewarding and productive time, especially Bernard Comrie and Martin Haspelmath, whose generous offer of office-space and a chance to teach at the University of Leipzig's Spring School on Language Diversity helped me clarify my own thinking about feature hierarchies in a very direct way — but also intellectual fellowship with the likes of David Gil, Sven Grawunder, Andrei Malchukov, Don Stilo, and all the many students who attended my talks with interest and suggestions for refinement.

Lastly I want to thank my family and friends who each helped make life enjoyable along the way. My father and mother always had advice and encouragement that made getting such an education and career possible financially and emotionally. My many friends in the States, Europe and Georgia itself: Nikki Adams, Alan Bailey, Alex and Khatuna Bainbridge, Tim Blauvelt, Rod and Kim Edwards, Andre Hemker, Jonathan Long, Helena Metslang, Avital Rabin, Gela Tevzadze, William and Heidi Wuertz, and Ilya and Masha Yakubovich, and Ichiro Yuhara among many others. Many of them helped directly on this project by their questions and

comments, but more important than that, they all helped me know more fully that sometimes writing a book means knowing when to step away from the keyboard for a glass of wine and good company.

Leipzig, Germany

January 2010

A WORD ABOUT PRONUNCIATION AND TRANSCRIPTION

While Georgian phonology may be rather complicated, both from a theoretical and practical standpoint, its orthographic representation is quite simple, consisting of 33 letters for each of the 33 phonemes (not counting dialectal variation and subphonemic distinctions). I will be using a modified version of the system used by Harris (1981), replacing underdot diacritics <.> with more standard <'> to represent glottalization, but it will be otherwise identical to that work.

Georgian letter (<i>Mxedruli</i>)	IPA equivalent	Transcription
ა	a	a
ბ	b	b
გ	g	g
დ	d	d
ე	e, ε	e
ვ	v, w, f	v
ზ	z	z
თ	t ^h	t
ი	i, I	i
კ	k'	k'
ლ	l	l
მ	m	m
ნ	n	n
ო	o, ɔ	o
პ	p'	p'
ჟ	ʒ	ž
რ	r	r
ს	s	s
ტ	t'	t'
უ	u, ʊ	u
პ	p ^h	p
ქ	k ^h	k
ყ	y	g
ყ	q', ?	q
შ	ʃ	š
ჩ	č	č
ც	ts	c
ძ	dz	z

ڻ	\widehat{ts}	c'
ڙ	$\widehat{tʃ}$	č'
ٻ	x	x
ڦ	$\widehat{dʒ}$	j
ڻ	h	h

GLOSSING CONVENTIONS

Except where noted, in this work I will be following the Leipzig Glossing Convention. Although this thesis will ultimately reject the classical notion of the morpheme, for expository purposes I will continue to segment Georgian words morphologically in the most straightforward manner (e.g. no phonologically null morphemes). In a few cases where the morphology is nonconcatenative, I list lexemes/features between hyphens and separate them only with a period. Clitics are separated by '=' rather than a hyphen '-'.

1	First person
2	Second person
3	Third person
II	Second conjugation
ADV	Adverbial case
AOR	Aorist screeve
CAUS	Causative
DAT	Dative case
EXT	Extended case form
FUT	Future participle formant
GEN	Genitive case
IMPF	Imperfect screeve
INST	Instrumental case
NARR	Narrative case (aka ergative)
NOM	Nominative case
PRV	Preradical vowel (aka version vowel)
PVB	Preverb
PL	Plural
SG	Singular
TH	Thematic suffix (aka present/future stem formant)
VENT	Ventive prefix (direction towards deictic center)
VOC	Vocative case

§1 Feature theory and the architecture of grammatical systems

1.1 Posing the question

This dissertation is an exploration of the idea of linguistic features: what we mean by them, and how they relate to each other. The notion that linguistic features act as labels for natural classes of grammatical phenomena is fundamental to any linguistic inquiry, as any linguist will tell you. Equally important, but less often appreciated, is the idea that those natural classes have a nonrandom distribution within lexical items, and furthermore often compete for realization in particular constructions. At least implicitly, these are quite ancient ideas in the history of grammatology, going back at least to Panini's discussion of elsewhere-phenomena and other ancient grammarians' approach to paradigm formation. However, only comparatively relatively recently has it been realized how difficult it is to characterize precisely both what a feature is and what we mean when we say that such features 'compete' for realization to form a hierarchy.

This difficulty has its origins primarily in two aspects of modern linguistic theorizing. First, linguists have increasingly tried to apply formal methods to an ever increasing array of languages for which those formalisms were not originally envisioned. This means not just commonplace but nonetheless often ignored problems such as inclusive/exclusive distinctions in pronominal systems and agreement, but also exotica like antiagreement phenomena in Berber question formation or Kiowa inverse number marking, which marks not what number the argument is, but what it is not. Second, many questions arise as a result not of the data as such, but as a result of the theoretical lens through which that data is assessed and analyzed. This is true both of syntactocentric

frameworks, which tend to telescope all fundamental grammatical questions into isomorphisms between constituency, grammatical functions and argument structure and of more functionally oriented semantocentric frameworks which prioritize pragmatic and thematic properties of predicates, thus minimizing the autonomous examination of constructions which have no plausible synchronic foundation in semantic generalizations. What makes a general theory of features all the more difficult to formulate is that these two questions are often deeply intertwined with one another, so that it is not always immediately clear what problems really result from the analysis and what are fundamentally empirical problems independent of any analysis.

Balancing these two halves of the question – typological breadth with theoretical depth – I believe is best achieved by looking at particular key languages in depth, and then trying to apply those same approaches to a larger number of languages. The core of this dissertation will therefore concentrate on one such key language that has been much discussed in the literature: Georgian, a Kartvelian language of the Caucasus. Although it has much notoriety for its tendency to defy theoretical characterization, I believe not only is it theoretically characterizable, it is even more interesting than is often realized because it can shed light on many salient debates about how morphological paradigms are formed, the relationship between grammatical functions and argument structure, and, most importantly for this thesis, where asymmetries in feature realization come from and how those asymmetries are manifested in particular construction types resulting in what we by now traditionally call hierarchies.

To give a representative example, Georgian has of late become something of a posterchild for morphological complexity not because of the number of affixes, or even

the number of features those affixes contain, but because of the way those affixes relate to each other in the larger morphological system. Consider a simple transitive verb, which agrees for both subject and object:

- (1) v-nax-e
1-see.PF-1/2AOR
'I saw him'

Here, the subject is overtly marked morphologically both by a prefix *v-* for first person, and by a suffix *-e*, which tells you the verb is aorist in tense and the subject is either first or second person; the third person object has no overt marking. If you want to indicate a second person object, however, an overt prefix *g-* is marked where the *v-* prefix otherwise would be:

- (2) g-nax-e
2-see.PF-1/2AOR
'I saw you.'

Here, we know the subject is first or second person because the screeve marker (a kind of tense suffix) is *-e*, and because here the second person object prefix is also overtly marked, by elimination we know that the subject is first person. But this raises an immediate question of analysis: if *v-* is the marker of first person, and verbs must mark both subject and object, why do we not see both *v-* and *g-*? The answer cannot be phonological, since Georgian is also famous for its liberality with consonant clusters: cf. *g-vlen* 'I send it to you' and *v-glex-ob* 'I act like a peasant'. Rather, the *v-* prefix is simply blocked from morphological expression. This constitutes a classic case of a linguistic hierarchy, in that two construction types could in principle both appear, but one fails to do so. Hierarchies like this are actually fairly widespread in language, occurring

in many different kinds of morphological, syntactic and semantic construction types, and thus an explanation of what a possible hierarchy is would go a long way to explaining what a possible natural language is.

1.2 Towards a general theory of features: claims and framework assumed

This thesis will make several key claims about features and feature hierarchies. First, I will argue for a modular conception of grammar in which not only are different construction types autonomous from each other, so are the features that they manipulate. I summarize this in one hypothesis and a second corollary to that hypothesis:

- (3) **Modularity Hypothesis:** the knowledge that people have about their languages consists of a set of different domains of representation or modules, none of which can be reduced to any of the others, nor are any intrinsically isomorphic to any other.
- (4) **Categorical Corollary:** within each domain, features act as labels for natural classes of grammatical phenomena, and those features within a module refer *only* to that domain – even when other domains of representation redundantly cospecify analogous features.

Thus a morphological feature F_μ describing one cell in a paradigm may or may not have a corresponding syntactic feature F_τ which itself may or may not correspond to a semantic feature F_σ ; the fact that they usually do is not sufficient evidence to assume they always do. Secondly, not only are features modularly specified, they fall into hierarchically oriented sub- and superclasses, which are described by feature geometries. Thirdly, I will ultimately articulate an epiphenomenal theory of feature hierarchies in which hierarchies result from set-theoretical metaprinciples of feature geometries: is a feature present or absent within a given module's geometry, and if present is a feature subordinate, superordinate or symmetrical with respect to other features in a geometry?

Before we can address the particulars of feature theory, hierarchies, and how Georgian fits in to that picture, it is important first to explain what modularity in grammar means and motivate why I am adopting such a modular view. Almost all linguists agree on the idea that language constitutes a sign mapping phonological properties of an utterance onto particular semantic meanings of a predicate, and that the relationship between the two is largely arbitrary. This arbitrariness acts as a kind of partition that separates grammatical representation into separate modules. In the course of the 20th century, many linguists came to believe that more such autonomous modules were necessary to fully describe the totality of linguistic phenomena, and much of the history of late 20th century linguistics consists of arguments about the exact number and relationship that these additional levels of representation have to each other. Thus, strictly speaking, probably all linguists believe in modularity of one kind or another – they just disagree on its nature.

So what I mean by modularity is something considerably more specific. I think one of the great problems of linguistic theorizing has been a failure to be very clear about exactly what criteria one uses to say that something is ‘syntactic’ or ‘morphological’ in part because a given construction might redundantly cospecify properties in multiple different domains, obscuring their actual independence. This can lead to a situation in which there is an inverse relationship between the number of modules posited and the complexity both within and between those modules: if, say, you have no way to represent morphological structure independent of syntax and semantics, then you have to divide up otherwise straightforwardly morphological questions into things that kinda-sorta look like syntax or semantics, but not fully. This will be a central problem in this thesis, since

morphological structure independent of syntax and semantics, then you have to divide up otherwise straightforwardly morphological questions into things that kinda-sorta look like syntax or semantics, but not fully. This will be a central problem in this thesis, since features prototypically are quite redundantly cospecified across many multiple domains, and linguists often mix syntactic, morphological and semantic criteria in claiming that an argument bears or a construction manipulates certain features.

Aside from this quantitative problem, as noted above there is also the qualitative question of how the different modules interface with one another. Theories tend to fall into two camps on this issue: do you or do you not privilege one particular module as against all the others, and shoehorn problem areas into that picture? Some theories, such as those pursuing Principles and Parameters/Minimalist (e.g. Chomsky 1995) or Relational Grammar analyses (Perlmutter 1980), privilege their conception of syntax above semantics or discourse structure, while others, notably Functional (Croft 2001) or Cognitive (Lakoff 1987, etc.) grammarians, do just the opposite, and minimize or even eliminate the role that an autonomous syntax has to play. Other so-called monostratal theories, such as Lexical-Functional Grammar (Bresnan 1982, 2001), Autolexical Grammar (Sadock 1991), Head-driven Phrase Structure Grammar (Pollard and Sag 1994), Simpler Syntax (Culicover and Jackendoff 2005), etc., do not privilege one module's properties above others, and so must take account of mismatches between modules in other ways.

This thesis will take a more-modular, monostratal (nonprivileging) stance on these quantitative and qualitative metatheoretical questions. In its particulars, I will not be adopting any one monostratal framework, though it will most closely resemble and

often directly adopt the mechanisms employed in LFG and Autolexical Grammar. My goal however is not to decide between frameworks, but rather to use such tools to explore the fundamental empirical question of what linguistic features are and where feature hierarchies come from. I believe the phenomena under investigation exist at a general enough level that it will hopefully contribute to scholars working in both frameworks as well as other similar frameworks.

To be specific, I will be adopting at least the following five¹ levels of representation:

- Grammatical function structure (GFS)
- Constituency structure (CS)
- Morphological structure (MS)
- Argument structure (AS)
- Role structure (RS)

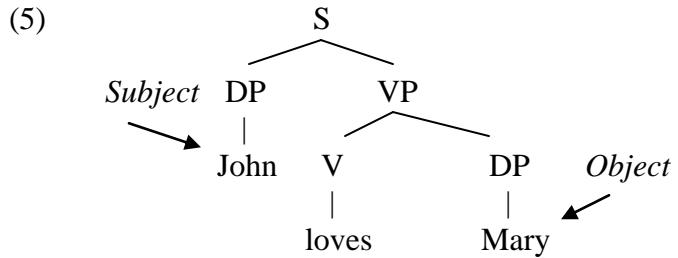
I believe that at least this many levels of representation are necessary independently of each other to describe complicated systems of morphosyntax such as are found in Georgian, and as a consequence are available to the human language faculty. The rest of this section will briefly explain what domain of language each such module seeks to characterize. Hopefully this will allow readers unfamiliar with similar frameworks to understand my motivations, as well as to clarify for future generations who may reformulate the same questions in different ways (e.g., in neural processing).

1.2.1 Grammatical functions and syntactic constituency

Among theories that adopt some notion of the autonomy of syntax, theories divide on whether grammatical relations like Subject and Object are considered primitives of

¹ In point of fact, an additional sixth module, Information Structure dealing with the role topicalization and focus constructions have in language, surely is necessary. However, this will play an extremely minor part of my discussion, and I will only mention it in passing.

theorizing, as with Relational Grammar, LFG, HPSG, etc.; and others which consider them epiphenomenal, as with most varieties of Principles and Parameters/Minimalist approaches. Specifically, the latter group generally seeks to reduce grammatical relations to specific (asymmetric) nodal positions in syntactic constituency trees:



For languages like English where specific syntactic tests – clefts or pro-form substitution, for example – clearly establish the requisite constituent asymmetry, a VP phrase containing the verb and its object, and so where specific nodes can be annotated with particular grammatical functions, such an approach seems to make some sense, since we can simplify our grammatical description considerably. The problem comes in when we attempt to extend such approaches to other languages, like Georgian, where no such asymmetry is readily apparent. Such nonconfigurational languages typically instead annotate not syntactic nodes but pieces of morphology for subject and object status. However, in Georgian, as we will discover in more detail in the next chapter, almost all such tests are actually inconclusive or mutually contradictory, raising the question of whether grammatical functions should be done away completely and replaced with a direct mapping to the properties of logical semantic predicates in argument structure. I will argue that this is not tenable, but the nature of the problem is highly complex, and will require much of Ch. 2 and 3 to establish its separate existence, before we proceed to our discussion of feature theory and feature hierarchies.

1.2.2 Morphology and morphemic theory

For much of the 20th century, parts of words were taken to be miniature versions of Saussurean signs, or morphemes. Morphemic theory proved so successful for some languages that, like ‘markedness’ and ‘construction’, it came to be considered a kind of pretheoretical norm of linguistic theorizing, not requiring particular justification. In western languages, with their largely analytic word-structures, it is easy to finesse or ignore this fact, but quasi-polysynthetic languages like Georgian require a rigorous and detailed account of why word structure does or does not mirror syntactic or semantic properties of the clause. Consider two typical examples taken from prominent scholars in the field:

Juxtaposing these two examples together throws into sharp relief the nature of the problem. In the first example, there appears to be no morphological complexity at all², while the forms in the latter example appear to be broken down into baroque

² This is not literally true for Harris, though because in Harris (1981), all inflectional and much derivational morphology is ultimately isomorphic to syntax, the question of morphological analysis is not as central. In her later work, Harris (2009) explicitly adopts a word-and-paradigm approach in morphology much like the theory advocated in this dissertation.

microcomplexity, with each category bearing some morphological representation even if that means it has no discernible (or, given the question marks in (7), even for the analyst detectable) phonological form.

Such disagreement even among respected scholars working on the same language was ultimately one of the reasons why an increasing number of theorists have sought to radically rethink the relationship between word structure and its overt phonological manifestation. Scholars now increasingly divide into four camps along two axes. On the one hand, there is the question of whether morphs should have a distinct entry in the lexicon, or whether such morphs should be merely inferred from the existence of separate rules -- *lexical* vs. *inferential* theories, respectively. On the other hand, there are those who believe that morphological processes should be added *incrementally* one at a time to build up word structure, versus those who believe processes *realize* potentially any number of categories all at once. Inferential-realizational morphologists such as Aronoff (1976), Anderson (1992), Spencer (2004), and Stump (2001) have posited five main objections to the classical lexical-incremental conception of the morpheme:

- (7) **Inferential realizational arguments against classical morphemic theory**
- a. **ZERO-MORPHS:** almost every morphological system includes morphological contrasts not between two discrete affixes, but rather between an affix and the lack of an affix.
 - b. **MEANINGLESS MORPHS:** in many languages, there is phonological material that appears to bear no meaning, but is productively used to generate new words.
 - c. **CUMULATION:** multiple features may be manifest on a single morph.
 - d. **SUBTRACTIVE MORPHS:** the salient aspect of some processes is the deletion of material.
 - e. **MULTIPLE EXPONENCE:** a single given feature may map onto multiple different aspects of the phonological matrix, which themselves may not constitute natural phonological classes.

The implication of such arguments, if we take them at face value, is that the way words are grouped together to form phrases and clauses is not at all closely analogous to the kinds of processes that build up paradigms. This will become very important for our larger discussion of feature hierarchies, because many of the criteria that people use to posit feature hierarchies depend on their particular view of word structure, and morphemic theories sometimes obscure that fact³. Because of such problems, I will adopt a modified version of Stump's Paradigm Function Morphology morphological framework, an inferential realizational approach that replaces morphemes with realizational rules along the following lines:

$$(8) \quad RR_{I,\{NUM: PL\},N}(<X, \sigma>) = <Xeb, \sigma> \quad ("‐eb marks plural nouns")$$

Rules like this, arranged in blocks only one of which may surface at any given time will allow us to piece apart morphologically-based hierarchies with considerably greater precision than other extant theories – though full exposition of this idea and how morphology relates to other modules I will leave until Chs. 4 and 5.

1.2.3 Argument structure and Role structure

Two elements of my account crucial to explaining the behavior of case and agreement are the semantically oriented domains of argument structure and role structure,

³ For example, to use the agreement facts discussed earlier, on a morphemic theory, either the *v-* first person prefix must be deleted by a morphophonemic rule which otherwise is not needed, or the first person features must be represented by a phonologically null affix. Both approaches therefore essentially stipulate that we see *g-* but not *v-*, and so both obscure the underlying competition between affixes which results in a hierarchy.

a distinction first made in Autolexical Grammar approaches to the syntax-semantics interface (Sadock 1991, Sadock forthcoming, Yuhara 2006). Although both levels of representation are ‘semantic’ in nature, each focuses on different aspects of semantic representation. Argument structure treats arguments as logical entities that combine with predicates, and is where quantification and referential binding are represented. For our purposes, argument structure crucially also contains information about how arguments may map onto different kinds of grammatical functions – under passivization, for example, or the behavior of different kinds of unaccusative or unergative intransitive predicates:

(9) ACTIVE CLAUSE:		PASSIVE CLAUSE:		
GF-stx:	[SUBJ[...], A-stx: R-stx:	OBJ[...]] < X [-o], < X [-o], θ-stx: [F = +] θ-stx: [F = -]	GF-stx: A-stx: R-stx:	[SUBJ[...]] Y [-r]> Y [-r]> θ-stx: [F = +] θ-stx: [F = -]

In the above diagram, although argument structure remains the same from the active to the passive construction, the number of grammatical functions and their mapping into other modules differs between the two differs. As with Lexical-Mapping Theory (LMT; Bresnan and Zaenen 1990) in LFG approaches, I assume that different arguments in argument-structure may have different features, which show differential mapping into grammatical functions:

(10)	[-r]	[+r]
	[-o]	SUBJ
	[+o]	OBJ

	OBL _θ	OBJ _θ
--	------------------	------------------

These are ultimately argued to account for unaccusative phenomena in intransitive predicates. For more discussion of this and other questions, see Ch. 3 and Bresnan (2001).

While the analysis of argument structure here is therefore more or less in keeping with LMT, I take a different track in the representation of how such arguments in argument structure are mapped onto cognitive entities in a thematic representation of events, which requires a little more explanation. Classical generative accounts (Chomsky and Halle 1965, Chomsky 1981, etc.), as well as the majority of lexicalist (Bresnan 1982, Pollard and Sag 1994) and functionalist (Croft 2001) accounts of semantic theory assume that semantic representation of events involves the behaviors and states of discrete semantic primitives called thematic roles: a prototypical subject is also an agent, while a prototypical object is typically a theme or patient. On a very general level, such an account makes a certain amount of intuitive sense, since redundancy and parallelism are hallmarks of many symbolic systems as mechanisms to vitiate signal noise. However, decades of research, both crosslinguistic and narrowly focused on single languages, have failed to pin down exactly how many such discrete roles exist, what properties they have, and what kinds of boundaries, if any, can be drawn between them. Dowty (1991) put the problem very succinctly:

'[F]or every verb in the language, what the verb semantically entails about each of its arguments must permit us to assign the argument, clearly and definitely, to some official thematic role or other -- it cannot be permitted to hover over two roles, or to 'fall in the cracks' between roles--and what the meaning entails about every argument must always be distinct enough that two arguments clearly do not fall under the same role definition. This is a very strong empirical claim about natural-language predicates, and, as soon as we try to be precise about exactly

what Agent, Patient, etc., ‘mean’, it is all too subject to difficulties and apparent counterexamples.’ (Dowty 1991: 549)

In the place of discrete thematic roles, Dowty proposes that what appear to be discrete roles are actually cluster concepts that group together a number of protoproperties for what is surely a discrete semantic *entity*.

- (11) Properties characteristic of Proto-Agents: (Dowty 1991: 572)
- a. volitional involvement in the event or state
 - b. sentience (and/or perception)
 - c. causing an event or change of state in another participant
 - d. movement relevant to the position of another
 - e. exists independently of the event named by the verb
- (12) Properties characteristic of Proto-Patients:
- a. undergoes change of state
 - b. incremental theme
 - c. causally affected by another participant
 - d. stationary relative to the movement of another participant
 - e. does not exist independently of the event, or not at all

What decides, then, whether a given entity is treated as proto-Agent or proto-Patient in Dowty’s view is a kind of semantic calculus that adds up the various semantic entailments of each protoproperty, and measures the given arguments relative to one another. The argument that has the most proto-Agent entailments, other things being equal, will be lexicalized as the subject, while that that has the most proto-Patient entailments will be lexicalized as the object.

I believe we can go one step beyond Dowty by formalizing the Dowtyan properties as formal binary semantic features:

- (13)
- | | | |
|----|---------------|------------------|
| a. | Volitionality | [α VOL] |
| b. | Perception | [β PERC] |
| c. | Sentience | [γ SENT] |
| c. | Causation: | [δ CAUS] |

d.	Agentivity:	[εAG]
e.	Motility:	[ζMOT]
f.	Existence:	[ηEXIST]

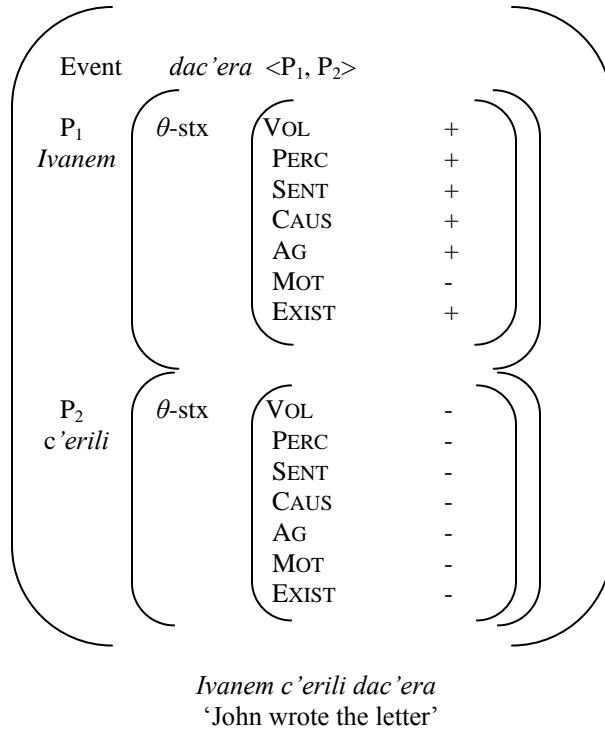
As binary features, the positive specification corresponds roughly to Dowty's proto-Agent criteria, while the negative specifications tend to correspond to Dowty's proto-Patient criteria. There are some exceptions: I take perception to be distinct from sentience, as animals in English, Georgian and many other languages may or may not pattern together with humans for purposes of many constructions. Also, I have taken the ability to act on others and to be acted upon as two distinct semantic features which can both be simultaneously positively specified, though one fits in Dowty's proto-Agent set of criteria, while the other fits in his proto-Patient criteria.

These features differ from traditional thematic roles in at least three important ways. First, thematic features exist simultaneously yet independently of one another, and so a given argument may be positively specified for one, but negatively specified for another. Second, unlike traditional thematic roles, their values are dynamic by virtue of the fact that feature values are *relative* to other arguments in a clause, rather than absolute statements of function⁴. Third, this theory separates out the ontological facts (that there is an entity) from the epistemological facts (what properties that entity has).

To take a Georgian example, we could thus have a partial role structural representation as in (14):

⁴ There are several important generalizations about this fact which will only be partially explored in Ch. 3. First, because the features rely on entailments, they are semantic facts, not pragmatic implicatures, despite the fact that they are done online, as it were. Secondly, another important implication is that (probably) all thematic features are actually metatheoretically derived from scalar predicates 'be volitional', 'be percipient', etc., which, like 'be tall' or 'be short', cannot have any meaning in an absolute sense.

(14) R-stx:



That is, θ -structure contains not unitary thematic roles like Agent or Patient, but rather more fine-grained semantic feature specifications for each participant in the clause. In the example above, the two arguments are almost maximally distinct, in that one participant has almost only positive specifications for agentive features, while the other has only negative specifications for those same features. What is most important to understand is that thematic features are *dynamic* lexical specifications for how a *predicate* semantically relates to *entities* – whether or not they are encoded as full arguments or not. It is this fact that I will draw attention to in Ch. 3 where I will argue that traditional thematic role theory fails to explain the precise distribution of unergative versus unaccusative predicates in Georgian case and agreement, as well as the kinds of semantic entailments of evidential perfect series verbs, and that both problems are far much more readily understandable in the light of a Dowtyan thematic feature analysis.

Another area of role structural semantics that should be mentioned, but which will not play a large part in this thesis, is that along with dynamic statements of what dynamic statements arguments in a clause are also static statements about the inherent logical properties of predicates. Following Pustejovsky (1991, 1995), I take these to be grouped into four main roles⁵:

- (15) a. CONSTITUTIVE Role: material, weight, parts and components...
- b. FORMAL Role: that which distinguishes a participant within a larger domain (orientation, magnitude, shape, dimensionality, color, position...)
- b. TELIC Role: purpose and function of object
- c. AGENTIVE Role: factors involved in the origin or bringing-about of the object

Qualia structure, or Q-structure, has been used successfully by others to help compositionalize many kinds of compound constructions in English and Italian. One could, following Pustejovsky, list these as predicates with variables: CORPOREAL-BODY(X), ALIVE(X), NARRATIVE(X), etc. Note, however, it is the inclusion or exclusion in the logical sets that such predicates create that really is the crux of the matter. For that reason, I will formalize these as semantic sets which may be positively specified for inclusion or exclusion of feature values.

	<i>Ivane</i> ‘John’	<i>c’erili</i> ‘letter’												
R-stx:	<table border="0"> <tr> <td>Q-</td> <td>CONST: [CORP +]...</td> </tr> <tr> <td>STX</td> <td>FORM: [ALIVE +]...</td> </tr> <tr> <td></td> <td>TELIC: [WRIT +]...</td> </tr> <tr> <td></td> <td>AGENT: [HUM +]...</td> </tr> </table>	Q-	CONST: [CORP +]...	STX	FORM: [ALIVE +]...		TELIC: [WRIT +]...		AGENT: [HUM +]...	<table border="0"> <tr> <td>CONST: [NARR +]...</td> </tr> <tr> <td>FORM: [WRITTEN-OBJ +]...</td> </tr> <tr> <td>TELIC: [TO-READ +]...</td> </tr> <tr> <td>AGENT: [ARTIFACT +]...</td> </tr> </table>	CONST: [NARR +]...	FORM: [WRITTEN-OBJ +]...	TELIC: [TO-READ +]...	AGENT: [ARTIFACT +]...
Q-	CONST: [CORP +]...													
STX	FORM: [ALIVE +]...													
	TELIC: [WRIT +]...													
	AGENT: [HUM +]...													
CONST: [NARR +]...														
FORM: [WRITTEN-OBJ +]...														
TELIC: [TO-READ +]...														
AGENT: [ARTIFACT +]...														

⁵ Note the similarity to Aristotle’s analysis of causation into material, formal, efficient and final causes. This is no accident on the part of Pustejovsky.

Because Q-structure is a subtheory of role-structure, I take it that θ -structure and Q-structure must always logically agree, with Q-structure constraining the dynamic statements of θ -structure⁶. Although qualia features will not play a major role in this thesis, I will return to the role they ultimately play in feature hierarchies towards the end as the ultimate grounding for typological generalizations about feature hierarchies as postulated by Silverstein (1976) and other theorists.

1.3 Overview of the thesis.

Having laid out the basic theoretical foundations, we can now move to an overview of the rest of thesis. In **Chapter Two**, I will lay out the bare rudiments of Georgian grammar on a modular basis. This is important, because all previous work in traditional grammar, as well as much work in other frameworks, explicitly or implicitly treats many aspects of Georgian grammar to be manifestations of syntax, semantics, or some usually unstated combination of the two. Therefore after introducing the basics nominal and verbal morphological traits in question, I will introduce basic constituent, grammatical-functional and argument-structural constructions that will be instrumental in understanding later chapters.

In **Chapter Three**, I will address claims that the ‘inverted’ perfect series and the ‘antipassivized’ present series of verbs are examples of obligatory grammatical function changing. I will show that the otherwise elegant inversion analysis of Harris (1981) actually fails on many of the grounds which make it famous: binding theory, subcategorization of object arguments, the behavior of quantifiers in ‘tough’-constructions and inversion constructions, and person-function constraint constructions,

⁶ Mismatches between the two would logically mean that Q-stx and θ -stx are separate modules.

despite appearances, are not genuine synchronic examples of grammatical function changing. After this, I will argue that many of the same problems of the inversion analysis are true of Palmer (1994)'s antipassivization analysis of the present series, which behaves rather differently. Lastly, I will examine Holisky (1981)'s semantic arguments concerning case and agreement, and argue that they too have problems and that a more explanatory theory must rely on the relationship between argument-structure and role-structure.

Having clarified the larger morphosyntactic context, in **Chapter Four** I will begin my discussion of different problems posed by the agreement system in Georgian and why feature hierarchies are relevant. We will first look in closer detail at the basics of Georgian agreement, and then look at three prominent approaches in the theoretical literature that have wrestled with the Georgian system: Halle and Marantz (1993), Anderson (1992), and Stump (2001). All of these theories conclude that the classical conception of the morpheme is incapable of handling the complex blocking effects of Georgian agreement, but each handles it in a different way. Halle and Marantz (1993) propose the lexical realizational theory of Distributed Morphology. I examine a number of serious problems with this account, and conclude it is both too strong and too weak to account for the blocking phenomena in Georgian. Anderson (1992)'s A-morphous Morphology and Stump (2001)'s Paradigm Function Morphology both propose similar inferential realizational theories in which realizational rules are ordered in blocks, but disagree on whether the ordering can be reduced to Pāṇinian elsewhere-principles. I argue that Anderson, who does not believe it can be so reduced, has the upper-hand empirically on the Pāṇinian question, and then discuss problems of syntactic noun-

incorporation in Old Georgian, violations of the ‘no-phrase’ constraint, and violations of anaphoric islands, all of which pose problems for nonmorphemic accounts, and which must be addressed before one can move on.

Chapter Five resolves many of the questions raised in Chapter Four by arguing that features must be modularly specified to deal with the paradoxes raised by morphemic and amorphemic theories of morphology, and that interface procedures must be flexible enough to account for this fact. I then address the problem of what constrains rule-ordering in rule-blocks if not Stump’s Pāṇinian Determinism Hypothesis, and after an examination of different kinds of feature theories conclude that distinct feature morphological geometries must exist, and that these act as a constraint on rule ordering. I also devise positive criteria from allomorphy for the presence, in morphology, of a category of third person.

Chapter Six turns away from strict considerations of morphology and examines syntactic hierarchies in Georgian and other Kartvelian languages by focusing specially on the so-called Person-Case constraint (my person-function constraint). I review the argument of Bonet (1994), who claims, based on data from various Romance languages, that dysharmonic associations of person features with particular grammatical functions in ditransitive constructions is strictly a question of what case the argument receives, because case and grammatical functions are isomorphic. I argue that data from Georgian show this cannot be so because of the differing case arrays across tense-series. I then provide data from other Kartvelian languages, some with radically different case arrays, that reinforces this conclusion. Then, I turn to an alternative semantically based account of Haspelmath (2004), who argues that the constraint is one of dysharmonic association

of person features with thematic roles. I argue that evidence from causative constructions as well as nominalizations argues against a semantic account. Lastly, I argue that evidence from agreement and from appositives suggests that, syntactically, Georgian lacks a feature for third person.

In **Chapter Seven**, I will conclude by broadening my discussion of feature hierarchies with a typological perspective, so that we can assess what significance the previous chapters really have. I will review the classical celebrated but often misunderstood analysis of feature hierarchies in Silverstein (1976), in which feature hierarchies were argued to be the epiphenomenal result of unidirectional (i.e. asymmetrical) neutralization of semantic features. I will then look at two recent critical reviews of Silverstein's analysis: Filimonova (2005) and Bickel (2008). I will argue that both critiques generally misunderstand the core claims of Silversteinian feature analysis, and that, to the extent that they raise any genuine exceptions, these can be handled within a multimodular view of features. I then go on to articulate a Neo-Silversteinian account of three metaprinciples of modular feature geometries from which feature hierarchies can be derived: the *Covariation Principle*, the *Dominance Principle*, and the *Intermodular Interface Principle*.

Finally, in the **Epilogue**, I summarize what the larger claims of the thesis are and address issues that bear further consideration: are the implications of this featural analysis of Georgian capable of being replicated in other language families radically different from it in space and phylogeny?

PART I:
GEORGIAN MORPHOSYNTAX

§2 A Modular Sketch of Georgian Grammar

In the last chapter, we introduced basic concepts of modularity and what roles each module plays in the overall architecture of grammatical systems. In this chapter, I will illustrate basic facts about Georgian grammar along those modular lines. This will serve two functions. First, it will make more readily understandable what are the relevant facts and questions to be considered in later chapters. Secondly, it will clarify issues that have long been confused because of the conflation of terms: syntax with morphology, morphology with semantics, syntax with semantics, etc.

Since morphological questions resurface over and over in this account, in §2.1 we will begin by discussing the Separationist Hypothesis and aspects of Georgian morphology from a rather abstract perspective, and then lay out basic facts about that morphology illustrating that perspective. Afterwards, in §2.2, we will look at various arguments that have been put forward to assign grammatical functions in Georgian, and discuss how successful they have or have not been. In §2.3, we will examine a second level of syntax, constituency structure, and briefly discuss nonconfigurationality in Georgian and why constituency is not reducible to grammatical functions. Because this chapter will only focus on necessary preliminaries for understanding later chapters, I will not focus in any great detail on argument structure or role structure, which tend in any event not to greatly vary crosslinguistically from language to language. Instead, I will focus on showing that constructions typically thought to belong to grammatical functions are actually motivated at more such semantically oriented levels.

2.1 The Separationist Hypothesis and Georgian morphology

In the last chapter, we introduced several problems with morphemic theory that impinged on the idea of how features are distributed in the larger linguistic system. The basic idea advanced was what is now called the **Separationist Hypothesis** (Matthews 1972; Beard 1987, 1988, 1995; Anderson 1992; Aronoff 1974, 1976; Stump 2001): the idea that the phonological realization of a morphological process is separate and autonomous from the actual principles of morphological structure. This section will introduce a few such examples from Georgian of mismatches between morphophonology and morphology proper, first by reviewing the amorphemic criticisms of classical morphemic theory presented in the last chapter, but with Georgian data, and then introducing others which are side-effects of the same many-to-many mapping. But first I want to introduce some more basic primitive notions that stand outside the question of incremental vs. realizational approaches to morphology, based on the approach taken in Sadock (2003) with Kalaallisut (West Greenlandic). In that work, morphs are categorized as either STEMS or WORDS, with stems being incapable of standing on their own morphologically, and words being so capable. Morphological processes are then defined by what input (stem or word) they have and which of the two types is the output:

Table 2.1. A typology of morphological processes

Affix type	Added to	Produces	Georgian example
Inflectional affixes	Stem	Word	<i>c'er-</i> ‘write’ + <i>-s</i> ‘3SG’ → <i>c'er-s</i> ‘he writes’
Derivational affixes	Stem	Stem	<i>c'er-</i> ‘write’ + <i>a- -in-</i> ‘CAUS’ ‘make write’ → <i>a-c'er-in-eb-s</i> ‘she makes him write it’
Inflectional Clitics	Word	Word	<i>k'ac-i</i> man-NOM + <i>-ve</i> ‘the very’

A fourth logical possibility, derivational clitics, take morphological words as their input and create new stems out of them. Although such clitics do exist in Greenlandic and other languages, they happen not to exist in Georgian¹. In this and later chapters, when I refer to inflection vs. derivation vs. clitics, I will be referring to these wholly morphological notions of structure; whether and how these relate to semantic or syntactic categories will be left to the discussion of interfaces.

2.1.1 Previous critiques of the morpheme

As noted in the the introductory chapter, late 20th century morphologists have increasingly begun to deal with basic problems posed by the idea of a morpheme. Georgian provides interesting, and sometimes perplexing, examples of each of the five problems identified by amorphemic morphologists:

¹ Although some suffixes come close: *-indel-* ‘dating from’ can take what look like phrases as inputs and produce new stems, as with

am-c'el-indel-i
this-year-dating.from-NOM
‘dating from this year’

We will discuss the implications of such forms later in chapter 4. But for right now, these do not as derivational clitics, since *am c'el* cannot stand on its own morphologically, and so is not a stem, and so *-indel* is rather a derivational affix.

- (1) **Inferential realizational arguments against classical morphemic theory**
- a. **ZERO-MORPHS:** almost every morphological system includes morphological contrasts not between two discrete affixes, but rather between an affix and the lack of an overt affix. E.g., in Georgian, the nominative singular of vocalic stems never manifests any affix overt form: *sasiamovno* ‘pleasure.NOM’ ~ *sasiamovno-s* ‘pleasure-DAT’ vs. *kalak-i* ‘city-NOM’ ~ *kalak-s* ‘city-DAT’.
 - b. **MEANINGLESS MORPHS:** in many languages, there is phonological material that appears to bear no meaning, but is productively used to generate new words. In Georgian, the causative suffix *-in* attaches to the present stem-forming thematic suffix of verbs, adding its own thematic suffix *-eb*, as in

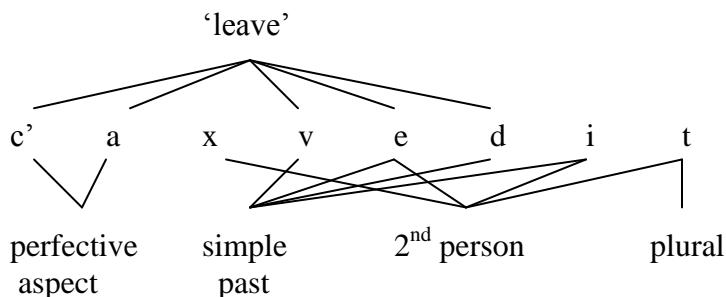
a-k'et-eb-in-eb-s
 PRV-do-TH-CAUS-TH-3SG
 ‘he makes him do it’,

Interestingly, here only the external *-eb* is deleted in the aorist:

<i>ga-a-k'et-eb-in-a</i>	(cf. <i>ga-a-k'et-a</i>)
PVB-PRV-do-TH-CAUS-AOR3SG	PVB-PRV-do-AOR3SG
‘He made him do it’	‘He did it’

This stranding of *-eb* is unexpected if the thematic suffix truly added present tense semantics to the verb.

- c. **CUMULATION:** multiple features may be manifest on a single morph: in Georgian, *-a* represents 3rd person, singular, aorist tense, realis mood.
- d. **SUBTRACTIVE MORPHS:** the salient aspect of some processes is the deletion of material. E.g. Georgian truncating nominal stems: *sagan-i* ‘object-NOM’ vs. *sagn-it* ‘object-INST’.
- e. **MULTIPLE EXPONENCE:** a single given feature may map onto multiple different aspects of the phonological matrix, which themselves may not constitute natural phonological classes. E.g., in Georgian *c'a-x-ved-i-t* ‘you (pl.) left’, tense, aspect, person and number are all completely interlaced:



Here, the preverb *c'a-* ‘out’ has two roles: it adds semantic detail to the root *ved-* ‘go.AOR’, but also perfectivizes the verb. Without it, the verb

loses its perfectivity, but also the semantic directionality; the system is incapable of distinguishing both independently. Likewise, there are no less than four indications of second person: an overt prefix which means nothing else; *e*-grade ablaut in the root used in first and second person contexts; the screeve sign *-i*, also used for both first and second person; and the plural suffix *-t*, used to pluralize first and second person arguments. Lastly, the root itself bears not only the lexical content, but also is suppletively marked for aorist (simple) past tense, as is the screeve marker *-i*.

2.1.2 Nonsequentiality

In fact, there are several other kinds of evidence, sometimes related to the above, that suggest that morphological processes are formally independent of their overt phonological realization. The first such property of Georgian morphology concerns the sequential addition of morphological material. Like more familiar languages, Georgian morphology has numerous affixes that appear to linearly combine on either the right or left of the stem: *k'arg-i* [good-NOM] ‘good X, a good thing’ (**i-k'arg*) ; *v-c'er* [1-write] ‘I’m writing it’ (**c'er-v*). In addition to this, Georgian morphology also has a rather large number of processes that are not clearly a result of sequential addition. Among these we might count circumfixes such as those in (2):

		STEM	DERIVED FORM
(2)	a. sa-...-o ‘associated with’	<i>kartvel-</i> ‘Georgian’	<i>Sakartvelo</i> ‘Georgia’
	b. sa-...-e ‘to be used for’	<i>tval-</i> ‘eye’	<i>satvale</i> ‘eyeglasses’
	c. me-...-e ‘ordinal’	<i>xut-</i> ‘five’	<i>mexute</i> ‘fifth’
	d. u-...-o ‘lacking X’	<i>pas-</i> ‘price’	<i>upaso</i> ‘free, gratis’

Such circumfixes are highly productive at all registers. Although in some instances one element of the circumfix will be identical with another analogous element

elsewhere in the morphological system, (e.g. *-o* in *sa-...-o* (2a) and *u-...-o* (2d)), no clear semantics can be identified with such constituents. Another kind of nonsequential modification is ablaut, which though unproductive, appears in a number of different paradigms or subparadigms of verb forms such as the aorist and optative:

AORIST			
(3)	e ~ i ablaut	c'a-ved-i-(t) PVB-go.AOR-1/2-PL 'I/we left'	c'a-x-ved-i-(t) PVB-2-go.AOR-1/2-PL 'You/y'all left'
		c'a-v <u>id</u> -a PVB-go.AOR-AOR3SG 'He left'	c'a-v <u>id</u> -nen PVB-go.AOR-AOR3PL 'They left'
(4) e ~ Ø ablaut			
		še-v-kmen-i-(t) PVB-1-make.AOR-AOR1/2-PL 'I/we made it'	še-kmen-i-(t) PVB-make.AOR-AOR1/2-PL 'You/y'all made it'
		še-kmn-a PVB-make.AOR-AOR3SG 'He made it'	še-kmn-es PVB-make.AOR-AOR3PL 'They made it'

In both subtypes (3) and (4), the aorist stem form of the third person singular – *i*-grade ablaut or zero-grade ablaut respectively – is further used as the stem for the optative in *all* persons:

OPTATIVE			
(5)	e ~ i ablaut verbs (with just i-grade)	c'a-v <u>id</u> -e-(t) PVB-go.OPT-1/2OPT-PL 'I/we should leave'	c'a-x-v <u>id</u> -e-(t) PVB-2-go.OPT-1/2OPT-PL 'You/y'all should leave'
		c'a-v <u>id</u> -es PVB-go.OPT-OPT3SG 'He should leave'	c'a-v <u>id</u> -nen PVB-go.OPT-OPT3PL 'They should leave'

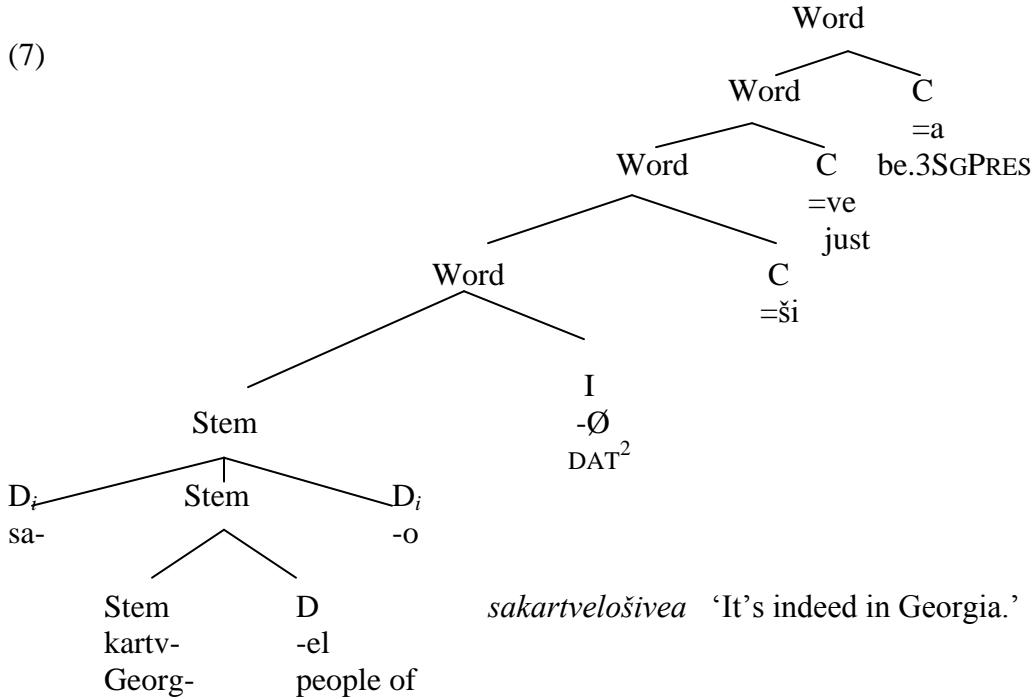
(6)	e ~ Ø ablaut (with just Ø-grade)	še-v-kmn-a-(t) PVB-1-make.OPT-1/2OPT-PL 'I/we should make it'	še-kmn-a-(t) PVB-make.OPT-1/2OPT-PL 'You/y'all should make it'
		še-kmn-as PVB-make.OPT-3SGOPT 'He should make it'	še-kmn-an PVB-make.OPT-3PLOPT 'They should make it'

Such forms are complicated in a number of different ways, and raise many questions for the idea of a one-to-one mapping between sound and meaning. It is very difficult to say that ablaut here has any one function, as it can mark a realis aorist past tense on the one hand, but on the other for irrealis forms the contrast is neutralized in favor of just one in each pair of ablaut realizations.

2.1.3 Branchedness and Templetic Morphology

The apparent lack of rigidly sequential application of morphological processes in Georgian also complicates the analysis of morphological branching structure, and constitutes another side-effect of multiple exponence. Some ternary branching, as in (7) necessarily results from the fact that there is no clear way to identify which part of the circumfix is affixed first. To put it another way, if we insist on binary branching and therefore assume that morphology and morphophonology are identical, then there is a systematic ambiguity of branching depending on whether the prefix or the suffix part goes first.

(7)



I = inflectional affix [creating a word from a stem]

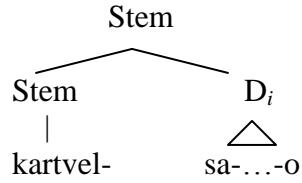
D = derivational affix [creating a stem from another stem]

C = (inflectional) clitic [creating a word from another word]

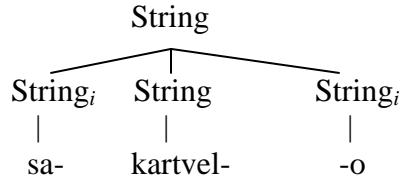
In point of fact, this ‘systematic ambiguity’ is a symptom of the actual independence of morphological process that create Stems_μ or Words_μ from their overt phonological representation. Thus, in keeping with the Separationist Hypothesis, we should actually envision a morphological representation in which *sa-* *-o* behaves like a regular affix (*qua* creating a stem) along the morphological dimension, but behaves like two along the morphophonological dimension.

² The postposition *-ši* here normally takes dative case, but on regular nouns *-ši* absorbs the dative *-s* (and not pronouns: *amas-ši* ‘3SG.DAT-in’, **amaši*).

(8) a. Morphology

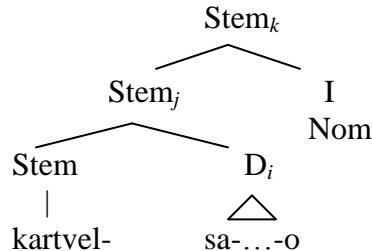


Morphophonology

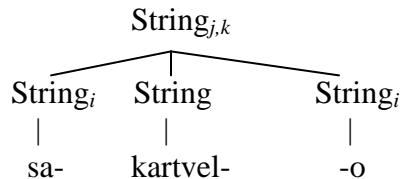


Where the formal analogues of Morphological Stems and Words are Strings; the subscripting is merely my notation for the fact that in the other module, Morphology, those two strings map onto one entity, not two. The inverse is also true: an affix can be present in morphology but absent in morphophonology, as in (9).

(9) a. Morphology



b. Morphophonology



As noted above, the zero morph that marks the nominative case of vowel-stem nouns is represented by nothing in morphophonology. More evidence that morphological constructions with phonologically null realizations have some real salience is that they can act as the input to other morphological processes. In Georgian there is one clitic postposition, *=vit* ‘like, as’, that for most speakers can optionally take either dative or nominative case:

- (10) a. kalak-i=vit b. kalak-s(a)=vit c. Sakartvelo=vit d. Sakartvelo-s(a)=vit
 city-NOM=like city-DAT(.EXT)=like Georgia.NOM=like Georgia-DAT(.EXT)=like
 'like the city' 'like the city' 'like Georgia' 'like Georgia'

Here, the consonant stem in (10a-b) clearly takes the nominative case as one option. For vocalic stems in (10c-d), which take no overt form of the nominative case, the *-vit* postposition may attach exactly as if it were there. This is because the postposition is sensitive not to the morphophonological content of words, but their purely morphological content.

A consequence of potential nonsequentiality, and a problem for morphemic approaches, is the possibility of templatic representations of words, in which word structure may be relatively flat. This is especially true of verbal morphology, in which up to eleven different morphological positions may be specified³:

- (11) Templatic Morphology in Georgian:

1a	1b	2	3	4
Preverbs	Ventive	Personal Prefixes	Preradical Vowel	<i>ROOT</i>

5	6	7	8	9	10	11
II. Conj. (PASS)	Thematic suffix	Causative	Imperfect, Cond., Conj.	Screeve marker	^{3rd} Person	- <i>t</i> Plural

Within each templatic slot, morphemes specified for that slot may compete for realization (indeed, it would not be templatic otherwise). This idea will be explored at length later in

³ This is a modified version of Aronson (1990). *Pace* Aronson, I believe that personal prefixes are not specified for subject and object GF status and constitute one slot, and that feature hierarchies, not deletion rules, explain their interaction.

discussion of feature hierarchies in Georgian. For now, it is sufficient to illustrate this with a number of verb forms:

- (12) a. ga-mo-g-i-gzavn-i-d-a-t
PVB-VENT-2-PRV-send-TH-IMPF-3SG-PL
'He was sending it off to y'all'
b. še-g-i-c'q'vet'-in-a-t
PVB-2-PRV-cut.off-CAUS-AOR3SG-PL
'He interrupted him for you all.'
c. sula-c čin-el-eb-ma ar ga-mo-i-gon-es
wholly-even China-GENT-PL-NARR not PVB-VENT-PRV-invent-AOR3SG
es oxer-i?
this damned-NOM
'Didn't the Chinese invent the damned thing [the compass]?'
(Hewitt 1995: 640)

Traditional morphemic accounts of morphology, as in Hewitt (1995), do away with templatic morphology by increasing the number of phonologically null allomorphs of morphemes. Thus what appears to be competition between two morphs for realization in a morphemic account, as with *v-* and *g-* mentioned in Ch. 1, is actually turned into a problem of the allomorphy of individual morphemes. *v-*, on these accounts, is simply null when followed by *g-*. This example illustrates why we must have a fully worked-out theory of morphology before we can explain the problems central to our discussion of morphological feature hierarchies in Ch. 4-5.

2.1.4 Nominal and verbal morphology

In the rest of this section, I will lay out some more basic facts about Georgian morphology necessary to understand the rest of this thesis. Georgian has a number of

overt morphological contrasts between morphological nouns and verbs. Nouns can be inflected for case, number and (for certain kinship terms) the person and number of a possessor. Nominal morphology is largely agglutinating, though nominal plurals also have separate fusional stylistically marked forms used in ellipsis, *Suffixaufnahme*, and a few other marked construction types, as in (13):

(13)	Unmarked Case endings (Consonant stems)	Stylistically Marked Plural
	<i>Sg</i>	<i>Pl</i>
Nominative	kal-i woman-NOM	kal-eb-i woman-PL-NOM
Vocative	kal-o	kal-eb-o
Narrative ⁴	kal-ma	kal-eb-ma
Dative	kal-s(a) ⁵	kal-eb-s(a)
Genitive	kal-is(a)	kal-eb-is(a)
Instrumental	kal-it(a)	kal-eb-it(a)
Adverbial	kal-ad(a)	kal-eb-ad(a)

In addition, some nominals have zero-grade ablaut in their stem: ‘object, thing’ *sagan-i*, *sagan-ma*, *sagan-s*, BUT *sagn-is*, *sagn-it*, *sagnad*. Others truncate the final vowel, and different final vowels truncate differently: *c’re* ‘circle.NOM’ ~ *c’re-s* ‘circle.DAT’ ~ *c’r-is* ‘circle-GEN’ BUT *k’u* ‘turtle.NOM’ ~ *k’u-s* ‘turtle-DAT’ or ‘turtle-GEN’. Thus agglutinativity is a matter of degree, and really a side-effect of the theory of morphology assumed.

Verbs in Georgian morphologically inflect for person, number, tense, aspect, evidentiality (or motion towards a deictic center), as well as various valence-altering devices

⁴ This is a loan-translation of the term *mot’qrobiti* ‘(oral) narrative’, the term for this case in traditional Georgian grammar. I follow Harris (1985) in thinking this reflects the actual distribution of the case better than ‘ergative’.

⁵ The forms marked with ‘-(a)’ represent so-called ‘extended’ forms of the cases, which are used in contexts of conjunction and when following the nouns as modifiers, usually with a formal flavor.

like causativization, passivization, and, it has been argued, the category of version, a kind of argumental affectedness. Some of these categories have syntactic analogues – person and number most prominently – while for others it is difficult to find any clear consistent syntactic manifestation. Morphological ‘screeves’ (from Georgian მწერივი *mc'k'rivi* ‘row, line’) are characterized by a single verb paradigm inflected for all persons and numbers of subject and object (though by tradition usually only third person singular objects are indicated in grammars):

(14) **Present screeve**

- | | |
|--|---|
| a. v-a-k'et-eb
1-PRV-do-TH
'I do it' | d. v-a-k'et-eb-t
1-PRV-DO-TH-PL
'We do it' |
| b. a-k'et-eb
PRV-do-TH
'You do it.' | e. a-k'et-eb-t
PRV-do-TH-PL
'Y'all do it' |
| c. a-k'et-eb-s
PRV-do-TH-3SG
'He does it.' | f. a-k'et-eb-en
PRV-do-TH-3PL
'They do it.' |

Screeves are organized into supercategories called **series**, which are characterized morphologically by a common stem form. Thus all tenses/aspect combinations without a preverb, but with a thematic suffix (AKA present-future stem formant), are called here present series verbs (including imperfects and first conjunctives):

(15) **PRESENT SERIES**

PRESENT	IMPERFECT	CONJUNCTIVE 1
a-k'et-eb-s	a-k'et-eb-d-a	a-k'et-eb-d-es
PRV-do-TH-3SG	PRV-do-TH-IMPF-3SGIMPF	PRV-do-TH-IMPF-3SGCONJ
'He's doing it'	'He was doing it'	'(If) he did it'

(16) FUTURE SERIES		
FUTURE	CONDITIONAL	CONJUNCTIVE 2
ga-a-k'et-eb-s PVB-PRV-do-TH-3SG 'He will do it.'	ga-a-k'et-eb-d-a PVB-PRV-do-TH-IMPF-3SGIMPF 'He would do it'	ga-a-k'et-eb-d-es PVB-PRV-do-TH-IMPF-3SGCONJ '(If) he would do it'

Sometimes, the morphological criteria for identifying a series are not identical to the syntactic criteria. Although the present and future series are morphologically distinguished by the absence or presence of a preverb, respectively, the assignment of case to their arguments is the same ($\text{SUBJ}_{\text{NOM}} \sim \text{OBJ1}_{\text{DAT}} \sim \text{OBJ2}_{\text{DAT}}$), in contrast to the screeves of the aorist or perfect series. Thus a morphological series is not necessarily the same as a syntactic series⁶.

In addition to the horizontal dimension of tense/aspect, verbs also distinguish different conjugations. Like the series, different conjugations also have different behavior in syntax (notably which case form arguments take in the aorist series), but here I present purely morphological criteria that distinguish them: the presence or absence of a preverb in the future screeve, and the formation of the third person singular in the present vs. future screeves. First and second conjugations form their future with a preverb and third singular *-s* and *-a* respectively:

(17) First conjugation verbs (formed with preverbs and *-s*):

PRESENT:			
a-k'et-eb-s PRV-do-TH-3SG 'He is doing it'	c'er-s write-3SG 'He is writing it'	kmn-i-s create-TH-3SG 'He is creating it'	a-čen-s PRV-discover-3SG 'He is discovering it'

⁶ I will argue later that case-assignment and agreement are not motivated by grammatical functions, but rather by argument structure. However, even though the actual assignment mechanism is not based on grammatical functions, I do believe they are redundantly represented in GF-structure by syntactic a.k.a. ‘abstract’ case values.

FUTURE:

ga-a-k'et-eb-s	da-c'er-s	še-kmn-i-s	ağmo-a-čen-s
PVB-PRV-do-TH-3SG	PVB-write-3SG	PVB-create-TH-3SG	PVB-PRV-DISCOVER-3SG
'He will do it'	'He will write it'	'He will create it'	'He will discover it'

(18) Second conjugation verbs (formed with preverbs and *-a*):

PRESENT:

xd-eb- <i>a</i>	mzad-d-eb- <i>a</i>	tb-eb- <i>a</i>
happen-TH-3SGII	prepare-INGR-TH-3SGII	warm-TH-3SGII
'It's happening'	'It is being prepared'	'It's getting warm'

FUTURE:

mo-xd-eb-<i>a</i>	da-mzad-d-eb-<i>a</i>	ga-tb-eb-<i>a</i>
PVB-happen-TH-3SGII	PVB-prepare-INGR-TH-3SGII	PVB-warm-TH-3SGII
'It will happen'	'It will be prepared'	'It will get warm'

As is clear, each verb may select a lexically specified preverb, and the present is formed by the absence of a preverb rather than the presence of one in the future. The third and fourth conjugations differ from the above in that they form their future series with either *i-...-eb* (in third conjugation) or *e-...-eb* (in the fourth conjugation):

(19) Third conjugation verbs (formed with *i-...-eb* and *-s*):

t'ir-i-s	lap'arak'-ob-s	cur-av-s	dug-s
cry-TH-3SG	speak-TH-3SG	swim-TH-3SG	boil-3SG
'He's crying'	'He's speaking'	'He's swimming'	'It's boiling'
i-t'ir-eb-s	i-lap'arak'-eb-s	i-cur-eb-s	i-dug-eb-s
PRV-cry-TH-3SG	PRV-speak-TH-3SG	PRV-swim-TH-3SG	PRV-boil-TH-3SG
'He will cry'	'He will speak'	'He will swim'	'It will boil'

(20) Fourth conjugation verbs (formed with *e-...-eb* and *-a*):

m-i-qvar-s	mo-m-c'on-s
1SG-PRV-love-3SG	PVB-1SG-like-3SG
'I love her'	'I like her'
m-e-qvar-eb-a	mo-m-e-c'on-eb-a
1SG-PRV-love-TH-3SGII	PVB-1SG-PRV-like-TH-3SGII
'I will love her'	'I will like her'

We can summarize the differences among the conjugations as follows⁷:

	1st	2nd	3rd	4th
<i>Formation of future series</i>	Preverb	Preverb	i-...-eb	e-...-eb
<i>3Sg suffix in Present</i>	-s	-a	-s	-s
<i>3Sg Suffix in Future</i>	-s	-a	-s	-a

2.2 Grammatical Functions

As noted in Harris (1981), Georgian has long had stood as a difficult case for the establishment of grammatical relations like subject and object, since most of the formal tests within single predicates like agreement, case-marking, coreference, etc., fail to identify discrete categories. Orthogonal to this is the question of alignment, in which the single argument of intransitive predicates is taken to pattern with either the more agentive argument of transitive predicates or the more patientive argument – a test across different

⁷ These patterns account for the vast majority of Georgian verbs (>99%); however, there is a small number of verbs of mixed conjugation or verbs which only exist in certain series which therefore do not allow one to make definitive assignment of conjugational class. To cite just one type (Aronson and K'iziria 1999: 355), passives of state normally pattern like 4th conjugation verbs in the future, but those whose first conjugation correspondents have the thematic suffix *-ob* or *-ev* retain that formant in the future instead of taking the *-eb* of the *e-...-eb* sequence, and take *-a* in both present and future instead of *-s* and *-a* respectively:

1 ST CONJ.	PASSIVE OF STATE		
	PRESENT	FUTURE	
ča-a-cm-ev-s PVB-PRV-put.on-TH-3SG 'He will put it on'	a-cv-i-a PRV-put.on-TH-3SGII 'He is wearing it'	e-cm-ev-a PRV-put.on-TH-3SGII 'He will wear it'	
da-a-c'q-ob-s PVB-PRV-arrange-TH-3SG 'He will arrange it'	a-c'q'v-i-a PRV-arrange-TH-3SGII 'Things are arranged'	e-c'q'-ob-a PRV-arrange-TH-3SGII 'Things will be arranged'	

kinds of predicates. For these reasons, many scholars no longer speak of grammatical relations, but rather grammatical functions: ‘relations’ are mappings between two distinct theoretical constructs, while ‘functions’ are single theoretical constructs that formally describe natural classes of grammatical behavior, and these may or may not map onto constituent or argument-structural categories in different ways. Following Bresnan (2002) and many others, these are:

- (21)
- | | | |
|--------------|---|---|
| SUBJ | ↓ | decreasing prominence
& likelihood to be assoc.
a proto-agent |
| OBJ | | |
| OBJ θ | | |
| OBL θ | | |

The complexity lies in the fact that not all languages privilege GFs as much as others. As we will see in Georgian, many features of that language simply do not refer to GFs as their English counterparts do, but rather represent other parts of the formal grammar.

2.2.1 The distribution of case and agreement

A quick glance at the system of case assignment is enough to demonstrate why Georgian has so confused scholars working on the language. Georgian only has three (morpho)syntactic cases that can mark different grammatical functions, but these cases stand in a complicated many-to-many relationship with those functions. The nominative is sometimes the SUBJ, but more often marks the OBJ. The dative can mark all three: SUBJ, OBJ, and OBJ θ .⁸ The only case that consistently marks a grammatical function is

⁸ It can also marginally mark some adverbial obliques: *dge-s* [day-DAT] ‘today’.

the narrative, but even this case does not mark the subject of unaccusatives in the aorist (the so-called second conjugation).

Table 2.2. Georgian case arrays across different conjugations.⁹

Series / Conj.	1 st Conj.	2 nd Conj.	3 rd Conj.	4 th Conj.
Present / Future	SUBJ: NOM _{AG} DO: DAT _{PAT} IO: DAT _{GOAL}	NOM _{PAT}	NOM _{A G}	SUBJ: DAT _{EXP} DO: NOM _{PAT}
Aorist	SUBJ: NARR _{AG} DO: NOM _{PAT} IO: DAT _{GOAL}	NOM _{PAT}	NARR AG	SUBJ: DAT _{EXP} DO: NOM _{PAT}
Perfect Evident ial	SUBJ: DAT _{AG} DO: NOM _{PAT} IO: -TVIS _{GOAL}	NOM _{PAT}	DAT _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}

Georgian agreement has a similarly complicated distribution. Georgian has two basic and four derived person agreement patterns that partially but not entirely align with the case system. The two basic ones are the v-set and the m-set:

Table 2.3. Basic agreement.

		V-SET	M-SET
1 st	SG	v-....-(i/e/o/a) ¹⁰	m-
	PL	v-....-(i/e/o/a)-t	gv-
2 nd	SG	Ø-....-(i/e/o/a)	g-
	PL	Ø-....-(i/e/o/a)-t	g-....-t
3 rd	SG	-s/a/o	Ø
	PL	-en/-es/-nen...	Ø

⁹ Although the verb morphology of these conjugations is essentially as in 2.1, there are numerous case arrays for individual verbs which diverge from the above chart which cannot be deduced from verb morphology alone. See Cherchi (1998) for more details.

¹⁰ The suffixes denoted as ‘-(e/o)’ are the so-called screeve markers, which bear both tense and person features. They are thus relevant despite not being discussed by Harris (1981) and others. They pattern with the v-set.

Table 2.4. Derived agreement.

u-series		h-series		e-series		a-series	
<i>Sg</i>	<i>Pl</i>	<i>Sg</i>	<i>Pl</i>	<i>Sg</i>	<i>Pl</i>	<i>Sg</i>	<i>Pl</i>
<i>1st</i>	m-i- gv-i-	m-	gv-	m-e- gv-e-	m-a- gv-a-		
<i>2nd</i>	g-i- g-i-...-t	g-	g-...-t	g-e- g-e-...-t	g-a- g-a-...-t		
<i>3rd</i>	Ø-u- Ø-u-...-t	h/s/Ø -	h/s/Ø...-t	Ø-e- Ø-e-...-t	Ø-a- Ø-a-...-t		

As is immediately clear looking at the version markers, the agreement used for each series of ‘version’ markers is similar or identical to the *m*-set. In Harris’ work, the *v*-set and *m*-sets are linked to particular grammatical functions: SUBJECT and DIRECT OBJECT respectively. This is based on the apparent behavior of agreement in the ‘uninverted’ present/future and aorist series constructions:

- (22) a. m-nax-a
 1SG-see.PF-AOR3SG
 ‘He (*v*-set) saw me (*m*-set).’
- b. gv-xed-av-en
 1PL-see.IMPF-TH-3PL
 ‘They (*v*-set) see us (*m*-set)’

h-series of agreement markers are also sometimes treated as a third basic set linked to an INDIRECT OBJECT relation. This is a *prima facie* reasonable analysis:

- (23) a. mi-s-c-a
 PVB-***h.set***-give.AOR-AOR3SG
 ‘He gave it to **her**’
- b. m-a-c'er-in-eb
 h.set-PRV-write-CAUS-TH
 ‘You’re making **me** write it down.’

However, once we enlarge the number of contexts with indirect objects, this generalization immediately breaks down. Particular verbs, and some whole paradigms, simply choose one or the other series, so it is not so easy to say that the *h*-set marks

indirect objects; there is some simple morphological subcategorization going on.

Consider the following examples

- (24) a. **h**-p'oul-ob-s b. **e**-tamaš-a c. **e**-lod-eb-a
 3SGIO-find-TH-3SG **PRV**-play-AOR3SG **PRV**-wait-TH-3SGII
 ‘he finds **it**’ ‘He played **with him**’ ‘He is waiting **on him**’

where in (24a) the verbal *-s* formally agrees with the grammatical subject and the **h**-agrees with the notional object. In the two others, the absence of any overt marker makes it impossible to tell if we’re seeing the *m*-set or the *h*-set, since one of the possible realizations of the *h*-set is null, just like all third person *m*-set agreement. In fact, the primary evidence that the *h*-set would be a marker of indirect objects is a syntactic one that most arguments that agree with the *h*-set take dative case. But not all do:

- (25) samšoblo-s dideba, romel-ma=c **h**-p'ov-a gagržebeb-a
homeland-DAT greatness.NOM which-NARR=REL **h.set**-find.AOR-AOR3SG follow-MAS.NOM

lurj zğva=ze da mze=ze siarul-i...
blue.DAT sea.DAT=on and sun=on strolling-NOM

‘Glory to the land that (SUBJ) found out how to follow (OBJ) the blue sea and
the path of the sun...’¹¹

In this sentence, if the *h*-set marker on *hp'ova* were agreeing with an indirect object in the aorist, we would expect the verbal noun *gagržebeb* ‘following, continuing’ to be in the **dative** case (again, assuming case is assigned by GF status), whereas it is actually in **nominative** case, the normal case that marks *direct objects* in the aorist series. Thus,

¹¹ From a Georgian translation of the Spanish national anthem, available online: [http://forum.ge/?f=76&showtopic=33869471&st=30>](http://forum.ge/?f=76&showtopic=33869471&st=30)

previous arguments that try to reduce the agreement pattern to one of clear grammatical relations are not so straightforward as they appear.

An even more important problem associated with agreement is that of inversion¹².

Compare the following paradigm of *xedva* ‘see’¹³ in the (uninverted) aorist versus that in the (inverted) pluperfect:

Table 2.5. Aorist Screeve Paradigm of *xedva* ‘see’

		Obj. →				
Subj. ↓	1 st sg	pl	2 nd sg	Pl	3 rd sg	Pl
1 st sg			g-nax-e	g-nax-e-t	v-nax-e	v-nax-e-t
Pl			g-nax-e-t	g-nax-e-t	v-nax-e-t	v-nax-e-t
2 nd sg	m-nax-e	gv-nax-e			nax-e	nax-e
Pl	m-nax-e-t	gv-nax-e-t			nax-e-t	nax-e-t
3 rd sg	m-nax-a	gv-nax-a	g-nax-a	g-nax-a-t	nax-a	nax-a
Pl	m-nax-es	gv-nax-es	g-nax-es	g-nax-es	nax-es	nax-es

Table 2.6. Pluperfect Screeve Paradigm of *xedva* ‘see’

		Obj. →				
Subj. ↓	1 st sg	pl	2 nd sg	Pl	3 rd sg	Pl
1 st sg			m-e-nax-e	m-e-nax-e-t	m-e-nax-a	m-e-nax-a
Pl			gv-e-nax-e-t	gv-e-nax-e-t	gv-e-nax-a	gv-e-nax-a-t
2 nd sg	g-e-nax-e	g-e-nax-e			g-e-nax-a	g-e-nax-a
Pl	g-e-nax-e-t	g-e-nax-e-t			g-e-nax-a-t	g-e-nax-a-t
3 rd sg	v-e-nax-a	v-e-nax-a-t	e-nax-e	e-nax-e-t	e-nax-a	e-nax-a
Pl	v-e-nax-a-t	v-e-nax-a-t	e-nax-e-t	e-nax-e-t	e-nax-a-t	e-nax-a-t

The difference between these two paradigms is that they have inverted associations of grammatical functions and particular agreement sets. In the aorist (‘uninverted’) screeve, the *m*-set marks the features of the grammatical object and the *v*-set the grammatical subject. In the pluperfect, it is exactly the inverse: the *m*-set marks the grammatical subject, while the *v*-set marks the grammatical object. Although I will have much to say about this later in my discussion of inversion in Ch.3 and my discussion of feature

¹² What is important to understand though is that the forms between different sets sometimes compete for realization in the same templatic slots, with the effect that you do not always see the set marker.

¹³ Note that this verb has a suppletive stem for perfective forms: *xed-* (imperfective) vs. *nax-* (perfective).

hierarchies in Ch. 4, for purposes of establishing tests for grammatical functions, these agreement patterns cannot be said to correspond to any surface notion of grammatical functions.

Furthermore, there is one more important fact about why case and agreement are not very good indicators of grammatical function status. Consider the following data:

- (26) a. Gela-m Mariam-i / me nax-a / m-nax-a
 Gela-NARR Mary-NOM / 1Sg see.PF-AOR3SG / 1SG-see.PF-AOR3SG
 'Gela saw Mary / me.'
- | | | |
|-------------|----------------|----------------|
| [Case: | NP-NARR | NP-NOM] |
| [Agreement: | v-set | m-set] |
- b. Ivane-s / Me Gela e-nax-a / m-e-nax-a
 John-DAT 1Sg Gela.NOM PRV-see.PF-3SG / 1SG-PRV-see.PF-3SG
 'John / I had apparently seen Gela' (but e.g. I don't remember it)
- | | | |
|-------------|---------------|----------------|
| [Case: | NP-DAT | NP-NOM] |
| [Agreement: | m-set | v-set] |

In this example, the agreement system is completely inverted, but the case-array is not: the subject of the aorist clause is narrative case and its object nominative, while the subject of the perfect clause is dative and its object nominative. This is a problem for any syntactic analysis that assumes that the grammatical relations have actually changed and assumes that case and agreement are both linked to grammatical relations, because the two kinds of criteria behave differently: otherwise, we would expect the object to be in narrative case¹⁴. I will discuss the further implications of this in the next chapter on inversion.

¹⁴ In fact, in the related language Mingrelian, the narrative case suffix *-k* does mark the object of some inversion verbs, even though historically it was an ergative case marker.

2.2.2 Reflexivization and other forms of binding

Reflexivization and referential pivots have also often been taken as tests of grammatical function status. In Georgian there are two different kinds of analytic (i.e. nonmorphological) reflexive construction:

- (27) *Tav*-reflexivization: full pronoun reflexivization (Harris 1981: 25)
- | | | | | |
|---|-----------------------------|-----------------------|-----------|--|
| Vano _i | pikr-ob-s, | rom Nino _j | sač'mel-s | |
| Vano.NOM | think-TH-3SG | that Nino.NOM | food-DAT | |
| a-mzad-eb-s | tav-is=tvis _{*i,j} | | | |
| PRV-prepare-TH-3SG | self-GEN=for | | | |
| 'Vano _i thinks that Nino _j is preparing food for herself _{*i,j} .' | | | | |
- (28) *Tavis*-reflexivization: possessive reflexivization (Harris 1981: 27)
- a. deda ban-s tavis švil-s
mother.NOM wash-3Sg 3POSS.REFL child-DAT
'Mother_i is bathing her_{i,*j} (own) child.'
 - b. deda ban-s mis švil-s
mother.NOM wash-3Sg 3POSS.DAT child-DAT
'Mother is bathing (someone else's) child'

Harris (1981: 23; 27) argues that these two reflexive constructions must be coreferential to the grammatical subject of the same clause, whatever the actual surface order. However, three different types of constructions cast doubt on that analysis. First as in (29a), there are formal reflexives that are themselves marked as the grammatical subject, with narrative case morphology and all. These are bound by the grammatical *object*, and moreover c-command their antecedent under almost any syntactic analysis¹⁵. Second, the possessive reflexive *tavis*- in fact can corefer to the grammatical objects of

¹⁵ This may be seen to follow from nonconfigurationality, depending on one's theory of configurationality. Although these are not 'true' reflexives in the sense of Amiridze (2006), they still pose a problem for theories of referentiality. See that work for more discussion.

the same clause (29b). Thirdly, in titles of works, it is possible to use *tavis-* without any predicate whatsoever, and therefore without any knowledge of grammatical function status (29c-d):

- (29)a. tavis-ma tav-ma ga-a-k'et-eb-in-a Nino-s es.
 3Poss-NARR self-NARR PVB-PRV-do-TH-CAUS-AOR3SG Nino-DAT this.NOM
 ‘Something in Nino_i made her_i do it’ (lit. ‘Herself made Nino do it’; Asatiani 1982)
- b. gušin v-nax-e Ivane_i da tavis-i axal-i
 yesterday 1-see.PF-1/2AOR John.NOM and 3rdPOSS.REFL-NOM new-NOM
 še-qvar-eb-ul-i
 PVB-love-TH-PF.PART-NOM
 ‘Yesterday, I saw John_i and his_i new girlfriend.’
- c. civilizacia da mis-it uk’maqopilo-ni
 civilization.NOM and 3POSS-INST discontent-NOM.PL
 ‘Civilization and its Discontents’ (lit. ‘discontents with it’)
- d. civilizacia da tavis-it uk’maqopilo-ni
 civilization.NOM and 3POSS.REFL-INST discontent-NOM.PL
 ‘Civilization and Discontents with Oneself.’

Here, the so-called nonreflexive possessive *mis-* is actually bound by a nominal rather than being free. The fact that both (29c) and (29d) are grammatical, with a crucial difference in meaning, indicates that the binding facts cannot be linked to grammatical functions in Georgian as such, there being no functions to bind in this context.

Another common test for GF status is crossclausal coreference, which has been used by some (e.g. Dixon 1994) to distinguish syntactically ergative from syntactically nominative languages. Even here, Georgian does not provide perfectly clear evidence for grammatical functions: while present series and aorist series screeves conjoined with other verbs do result in a nominative/accusative pivot, a fluid-S pivot exists in the perfect series (Wier 2005).

(30) Present/Future series:

- a. Ivane_i Mariams_j xed-av-s da pro_{i,j}* t'ir-i-s. (Intr. = 3rd Conj.)
John-NOM Mary-DAT see-TH-3SGS and cry-TH-3SGS
'John sees Mary, and (John/*Mary) is crying.'
- b. Ivane_i Mariams_j xed-av-s da pro_{i,j}* ga-c'itl-d-eb-a. (S_o/A)
John-NOM Mary-DAT see-TH-3SGS and PRVB-red-INGR-TH-3SGS
'John sees Mary, and (John/*Mary) blushes.'
- c. Ivane_i Mariams xedavs rodesac pro_{i,j}* t'ir-i-s (S_o/A)
John-NOM Mary-DAT see-TH-3SGS when cry-TH-3SGS
'John sees Mary, and (John/*Mary) is crying.'
- d. Ivane_i Mariams xedavs rodesac pro_{i,j}* ga-c'itl-d-eb-a (S_o/A)
John-NOM Mary-DAT see-TH-3SGS when PRVB-red-INGR-TH-3SGS
'John sees Mary, and (John/*Mary) blushes.'

(31) Aorist series:

- a. Maia-m_i Eduard-i_j nax-a da pro_{i,j}* t'ir-od-a (S_o/A)
Maia-NARR Eduard-NOM see-TH-3SGS and cry-IMPF-3SGS
'Maia saw Eduard, and (Maia/*Eduard) was crying.'
- b. Maia-m_i Eduard-i_j nax-a da pro_{i,j}* ga-c'itl-d-eb-od-a. (S_o/A)
Maia-NARR Eduard-NOM see-TH-3SGS and PRVB-red-INGR-TH- IMPF-3SGS
'Maia saw Eduard, and (Maia/*Eduard) was blushing.'
- c. Maia-m_i Eduard-i_j nax-a rodesac pro_{i,j}* t'ir-od-a (S_o/A)
Maia-NARR Eduard-NOM see-TH-3SGS and cry-IMPF-3SGS
'Maia saw Eduard when (Maia/*Eduard) was crying.'
- d. Maia-m_i Eduard-i_j nax-a rodesac pro_{i,j}* ga-c'itl-d-eb-od-a. (S_o/A)
Maia-NARR Eduard-NOM see-TH-3SGS when B-red-INGR-TH- IMPF-3SGS
'Maia saw Eduard when (Maia/*Eduard) was blushing.'

(32) Perfect series:

- a. Tamaz-s_i Zurab-i_j u-nax-i-a da pro_{i,j}* u-t'ir-i-a. (S_o/A)
Tamaz-DAT Zurab-NOM 3IO-see-TH-3SgO and 3IO-cry-th-3Sg
'Tamaz has (apparently) seen Zurab, and (Tamaz/*Zurab) has cried.'
- b. Tamaz-s_i Zurab-i_j u-nax-i-a da pro_{i,j} ga-c'itl-eb-ul-a. (S_o/A or O)
Tamaz-DAT Zurab-NOM 3IO-see-TH-3SgO and PRVB-red-TH-PF-3SGS
'Tamaz has (apparently) seen Zurab, and (Tamaz/Zurab) has blushed.' !!!
- c. Tamaz-s_i Zurab-i_j u-nax-i-a rodesac pro_{i,j}* u-t'ir-i-a. (S_o/A)
Tamaz-DAT Zurab-NOM 3IO-see-TH-3SgO when 3IO-cry-th-3Sg
'Tamaz has (apparently) seen Zurab, when (Tamaz/*Zurab) has cried.'
- d. Tamaz-s_i Zurab-i_j u-nax-i-a rodesac pro_{i,j} ga-c'itl-eb-ul-a. (S_o/A or O)
Tamaz-DAT Zurab-NOM 3IO-see-TH-3SgO when PRVB-red-TH-PF-3SGS
'Tamaz has (apparently) seen Zurab, when (Tamaz/Zurab) has blushed.' !!!

And, in point of fact, it is even more complicated than the above data suggest: speakers seem to differ markedly on exactly which arguments can corefer. Some seem to have a pragmatic pivot in which coreference tracks discourse status but not any formal syntactic or morphological entity.

2.2.3 Suppletion for animacy or number of a grammatical function

Traditionally, a number of different verbs come in pairs that are said to supplet for the animacy or number of one of its arguments:

- (33) a. **animacy of ‘object’:**
- | | |
|--|--|
| mi-i-t'an-s
PVB-PRV-carry.INAN-3SG
‘He will carry it / *him’ | c'a-i-qvan-s
PVB-PRV-carry.ANIM-3SG
‘She will carry *it / him’ |
| m-a-kv-s
1SG-PRV-have.INAN-3SG
‘I have it / *him’ | m-qav-s ‘have (ANIM)’
1SG-have.ANIM-3SG
‘I have *it / her’ |
- b. **number of ‘subject’:**
- | | |
|---|--|
| v-zi-var
1-be.seated.SG-1
‘I am seated’ | v-sxed-var-t
1-be.seated.PL-1-PL
‘We are seated’ |
|---|--|
- c. **number of ‘object’:**
- | | |
|--|--|
| gada-a-gd-i-s
PVB-PRV-throw.SG-TH-3SG
‘He will throw it / *them’ | gada-qr-i-s
PVB-throw.PL-TH-3SG
‘He will throw *it / them’ |
|--|--|

The implication of this is that nouns come in discrete formal animate and inanimate classes. However, in some cases, these claims are really no more than a prescriptive assertion. It is quite common for example to find the so-called ‘singular’ verb with overt plural morphology, especially among young speakers: *v-zi-var-t* ‘we are seated’ (Aronson, p.c.). Harris (1981) uses such constructions as tests for initial grammatical relations (see Ch. 3), which relation changing rules may thereafter alter. Consider the *tough*-construction below, where the plural ‘throw’ appears to rule out a ‘raised’ object:

- (34) a. *es did-i kva ʒnel-i-a gada-sa-qr-el-ad
 this big-NOM stone.NOM hard-NOM-be.3SG PVB-FUT.PART-throw.PL-PART-ADV
 ‘This big stone is hard to throw.’

b. es did-i kv-eb-i ʒnel-i-a gada-sa-qr-el-ad
 this big-NOM stone-PL-NOM hard-NOM-3SG.BE PVB-FUT.PART-throw.PL-PART-ADV
 ‘These big stones are hard to throw.’ (Harris 1981: 57)

Note that even though the inanimacy of *kvebi* ‘stones’ means it does not trigger number agreement on ‘be’, the lower predicate does still restrict the number of the upper predicate. However, evidence from quantification suggests that this constraint depends not on selection for grammatical function but rather semantic properties. In Georgian, all quantifiers in the standard language, and in most dialects¹⁶, obligatorily take morphosyntactically singular noun phrases:

- | | | | | |
|---|-----|--|--|--|
| (35) k'ac-eb-i
man-PL-NOM
'The men' | BUT | qvela k'ac-i
all man-NOM
'All the men' | titoeul-i
each-NOM
'Each of the men' | k'ac-i
man-NOM
'Each of the men' |
|---|-----|--|--|--|

Agreement is sensitive to this: when a noun phrase is quantified, as in (36), it takes singular agreement even when it denotes a semantic set (and thus the quantified phrase is both morphologically and syntactically singular).

- (36) qvela k'ac-i dga-s / *dga-nan ezo=ši
 all.NOM man-NOM stand-3SG / *stand-3PL courtyard=in
 'All the men are standing in the courtyard.'

¹⁶ Some young speakers optionally allow overt plurals after quantifiers like *bevri* ‘many’ and *qvela* ‘all’ whose cardinality is not specific (*bevri k’aci*, *bevri k’acebi*), but never after quantifiers whose cardinality is specific: **ori k’acebi* ‘two men’, for all speakers (Rusik’o Asatiani, p.c.). Whether this results from language contact (with e.g. Russian) is unknown and awaits further study.

When we apply the same test to *tough*-constructions with quantifiers, we get a different picture. Like English, Georgian has a quantifier distinction between distributive ‘each’ and nondistributive ‘all’. While each of the following sentences is morphosyntactically singular by virtue of being quantified, and each refers to a semantic set whose cardinality is greater than one, using the ‘plural’ verb with the distributive quantifier *titoewuli* ‘each’, or the ‘singular’ verb with the nondistributive *qvela* ‘all’, results in ungrammaticality.

- (37) a. qvela did-i kva 3nel-i-a gada-sa-qr-el-ad
 all.NOM big-NOM stone.NOM hard-NOM-3SG.be PVB-FUT.PART-throw.PL-PART-ADV
 ‘All the big stones are hard to throw.’
- b. *titoewul-i did-i kva 3nel-i-a gada-sa-qr-el-ad
 each-NOM big-NOM stone.NOM hard-NOM-3SG.be PVB-FUT.PART-throw.PL-PART-ADV
 ‘Each of the big stones is hard to throw.’
- c. *qvela did-i kva 3nel-i-a gada-sa-gd-eb-l-ad
 all.NOM big-NOM stone.NOM hard-NOM-3SG.be PVB-FUT.PART-throw.SG-TH-PART-ADV
 ‘All of the big stones are hard to throw.’
- d. titoewul-i did-i kva 3nel-i-a gada-sa-gd-eb-l-ad
 each-NOM big-NOM stone.NOM hard-NOM-3SG.be PVB-FUT.PART-throw.SG-TH-PART-ADV
 ‘Each of the big stones are hard to throw.’

The fact that (37a) is grammatical directly proves that the constraint on ‘number’ is not linked to grammatical relations as such, but rather to features linked to particular arguments in argument structure. Otherwise, we would expect the singular quantified NP and the subcategorization requirements of the lexical verb to clash. As with number, so with animacy: animacy features appear not to be subcategorization for particular grammatical relations, but rather semantic constraints on participants. The evidence is that in fact for probably all animates, both animate and inanimate ‘have’ are possible as long as one refers to the dead version of the other:

- (38) a. bat'-i m-qav-d-a sa-qvar-el cxovel-ad
goose-NOM 1SG-have.ANIM-IMPF-3SG FUT.PART-love-PART animal-ADV
‘I had a [live] goose as a pet.’
- b. bat'-i m-kon-d-a sadil=ze
goose-NOM 1SG-have.INAN.IMPF-IMPF-3SG dinner=on
‘I had a goose for dinner.’ (Boeder 1980: 208, from Khizanšvili 2006: 18)

Most of the apparent exceptions to this generalization constitute a semantic class: motile objects, and vehicles allow either the animate or the inanimate verb¹⁷:

- (39) mankana / tvitmprinav-i / nav-i m-a-kv-s / m-qav-s
car.NOM airplane-NOM ship-NOM 1Sg-prv-have.INAN-3SG 1SG-have.ANIM-3SG
‘I have a car/airplane/ship.’ (Khizinašvili 2006: 19)

I will have much more to say about animacy effects in Chapter 5 where I discuss number agreement, and its relation to morphology and discourse structure.

2.2.4 Tests for GF status

There are some processes that consistently refer to grammatical functions, however. Most of these are to be found in valence-changing processes, of which Georgian has a number: passivization, causativization (Harris 1981) and perhaps the peculiar process known as version, which is akin to an applicative. In each case, the input to the process selects for a grammatical function whatever its other morphosyntactic peculiarities. Georgian can form both synthetic and analytic passives:

¹⁷ There are some purely idiomatic uses that appear to defy any clear generalization (Paul Meurer, p.c.). For example, grades one receives in school are grammatically animate for purposes of the choice of subcategorization:

xut-i	m-qav-d-a /	*m-kon-d-a
five-NOM	1SG-have.ANIM-IMPF-3SG	1SG-have.INAN-IMPF-3SG
‘I got a five (i.e., the best grade).’		

- (40) a. Gela-m c'eril-i da-c'er-a (Active)
 Gela-NARR letter-NOM PVB-write-AOR3SG
 ‘Gela wrote the letter.’
- b. C'eril-i da-i-c'er-a (Synthetic passive)
 letter-NOM PVB-PRV-write-AOR3SG
 ‘The letter was written.’
- c. C'eril-i i-kn-a da-c'er-il-i (Analytic passive)
 letter-NOM PRV-be-AOR3SG PVB-write-PART-NOM
 ‘The letter got written.’

The morphopassive is restricted by various semantic factors; not absolutely all transitive verbs can undergo passivization in this way. For those that can't, the analytic passive must suffice. Georgian also has a quite productive causative circumfix *a-...-(in)-eb* that can apply to transitive verbs, as well as to both unaccusative and unergative intransitive verbs:

- (41) unergative or unaccusative → transitive with *a- -eb* circumfix
- a. Ivane mğer-i-s → a-mğer-***eb***-s (unerg. > trans.)
 John.NOM sing-TH-3SG CAUS-sing-TH-3SG
 ‘John is singing’ ‘She is having him sing’
- b. Inormacia mzad-d-eb-a → a-mzad-***eb***-s (unacc. > trans)
 information.NOM ready-INGR-TH-3SGII CAUS-ready-TH-3SG
 ‘The information is being prepared’ ‘He is making it ready’
- monotransitive → ditransitive with *a- -in-(eb)-* circumfix
- c. mo-i-smen-s → mo-***a***-smen-***in***-eb-s
 PVB-PRV-listen.to-3SG PVB-PRV-listen.to-CAUS-TH-3SG
 ‘He will listen to her’ ‘He will have him listen to her’
- d. da-c'er-s → da-***a***-c'er-***in***-eb-s
 PVB-write-3SG PVB-PRV-write-CAUS-TH-3SG
 ‘He will write it down’ ‘She will have him write it down’

In each case, the SUBJ of the underlying verb becomes the OBJ of the derived verb. Georgian also has a morphological category, version (or ‘pre-radical vowels’ (PRV)), that is sometimes treated as an applicative in syntax:

- (42) a. Ivane-m surat-i da-xat'-a
 John-NARR picture-NOM PVB-paint-AOR3SG
 ‘John painted a picture’
 b. Ivane-m Mariam-s surat-i da-*u*-xat'-a
 John-NARR Mary-DAT picture-NOM PVB-*PRV*-paint-AOR3SG
 ‘John painted a picture for Mary.’

However, as discussed in great detail in Gurevich (2006), there are too many syntactic contexts where such version vowels have no obvious syntactic correlate, and so it is probably incorrect to treat them as applicatives morphosyntactically.

A final test indicating the value of grammatical functions, the Person-Function constraint (also called ‘object-camouflage’ (Harris 1981), ‘tavization’ (Tuite 1989), ‘person-case constraint’ (Bonet 1994), ‘person-role constraint’ (Haspelmath (2004)), will be discussed in more detail in Ch. 3 on inversion and Ch. 6 on syntactic feature hierarchies. To put it in brief, in Georgian verbs that subcategorize for three GF functions, there must be a harmonic alignment between person features and the first and second object GF functions. The prototypical situation is when a first or second person is the primary object, while the second object is a third person:

- (43) a. 3 OBJ; 3 OBJ2
 vano-m anzor-i še-a-dar-a givi-s
 Vano-NARR Anzor-NOM PVB-PRV-compare-AOR3SG Givi-DAT
 ‘Vano compared Anzor to Givi’ (Harris 1981: 48)

- b. 2 OBJ; 3 OBJ2
- | | | | |
|------------------------------|-----------|----------------------------|-----------|
| vano-m | anzor-i | še-g-a-dar-a | (šen) |
| Vano-NARR | Anzor-NOM | PVB-2SG-PRV-compare-AOR3SG | 2SG.(DAT) |
| 'Vano compared Anzor to you' | | | |
- c. 1 OBJ; 3 OBJ2
- | | | | |
|-----------------------------|-----------|----------------------------|-----------|
| vano-m | anzor-i | še-m-a-dar-a | (me) |
| Vano-NARR | Anzor-NOM | PVB-1SG-PRV-compare-AOR3SG | 1SG.(DAT) |
| 'Vano compared Anzor to me' | | | |

However, when that harmonic alignment is inverted (namely, when the second object is first or second person), the construction is ungrammatical:

- (44) 3 OBJ; 1 or 2 OBJ2
- a. *vano-m (šen) še-a-dar-a givi-s
Vano-NARR 2Sg PVB-PRV-compare-AOR3SG Givi-DAT
'Vano compared you to Givi'
 - b. *vano-m (me) še-a-dar-a givi-s
Vano-NARR 1Sg PVB-PRV-compare-AOR3SG Givi-DAT
'Vano compared me to Givi'

To express these relations, Georgian has **two** different strategies: *tavization*, which converts first or second person phrases into third person possessed phrases headed by *tavi* 'head, self', and what I am calling the *second object agreement* strategy:

- (45) TAVIZATION:
- 1 or 2 OBJ (AGR); 3 [< 1 or 2] OBJ2
- a. man gamo-m-i-gzavn-a me šen-i tav-i / (*šen)
3SGNARR PVB-1SG-PRV-send-AOR3SG 1SG 2SGPOSS-NOM head-NOM
'She sent you to me' (Tuite 1989: 21)
 - b. man gamo-g-i-gzavn-a šen čem-i tav-i / (*me)
3SGNARR PVB-2-PRV-send-AOR3SG 1SG 1SGPOSS-NOM head-NOM
'She sent me to you'

(46) SECOND-OBJECT AGREEMENT¹⁸: 3 OBJ; 1 or 2 OBJ2 (AGR)

- a. vano-m (šen) še-g-a-dar-a givi-s
Vano-NARR 2Sg PVB-2-PRV-compare-AOR3SG Givi-DAT
'Vano compared you to Givi' (Harris 1981: 48)
- b. vano-m (me) še-m-a-dar-a givi-s
Vano-NARR 1Sg PVB-1-PRV-compare-AOR3SG Givi-DAT
'Vano compared me to Givi' (Harris 1981: 49)

In this study, we will use the behavior of valence-changing operations as well as the person-function constraint as the sole tests to determine grammatical function status.

2.3 Constituency

In this last section, I will provide a few arguments to illustrate so-called nonconfigurational properties of Georgian morphosyntax. Although this will not play a large role in this dissertation, because it does play such a large role in many different linguistic theories, some context about constituency is appropriate.

Georgian has been described as an SOV language (Nash 1995, Harris 2000, Skopeteas and Fanselow 2009), but the reality is considerably more complicated. Any order of arguments is grammatical in Georgian, and although there is a slight tendency towards SOV order (due partially to prescriptive norms), other orders can and do happen almost as frequently:

¹⁸ Note that Harris (1981) incorrectly cited these sentences as ungrammatical. See also Tuite (1989) and Vamling (1988).

(47) a. Ivane Mariam-s xed-av-s	(SOV)	
John.NOM Mary-DAT see.IMPF-TH-3SG		
'John sees Mary.'		
b. Ivane xedavs Mariams	(SVO)	
(Martla) xedavs Ivane Mariams!	(VSO)	(rare)
really see-3SG John.NOM Mary-DAT		
Mariams Ivane xedavs	(OSV)	
Mariams xedavs Ivane	(OVS)	(very rare except in questions)
(Martla) xedavs Mariams Ivane!	(VOS)	(rare)

This freedom is symptomatic of the fact that typical tests for constituency such as displacement (47) above, pronominalization (48), and (pseudo)clefting (49)-(50) all fail to identify an asymmetry grouping the verb and its object as against the subject. What's more, some tests, such as idioms, actually sometimes suggest the opposite (51) -- while still affirming the existence of syntactic clause boundaries.

(48) Pronominalization:

- a. Ivane-m c'a-i-k'itx-a c'ign-i,
John-NARR PVB-PRV-read.AOR-AOR3SG book-NOM

da Mariam-ma igi=ve ga-a-k'et-a agretive
and Mariam-NARR that=FOC PVB-PRV-do-AOR3SG also

'John read the book, and Mary did so too' *VP: V + NP
- b. * Ivanem c'aik'itxa c'igni, da *igive* Mariamma *gaak'eta*.
- c. * Ivanem c'aik'itxa c'igni, da Mariamma *gaak'eta* *igive*.¹⁹

(49) Clefts

- a. *Ivane nax-os=a, ra=c u-nd-a ga-a-k'et-os
Ivane.NOM see.PF-3SGOPT=be.3Sg what.NOM=REL PRV-should-3SG PVB-PRV-do-3SGOPT
'It's see John that he should do' (Cleft)
- b. Ivane-s naxva=a, ra=c u-nd-a ga-a-k'et-os
John-GEN see.MAS=be.3Sg what=REL PRV-should-3SG PVB-PRV-do-3SGOPT
'It's the seeing of John that he should do'

¹⁹ Googling this sequence, one does find some hits for *igive* following *gaake'ta*, but in all such cases the *igive* is part of a larger NP and never by itself. The restriction on word order is probably motivated by the focal/emphatic particle *=ve* 'just, the very', and so there is an independent explanation for this restriction other than constituency.

(50) Pseudoclefts

- a. *Ra=c u-nd-a ga-a-k'et-os, Ivane nax-os=a
what.NOM=REL PRV-should-3SG PVB-PRV-do-3SGOPT John-NOM see.PF-3SGOPT=be.3SG
'What he should do is see John' (Pseudocleft)
- b. ?Ra=c u-nd-a ga-a-k'et-os, Ivane-s naxva=a.
what.NOM=REL PRV-should-3SG PVB-PRV-do-3SGOPT John-GEN see.MAS=be.3SG
'What he should do is the seeing of John'

(51) Subject and object oriented idioms

- a. Object-oriented idiom:
Vista-m ga-č'im-a pex-eb-i²⁰
Vista-NARR PVB-stretch-AOR3SG leg-PL-NOM
'Vista [i.e., the computer operating system] died.'
- b. Subject-oriented idiom:
gul-ma m-i-txr-a
heart-NARR 1SG-PRV-tell.AOR-AOR3SG
'I thought [about it]' (Lit. 'My heart told me it')

In fact, the real constraint on Georgian word order comes not in the form of phrasal asymmetries but rather annotation for discourse functions of topic and focus (52)-(53) and so-called superiority effects resulting from a constraint on the realization of notional animacy (54):

(52) a. sad c'a-vid-a Nino? (Harris 1981: 14)

where PVB-go.AOR-AOR3SG Nino
'Where did Nino go?'

b. Nino sad c'avida? (for some speakers an echo-question)

c. *Sad Nino c'avida?

d. *C'avida Nino sad?

(53) a. Vis ar u-nax-i-a Nino? (Harris 1981)

Who.DAT not PRV-see.PF-PERF-3SG.BE Nino
'Who didn't see Nino?'

b. *ar vin unaxia Nino?

c. *vin unaxia Nino ar

d. *vin unaxia ar Nino (as sentential negation)

²⁰This object-oriented idiom has been falsely claimed (Skopeteas and Fanselow 2009) to show a restricted SOV word-order under its idiomatic interpretation. This SVO example drawn from the internet clearly can only have the idiomatic interpretation. Idiom chunks are extremely weak tests of constituency, as both (51a-b) show.

However, although Georgian constituency syntax is largely flat, there are tests that show clear clausal boundaries. There is a clitic version of *qopna* ‘to be’, =*a*, which can only be attached to an element in its own clause (Harris 1981: 13). Also, long-distance dependencies are impossible in Georgian; wh-words not licensed by their local clauses must be turned into surface adjuncts coreferential with a null argument in the dependent clause, as in (55a) vs. (55b):

- (55) a. Gela-m i-c-i-s, rom Anzor-i ekim-i=a
 Gela-NARR PRV-know-TH-3SG that Anzor-NOM doctor-NOM=be.3SG
 ‘Gela knows that Anzor is a doctor.’

b. *Gela-m i-c-i-s=aa, rom Anzor-i ekim-i
 Gela-NARR PRV-know-TH-3SG=BE.3SG that Anzor-NOM doctor-NOM
 ‘Gela knows that Anzor is a doctor.’

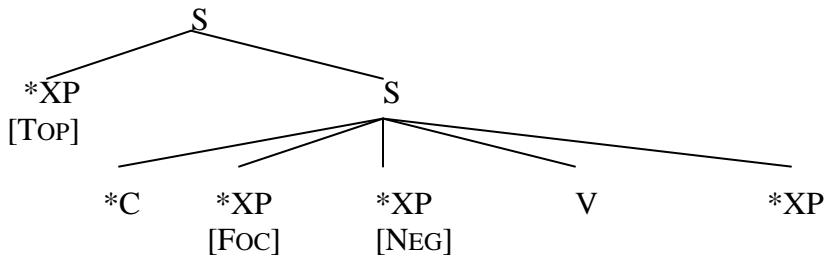
c. *Gela-m=a i-c-i-s, rom Anzor-i ekim-i
 Gela-NARR=BE.3SG PRV-know-TH-3SG that Anzor-NOM doctor-NOM
 ‘Gela knows that Anzor is a doctor.’ (Harris 1981: 13)

(56) a. *Vin tkv-a Ivane-m rom Mariam-s
 who.NOM say.AOR-AOR3SG John-NARR that Mary-DAT
 s-jer-s rom Gela-m nax-a ___ ?
 3-believe-3SG that Gela-NARR see.PF-AOR3SG
 ‘Who_i did John say that Mary believes that Gela saw ___?i

b. Vis=ze tkv-a Ivane-m rom Mariam-s
 who.DAT=on say.AOR-AOR3SG John-NARR that Mary-DAT
 s-jer-s rom Gela-m nax-a ___ ?
 3(DAT)-believe-3SG that Gela-NARR see.PF-AOR3SG
 ‘Who_i did John say that Mary believes that Gela saw ___?i

The implication of these facts is that while grammatical generalizations do have a constituency-based dimension, not all properties of the clause can be predicted from that fact alone. A better way to view constituency is to view how it interacts with other domains like information structure and role structure:

(57)



For a fuller exposition of syntactic constituency in Georgian, see Wier (forthcoming).

2.4 Conclusions

In this chapter, we examined the implications of Georgian for morphemic theories of morphology, as well as tests for grammatical functions and constituency structure. We concluded that all the basic problems of the morpheme adduced by other scholars are also present in Georgian. This picture is only complicated by how case and agreement morphology do not select for grammatical functions as such, but rather are the manifestations of argument structure. Furthermore, Georgian largely lacks the kinds of constituency asymmetries found in languages like English and which, in English, map so regularly onto grammatical functions. These facts will form the basis for a new view of Georgian case and agreement discussed in much greater detail in the succeeding chapters.

§3. Modular mismatches: Inversion and Pseudo-Antipassivization

The preceding chapter discussed a number of different dimensions along which a given utterance can vary in Georgian. In this and the next chapter I will look more closely at how they interact – or don’t – by looking at two different areas of Georgian grammar where the modules show particularly complicated kinds of nonisomorphisms:

- Apparently obligatory ‘inversion’ of case and agreement in the perfect series and fourth conjugation (3.1);
- Apparently obligatory ‘antipassivization’ in the present series (3.2);

Each of these have been used as evidence for multistratal approaches involving constituent movement or changes of grammatical relations (or both). In what follows, I begin by looking at Harris (1981)’s inversion analysis and will show how what Jackendoff (2005) calls ‘interface uniformity’ and multistratal approaches to modular mismatches actually create more problems than they solve. Then I will examine the properties of the present series, which has been argued by Palmer (1994) also to involve a change of grammatical relations by detransitivization. Finally, at the end of this chapter (3.3), I will propose my own analysis of case and agreement in Georgian that appeals to argument structure and role structure rather than (or rather than exclusively to) GF-status.

By establishing these tests for grammatical functions and showing how the modules interact, I will be setting the groundwork for my later discussion of how features are specified independently of each other in separate modular feature geometries.

3.1 Harris 1981 on Inversion

The first major work in a western language to investigate issues in the light of modern formal methods was Alice Harris' *Georgian Syntax* (1981), which focused primarily not on constituency but what I am calling GF-structure and tests for grammatical relations. Because this is a widely cited and very cogently written work on the language, and because it will be relevant for later discussion of morphological feature hierarchies, it is worth discussing a few of her arguments at length to illustrate why I believe a monostratal modular approach is different and in many respects superior to her multistratal approach.

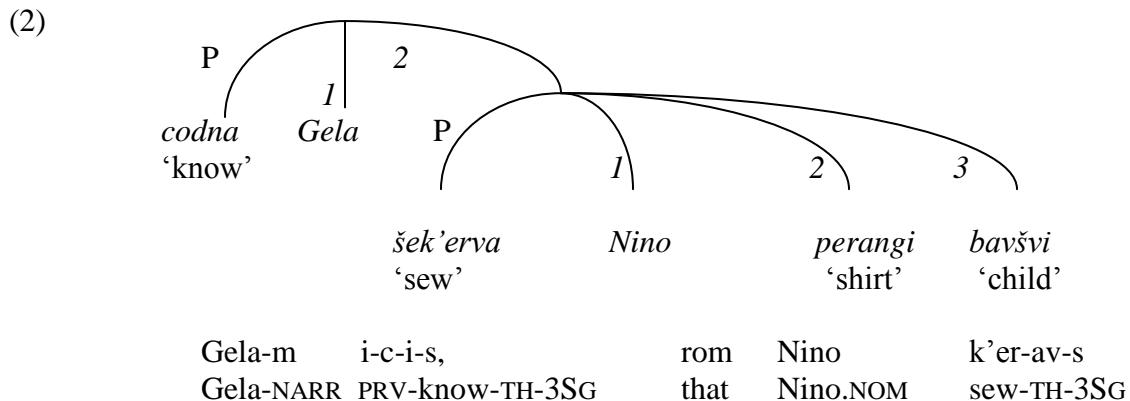
Harris wrote her work on Georgian within the framework of Relational Grammar (henceforth RG; Perlmutter 1984) which stood as a reaction against perceived problems of transformational approaches of the 1960s and 1970s. As she put it, rather than being described by rules operating ‘on strings of ordered elements, on cases, or on constituent structure trees’ (1981:4), grammatical processes are best described by rules that operate on grammatical relations, because, although constituency structures, case, agreement and so on might vary greatly from one language to another, grammatical relations (it is held) will not. This is a particularly acute problem in Georgian, since as we saw in the last chapter, many of the traditional tests used to establish grammatical relations are weak at best in Georgian. Her work, then, had a double purpose: first to establish what the relational facts of Georgian are, and then to show why grammatical relations are still relevant.

3.1.1 The conceptual basis of Relational Grammar

RG relies on two basic central tenets (Perlmutter 1984):

- (1) a. The grammatical relations needed for individual grammars and for cross-linguistic generalizations cannot be defined in terms of other notions, but must be taken as primitive notions of syntactic theory.
- b. It is necessary to posit distinct syntactic (i.e., nonsemantic, nonthematic) levels.

Thus, like transformational approaches, RG is multistratal: rules refer to specific levels, and outputs to rules may themselves be subject to other rules. This results in the classical possibility of feeding and bleeding relationships: if, e.g., a rule for case-marking applies at one level, and a second rule of, say, agreement is sensitive to what case an argument bears, then it matters in which order the two rules apply. Another important feature of RG analyses is that initial relations are assumed to be isomorphic to logical relations: they are functionally like the D-structure of early generative analyses. Unlike GB, notationally, RG relies on nodal tree diagrams in networks to illustrate the relationship between terms on a given level, as well as between terms on different levels. Because in RG the relevant domain is the clause rather than the phrase, clauses represent the highest nodes of which arguments are projected dependents:



perang-s bavšv-is=tvis.
 shirt-DAT child-GEN=for
 'Gela knows that Nino is sewing a shirt for the child.'
 (Harris 1981: xxii; my morphological glossing)¹

The diagram illustrates important characteristics of RG and Harris' view of Georgian.

First, the glossing abstracts away from all actual surface forms: what matters here is exclusively how arguments are encoded as terms with particular grammatical relations.

The theory takes other modular properties – morphology, semantics, argument structure, etc – to be either unimportant or manifestations of syntax. Thus, like transformational theories, RG is also in Jackendoff's (2002; 2005) term ‘syntactocentric’: the important generalizations are to be found in what it considers to be syntax.

3.1.2 Formalization of Tests for Termhood in RG

Because grammatical relations are not only center-stage in RG but in fact where all important generalizations are stated, Relational Grammarians and Harris in particular take very seriously the exact criteria by which a relation is defined. As alluded to in chapter 2, Georgian was a challenge for RG approaches in which grammatical relations are primitives precisely because the evidence for them is weak compared to other languages. Harris uses different criteria for identifying grammatical subjects:

- (3) a. *Tav*-Reflexivization (full pronoun reflexivization) (initial)
b. *Tavis*-Reflexivization (possessive reflexivization) (initial)
c. Person-agreement (final)
d. Number agreement (final and initial)

¹ In RG, the notation ‘1’, ‘2’, and ‘3’ are formal constructs that refer to Subject, Direct Object and Indirect Object, respectively. When a term has been retired, it is noted with the prefix ‘R-’.

- | | | |
|-----|---|-----------|
| (4) | e. Unemphatic pronoun drop ² | (final) |
| | a. Object camouflage | (final) |
| | b. Suppletion for number/animacy of direct object | (initial) |

The reflexive criteria we have already reviewed in §2.2, and found that they do not indeed really correspond to intuitive notions of ‘subject’ or ‘object’, but seem more appropriately described in a more semantically oriented module like FA-structure or Role-structure. In Harris’ analysis, person agreement and case are defined on final terms: thus, despite the initial impression given of case-assignment shown in §2.2, any apparent disconnect between case and agreement with grammatical function must be the result of relation-changing rules.

3.1.3 Inversion

One of the most important such disconnects is so-called ‘inversion’. This process (discussed briefly in §2.3 in case and agreement) is based on the idea that the inferential past tense forms constituting the perfect series (5c) as well as all verb forms in the fourth conjugation (which are mostly psychological predicates) in some sense undergo a reversal of relations with respect to the other two series of screeves (5a-b):

- (5) FIRST CONJUGATION (mostly transitive)
- a. Present/Future series ('noninverted')

Ivane	mi-s-c'er-s	Mariam-s	c'eril-s
John.NOM	PVB-3SGIO-write-3SG	Mary-DAT	letter-DAT
‘John will write a letter off to Mary’			

 - b. Aorist series ('noninverted')

Ivane-m	mi-s-c'er-a	Mariam-s	c'eril-i
John-NARR	PVB-3SGIO-write-AOR3SG	Mary-DAT	letter-NOM
‘John wrote a letter off to Mary’			

² I did not discuss this test in §2.3, because it is not a test of relations as such, but of constituency.

c. *Perfect series ('inverted')*

Ivane-s	mi-u-c'er-i-a	Mariam-isa=tvis	c'eril-i
John-DAT	PVB-PRV-write-PF-3SG	Mary-GEN=for	letter-NOM
'John has apparently written a letter off to Mary'			

Three separate sets of facts form the backbone of the relation-changing argument.

The first is case: the case-marking that denotes the recipient in (5a) and (5b) is dative case, the same as that used to mark the grammatical subject in the perfect series in (5c).

The second is agreement: the suffixal position filled by *-a*, which in the other two series is a *v*-set agreement marker agreeing with the notional subject, now agrees with the notional object, *c'erili* 'letter', and not with the notional subject *Ivanes* 'John'. Likewise, the notional subject *Ivanes* now agrees with morphology one of the derived indirect object agreement sets discussed in §2.3, repeated here for convenience.

Table 3.1. 'Version' markers

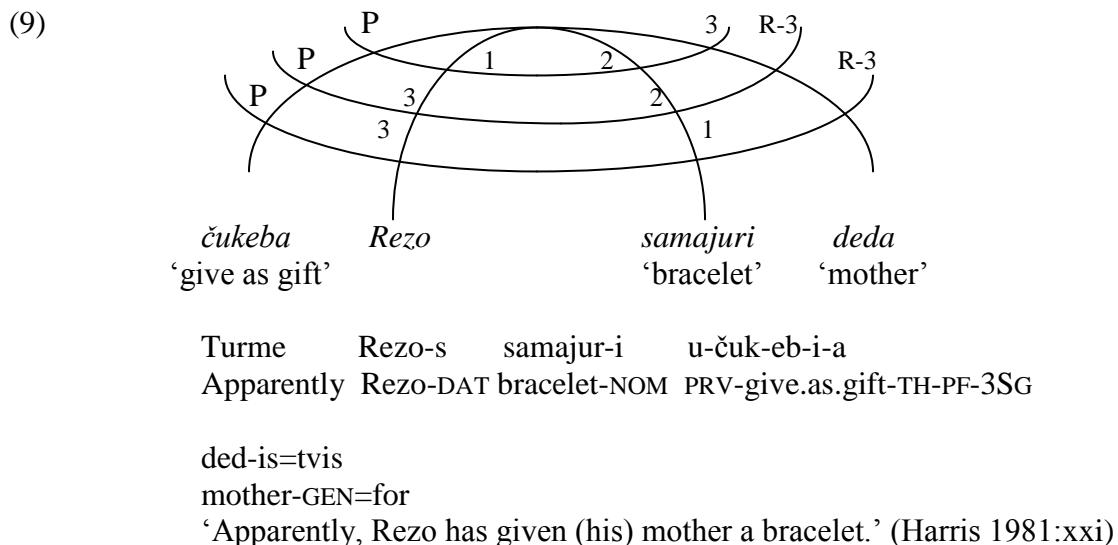
	u-series		h-series		e-series		a-series	
1 st	Sg	Pl	Sg	Pl	Sg	Pl	Sg	Pl
2 nd	m-i-	gv-i-	m-	gv-	m-e-	gv-e-	m-a-	gv-a-
3 rd	g-i-	g-i-....t	g-	g-...-t	g-e-	g-e-...-t	g-a-	g-a-...-t
	Ø-u-	Ø-u-....t	h/s/Ø -	h/s/Ø...-t	Ø-e-	Ø-e-...-t	Ø-a-	Ø-a-...-t

Compare (5c) with the following paradigm:

- (6) a. mi-**m-i-c'er-i-a** Mariam-isa=tvis c'eril-i
 PVB-1SG-PRV-write-PF-3SG Mary-GEN=for letter-NOM
 'I have apparently written Mary the letter' (but I don't remember doing so)
- b. mi-**g-i-c'er-i-a** Mariam-isa=tvis c'eril-i
 PVB-2-PRV-write-PF-3SG Mary-GEN=for letter-NOM
 'You have apparently written Mary the letter'
- c. mi-**u-c'er-i-a** Mariam-isa=tvis c'eril-i
 PVB-PRV-write-PF-3SG Mary-GEN=for letter-NOM
 'He has apparently written Mary the letter'

The third and perhaps most compelling argument in favor of a function-changing analysis in inversion contexts is the peculiar behavior of the recipient arguments in ditransitive constructions (namely, almost only first conjugation verbs). In the other two series, the recipient is encoded with plain dative case, but in the perfect series, that case marks the subject, and the recipient is now encoded not as a direct syntactic³ argument at all, but as a postpositional phrase headed by *=tvis* ‘for’. Under the assumption that case, agreement and valency are all formally identified by grammatical relations, Harris (1981: 119) formalizes this with an explicit RG rule of inversion:

			<i>Other rules applicable at this level:</i>
(7) Initial GR:			<i>Tav-/Tavis- reflexivization</i>
Subject			<i>Suppletion for number, animacy</i>
Direct Object			<i>Person agreement</i>
Indirect Object			<i>Number agreement</i>
(8) Final GR	Indirect Object		<i>Person agreement</i>
	Subject		<i>Number agreement</i>
	Indirect Object <i>chomeur</i>		



³ Many times in this text I use the term ‘syntactic’ in two different meanings: the syntax of constituency and the syntax of grammatical functions. I will distinguish the two autonomous kinds of syntax as necessary.

In RG terms, the former indirect object becomes a *chomeur*, a term demoted from argument status in much the same way that the agent of passives in English can be marked with a ‘by’-phrase.

Harris uses several other different lines of evidence besides case and agreement to support this account of inversion: *tav-* and *tavis-* reflexivization, suppletion for the number and animacy of the direct object, and object camouflage.

3.1.4 *Tav-reflexivization*

Because Harris assumes that *tav-* and *tavis-* reflexivization are both coreferential to the initial subject, she can use this as a test to show that the appearance of surface subjects coreferential to surface direct objects is not really a counterexample, since the coreference rule is held to apply at an earlier stratum:

- (10) a. Gela i-rc'mun-eb-s tavis tav-s
Gela.NOM PRV-convince-TH-3SG his self-DAT
'Gela is convincing himself'
- b. Gela-s turme da-u-rc'mun-eb-i-a tavisi tav-i
Gela-DAT apparently PVB-PRV-convince-TH-PF-3SG his-NOM self-NOM
'Gela has apparently convinced himself'
- c. * tavis tav-s turme da-u-rc'mun-eb-i-a Gela
his self-DAT apparently PVB-PRV-convince-TH-PF-3SG Gela.NOM
'Himself has apparently convinced Gela'
- d. * Gela turme da-u-rc'mun-eb-i-a tavis tav-s (Harris 1981: 125)

(10c-d) appear to show that although the surface reflexive is an indirect object, it cannot bind the surface subject (10c), and that scrambling processes do not improve the grammaticality (10d). However, as we saw in §2.2, the reality of binding facts are more complicated: Georgian *can* have a morphological reflexive as subject as long as there is

only *partial* coreference between the subject and object (11a), and even initial objects can bind other phrases (11b):

- (11) Binding facts in inverted constructions:

- a. *Tav-* pronominal reflexivization

tavis tav-s ga-u-k'et-eb-in-eb-i-a

3POSS.REFL self-DAT PVB-PRV-do-TH-CAUS-TH-PF-3SG

Nino-s=tvis es

Nino-GEN=for this.NOM

⁴‘Something in Nino apparently made her do it.’ (lit. ‘Herself_i has apparently made Nino_i do it.’)

- b. *Tavis-* possessive reflexivization

(Me) da-m-i-rc'mun-eb-i-a

Gela*j*

da

I PVB-1SG-PRV-convince-TH-PF-3SG

Gela.NOM

and

tavis-i_i axal-i

3Poss.refl-NOM new-NOM PVB-love-TH-PART-NOM

'I have apparently convinced Gela; and his; new girlfriend

www.ijpr.su
International Journal of Psychology and Religion

In (11a), the grammatical subject is in the dative case and is a reflexive phrase that is actually bound by a logical (i.e. A-structural) argument that is not a syntactic (i.e. C-structural) argument: *Nino-s=tvis*. In (11b), the reflexive possessive construction is bound by an argument that has the same GF-status at every stratum (in RG terms). While in an RG analysis, *Gela* and *tavisi axali šeqvarebuli* ‘his new girlfriend’ are final subjects, the binding rule applies when they were initial objects, before inversion occurred. This thus directly disproves the inversion hypothesis if we use reflexives as criteria, since *tavis-* should not be able to be bound by *Gela* if they are both initial objects.

⁴ This is not a case of true reflexivization, but because it still involves a kind of coreference, it illustrates the dangers of describing semantic relations at a syntactic level.

3.1.5 Suppletion for the number and animacy of the initial ‘direct object’

Another test used to establish initial grammatical relations in Georgian is suppletion for the number and animacy of direct objects:

- (12) a. burt-i gada-a-gd-o / *gada-qar-a
 ball-NOM PVB-PRV-throw.SG-AOR3SG PVB-throw.PL.AOR-AOR3SG
 ‘He threw the ball’

b. burt-eb-i *gada-a-gd-o / gada-qar-a
 ball-PL-NOM PVB-PRV-throw.SG-AOR3SG PVB-throw.PL.AOR-AOR3SG
 ‘He threw the balls.’

Harris shows that inversion constructions appear to behave as expected, as long as the suppletion for number applies before the inversion rule has applied:

Here, the constraint still holds despite the fact that *kva* and *kvebi* are now surface subjects, having undergone unaccusative advancement to subject status. Thus, suppletion must apply at the initial stratum, before inversion has applied. However, as shown in §2.2, this is really a suppletion for arguments in argument structure, and not for grammatical functions at all:

- (14) a. turme bavšv-s gada-u-gd-i-a /
 apparently child-DAT PVB-PRV-throw.DIST-PF-3SG
 *gada-u-qr-i-a titoeul-i kva
 PVB-PRV-throw.NONDIST-PF-3SG each-NOM stone.NOM
 ‘Apparently, the child has thrown each stone.’

b. turme bavšv-s *gada-u-gd-i-a /
 apparently child-DAT PVB-PRV-throw.DIST-PF-3SG
 gada-u-qr-i-a qvela kva
 PVB-PRV-throw.NONDIST-PF-3SG all.NOM stone.NOM
 ‘Apparently, the child has thrown all the stones.’

That is, just as with the *tough*-construction data in §2.2, both objects are obligatorily morphosyntactically singular by virtue of being quantified, and yet both semantically refer to sets of participants. Thus, what these verbs actually subcategorize for is not features of a particular grammatical function, but distributivity of particular arguments in argument structure: the root *-gd-* selects for distributed arguments as shown by the fact that it can take the distributive universal quantifier *titoeuli* ‘each’ but not the nondistributive universal *qvela* ‘all’; while the root *-qr-* selects for nondistributed arguments, which take *qvela* but not *titoeuli*.

What is true of so-called number subcategorization is also true of animacy. The animacy constraint, too, operates in the perfect series. Just as with the other series, speakers have a choice with respect to live things which verb to use based on the actual semantic/pragmatic context of the situation: if the goose is for food, then you use the inanimate verb; for all other uses, one uses the animate version of 'have':

- (15) a. bat'-i ar⁵ m-kon-i-a sadil=ze
 goose-NOM not 1SG-have.INAN.PF-PF-3SG dinner=on
 'I did not have goose for dinner'

⁵ Because of its pragmatics as an inferential tense, the perfect is the unmarked way to indicate negation in the past. Negation thus improves sentences which might otherwise be awkward for purely pragmatic reasons.

- b. bat'-i ar m-qol-i-a sa-qvar-el cxovel-ad
 goose-NOM not 1SG-have.ANIM.PF-PF-3SG FUT.PART-love-PART animal-ADV
 'I did not have a goose as a pet.'

3.1.6 Person-Function Constraint

Perhaps the most interesting test of grammatical function changing is the RG treatment of object camouflage, what I have been calling the Person-Function constraint (PFC; aka Person-Case Constraint (Bonet 1994)). Recall that the PFC data in RG analysis were linked to particular surface (i.e. final) grammatical relations: a first or second person feature could not be linked to a final direct object while a third person feature was linked to a final indirect object, as in (16).

- (16) 3 OBJ; 1 or 2 OBJ2

 - a. *vano-m (šen) še-a-dar-a givi-s
Vano-NARR 2Sg PVB-PRV-compare-AOR3SG Givi-DAT
'Vano compared you to Givi'
 - b. *vano-m (me) še-a-dar-a givi-s
Vano-NARR 1Sg PVB-PRV-compare-AOR3SG Givi-DAT
'Vano compared me to Givi'

(Harris 1981: 48)

As we discussed earlier, Georgian has two ways to fix this ‘problem’. One is to turn the first or second person pronoun into a third person possessive phrase headed by *tavi* ‘head’. The other is to agree, exceptionally, with the first or second person second object⁶:

⁶ This has been observed before by both Tuite (1989) and Vamling (1988). Tuite says that variation on this point is ‘dialectal’, suggesting that there are some speakers who have indeed have judgments Harris recorded. If so, this speaker variation suggests that the contemporary Georgian inversion construction is undergoing transitioning from a more semantic orientation to a more surface syntactic one (i.e., GF-functional).

- (17) a. TAVIZATION: 3 OBJ (AGR); 3 [< 1 or 2] OBJ2
- | | | | | | |
|---------|---------------------|---------|--------------|--------------|-------------------|
| man | gamo-u-gzavn-a | mas | <i>šen-i</i> | <i>tav-i</i> | / (* <i>šen</i>) |
| 3SGNARR | PVB-PRV-send-AOR3SG | 3SG.DAT | 2SGPOSS-NOM | head-NOM | |
- ‘She sent you to him’ (Tuite 1989: 21)
- b. SECOND-OBJECT AGREEMENT: 3 OBJ; 1 or 2 OBJ2 (AGR)
- | | | | | | |
|-----------|----------------|--------------------------|----------|---------------|--|
| vano-m | (<i>šen</i>) | še-g-a-dar-a | | <i>givi-s</i> | |
| Vano-NARR | 2Sg | PVB-2-PRV-compare-AOR3SG | Givi-DAT | | |
- ‘Vano compared you to Givi’ (Harris 1981: 48)

Harris claims that the PFC does not apply in cases of inversion. This is an important prediction of RG theory: if object camouflage applies at the final level, after inversion, then we would predict that the surface indirect object would have no direct object with which object camouflage could interact, because the initial direct object is now a surface subject:

- (18) a. turme deda-s ča-u-bar-eb-i-xar masc'avlebl-is=tvis
 apparently mother-DAT PVB-PRV-render-TH-PF-2SG teacher-GEN=for
 ‘Apparently mother has turned you over to the teacher.’
- b. (*)turme deda-s ča-u-bar-eb-i-a *šen-i* *tav-i*
 apparently mother-DAT PVB-PRV-render-TH-PF-3SG your-NOM head-NOM
 masc'avlebel-is=tvis
 teacher-GEN=for
 ‘Apparently mother has turned you over to the teacher.’ (Harris 1981: 124)

However, I tested this with other native speakers, and they give judgements that contradict this, allowing both of the same constructional strategies to get around the Person-Function constraint in inverted contexts as in the other noninverted contexts, irrespective of how the arguments are encoded syntactically as arguments or as postpositional phrases:

- (19) a. Ivane-s še-u-dar-eb-i-a Mariam-isa=tvis Anzor-i
 John-DAT PVB-PRV-write-TH-PF-3SG Mary-GEN=for Anzor-NOM
 ‘John has apparently compared Anzor to Mary.’

b. TAVIZATION strategy
 Ivane-s še-u-dar-eb-i-a Mariam-isa=tvis šen-i tav-i
 John-DAT PVB-PRV-compare-TH-PF-3SG Mary-GEN=for your-NOM head-NOM
 ‘John has apparently compared you to Mary.’

c. SECOND OBJECT AGREEMENT strategy
 Ivane-s še-u-dar-eb-i-xar Mariam-isa=tvis šen
 John-DAT PVB-PRV-compare-TH-PF-2SG Mary-GEN=for you
 ‘John has apparently compared you to Mary.’

This should not be surprising, as the constraint is really one on surface ditransitive GF-functions, and not on argument structure as such (which is equivalent to RG's initial stratum; I will have much more to say in Ch. 4). This fact fully contradicts the analysis that inversion is a relation-changing process: to account for this dialect, one would have to say that object camouflage applies, paradoxically, at the final level for noninverted contexts, but at the initial level for inverted contexts. Such a paradox is only apparent because it is a side-effect of the theoretical framework: it is a paradox inherent in the notion of extrinsically ordered syntactic rules that produce surface grammatical patterns.

3.1.7 Further Complications

This picture is complicated by a number of important facts. First, as noted in §2.2, only certain conjugations undergo such inversion, and some always undergo it, while others undergo inversion only in the perfect series. Here again is the case-array for Georgian across conjugations and tense-series:

Table 3.2. Case assignment across series and conjugational class

Series / Conj.	1 st Conj.	2 nd Conj.	3 rd Conj.	4 th Conj.
Present / Future	SUBJ: NOM _{AG} DO: DAT _{PAT} IO: DAT _{GOAL}	NOM _{PAT}	NOM _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}
Aorist	SUBJ: NARR _{AG} DO: NOM _{PAT} IO: DAT _{GOAL}	NOM _{PAT}	NARR _{A G}	SUBJ: DAT _{EXP} DO: NOM _{PAT}
Perfect Evidential	SUBJ: DAT _{AG} DO: NOM _{PAT} IO: -TVIS _{GOAL}	NOM _{PAT}	DAT _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}

As shown above, verbs that belong to the second conjugation, which are mostly unaccusative intransitive verbs, are the only verbs that never undergo inversion. These verbs take nominative case for their subjects in the perfect series, take the *v*-set of agreement markers for their notional subjects in all series rather than the *m*-set, and unlike first or third conjugation verbs can register the presence of an oblique argument morphologically on the verb by agreement:

- (20) es c'ign-i Ivane-s(a) da Mariam-s da-s-c'er-i-a
 this book-NOM John-DAT(.EXT) and Mary-DAT PVB-3SG-write-PF-3SG
 'This book has been written for John and Mary.'

In other words, none of the processes typical of inverted transitive and unergative intransitive verbs occurs with unaccusatives. Harris explains their failure to undergo inversion by the fact that they start out as initial direct objects, and so the rule of inversion does not have the right input at the point when it applies: initial objects bleed inversion. This makes them unlike the unergative intransitive predicates, which start out as initial subjects, and thus have the right input for the inversion rule to apply. So the

second conjugation is, under the function-changing analysis, only an apparent counterexample if we make RG assumptions.

A more problematic set of data are those verbs which always undergo inversion. These are verbs of the fourth conjugation, which number about one hundred, whose notional subject is always marked in the dative case, whose notional object (if any) is always nominative, and whose agreement is always with both the *m*- and *v*-sets, for subject and object agreement respectively.

(21) VERBS OF THE FOURTH CONJUGATION (mostly psych-predicates)

- a. Present/Future series ('inverted')
Ivane-s u-qvar-s Mariam-i
John-DAT PRV-love-3SG Mary-NOM
'John loves Mary.'
- b. Aorist series ('inverted')
Ivane-s e-ʒin-a⁷
John-DAT PRV-sleep-AOR3SG
'John slept.'
- c. Perfect series ('inverted')
Ivane-s h-qvar-eb-i-a Mariam-i
John-DAT 3SG-love-TH-PF-3SG.BE Mary-NOM
'John has apparently loved Mary'

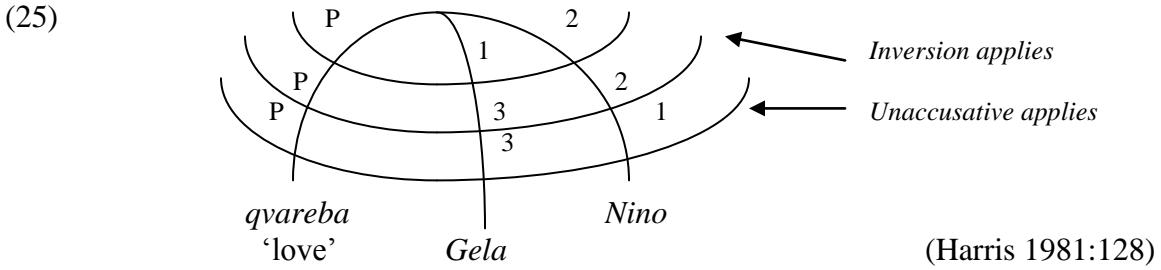
Such verbs are clearly different from the others in that inversion does not seem to be triggered by a grammatical process but rather by the lexical item itself. It is an important fact that the members of this class are not a proper semantic class. Although many, probably most, 4th conjugation verbs are so-called psychological predicates (22), some are not (23), and other verbs that 'ought' to belong to the fourth conjugation do not (24):

⁷ Many fourth conjugation verbs are defective, in that they lack one or more stems to form screeves from a given series. This never affects case-marking, however: an aorist series 4th conj. verb will still take dative case for the notional subject.

- (22) 4th Conjugation and Psychological predicates:
- a. m-i-qvar-s b. m-Zul-s c. m-a-xs-ov-s
1Sg-PRV-love-3SG 1SG-hate-3SG 1SG-PRV-remember-TH-3SG
'I love her' 'I hate it' 'I remember it'
 - d. m-ši-a
1Sg-be.hungry-3Sg
'I'm hungry'
- (23) 4th Conjugation and not psychological predicates:
- a. pul-i m-a-kv-s
money-NOM 1SG-PRV-have.INAN-3SG
'I have the money'
 - b. Tamaz-i m-kv-i-a
Thomas-NOM 1SG-be.called-TH-3SG
'My name is Thomas'
- (24) Not 4th Conjugation and psychological predicates
- a. m-xed-av-s b. da-v-i-čgal-e
1SG-see.IMPF-TH-3SG PVB-1-PRV-tire-1/2AOR
'He sees me' 'I got tired.'
 - c. dard-ob-s d. nugeš-ob-s
sorrow-TH-3SG take.comfort-TH-3SG
'He feels sorrow.' 'He feels consolation.'
 - e. xalis-ob-s f. šimšil-ob-s (cf. 22d)!!)
be.in.good.mood-TH-3SG starve-TH-3SG
'He's in a good mood.' 'He's starving (to death)'

Note that it is not readily possible to identify what the actual morphology should be for a given 4th conjugation verb. Does it take the *u*-set as in (22a), the *h*-set as in (22b), or the *a*-set as in (22c)? This is more evidence of the purely morphological (and not GF-functional) distribution of the so-called indirect object markers. At the same time, it casts further doubt on RG's underlying assumption that thematic roles naturally or easily map onto GF-functions at any level, since the set of verbs with experiencer participants does not map easily onto fourth-conjugation dative constructions.

Harris' argument about these verbs is that they are syntactically the same as the perfect series: they undergo both the rule of inversion and the unaccusative rule.



However, given that the fourth conjugation verbs always undergo inversion, while first and third conjugation verbs do so only in the perfect series, a RG function-changing analysis must explain what leads to separate application of the same rule, if the same rule is indeed applying. Harris' answer is twofold. First, she points to putative suppletion for tense which happens also to be correlated with a difference in case assignment.

		<i>Inanimate 'object'</i>	<i>Animate 'object'</i>
(26)	<i>Present</i>	mi-m-a-kv-s (4 th Conj.) PVB-1SG-PRV-have.INAN-3SG 'I take it'	mi-m-qav-s PVB-1SG-have.ANIM-3SG 'I take him'
	<i>Aorist</i>	mi-v-i-t'an-e PVB-1-PRV-bring.INAN-1/2AOR 'I took it'	c'a-v-i-qvan-e PVB-1-PRV-bring.ANIM-1/2AOR 'I took him' (Harris 1981: 21)

She argues from this that it is interesting that these verbs thus take different case arrays:

- (27) a. Gela-s c'ign-eb-i mi-a-kv-s samk'itxelo-ši
Gela-DAT book-PL-NOM PVB-PRV-have.INAN-3SG reading.room-to
'Gela is taking the books into the reading room'
- b. Gela-m c'ign-eb-i mi-i-t'an-a samk'itxelo-ši
Gela-NARR book-PL-NOM PVB-PRV-bring.INAN-AOR3SG reading.room-to
'Gela took the books into the reading room.' (Harris 1981: 129)

In these examples, the present tense verb translated as 'take' has the same array as a fourth conjugation verb, namely a subject with dative case and an object with nominative case. The aorist verb translated the same way, though with a different tense, has a

different array that is typical of regular first conjugation transitive verbs: narrative case subject, nominative case object. This is unexpected if the verbs stand in a truly suppletive relation: we would expect roots to differ, but not their syntax.

Several different lines of evidence speak against this analysis. First, we know that there are verbs that do simply subcategorize for certain case forms. The verb *icis* ‘knows’ is famously irregular syntactically, as it takes narrative case for its subject and nominative case for its object in the present series unlike any other verb in the standard language (normally nominative and dative respectively). More importantly, these particular forms do not actually at all obviously stand in a suppletive relation, since the form with the root *t'an-* ‘bring, carry, take’ actually has a full paradigm:

- (28) a. mi-i-t'an-s
PVB-PRV-bring.INAN-3SG
‘He is bringing it’
b. mi-i-t'an-a
PVB-PRV-bring.INAN-AOR3SG
‘He brought it’
c. mi-u-t'an-i-a
PVB-PRV-bring.INAN-PF-3SG
‘He has apparently brought it’

Furthermore, as noted by the glosses, the putatively present forms *mimakvs* ‘I take it’ and *mimqavs* ‘I take him’ are actually based on fourth conjugation roots meaning ‘have’ plus the ‘hither’ preverb *mi-*. Moreover, the set of 4th conjugation verbs is actually relatively small and closed: only about a hundred or so lexical items, and not very productive. Thus, there really is no reason to see why either these forms do not simply stipulate lexically dative subjects, or alternatively why they are at all suppletive. However, there is one piece of evidence that seems to support Harris’ analysis of the 4th conjugation, and this is

that inversion verbs do not trigger tavization. Recall that in the function-changing analysis, tavization is triggered in the presence of an indirect object, and the underlying subjects of 4th conjugation verbs are surface indirect objects in this view:

- (29) a. Ivane-s u-nax-i-xar šen
John-DAT PRV-see.PF-PF-2SG you.NOM
'John has apparently seen you.'
- b. * Ivane-s u-nax-i-a šen-i tav-i
John-DAT PRV-see.PF-PF-2SG your-NOM head-NOM
'John has apparently seen you' (acceptable as: '...seen your head.')

As noted above, and as will be discussed in full in Ch. 6, the real explanation for this apparent failure to trigger the person-function constraint violation is that the predicate is only a two-place predicate, and the constraint only applies to three place predicates with a SUBJ, OBJ1 and OBJ2. This also makes sense in the light of the revised data above: tavization *does* occur (*pace* Harris) in the perfect series of ditransitive verbs.

3.1.8 Preliminary conclusions

In this section we have reviewed all the evidence relevant to the behavior of 'inversion' in both the perfect series and the 4th conjugation and have found that the evidence for genuine syntactic reversal of grammatical functions is actually far weaker than originally claimed. The behavior of *tav-* and *tavis-* reflexives, suppletion for the animacy and number of direct objects, and the behavior of ditransitives under conditions of the person-function constraint all fail to show a genuine reversal of grammatical functions for one reason or another. Furthermore, fourth conjugation 'psych'-predicates also fail to support a multistratal analysis of grammatical relations, since they appear to

overgenerate indirect objects and therefore dative case and agreement relations. There is another larger problem with the function-reversal analysis that should be brought to the fore, and this is that the analysis provides no obvious motivation for why inversion should occur: to the extent that the inversion analysis accounts for the data, it simply stipulates the inversion rather than explaining what it is about inversion that makes it different from the other two series.

3.2 Palmer (1994) and (Pseudo)-Antipassivization

One other larger problem with the inversion analysis is that some of the criteria that are used to defend a relation-changing analysis would also suggest a relations-changing argument for the present/future series, which Harris and other Kartvelologists crucially do *not* treat as function-changing. Recall that one of the reasons Harris argued inversion occurs is that the case used to identify the recipient argument in the present/future and aorist series, the dative marked by *-s*, is also the same as that which marks the notional subject in the perfect series (here all **dative**-marked arguments are in bold, while all *nominative*-marked arguments are italicized):

- | | | | |
|---|----------------------|-----------------|-------------------|
| (30) a. <i>Ivane</i> | mi-s-c'er-s | Mariam-s | c'eril-s |
| <i>Ivane.NOM</i> | PVB-3IO-write-3SG | Mary-DAT | letter-DAT |
| ‘John will write Mary a letter.’ | | | |
| [Case: Nom_{AG} ~ Dat_{REC} ~ Dat_{TH}] | | | |
| b. <i>Ivane-m</i> | mi-s-c'er-a | Mariam-s | <i>c'eril-i</i> |
| <i>Ivane-NARR</i> | PVB-3IO-write-AOR3SG | Mary-DAT | <i>letter-NOM</i> |
| ‘John wrote Mary a letter.’ | | | |
| [Case: Narr_{AG} ~ Dat_{REC} ~ Nom_{TH}] | | | |
| c. <i>Ivane-s</i> | mi-u-c'er-i-a | Mariam-isa=tvis | <i>c'eril-i</i> |
| Ivane-DAT | PVB-PRV-write-PF-3SG | Mary-GEN=for | <i>letter-NOM</i> |
| ‘John has apparently written Mary a letter’ | | | |
| [Case: Dat_{AG} ~ -tvis_{REC} ~ Nom_{TH}] | | | |

In the present series, however, we see not one but **two** dative arguments: the notional primary object as well as the second object are **both** marked by dative case. Unlike the inversion constructions, however, the notional subject makes use of suffixal morphology exactly as in the aorist, and the same object morphology applies:

- (31) a. m-xat'-av-s
1SG-draw-TH-3SG
'He's drawing me.'
- b. m-xat'-a
1SG-draw-AOR3SG
'He drew me.'

The case-array in the present series resembles antipassivization constructions seen e.g. in the languages of Australia (Warrungu; Tsunoda 1988: 598):

- (32) a. pama+ngku kamu+Ø yangka+n [without antipassive]
man+ERG water+ABS search+P/P
'A man looked/looks for water.'
- b. pama+Ø kamu+wu yangka+kali+n [with antipassive]
man+ABS water+DAT search+ANTIPASS+P/P
'A man looked/looks for water.'

Like these antipassive constructions, there is an overt morphological difference between the present and aorist series: the presence of the so-called thematic suffix (aka present/future-stem formant). The thematic suffix is a set of markers that are present in the present/future series as well as some perfect series forms, which with one exception all have a vowel plus a labial consonant⁸:

- (33) a. -eb a-k'et-**eb**-s 'he is doing it'
b. -ob k'itxul-**ob**-s 'he is reading it'
c. -i mğer-**i**-s 'he is singing'
d. -am c'ar-mo+tkv-**am**-s 'he is pronouncing it'

⁸ As noticed by Harris (1985: 194), most of these go probably back to a common ancestor in *-ew.

e. -av	xat'- av -s	'he is painting it'
f. -ep	q- ep -s	'it [e.g. the dog] is barking'
g. -ov	m-a-xs- ov -s	'I remember it'
h. -ev	c'- ev -s	'he is lying down'

This is thus a different problem from the case of inversion: if we assume that case is assigned by grammatical function, then dative case appears to be *overgenerated* (too many arguments with dative case) rather than *differently generated* (the wrong arguments showing dative case), as with inversion in the perfect series. Harris does not treat it as function-changing presumably because other than case, agreement appears to be the same (modulo tense features) and there is no quirky valence-change as with the peculiar *=tvis* nominals denoting recipients in the perfect series.

Despite this, it has been suggested that the case-marking facts of the present-series also represent a change of grammatical relations – or at least, a lowering of transitivity. Palmer (1994) makes just this claim about Georgian:

- (34) “If this is again a matter of lowered transitivity, the contrast between the agentive [= Geo. narrative] and the patientive [= Geo. nominative] might be compared with the use of antipassives and detransitives discussed in 7.7.2 and 7.4, where an ergative (= agentive) construction is replaced by an absolute (= patientive) one with certain aspects; moreover, the fact that the aorist has the agentive pattern [in Georgian] may be related to the fact that where there is split ergativity in terms of tense/aspect, ergative marking is ‘always found either in the past tense or perfect aspect’ (Dixon 1979:95).” (Palmer 1994: 86)

That is, in Palmer’s analysis, the case-marking pattern in the present series represents an actual detransitivization that treats the underlying agentive argument as the single argument and so now is marked by nominative case. The assumption is that grammatical functions are also grammatical relations, and that the ‘subject’ here stands in an

absolutive relation whereby the single arguments of intransitives and the objects of transitives are marked with the same ‘nominative’ (=absolutive) case. Furthermore, under Palmer’s analysis, there is a natural explanation of the function of the thematic suffixes (though he does not make this explicit): the thematic suffix is actually an antipassive suffix that happens also to bear tense features.

In fact, I intend to show that in every respect, there is no sense in which the Georgian present series resembles an obligatory syntactic antipassive except superficially, even by Palmer’s own criteria. Palmer’s notion of transitivity is different from that adopted by Harris and other more formal linguists, so in order to compare theories it is important to step back for a moment and discuss his perspective. Palmer follows a number of functionally oriented linguists in which transitivity is not discrete, but rather gradually determined by a large number of discourse factors quite like those discussed in Hopper and Thomson (1980). Among those he lists are:

- (35) a. the patient not being mentioned (or being backgrounded [Dixon 1994]);
b. the patient being less directly affected by the action;
c. incompletive aspect leading to less prototypically controlled
or affected state of patient;
d. partitivity;
e. agent not acting alone;
f. the patient being generic. (Palmer 1994)

These criteria in fact mix a number of syntactic, semantic and pragmatic factors which I view as operating independently of one another, but increasing the number of tests for transitivity can only help shed clearer light on how the system actually works. After running through each of these tests, I will proceed to use my own tests developed in chapter two which will even more fully illustrate the point.

3.2.1 Palmer's tests for transitivity

The first of Palmer's tests for transitivity refers to the perhaps the most intuitive and fundamental criterion of high or low transitivity is the presence or absence of an overt argument. Because Georgian is a rigorously pro-drop language, any arguments (as well as some non-arguments) can and usually are omitted from regular speech as long as they are understood from discourse:

- (36) A:Nino xed-av-s mat?
Nino.NOM see.IMPF-TH-3SG 3PL.DAT
'Does Nino see them?'
B: Ara, Ivane k'i xed-av-s!
No, John.NOM however see.IMPF-TH-3SG
'No, John though does see them!'

where the direct object of the response would be referential: it cannot mean 'John sees (things)'. Thus, Georgian pro-drop constructions are different from a verb like English 'eat' whose object is optional, since in Georgian the covariation is systematic. The second test likewise shows no noticeable change in transitivity: if we use a highly affective verb, such as *mok'vla* 'kill', we nonetheless get the same case array:

- (37) Mariam-i Ivane-s k'l-av-s
Mary-NOM John-DAT kill-TH-3SG
'Mary is killing John.'

The proof that incompleteness is not really the trigger for the change in case-marking between the present/future series and the aorist is that there are in fact imperfective aorists which typically denote repeated, and by implication unsuccessful, attempts to

perform the action in question. Crucially, these imperfective aorists (signaled by the absence of a preverb) have exactly the same case array as the perfective aorists: NARR ~ (DAT) ~ NOM.

- (38) a. Perfective aorist
 Ivane-m k'ar-i ga-a-ğ-o
 John-NARR door-NOM PVB-1-PRV-open-AOR3SG
 'John opened the door [successfully].'
 b. Imperfective aorist
 Ivane-m k'ar-i a-ğ-o
 John-NARR door-NOM PRV-open-AOR3SG
 'John (tried to) open the door [but was not successful].'

Thus, semantic aspectual distinctions are actually orthogonal to the case-array. In (39), we test partitivity. In both the first and second sentences, it does not appear to matter whether all or only some of the books are being read; they both are treated the same way in terms of case marking.

- (39) a. Davit-i ga-gzavn-i-s zogiert c'eril-s, magram ar qvela-s
 David-NOM PVB-send-TH-3SG some.DAT letter-DAT but not all-DAT
 'David will send some letters, but not all [of them].'
 b. Davit-i ga-gzavn-i-s qvela c'eril-s
 David-NOM pvb-send-TH-3SG all.DAT letter-DAT
 'David will send all of the letters.'

The fifth test is given in (40), where there are two agents, Mary and Zurab, and they are both participating in the action of killing John. Here again, the subject NPs *Mariami* and *Zurabi* as well as the direct object NP *Ivanes* surface with dative case, exactly the same as when only a single agent is involved.

- (40) Mariam-i da Zurab-i Ivane-s k'l-av-en
 Mary-NOM and Zurab-NOM John-DAT kill-TH-3PL
 ‘Mary and Zurab are killing John.’

The last of Palmer’s tests, specificity, deals with whether the subjects and/or objects refer to particular entities in the world (specific), or whether they refer to an arbitrary member of a class (nonspecific). The distinction is highlighted in questions, where in fact membership in a set is not even known. In Georgian such constructions pattern exactly as the ones where there is a clear discourse referent:

- (41) a. Nodar-i k'itxul-ob-s c'ign-s? (nonspecific)
 Nodar-NOM read-TH-3SG book-DAT
 ‘Is Nodar reading a book?’
 b. Nodar-i k'itxul-ob-s imis / im / ert c'ign-s (specific)
 Nodar-NOM read-TH-3SG 3SGGEN this.OBL one.DAT book-DAT
 ‘Nodar is reading his / this / a (certain) book.’

3.2.2 Further tests for GF-status

In chapter two, it was concluded that many of the most typical tests for GF-status do not work in Georgian for one reason or another, save for two different types: (1) nonmonotonic processes that alter valency in the form of passivization and causativization, and (2) the monotonic Person-Function Constraint that operates with ditransitive constructions. In this section, I will show that these tests, too, all disprove the detransitivization hypothesis for the present/future series.

3.2.2.1 Passivization

As discussed in Harris (1981), Georgian has at least five different passivization strategies that denote the notional agent⁹ of a predicate and promote the notional patient:

Table 3.3. Four different passivization strategies.

A	B	C	D
Analytic Passive 1 (<i>iqo</i>)	Analytic Passive 2 (<i>ikna</i>)	Passive of State	Synthetic Passive (<i>iniani, doniani</i>)
Stative	Nonstative	Stative	Nonstative

(modified table taken from Harris 1981: 203)

These are illustrated by examples in (42):

- (42) a. Analytic Passive 1 (stative)
Zalian da-ğl-il-i v-ar
very PVB-tire-PF.PART-NOM 1-be.PRES
'I'm very tired.'
- b. Analytic Passive 2 (nonstative)
saxl-i i-kn-a še-ğeb-il-i c'itl-ad
house-NOM PRV-become-AOR3SG PVB-paint-PF.PART-NOM red-ADV
'The house got painted red.' (Harris 1981: 203)
- c. Passive of State (stative)
mt'ver-i a-par-i-a iat'ak=ze
dust-NOM PRV-spread-PF-3SG floor=on
'Dust is spread on the floor.' (Harris 1981: 203)
- d. *Iniani* Synthetic passive (noningressive, nonstative)
c'ign-i i-c'er-eb-a
book-NOM PRV-write-TH-3SGII
'The book is being written.'
- e. *Doniani* Synthetic passive (ingressive, nonstative)
Mariam-i ga-c'itl-d-eb-a
Mary-NOM PVB-red-INGR-TH-3SGII
'Mary is blushing.'

⁹ It is well to remind the reader that I adopt Dowty (1991)'s analysis of proto-agents and proto-patients. My use of 'agent' and 'patient' here is only intended as a shorthand for the argument with more/less proto-features.

Although these different kinds of passivization have different semantic effects (stative vs. nonstative, ingressive vs. noningressive, etc) what they all have in common is that they are all derived from (or stand in a derivational relationship with) transitive verbs, mostly of the first conjugation:

- (43) a. զալիան դա-մ-ցլ-i-s
very PVB-1SG-tire-TH-3SG
'It will make me very tired.'
- b. Իվան սալ-i-s չե-ցեբ-ավ-s
Ivane.NOM house-DAT PVB-paint-TH-3SG
'John will paint the house.'
- c. Թամար իատ'ակ-s պար-ավ-s նօք-իտ
Tamara.NOM floor-DAT cover-TH-3SG rug-INST
'Tamara is covering the floor with the rug.'
- d. Նոդար-ի շեր-s շիգն-s
Nodar-NOM write-3SG book-DAT
'Nodar is writing the book.'
- e. էս սիմցերա Նինո-s ցա-ա-ց'իլ-էբ-s
this.NOM song.NOM Nino-DAT PVB-PRV-red-TH-3SG
'This song is making Nino blush'

What these passives all do is effectively convert a first conjugation transitive verb into a second conjugation unaccusative verb, whether because of the auxiliary chosen ('be', 'become') or directly by synthetic modification. If the present series of such transitive verbs were really a detransitivization, we would predict this rule to bleed passivization. In fact, as the forms in (43) show, present series and passive constructions are indeed quite compatible. This thus directly disproves the antipassivization analysis, and suggests that the case-array used in the present series is motivated by something other than a direct alignment of case and grammatical function.

3.2.2.2 Causativization

Another argument that the present series forms are not characterizable by transitivity lowering is that they act exactly like regular transitive verbs with respect to causativization. Consider again the morphocausatives mentioned in §2.2:

- (44) unergative or unaccusative → transitive with *a- -eb* circumfix
- a. Ivane mğer-i-s → *a-mğer-eb-s* (unerg. > trans.)
John.NOM sing-TH-3SG PRV-sing-TH-3SG
'John is singing' 'She is having him sing'
 - b. Informacia mzad-d-eb-a → *a-mzad-eb-s* (unacc. > trans)
information.NOM ready-INGR-TH-3SGII PRV-ready-TH-3SG
'The information is being prepared' 'He is making it ready'
- monotransitive → ditransitive with *a- -in-(eb)-* circumfix
- c. mo-i-smen-s → *mo-a-smen-in-eb-s*
PVB-PRV-listen.to-3SG PVB-PRV-listen.to-CAUS-TH-3SG
'He will listen to her' 'He will have him listen to her'
 - d. da-c'er-s → *da-a-c'er-in-eb-s*
PVB-write-3SG PVB-PRV-write-CAUS-TH-3SG
'He will write it down' 'She will have him write it down'

As shown above, Georgian has two related morphological strategies to increase valency: addition of the preradical vowel *a-* plus a thematic suffix *-eb* to create monotransitives, and to create ditransitives, the same preradical vowel plus the causative suffix *-in-eb* (thus, each adds exactly one argument). Crucially, derived causative verbs behave with respect to case exactly like their underived counterparts with the same number of arguments:

- (45) a. Underived present monotransitive: [CASE: SUBJ_{NOM} ~ OBJ_{DAT}]
- | | | | |
|-------------------------------|-------------|-------------|--|
| Ivane | xat'-av-s | surat-s | |
| Ivane.NOM | draw-TH-3SG | picture-DAT | |
| 'John is painting a picture.' | | | |

- b. Derived present monotransitive: [CASE: $\text{SUBJ}_{\text{NOM}} \sim \text{OBJ}_{\text{DAT}}$]
 Ivane *a-mğer-eb-s* Mariam-s
 Ivane.NOM PRV-sing-TH-3SG Mary-DAT
 ‘John is making/having Mary sing.’
- (46) a. Underived present ditransitive: [CASE: $\text{SUBJ}_{\text{NOM}} \sim \text{OBJ}_{\text{DAT}} \sim \text{OBJ2}_{\text{DAT}}$]
 Anzor-i *a-Zl-ev-s* deda-s sačukar-s
 Anzor-NOM PRV-give.PRES-TH-3SG mother-DAT gift-DAT
 ‘Anzor is giving mother a gift.’
- b. Derived present ditransitive: [CASE: $\text{SUBJ}_{\text{NOM}} \sim \text{OBJ}_{\text{DAT}} \sim \text{OBJ2}_{\text{DAT}}$]
 Šota *mo-a-smen-in-eb-s* Mariam-s Erizbar-s
 Šota.NOM PVB-PRV-listen-CAUS-TH-3SG Mary-DAT Erizbar-DAT
 ‘Shota is having Mary listen to Erizbar.’

Recall that one of the differences between the aorist and the present is that the present has thematic suffixes which (on Palmer’s analysis) would actually be kinds of antipassives marked for tense, while the aorist does not. Evidence that the antipassive analysis cannot be the case comes from causatives of verbs with the thematic suffix *-eb*, which are formed by simply adding the *-in-eb-* (CAUS-TH) sequence (46a). To create the aorist of these forms, one simply deletes the outermost thematic suffix, and uses the aorist agreement morphology (46b).

- (46) a. ešmak’-i *a-k’et-eb-in-eb-s*
 devil-NOM PRV-do-TH-CAUS-TH-3SG
 ‘The Devil is making him do it.’
- b. ešmak’-ma *ga-a-k’et-eb-in-a*
 devil-NARR PVB-PRV-do-TH-CAUS-AOR3SG
 ‘The Devil made him do it.’

Crucially, in these forms, the interior thematic suffix gets stranded, despite the fact that all events involved are semantically past-tense events: one does not remove all thematic suffixes, but rather only the outermost one that denotes the last event. This causative data

thus also directly disproves the antipassivization analysis, since the internal thematic suffixes do not delete as predicted in the aorist. The thematic suffix, in fact, is a purely morphological marker that builds paradigms, and cannot synchronically be assigned direct semantic content.

3.2.2.3 Person-Function Constraint facts

The last set of GF-status tests are the PFC that we discussed extensively with respect to inversion. Just as with inverted perfect series forms, the present series forms are sensitive to the PFC irrespective of case or even constituency status:

- (47) a. *Avtandil-i a-ʒl-ev-s Tinatin-s šen
 Avtandil-NOM PRV-give.PRES-TH-3SG Tinatin-DAT 2SG
 ‘Avtandil is giving you to Tinatin.’
- b. *Avtandil-ma mi-s-c-a Tinatin-s šen
 Avtandil-NARR PVB-3IO-give-AOR3SG Tinatin-DAT 2SG
 ‘Avtandil gave you to Tinatin’
- c. *Avtandil-s mi-u-c-i-a Tinatin-isa=tvis šen
 Avtandil-DAT PVB-PRV-give-PF-3SG Tinatin-GEN=for 2Sg
 ‘Avtandil has apparently given you to Tinatin.’

Although brief, these data are in fact very important. It shows in summary form what the PFC is actually doing: it appears to ignore surface case and even constituency facts (e.g., with the *=tvis* nominal in the perfect series) and treats them all identically with respect to GF-status. This is a powerful argument both for grammatical functions in general, and more specifically that they do not necessarily map onto particular constituency relations as has been extensively argued by some formalists (e.g. Bonet 1994).

I will have much to say about this in a later chapter (on syntactic hierarchies), but it will suffice for right now to say that what all of these data show about grammatical

functions is that the tests we have identified as actually applying consistently (passivization, causativization, and the person-function constraint) all cast doubt on any notion of obligatory function changing: *only nonmonotonic processes actually change grammatical functions*. This is a very important result, since so much of the literature has, as illustrated, implicitly or explicitly denied this principle.

3.3 A different analysis of case and agreement

In the previous two sections, I gave arguments about why trying to link the peculiar facts of Georgian case and agreement to grammatical functions and/or changes of transitivity raised more issues than they solved. In this section, I would like to put forward an analysis of how Georgian actually works. My argument will crucially rely on the existence of levels of representation that are not purely syntactic in nature: argument structure, and role structure.

3.3.1 Summary of the problem

Recall that the issue of case marking was that for two of the three main cases there is a many-to-many mapping between a case and the notional participant in the clause: dative case can mark the notional agent, patient or recipient/goal, and nominative the agent or the patient. Only the narrative case is always associated with an agent as well as always being the grammatical SUBJ¹⁰.

¹⁰ It is worth pointing out that in Mingrelian, which also underwent a similar shift within the present series, the narrative case in the aorist series *can* mark the direct object of psych predicates. See Ch. 6 and Harris (1985) for more details.

Series / Conj.	1 st Conj.	2 nd Conj.	3 rd Conj.	4 th Conj.
<i>Present / Future</i>	SUBJ: NOM _{AG} DO: DAT _{PAT} IO: DAT _{GOAL}	NOM _{PAT}	NOM _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}
<i>Aorist</i>	SUBJ: NARR _{AG} DO: NOM _{PAT} IO: DAT _{GOAL}	NOM _{PAT}	NARR _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}
<i>Perfect Evidential</i>	SUBJ: DAT _{AG} DO: NOM _{PAT} IO: - <i>TVIS</i> _{GOAL}	NOM _{PAT}	DAT _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}

Recall also that we concluded that agreement and case do not always cohere: sometimes the agreement appears totally inverted when the case is not:

- (48) a. Gela-m Mariam-i / me nax-a / m-nax-a
 Gela-NARR Mary-NOM / 1Sg see.PF-AOR3SG / 1SG-see.PF-AOR3SG
 ‘Gela saw Mary / me.’
- [Case: NP-NARR NP-NOM]
 [Agreement: v-set m-set]
- b. Ivane-s / Me Gela e-nax-a / m-e-nax-a
 John-DAT 1Sg Gela.NOM PRV-see.PF-3SG / 1SG-PRV-see.PF-3SG
 ‘John / I had apparently seen Gela’ (but e.g. I don’t remember it)
- [Case: NP-DAT NP-NOM]
 [Agreement: m-set v-set]

Thus, what is needed is a theory that has three basic properties:

- (49) a. It must not link either case or agreement directly to GF-status (or risk both over- and undergeneration of surface outputs);
 b. It must explain why nominative case only surfaces as subject in the present series, in only transitive and unergative conjugations, creating apparent ‘antipassivization’ case arrays;
 c. It must explain why those same conjugations have dative case as subject, and what motivates the peculiar *-tvis* nominal in the perfect series, creating apparent ‘inversion’.

3.3.2 Split-S languages and Unaccusative phenomena

The intuition behind these properties is that Georgian represents a slightly quirky but recognizable variant of so-called Split-S languages (Dixon 1994; see also Harris (1981), Harris (1985)). Such languages have two classes of intransitive predicates: one of

which acts more like the agent/subject of a transitive predicate (unergatives), and one acting more like the theme/object of a transitive predicate (unaccusatives). Much ink has been spilt on how to characterize the unergative/unaccusative split both within individual languages and cross-linguistically, so I will not attempt to rehearse all that literature except to briefly note a few major trends:

- (50) a. Unaccusative phenomena are basically a syntactic property of constituents: semantic themes are generated underlyingly as objects of verbs, which are then raised in the constituency tree to acquire subject properties. Unergatives are simply base-generated outside the VP. Grammatical relations are epiphenomena, not primitives [Government and Binding theory (Chomsky 1981), Minimalism (Chomsky 1995)];
- b. Unaccusative phenomena are basically questions of primitive (i.e. nonepiphomenal) grammatical relations, not constituency structure: semantic themes are encoded as direct objects, which must be converted to subjects on the surface by derivational rule. [Relational Grammar (Postal and Perlmutter 1980)]
- c. Unaccusatives reflect constraints on arguments in argument structure, which reflects the number of semantic arguments a predicate might have without making any reference to the real-world content. Arguments are specified for particular features rather than others, and it is this feature content that actually accounts for which predicates are unaccusative and which unergative by differential mapping onto grammatical functions [Lexical-Mapping Theory within LFG (Bresnan and Zaenen 1990), Blevins (2008)]
- d. Unaccusatives represent a mismatch between argument and/or GF-structure on the one hand and something like role-structure, where the actual real-world content is represented. [Yuhara (2008) within Autolexical syntax]

Based on the evidence presented in Chapter 2 and in this chapter, we can quickly rule out the first option presented here. As shown in §2.3, the basic evidence that would be used to support a constituent-based analysis of argument structure is more or less entirely lacking in Georgian. Only very weak evidence exists to suggest that Georgian has the requisite VP that creates a syntactic asymmetry between ‘external’ and ‘internal’

arguments of a verb, and thus no evidence that grammatical functions (such as those involved with the Person-Function Constraint) can be reduced to asymmetries of constituent structures.

The second option is like the first in that it relies on function changing to explain why intransitives do not pattern as a unitary class with respect to case, agreement, etc. Like the constituency-based analysis, unaccusatives are base-generated as having direct objects, while unergatives are base-generated with subjects. A rule of unaccusative advancement converts underlying objects to surface subjects, creating the appearance of uniformity where there is underlying diversity:

(51)	
$mğera$ ‘sing’	$daxrčoba$ ‘drown’

Giorgi-m	i-mğer-a	Giorgi	da-i-xrč-o
George-NARR	PRV-sing-AOR3SG	George.NOM	PVB-PRV-drown-AOR3SG
‘George sang’		‘George drowned.’ ¹¹	

Unlike the constituency-based analysis, however, grammatical functions in RG are primitives, and thus need not provide any evidence of an actual VP constituent, which is lacking in Georgian. This fact makes this analysis superior to the first one, as it can describe unaccusativity in the absence of any clear constituency tests licensing grammatical relations.

¹¹ This is a modified version of that given in Harris 1981: 240. The crucial details are not different: the noun takes the case appropriate for the conjugational class and tense. Here, the *-i* in Giorgi is part of the stem, as shown by the allomorphy for the narrative case.

We have already shown how the relation-changing analysis does not work for transitive predicates of the first conjugation. It is more difficult to actually disprove the relation-changing analysis for unaccusatives because the only monotonic test we showed to be consistent in §2.3 was the PFC, and the PFC only applies to ditransitives in Georgian¹². However, as shown there and in §3.2.2.2, both unaccusatives and unergatives undergo nonmonotonic processes of causativization, producing identical case-arrays and otherwise looking exactly like regular subjects and objects of monotransitive verbs. Consider the verb in (52) where the surface subject must be animate:

- (52) a. Gela c'-ev-s t'axt'=ze
 Gela.NOM lie-TH-3SG couch=on
 ‘Gela is lying on the couch.’

b. *c'ign-i c'-ev-s t'axt'=ze
 book-nom lie-TH-3SG couch=on
 ‘The book is lying on the couch.’

In (52a), the argument *Gela* is animate, while in (52b) the argument *c'igni* 'book' is inanimate. As Harris shows, the causative of this verb preserves the constraint for its direct object:

- (53) a. Mama Gela-s a-c'v-en-s t'axt'=ze
 father.NOM Gela-DAT PRV-lie-CAUS-3SG couch=on
 ‘Father is laying Gela on the couch.’

b. *Mama c'ign-s a- c'v-en-s t'axt'=ze
 father.NOM book-DAT PRV-lie-CAUS-3SG couch=on
 ‘Father is laying the book on the couch.’

¹² Many languages do have a monotransitive PFC, however, notably Algonquian languages and those with inversion constructions.

It thus appears that the causative has taken the features of the subject and attributed the same feature restrictions to the new object. This argument, however, does not really address the core of the problem. To show that the causative really takes the input of underlying subjects to create objects out of them, one would need to show that unaccusatives do not undergo this process because they have an underlying object, not an underlying subject. As Harris shows, however, this does not hold true for Georgian despite the otherwise very obvious unaccusative phenomena in the language. One could get around this problem by ordering the rule of unaccusative advancement before the rule of causativization, thus ensuring that unaccusatives have a subject to feed the causativization rule. This analysis has a number of drawbacks, the chief among which are that the intervening rule would be gratuitous, applying simply because it needs to apply to produce the right output. One saves the analysis at the expense of stipulating that unaccusatives, but not unergatives, must undergo the advancement rule twice if that same causative then undergoes inversion: once to provide a subject which can be causativized, and again after inversion to provide a surface subject once the original subject of the causative has been converted to an indirect object:

(54) **Steps of the derivation:**

	<i>Unergatives</i>	<i>Unaccusatives</i>	<i>Rule applying:</i>
1.	$\text{SUBJ}_i \sim \text{VERB}$	$\text{VERB} \sim \text{DOBJ}_i$	
2.	$\text{SUBJ}_i \sim \text{VERB}$	$\text{SUBJ}_i \sim \text{VERB}$	UNACCUSATIVE (vacuously for unerg.)
3.	$\text{SUBJ} \sim \text{VERB} \sim \text{DOBJ}_i$	$\text{SUBJ} \sim \text{VERB} \sim \text{DOBJ}_i$	CAUSATIVE CLAUSE UNION
4.	$\text{IO} \sim \text{VERB} \sim \text{DOBJ}_i$	$\text{IO} \sim \text{VERB} \sim \text{DOBJ}_i$	INVERSION
5.	$\text{IO} \sim \text{VERB} \sim \text{SUBJ}_i$	$\text{IO} \sim \text{VERB} \sim \text{SUBJ}_i$	UNACCUSATIVE

I take it that this is really a sign that, at the very least, we should look elsewhere for an explanation of unaccusativity before we countenance stipulative multiple application of the same rule.

3.3.3 Nonsyntactic approaches to Unaccusativity

In the preceding section, we have shown why approaches that rely on syntax – either constituency structures or grammatical functions – generally fail to provide an adequate account of unaccusative phenomena in Georgian. Nonsyntactic approaches generally fall into two camps which differ on how grammaticalized the unaccusativity is: those which rely on something resembling argument structure, which represents arguments as logical entities; and those which resemble role-structure, which represents participants encoded for thematic properties in a conceptual scene. In this section, I will argue that in Georgian both levels of representation are needed: while case and agreement reflect argument structure directly, reference to role-structural properties of the conceptualization of events must also be made to avoid circularity.

3.3.3.1 Argument-structural approaches and LMT

As discussed in §1, the purpose of argument structure is to encode purely logical relationships imposed by predicates that cannot be reduced to either grammatical functions or semantic-conceptual considerations. Argument structure in some sense mediates between grammatical functions on the one hand, which have no semantic content at all, and role structure, which though formal is purely conceptual in nature.

One of the most widely-known accounts of unaccusativity based purely on argument structure is that of Lexical Mapping Theory (LMT; Bresnan and Kanerva 1989; Bresnan and Moshi 1990; Bresnan and Zaenen 1990). LMT is a subtheory within the broader theory of Lexical-Functional Grammar that takes as its starting intuition that the way imprecise ‘fuzzy’ thematic roles actually map onto morphosyntactic properties is always discrete despite the fact that the actual semantic content of traditional thematic roles is anything but clearly discrete (cf. Dowty 1991). Within LFG, a-structure consists solely of logical arguments supplied with particular features:

(55)	a.	‘put’	$\langle x \quad y \quad z \rangle$	
			$[‐o] \quad [‐r] \quad [o]$	
	b.	‘pound’	$\langle x \quad y \rangle$	
			$[‐o] \quad [‐r]$	
	c.	‘freeze’	$\langle x \rangle$	(Bresnan 2001:307)
			$[‐r]$	
(56)		‘sing’	$\langle x \rangle$	
			$[‐o]$	

Like f-structure (which is more or less equivalent to my GF-structure), a-structural arguments are discrete entities, and map onto discrete grammatical functions. Unlike f-structure, an argument specified for a particular feature in a-structure need not always map onto the same argument in f-structure because it is underspecified for other features: each argument is specified for $[\pm o]$ and $[\pm r]$, but not both underlyingly at the same time. That is, there is a default feature alignment of particular a-structural arguments with particular grammatical functions in f-structure. Arguments are underspecified for particular a-structural features, making the prediction that certain features can potentially align with more than one, but not all, potential grammatical functions:

(57)	[-r]	[+r]
[-o]	SUBJ	OBL_θ
[+o]	OBJ	OBJ_θ

Thus, an argument in a-structure specified for [-o, -r] is mapped onto SUBJ in f-structure, while [-o, +r] maps onto obliques. These feature specifications thus capture the traditional intuition that grammatical functions form natural classes of grammatical behavior: that there is something, e.g., that connects subjects and obliques when passives create by-phrases in English (that they are both [-o]), or how many case-systems distinguish between core (i.e., [-r]) and noncore ([+r]) arguments. Thus, feature specifications are not merely labels for processes, but in fact are deeply embedded and have wide-ranging consequences for the grammatical system as a whole.

With respect to Georgian, there are two works that independently developed analyses of case and agreement of Georgian that make reference to argument structure: Wier (2005) and Blevins (2008). There are important differences between the two, but the basic analysis is the same, and boils down to this: different categories of intransitive verbs both have single grammatical functions, but bear different argument-structural features. It is these features in argument structure, and not grammatical functions as such, that determine the complicated case-array in Georgian:

- (58) a. Ivane-m mi-s-c'er-a Mariam-s c'eril-i
 Ivane-NARR PVB-3IO-write-AOR3SG Mary-DAT letter-NOM
 ‘John wrote Mary the letter’
- | | | | |
|--------|---------|----------|------------------|
| a-stx: | <x | y | z> |
| | [-o] | [-r] | [+o] |
| | | | |
| f-stx: | SUBJ | OBJ | OBJ _θ |
| | ‘Ivane’ | ‘letter’ | ‘Mariami’ |
- CASE: NARR NOM DAT
- b. Ivane-m i-mğer-a
 Ivane-NARR PRV-sing-AOR3SG
 ‘Ivane sang.’
- | | |
|--------|--------------|
| a-stx: | <x> |
| | [-o] |
| | |
| f-stx: | SUBJ |
| | ‘Ivane’ |
| | [CASE: NARR] |
- c. Ivane ga-c'itl-d-a
 Ivane.NOM PVB-red-INGR-AOR3SG
 ‘Ivane blushed.’
- | | |
|--------|-------------|
| a-stx: | <x> |
| | [-r] |
| | |
| f-stx: | SUBJ |
| | ‘Ivane’ |
| | [CASE: NOM] |

Thus, in the formulation given in Ch. 2 and in Wier (2005), what is essentially happening here is that underlying [-o] arguments trigger narrative case, while underlying [-r] arguments trigger nominative case, *no matter what actual relation they map onto*:

- (59) a. Default rule of narrative case assignment:

A-stx:	ARG
	[-o]
GF-stx:	GF [CASE: NARR]

- b. Default rule of nominative case assignment:

A-stx:	ARG
	[‐r]
GF-stx:	GF [CASE: NOM]

- c. Default rule No. 1 of dative case assignment:

A-stx:	ARG
	[+o]
GF-stx:	GF [CASE: DAT]

On this analysis, the default case array is thus treated as essentially that of the aorist series: NARR ~ NOM ~ (DAT) for (di)transitives; NOM for unaccusatives; and NARR for unergatives. To explain the case-arrays of the (pseudo-antipassivized) present and (pseudo-inverted) perfect series, in that work I invoked a kind of antiagreement triggered by the thematic suffixes as well as semantic properties that are not strictly argument-structural. I will return to this after a fuller discussion of Blevins (2008) and Holisky (1981)'s telicity-based analysis.

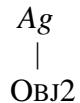
3.3.3.2 Differences between Wier (2005) and Blevins (2008)

The differences between Wier (2005) and Blevins (2008) come in how they explain the behavior of the other two series. Those two works do not focus on the same aspect of the problem. In Wier (2005), I argued against Palmer's transitivity lowering hypothesis with respect to the present series of verbs, producing apparent antipassivization effects, for many of the reasons cited above in 3.2, and used a LMT analysis much like the above. Blevins (2008) also invokes LMT, but takes on the

inversion constructions of the perfect series and, following Harris' analysis, argues there is indeed inversion of grammatical functions in the perfect series but that, unlike Harris, he takes this to be a mismatch between a level encoding grammatical functions (f-structure in LFG terms) and a level of argument structure. That is, the inversion is not a ‘change’ of grammatical relations, as Harris envisioned it, but an alternative mapping between argument structure and grammatical functions. He encodes this rule of inversion in the following mapping rule:

(60) Inversion:

(Blevins 2008)



Like the present work, Blevins adopts a Dowtyan proto-role analysis of thematic roles; thus, ‘Ag’ refers to the cluster of concepts that goes toward an argument being more or less agent-like. Blevins states that ‘for the most part’ this rule targets a [-o] role in a-structure, explaining the split-S behavior of inversion just as in the other two series. One crucial difference between Wier (2005) and Blevins (2008), however, is that, in the latter work, case and agreement are still assigned directly from grammatical function: despite the presence of argument structure, case and agreement are still formally the morphological manifestation of f-structural properties, rather than projections directly from a-structure:

- (61) Traditional grammatical analysis (Tschenkeli 1958, Harris 1981)

	SUBJECT	DIRECT OBJECT	INDIRECT OBJECT
Agreement:	v-set	m-set	h-set
Case array:			
Pattern A	ERG	NOM	DAT
Pattern B	NOM	DAT	DAT
Pattern (C)	DAT	NOM	--

(modified from Blevins 2008: 16)¹³

As with Harris, Blevins takes the inversion process as reducing the apparent tripartite case arrays into two: inversion turns the C arrays in (62) into the B arrays in (63).

- (62) *Traditional surface case arrays*

	Transitives	Unaccusatives	Unergatives	Indirect
Present	B	B	B	C
Aorist	A	B	A	C
Perfect	C	B	C	C

- (63) *Underlying arrays reformulated in line with Harris (1981) and Blevins (2008)*

	Transitives	Unaccusatives	Unergatives	Indirect
Present	B	B	B	B
Aorist	A	B	A	B
Perfect	B	B	B	B

This system appears to simplify the description, but at a cost both descriptively and methodologically. The descriptive cost is that it still actually fails to explain why the aorist series case array (A-pattern) cannot be collapsed together with the present/future series (B-pattern). Furthermore, as I have shown extensively above, the introduction of a genuine syntactic inversion (or pseudo-antipassivization, for that matter) actually introduces more problems than it solves by virtue of directly linking morphological properties and grammatical functions. But on a methodological level, both Harris' and

¹³ The original table in Blevins says the direct object of inverse constructions are demoted ('—'), which surely must be a typo: IOs are.

Blevins' analyses represent a kind of privileging of syntax as each conceives it: in the one morphology is isomorphic to grammatical functions at their respective levels, while in the other morphology is isomorphic to a different monostratal conceptualization of grammatical functions.

It is this assumption that I earlier and now contest: morphology can *directly* manifest properties of other levels of representation such as function-argument structure and role-structure without the mediation of grammatical functions or syntactic constituents. This result will reconfirm an important generalization about case-systems known since at least Silverstein (1976): that case and agreement systems are *dependent variables* of grammatical description, meaning that case-assignment rules can have multiple different motivations within the system which may conspire to create complicated systems such as that which we see in Georgian.

3.3.3.3 Conceptually based arguments: Holisky (1981)

In much of the literature on unaccusativity not making reference to some kind of syntax (e.g., most of the contributors to *The Typology of Semantic Alignment* (Donohue and Wichmann 2008)), the assumption is that unaccusative phenomena are fundamentally driven by what I am calling role-structural properties: features which represent the actual conceptual content of lexical items, and the more formal treatment in argument-structure. Probably the most extensive survey of the lexical semantic properties of unaccusativity in Georgian is the study of Georgian medial verbs (what I have been calling unergatives or third conjugation verbs) by Dee Holisky (1981). Her work focused on the formal and

semantic criteria of the third conjugation, and she found that far from being a kind of residual class into which all irregularities are put as earlier writers had generally thought (e.g. Šanize (1973), Tschenkeli (1958), Vogt (1971), Čikobava (1950), etc.), the third conjugation ‘medial’ verbs actually form a relatively coherent semantic class as long as one’s criteria are clearly stated. As with the current work, Holisky defines the class of medial verbs as those which form their future screeve not with a preverb (as with first conjugation transitives or second conjugation unaccusatives) but with the desinence *i*-...-*eb*:

		PRESENT	FUTURE (<i>i</i> -...- <i>eb</i>)
(63)	a.	dug-s boil-3SG 'It's boiling'	i-dug-eb-s PRV-boil-TH-3SG 'It will boil'
	b.	gor-av-s roll-TH-3SG 'It's rolling'	i-gor-eb-s PRV-roll-TH-3SG 'It will roll'
	c.	celk-ob-s behave.naughty-TH-3SG 'He's behaving naughtily.'	i-celk-eb-s PRV-behave.naughty-TH-3SG 'He will behave naughtily'

That is, while the present screeve forms might have a variety of different thematic suffixes (or none at all), their futures are invariantly *i*-...-*eb*¹⁴. Unlike the more or less closed class of fourth conjugation dative constructions, this class of unergatives is quite productive, new forms being mostly denominal verbs meaning variously ‘behave like X’, ‘work as X’, ‘partake of X’, ‘play using X’, ‘hunt X’, etc.

¹⁴ Holisky (1981) notes the existence of many stems which for one reason or another lack a future series form and thus all forms based off of that stem (aorist, pluperfect).

Table 3.4. Derived medial verbs.

(64) Celkob-class		
	‘work as X’	
a. <i>dalaki</i> ‘barber’	>	<i>dalakobs</i> ‘work as a barber’
b. <i>durgali</i> ‘cabinet maker’	>	<i>durglobs</i> ‘work as a cabinet maker’
c. <i>vač’ari</i> ‘merchant’	>	<i>vač’robs</i> ‘work as a merchant’
‘behave like X’		
d. <i>bič’i</i> ‘boy’	>	<i>bič’obs</i> ‘act like a boy’ (said only of girls)
f. <i>k’ap’asi</i> ‘bitchy’	>	<i>k’ap’asobs</i> ‘act bitchily’ (said of women)
g. <i>celki</i> ‘naughty’	>	<i>celkobs</i> ‘act naughtily’
(65) Sadilob-class		
<i>a. ‘partake of X’</i>		
<i>balaxi</i> ‘grass’>		
<i>balaxobs</i> ‘graze’		
<i>d̥gesasc’auli</i> ‘holiday’>		
<i>d̥gesasc’aulobs</i> ‘celebrate a holiday’		
<i>sadili</i> ‘lunch’ >		<i>varjišobs</i> ‘exercise’
<i>sadilobs</i> ‘eat lunch’		
<i>b. ‘participate in X’</i>		
<i>baasi</i> ‘conversation’>		<i>dardi</i> ‘sorrow’>
<i>baasobs</i> ‘converse’		<i>dardobs</i> ‘feel sad’
<i>bodiši</i> ‘pardon’>		<i>eč’vi</i> ‘doubt’ >
<i>bodišobs</i> ‘ask pardon’		<i>eč’vobs</i> ‘be in doubt’
<i>varjiši</i> ‘exercise’>		
<i>c. ‘experience X’</i>		
		<i>vaglaxi</i> ‘grief’ >
		<i>vaglaxobs</i>
		‘grieve’
<i>d. ‘play or compete using X’</i>		
<i>burti</i> ‘ball’		<i>tevzi</i> ‘fish’ >
<i>burtaobs</i> ‘play ball’		<i>tevzaobs</i> ‘fish’
<i>k’ot’riali</i> ‘summersault’		<i>nadirī</i> ‘wild beast’ >
<i>k’ot’rialobs</i> ‘turn summersaults’		<i>nadirobs</i> ‘hunt’
<i>e. ‘hunt for X’</i>		
		<i>bart’qi</i> ‘young bird’ >
		<i>bart’qobs</i> ‘hatch’
		<i>tkapuni</i> ‘a splash’ >
<i>f. residue</i>		
		<i>tkapunobs</i> ‘splash’
(66) Goraob-class		
a. <i>ban-s</i> ‘bathe’ > <i>ban-a(v)-ob-s</i> ‘go bathing, swimming’		
b. <i>gor-av-s</i> ‘roll’ > <i>gor-a(v)-ob-s</i> ‘roll around’		
c. <i>s-č’id-eb-s</i> ‘clinch s.o.’ (plus dir. obj.) > <i>č’id-a(v)-ob-s</i> ‘wrestle’		

Georgian also has a class of underived medial verbs that are mostly characterized by the emission of light or sound, or by motion:

(65) Sisineb-class, verbs of noise (Holisky 1981: 85-6):		Thematic suffix:
a. <i>sisin-eb-s</i>	‘he’s hissing’	-eb-
b. <i>grgvn-av-s</i>	‘it’s thundering’	-av-
c. <i>bğav-i-s</i>	‘it’s bleating’	-i-
d. <i>lac’un-ob-s</i>	‘it’s crashing, cracking’	-ob-
e. <i>ğren-s</i>	‘it’s growling, snarling’	null

- (66) Gizgizeb-class, verbs of light (Holisky 1981: 97-8):
- | | | |
|-------------------|--------------------------------------|------|
| a. bd̥vrial-eb-s | 'it's flashing, sparkling' | -eb- |
| b. brč'qvial-eb-s | 'it's blazing, flaring' | -eb- |
| c. gizgiz-eb-s | 'it's flickering' (of a hearth fire) | -eb- |
| d. bzin-av-s | 'it's flashing, sparkling' | -av- |
| e. bžut'-av-s | 'it gives off a weak light' | -av- |
| f. k'rt-i-s | 'it shimmers, glimmers' | -i- |
- (67) K'ank'aleb-class, verbs of motion in place (Holisky 1981: 99-100):
- | | | |
|----------------|--|------|
| a. baban-eb-s | 'it trembles, shakes' | -eb- |
| b. bibin-eb-s | 'it waves' (of grass in a field) | -eb- |
| c. čučun-eb-s | 'it moves slightly' (of a mouse) | -eb- |
| d. borg-av-s | 'he tosses and turns' (of a sick person who can't sleep) | -av- |
| e. trt-i-s | 'he trembles, shakes' | -i- |
| f. plašun-ob-s | 'it flutters, flaps its wings' (of a large bird) | -ob- |

The important generalization that Holisky draws is a semantic one: these verbs which form their futures with *i-...-eb* also are characterized by a common Aktionsart and a common thematic content: they are agentive, atelic monoargumental activities (68). She runs through a number of tests showing that the vast majority of such verbs do indeed have agent-like properties (if the argument is human), and that most of them also are clearly atelic. She shows, for example, that the class of medial verbs generally have all the properties of atelic verbs on the right, and none of those on the left:

- (68) **HOLISKY'S GENERALIZATION:** the class of medial verbs characterized by the *i-...-eb* future are a semantic set. They are:
- agentive
 - atelic
 - monoargumental

(69) Tests for telicity

CONSTRUCTION	TELIC	ATELIC
1. ‘he Ved (IMPF) but didn’t/couldn’t V (AOR)’	yes	no
2. <i>didxans</i> ‘for a long time’ + AOR	no	yes
3. expression of specific point of time + AOR picks out:	end-point	non-end
4. <i>rogorc k’i, tu ara</i> ‘just when’	yes	no
5. ‘in N of T’ ¹⁵	yes	no
6. ‘it took N T’s to V’	yes	no
<i>Instantaneous Durative</i>		
7. complement of finish	no	yes
8. complement of stop, begin	no	yes

(taken from Holisky 1981: 148)

If right, this is an important conclusion: it means that, unlike the fourth conjugation verbs which I argued do not constitute a clear semantic class of psychological predicates, the medial verbs would have a semantic property or properties in common. The theoretical result would be that we could link case and agreement phenomena directly to something like role-structure and by-pass argument structure entirely – indeed, weaken the evidence for the autonomous existence of a level of representation like argument-structure.

My response to this is two-fold. First, there are clearly predicates that do not have agents in Holisky’s sense. Within Holisky’s Sadilob-class, for example, there is a whole subclass of verbs which are more like experiencers than agents, and most of the underived verbs above for the emission of noise or light generally do not have animate subjects (65-67). Second, more problematically, there are verbs that actually lack any kind of participant whatsoever, as with certain zero-place predicates, and most of these

¹⁵ Where Holisky means here: “‘N’ is a count expression and ‘T’ is a unit of time”; ‘Yes’ for diagnostic 5 means that a sentence of the form ‘he V-ed in two hours’ may mean both that the subject spent two hours V-ing or that he V-ed after two hours had passed.” (1981: 148)

(usually denoting weather-phenomena) have the same paradigms as medial verbs, though of course they usually have no overt argument:

- (70) Medial verbs which are zero place predicates:
- | | | | |
|-----------------------|----------------|-----------------------|----------------|
| a. <i>tov-s</i> | ‘it’s snowing’ | i- <i>tov-eb-s</i> | ‘it will snow’ |
| b. <i>c'vim-s</i> | ‘it’s raining’ | i- <i>c'vim-eb-s</i> | ‘it will rain’ |
| c. <i>set'qv-av-s</i> | ‘it’s hailing’ | i- <i>set'qv-eb-s</i> | ‘it will hail’ |

Holisky argues that many such verbs for weather phenomena and the natural environment, though listed in dictionaries, are not accepted by her informants, and that they therefore do not, in effect, exist in the modern language (Holisky 1981: 155). However, a brief internet search confirmed that essentially all of those listed in dictionaries and discounted by Holisky do exist in actual usage, many albeit only liminally or only in certain genres (such as poetry). Here are some of those results¹⁶:

	Verb	gloss	Derived from:	No. of hits for verb:
(71)	a. <i>avdrobs</i>	‘it is bad weather’	<i>avdari</i> ‘bad weather’	5
	b. <i>darobs</i>	‘it is good weather’	<i>dari</i> ‘good weather’	656
	c. <i>erobs</i>	‘it constitutes a nation’	<i>eri</i> ‘nation, people’	10
	d. <i>vardobs</i>	‘it is like a rose’	<i>vardi</i> ‘rose’	134
	e. <i>varsik'vlavs</i>	‘it shines like a star’	<i>varsik'vlavi</i> ‘star’	0
	f. <i>vercxlobz</i>	‘it is silvery’	<i>vercxali</i> ‘silver’	3
	g. <i>ia-vardobs</i>	‘it is in bloom’	<i>ia</i> ‘violet’, <i>vardi</i> ‘rose’	1
	h. <i>mzeobs</i>	‘it shines’	<i>mze</i> ‘sun’	463
	i. <i>mc'vanobs</i>	‘it is green’	<i>mc'vane</i> ‘green’	6
	j. <i>natlobs</i>	‘dawn breaks’	<i>nateli</i> ‘clear, light’	4
	k. <i>peradobs</i>	‘it is brightly colored’	<i>peradi</i> ‘brightly colored’ (poetic)	2
	l. <i>šuk-s</i>	‘it is light, bright’	<i>šuki</i> ‘light’ (poetic)	1
	m. <i>cvarobs</i>	‘there is morning dew’	<i>cvari</i> ‘dew’	2
	n. <i>cot'aobs</i>	‘it is a little, too little’	<i>cot'a</i> ‘little’	0
	o. <i>c'it-s</i>	‘it is red’ (of sky)	<i>c'iteli</i> ‘red’	0

¹⁶ As of 27 August 2008. This was performed doing a Google-search with Georgian script, thus excluding any other possible languages or strings. Given the relatively low prominence of Georgian on the web, and given the search was exclusively done for the present screeve, the actual usage among Georgian speakers is likely to be much higher.

p. <i>c'qnarobs</i>	'it is still'	<i>c'qnari</i> 'still, quiet'	5
q. <i>xašmobs</i>	'an area is poisoned with marsh gas'	<i>xašmi</i> 'marsh gas'	1
i. <i>qvavilobs</i>	'to bloom'	<i>qvavili</i> 'flower'	617

As this search was restricted only to the present paradigm, it is nearly certain that these numbers understate the true extent of these verbs' usage in modern Georgian.

Holisky's argument is moreover that such basic underived medial verbs which do not fit her generalization are fundamentally atypical, showing a number of different verbal irregularities. Certain medials, for example, have peculiar paradigmatic alternations that are not completely regular, such as the *-il-* and *-vl-* formants that show up in a small number of verbs, but not always marking the same paradigmatic function:

- | | | |
|---------------|---------------------------|----------------------|
| (72) Present: | <i>c'k'mu-i-s</i> | 'it whines' |
| Verbal noun: | <i>c'k'mu-il-i</i> | 'whining' |
| Future: | <i>i-c'k'mu-vl-eb-s</i> | 'it will whine' |
| | PRV-whine-?-TH-3SG | |
| Aorist: | <i>i-c'k'mu-vl-a</i> | 'it whined' |
| | PRV-whine-?-AOR3SG | |
| Inceptive: | <i>a+c'k'mu-vl-d-eb-a</i> | 'it begins to whine' |
| | PVB-whine-?-INGR-TH-3SGII | |
| (73) Present: | <i>bzu-i-s</i> | 'it buzzes' |
| Verbal noun: | <i>bzu-il-i</i> | 'buzzing' |
| Future: | <i>i-bzu-vl-eb-s</i> | 'it will buzz' |
| | PRV-buzz-?-TH-3SG | |
| Aorist: | <i>i-bzu-vl-a</i> | 'it buzzed' |
| | PRV-buzz-?-AOR3SG | |
| Inceptive: | <i>a+bzu-il-d-eb-a</i> | 'it begins to buzz' |
| | PVB-buzz-?-INGR-TH-3SGII | |

Here, we cannot clearly attach semantic content to the *-il-* and *-vl-* desinences: for 'whine' only the verbal noun is formed with *-il* and the other stems with *-vl*; while with

‘buzz’, the *-il* desinence is used also for the inceptive. Holisky is clearly correct that many of these forms are highly lexicalized and do not take part in the speakers’ active knowledge of the language, constituting only residual constructions from previous stages of the language. However, this in fact represents a confusion of two separate issues: how morphological paradigms are formed on the one hand, and how such verbs behave with respect to argument selection, case, agreement and what not on the other. In these nonparadigmatic questions, even these verbs with quirky stems are generally completely regular with respect to the case they assign their verbal arguments and what kinds of agreement they show: they do not e.g. have narrative case in the aorist but nominative case in the perfect series rather than the expected dative or some strange array like that¹⁷. Thus an appeal to paradigmatic irregularities still does not explain why a minority of nonagentive, nonactivity and indeed nonargumental verbs would pattern along with the great majority of such verbs of this class that truly are agentive, atelic and have a single participant.

¹⁷ Holisky (1981: 179) claims that *arsebobs* ‘exists’ is exactly such a verb with quirky syntax as well as strangely taking third conjugation verbal forms despite being stative. She claims it resists realization in the perfect:

1. Devebi ar arsebulan. ‘Devils didn’t exist.’ (Perfect, II. Conj. unaccusative)
2. *Devebs ar uarsebniat ‘Devils didn’t exist.’ (Perfect, III Conj. unergative)
3. Devebs ar uarsebniat Betaniaši. ‘Devils didn’t exist in Betania.’ (Perfect, III Conj. unergative, with location).

It is clear that this again is a confusion of two different verbs: one (1) which is II Conj. both in case and agreement, and another (2-3) which is III Conj. which happens also to subcategorize for locations in Role-structure. Having the same root does not mean having the same syntax, especially if they clearly are inflected differently as here.

3.3.3.4 An analysis drawing on both Argument-structure and Role-structure

In this section I wish to propose an analysis of unaccusative and unergative phenomena in Georgian that partially reconciles the argument-structural and the role-structural accounts. Like Wier (2005) and Blevins (2008), I will argue that at the level of argument structure, all unaccusative verbs are encoded with a [-r] feature and this distinguishes them from unergative/medial verbs which are encoded with a [-o] feature. Case and agreement patterns are directly linked to arguments in argument-structure with the appropriate feature as argued in Wier (2005) above and repeated here for convenience:

- (73) a. Default rule of narrative case assignment:

A-stx:	ARG
	[-o]
GF-stx:	GF [CASE: NARR]

- b. Default rule of nominative case assignment:

A-stx:	ARG
	[-r]
GF-stx:	GF [CASE: NOM]

However, one of the problems of the argument structural account is that unless one can demonstrate module-internal reasons to assign [-r] and [-o] features, namely by invoking separate phenomena that actually refer to argument structure *alone* and treat the two classes of intransitives distinctly, then the whole enterprise becomes circular: unaccusatives are [-r] and unergatives [-o] because we declare them to be such, without

going the further step of asking why particular verbs have those specifications in the first place, and what predictions being [-r] or [-o] have.

I believe at least two arguments show the relevance of argument structure. The first concerns pivots which, I assume, are most naturally represented at a level involving reference and identity such as argument structure. Recall that in Georgian, pivots for at least some speakers have an accusative alignment in the present and aorist series, but in the perfect series, the coreference possible now becomes Fluid-S in alignment: unergatives obligatorily corefer to the subject of transitives, while unaccusatives can optionally refer to either the subject or the object of transitives:

- (74) Perfect series:
- a. Tamaz-s_i Zurab-i_j u-nax-i-a da pro_{i,j}* u-t'ir-i-a.
Tamaz-DAT Zurab-NOM 3IO-see-TH-3SGO and 3IO-cry-th-3SG
'Tamaz has (apparently) seen Zurab, and (Tamaz/*Zurab) has cried.' (S_a/A)
 - b. Tamaz-s_i Zurab-i_j u-nax-i-a da pro_{i,j} ga-c'itl-eb-ul-a.
Tamaz-DAT Zurab-NOM 3IO-see-TH-3SGO and PRVB-red-TH-PF-3SGS
'Tamaz has (apparently) seen Zurab, and (Tamaz/Zurab) has blushed.' !!! (S_o/A or O)
 - c. Tamaz-s_i Zurab-i_j u-nax-i-a rodesac pro_{i,j}* u-t'ir-i-a.
Tamaz-DAT Zurab-NOM 3IO-see-TH-3SGO when 3IO-cry-th-3SG
'Tamaz has (apparently) seen Zurab, when (Tamaz/*Zurab) has cried.' (S_a/A)
 - d. Tamaz-s_i Zurab-i_j u-nax-i-a rodesac pro_{i,j} ga-c'itl-eb-ul-a.
Tamaz-DAT Zurab-NOM 3IO-see-TH-3SGO when PRVB-red-TH-PF-3SGS
'Tamaz has (apparently) seen Zurab, when (Tamaz/Zurab) has blushed.' !!! (S_o/A or O)

As discussed extensively in §2 and above in §3.1, binding in Georgian does not clearly refer to constituent structure (the required structural asymmetry to derive it being absent), nor grammatical function (as shown with reflexive possessives above). Rather, in Georgian it must be represented at some more semantically oriented level, either at argument structure or role structure. If we take it to be represented at argument structure, then the pivot binding patterns after the feature specification there and presumably targets those features.

A stronger argument about argument structure comes from passivization. Recall that in LMT, arguments encoded as SUBJ or OBJ1 form a natural class: in many languages (so-called ‘asymmetric passive’ languages), only certain thematic properties can be associated with [-r] in ditransitive constructions, while in others either object can be so marked. English is one such language, where only primary objects can passivize for most speakers:

The restriction is hypothesized to be a restriction on multiple arguments in argument structure bearing a [-r] feature¹⁸:

- (76) *θ ... θ
 | |
 <[-r], [-r]>

Georgian is another such asymmetric passive language: only the direct object, and not the indirect object, may passivize. However, as the following example shows, unlike English, it is the direct object, or argument associated with a ‘theme’, and not the primary object that is passivizable:

- (77) a. Ivane-m mi-s-c-a Mariam-s c'eril-i
 Ivane-NARR PVB-3SG-give.AOR-AOR3SG Mary-DAT letter-NOM
 ‘John wrote Mary a letter.’

b. Mariam-isa=tvis mi-cem-ul-i-a c'eril-i (Ivane-s mier)
 Mary-GEN-for PVB-give-PART-NOM-be.3SG letter-NOM Ivane-GEN by
 ‘Mary was given the letter (by John).’

¹⁸ This might perhaps be seen as a kind of obligatory contour principle in action.

- c. *C'eril-i mi-cem-ul-i-a Mariam-s (Ivane-s mier)
 letter-NOM PVB-give-PART-NOM-be.3SG Mary-DAT Ivane-GEN by
 'A letter was given Mary (by John)'

Importantly, all such passives, irrespective of the semantics of the underlying transitive verb, pattern as second conjugation unaccusatives in terms of the agreement they use, the stems they take, and the case-arrays they select for, and never third conjugation unergatives. This is either because the auxilliary selected for is unaccusative (as here) or because the synthetic passive belongs to the second conjugation, the set of unaccusatives. This example above uses a clitic form of *aris* 'be'; the example below is a synthetic noningressive nonstative passive (an 'iniani' passive):

- (77) a. Ivane-m da-c'er-a c'eril-i
 Ivane-NARR PVB-write-AOR3SG letter-NOM
 'John wrote the letter.'
 b. c'eril-i da-i-c'er-a (Ivane-s mier)
 letter-NOM PVB-PRV-write-AOR3SG Ivane-GEN by
 'The letter was written (by John).'

Because this class of synthetic passives exists, we can be sure that unaccusatives and unergatives really are distinguished at the level of argument structure; it is not just a by-product of the syntax of using a particular auxilliary. So, the real distinction between the classes seems to be more appropriately described at argument structure than by reference to the cognitive content of the predicates.

If that is the case, this leaves one final question before I move on to explaining pseudo-inversion and pseudo-antipassivization: why does Holisky's Generalization seem to work so well for the vast majority of intransitive predicates? The answer to this I believe lies in how verbs get assigned argument structural features, not how argument

structure projects into morphology or syntax. Invoking Dowty's argument that thematic roles should not be conceived as discrete semantic participants, but rather, as I argued in Ch. 2, role-structural semantic feature specifications for those participants, we can create a highly generalized lexical default rule which links role-structure and argument structure:

(78) Linking rule for deriving new intransitive verbs:

- | | |
|---|---|
| a. R-stx: $[\Theta\text{-Stx}: [\alpha = +]]$ | b. R-stx: $[\Theta\text{-Stx}: [\alpha = -]]$ |
| | |
| A-stx: <Arg: [-o]> | A-stx: <Arg: [-r]> |

That is: if a single argument receives any of the positive (i.e. more agentive) specification for Dowtyan proto-features, then that argument is by lexical default assigned a [-o] specification. Likewise, single arguments bearing features that receive negative (i.e., more patientive) specifications are by default assigned a [-r] feature in argument structure. By using a Neo-Dowtyan analysis of thematic roles as semantic feature specifications in role-structure, we can explain essentially all of the exceptions to Holisky's Generalization. We can explain why some experiencer verbs take part in the third conjugation, because the role-structural feature [PERC] can be positively specified, even though by other criteria monoargumental verbs in A-structure with experiencer participants in R-structure are not necessarily agent-like. We can also explain why some stative nonatelic predicates can become lexicalized as unergatives: all such verbs will of necessity be positively specified for [EXIST], since these verbs describe states of affairs that exist separate from an external source. This is even true of the quirky unergative verb *arsebobs* 'to exist': unlike *aris* 'be' (an unaccusative verb), it is infelicitous to use *arsebobs* of temporary states. And when one R-stx feature is positively specified, while

one or more others are negatively specified, I take it that this belongs to the domain of frequency effects and indirectly of typology: after being introduced into the speech-community, after some time of uncertainty speakers will settle on one pattern or another, resulting in lexicalization for a given verb in one way or another. Thus, Holisky's Generalization was not 'wrong' in the relevant sense: role-structural properties are still right to the fore in understanding how split-intransitivity works in Georgian. It is only that this is not the whole picture, as I have argued. We can formulate it in this way:

- (79) **HOLISKY'S GENERALIZATION** (revised): the class of medial verbs are characterized by
- a. [-o] arguments at the level of argument structure (absolute generalization), and
 - b. generally positive specifications [+] for protothematic features [F] at role structure. (statistical generalization)

3.3.4 Accounting for diverging patterns: Inversion redux

Now that I have accounted for the structural properties that account for unaccusative phenomena in Georgian, I must still explain why the default situation – narrative case for [-o] arguments, nominative case for [-r] arguments – does not hold in the present and perfect series. The two problems are the two that have been given treatments involving changes of grammatical relations: inversion and pseudo-antipassivization. In this section, I will deal with this first problem: why inverse constructions which have dative case and agree with apparent 'object' morphology are actually assignments of dative case to arguments in argument structure based directly on role-structure specifications.

We must first of all take a closer look at the semantics of the Georgian perfect series. Recall that Georgian has two basic, synthetic past tenses: an aorist, which is generally termed a simple past, and an evidential/inferential perfect marked by forms of the perfect series:

(80) a. Aorist:

Ivane-m	c'eril-i	da-c'er-a
Ivane-NARR	letter-NOM	PVB-write-AOR3SG
'John wrote the letter.'		

b. Perfect:

Ivane-s	c'eril-i	da-u-c'er-i-a;	magida=ze=a
Ivane-DAT	letter-NOM	PVB-PRV-write-PF-3SG	table=on=be.3SG
'John has apparently written the letter; it's on the table.'			

At first glance, the semantic difference between the two seems to lie in the perfect's being used in contexts of inference, where the speaker did not actually witness or otherwise know for sure that the action in question occurred, but deduces it from other evidence. The aorist is on that reading then simply the pragmatically unmarked way to refer to events in the past because one usually speaks about events that one witnessed or otherwise are fairly sure occurred. Formally, then, one potential analysis would say that the special property of the aorist and perfect is that they bear positive and negative specifications, respectively, for the feature [PERC] in role-structure.

(81) R-stx: [Θ-Stx: [PERC = -]]
 |
 GF-stx: [TENSE: Perfect]

We can then simply further write a lexical default rule that directly links dative case to any argument in role structure that bears a negative specification for [PERC]:

- (82) Potential rule linking Dative case in the perfect directly with role-structural features:

R-stx: [Θ-Stx: [PERC = -]]
 |
 GF-stx: [SUBJ: [CASE: DAT]]

That is, in this analysis, subjects of in the perfect series acquire dative case because of their semantic content. Because this applies strictly to subjects in the perfect series, and not all subjects, this may be seen as an example of Pāṇini's Principle: the perfect series is a subset of all series forms, and so this case assignment rule takes precedence over the more general one that assigns narrative case to any [-o] argument in argument structure.

This simple analysis is complicated by a number of facts. First, under negation, the semantics of the aorist and perfect provide different implicatures: while a negated perfect implies no particular volitionality or perception of the event, use of a negated aorist implies that the subject did not perform the action because he did not wish to do so:

- (83) a. ar c'a-ved-i Tbilis=ši om-is gamo
 not PVB-go.AOR-1/2 Tbilisi=to war-GEN because.of
 'I didn't leave for Tbilisi because of the war.'
 (Possible implication: the fighting was too intense, and I was scared to go.)
- b. ar c'a-v-sul-var Tbilis=ši om-is gamo
 not PVB-1-go.PF-1Sg Tbilisi=to war-GEN because.of
 'I apparently didn't leave for Tbilisi because of the war.'
 (Possible implication: someone else says I didn't leave because of the war, though many flights that day were cancelled because of the weather, so it could have just been the weather.)

In the words of my consultant, the perfect form here “denotes what was a suggested or likely cause of why the planned but unfulfilled action did not materialize” (Dr. Gela Tevzadze, p.c.).

Is this volitionality part of the truth-conditional meaning of the perfect, or is it a pragmatic implicature of some other aspect of the perfect? In other words, more formally speaking, does the perfect carry a feature [VOL = -] or the aorist a feature [VOL = +] feature in Role-structure because that is part of its truth conditions? The distinction between the two boils down to a question of pragmatic detachability: is the implicature defeasible by a corresponding phrase negating that implication without resulting in a contradiction? There are two tests for this. One is the simple use of a positive verb of volitionality:

(84) Testing detachability of volitionality:

- a. M-i-nd-od-a Tbilis-ši c'a-svl-a, magram
 1SG-PRV-want-IMPF-3SG Tbilisi-to PVB-go.MAS-MAS but

 ar c'a-ved-i om-is gamo
 not PVB-go.AOR-1/2AOR war-GEN because.of
 'I wanted to go to Tbilisi, but I didn't go because of the war.'
 (Implication: I made a conscious decision not to go despite my desire to do so.
 In other words, I really did have some desire not to go under those circumstances.)

 b. M-i-nd-od-a Tbilis=ši c'a-svl-a, magram
 1SG-PRV-want-IMPF-3SG Tbilisi=to PVB-go.MAS-MAS but

 ar c'a-v-sul-var om-is gamo
 not PVB-1-go.PERF-1 war-GEN because.of
 'I wanted to go to Tbilisi, but I apparently didn't go because of the war.'
 (Implication: I could not go, but back then I was not aware of the reason.)

(85) Testing pragmatic detachability of perception:

- a. *im dro-s ar v-i-c-od-i, magram ar c'a-ved-i
 that time-DAT not 1-PRV-know-IMPF-AOR1/2 but not PVB-go.AOR-AOR1/2

 Tbilis=ši om-is gamo
 Tbilisi=to war-GEN because.of
 'I didn't know it at the time, but I didn't go because of the war.'¹⁹

¹⁹ My consultant had real problems with this: 'If you did not know back then, then [the aorist] does not sound quite right, although I can imagine this form being used in not too careful speech' (G. Tevzadze,

b.	im	dro-s	ar	v-i-c-od-i		magram
		that time-DAT	not	1-PRV-know-IMPF-AOR1/2		but
	ar	c'a-v-sul-var		Tbilis=ši	om-is	gamo
	not	pvb-1-go.pf-1Sg		Tbilisi=to	war-GEN	because.of

'I didn't know it at the time, but I didn't go to Tbilisi because of the war.'

As these tests clearly show, the implication that the speaker actively did not want to go to Tbilisi is negated by the immediately preceding clause, and this leads to a contradiction for speakers. That is, the implicatures of volitionality and perception in the aorist cannot be detached without contradiction. Thus, we would say that the perfect adds a formal Role-structural feature [VOL = - ; PERC = -], while the aorist adds the feature [VOL = +; PERC = +].

Another test is the use of the Georgian negative particle *ver*²⁰ 'not be able to', which like *ar* 'not', is a particle of sentential negation but has the added implicature that the action did not occur because it was not possible to perform it. Use of this particle carries the positive implication that the reason for the action not occurring was primarily the lack of ability to do it:

- (86) a. ver c'a-ved-i Tbilis=ši om-is gamo
can't PVB-go.AOR-1/2 Tbilis=to war-GEN because.of
'I couldn't leave for Tbilisi because of the war.'
(Possible implication: I tried to go, but the war prevented me from going.)
- b. ver c'a-v-sul-var Tbilis=ši om-is gamo
can't PVB-1-go.PF-1Sg Tbilisi=to war-GEN because.of
'I couldn't leave for Tbilisi because of the war.'
(Possible implication: the city was barricaded, and it was impossible to enter.)

p.c.). The fact that it does not seem totally categorical suggests that speakers are considering context and the semantic content, and not more structural aspects like argument structure or GF-structure.

²⁰ While glossed here as 'can't', this is emphatically not a syntactic verb, but just a particle with particular modal semantics.

Thus, because the implications of volitionality cannot be detached when ability is denied, this too suggests that these really are entailments of the perfect series – really, what it means to be perfect – rather than just implicatures. In the aorist series, we saw that the default assignment of case is according to argument structural features, and where the semantic distinctions are only statistical. Here, in the perfect, there is a tighter link between the tense and the case: the [VOL = -] and [PERC = -] directly assign case to [-o] arguments in argument structure, and then the linking rule in (82) assigns dative case in precisely this context. Now, [-r] arguments notably do not receive dative case in the perfect, since the rule governing dative assignment affects only [-o] arguments. Given that both the objects of perfect series verbs and the subjects of unaccusative have a [-r] argument structural specification, we would predict that they receive nominative case exactly as they do in the aorist series, and this is exactly what we find:

- (87) a. Ivane-s c'eril-i da-u-c'er-i-a
 Ivane-DAT letter-NOM PVB-PRV-write-PF-3SG.BE
 [-o] [-r]
 ‘John has apparently written the letter.’
- b. C'eril-i da-c'er-il-a
 Letter-NOM PVB-write-PF-3SG
 [-r]
 ‘The letter has apparently been written.’
- c. Ivane-s i-mğer-i-a
 Ivane-DAT PRV-sing-PF-3SG
 [-o]
 ‘John has apparently sung.’

That is, explaining dative case in the perfect is not just an arbitrary fact about the perfects, but an exceptionless fact about the meaning of the perfect based on R-structural feature specifications. Using this Neo-Dowtyan featural analysis, and not a discrete thematic role analysis, also explains another intuition behind the perfect: the perfect

seems to be systematically less agent-like than the aorist and the present series. We can explain this easily in a theory of semantic structure which relies on thematic features rather than thematic roles as such. It is also another interesting example of Silverstein's dictum that the morphological manifestation of features is the *dependent variable*: whereas the default assignment of case is directly assigned to argument structure and does not have a completely consistent semantic basis, in a small subset of case-assignments, in the perfect, the case born by the [-o] arguments does have a completely consistent semantic basis. The typological implication is that split-S phenomena may have multiple motivations *within the same system*, and not just different motivations in different languages: some cases in a language may be sensitive to just argument structure, while other cases in the same language sensitive to role-structure, and some (as here) to both.

There is also one important diachronic implication: the real difference between Harris' analysis and the current one is a question of diachrony. Harris believes that inversion is a synchronic process, whereas I have shown that this cannot be so today. The analysis proposed here allows one to see each step of the grammaticalization: some aspects are more recent, and directly predictable from role-structural semantics, whereas others have become more structurally oriented in argument structure.

3.3.5 Accounting for diverging patterns: the case array of the present series

The present series, as noted above, presents a different set of problems than the cases of so-called inversion. Recall that whereas the dative case appears to mark a

grammatical function that it does not in the other two series, in the present series the problem is one of two many arguments receiving dative case. It was argued that this boiled down to be the only evidence in favor of an actual change of grammatical functions in the presence series. That is, Palmer's argument turned out to be circular: he would only be able to explain the phenomenon (different cases) by invoking the phenomenon itself (different cases being one indication of a change in transitivity).

The present series is different from the other two series in at least one important way: unlike both the aorist and the perfect, the nominative case, which marks the *direct object* in those other two series, here marks the case of the *subject*. Perhaps even more importantly, the present series does not have any over contrast in intransitive conjugations: the split-S phenomena of the aorist and perfect series are neutralized here. For reference, here is a comparison of the case-arrays of the present, aorist and perfect series:

Table 3.5. Case distribution across screeves and series.

Series / Conj.	1 st Conj.	2 nd Conj.	3 rd Conj.	4 th Conj.
Present / Future	SUBJ: NOM _{AG} DO: DAT _{PAT} IO: DAT _{GOAL}	NOM _{PAT}	NOM _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}
Aorist	SUBJ: NARR _{AG} DO: NOM _{PAT} IO: DAT _{GOAL}	NOM _{PAT}	NARR _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}
Perfect Evidential	SUBJ: DAT _{AG} DO: NOM _{PAT} IO: - <i>TVIS</i> _{GOAL}	NOM _{PAT}	DAT _{AG}	SUBJ: DAT _{EXP} DO: NOM _{PAT}

Two different analyses present themselves to account for this in terms that do not make reference wholly to grammatical relations:

- (88) a. The apparent neutralization of case in the present series for subjects is only apparent: the apparent neutralization occurs because two different lexical default rules assign the same case, Nominative:

i.	A-stx: < ARG >	ii.	A-stx: < ARG >
	[-r]		[-o]

GF-stx: GF [CASE: NOM]

Tense: Present/Future

GF-stx: GF [CASE: NOM]

Tense: Present/Future

- b. There is a core of truth to the pseudoantipassivization analysis: although the actual grammatical functions do not change across the series because of tense, the present series exhibits a kind of **ANTIAGREEMENT** for narrative case, and this antiagreement is triggered by the one morphological salient difference between the aorist and the present series: the thematic suffix.

-eb, -av-, -ob, -i, etc. \uparrow SUBJ \rightarrow \neg [Case: NARR]

In what follows, I will argue for the first possible ‘accidental’ analysis, and against the second antiagreement analysis. First, why should we reject the antiagreement analysis?

The core intuition behind the antiagreement analysis is that there remains a relic syntactic element to an older stage of the language where there really was a kind of antipassivization. As Harris (1985) has shown (quite conclusively, in my opinion), late Proto-Kartvelian had a largely ergative alignment: on this analysis, *inter alia* the introduction of the third conjugation is innovative, and the second conjugation ancestral, and both the perfect series and the present series also represent innovations from the basic structure of the aorist. She argued that the present series *historically* represented a detransitivization of all transitive verbs, much as Palmer argues they do synchronically.

As Harris puts it,

‘In Kartvelian the explanation [for how the present series and aorist series can coexist -- TRW] is this: Series I developed when case marking in Series II was still ergative, and Series I existed as a productive syntactic variant of it. That is, ergative case marking existed throughout the language, though in Series I every

verb was a surface intransitive and therefore had a nominative case subject. When the case-marking system of Series II shifted from ergative to active, Series I could no longer function as a productive syntactic variant, though it continued to exist in the same surface form. The case-marking and the morphology became opaque, as they were no longer syntactically motivated. At this point, the initially transitive clauses were reanalyzed as transitive on the surface also; and Series I came to be treated, as it is to this day, as a distinct case-marking system apart from Series II and not synchronically relatable to it.' (Harris 1985: 140)

Thus, an antiagreement analysis would say that although there is no change of grammatical relations in the modern language, the case-arrays were fossilized by reanalyzing the antipassive as a rule saying effectively the subject and object could not be the same case as those of the aorist series. On this account, the subject of the present becomes nominative by virtue of a case-hierarchy which has the following ranking:

(89) NARRATIVE > NOMINATIVE > DATIVE

Thus, if the subject cannot be narrative case, it gets assigned the next case on the hierarchy, namely nominative. This is not entirely unreasonable: given the independent semantic motivation for case-assignment of dative case in the perfect series and given the lexicalization of the same in the fourth conjugation dative-constructions (a closed class), purely *syntactic* application of the dative actually becomes a choice of last resort. This also explains why every clause has at least one nominative-case argument. A further argument is that there is a single verb in the language which does not have the NOM ~ DAT case array in the present tense: *icis* 'know' exceptionally compared to all verbs takes a NARR ~ NOM case array (i.e., just like the aorist series). We can thus explain the

exceptional verb if we assume that the exception lies in failing to trigger antiagreement: it would then use the default NARR ~ NOM as the past tense verbs naturally do.

There are several problems with this analysis. First, nowhere in the known typological literature on antiagreement does a constructional pattern trigger antiagreement simply because of the tense it is in. Most instances of antiagreement seem to involve long-distance dependencies of some sort, where the triggering environment is actually a clausal boundary, past which features like person, number or gender may not be registered on the verb (Wier, fieldnotes). Long-distance dependencies are well known to cause processing difficulties for speakers of many (probably all) languages (see e.g. Clifton and Frazier 1989), and so it is easy to see how extraction might result in a head failing to agree with a subcategorized for argument²¹. In the case of Georgian generally, long-distance extraction is impossible²² and here in particular in the present series there is no obvious constituency relation that would create the necessary syntactic asymmetry.

Second, the notion of a case-hierarchy distinct from a hierarchy of thematic participants/features, grammatical relations or argument structural features is simultaneously ad hoc and circular: known examples of morphological hierarchies involve competition for a particular affixal distribution, as exists plentifully in Georgian agreement or any language with templatic morphology. This putative hierarchy, however, involves not competition for a particular morphological distribution, but competition for the realization of a particular case in a given *syntactic* distribution. That is, case hierarchies are really covert syntactic grammatical function hierarchies. But as we have already argued throughout this work, there is no good evidence to suggest synchronic

²¹ Similar considerations are surely to account for instances of case-atraction. However, the question at hand involves not case attraction but the fundamental basis of assignment in simple constructional contexts.

²² Based on my own field notes.

changes of grammatical relations, and thus appeal to a case-hierarchy would undermine the very analysis we are trying to avoid.

A third problem is perhaps the most damaging: although all subjects of first, second or third conjugation verbs, whether the subjects of transitives or of either class of intransitives, receive nominative case, thus apparently obliterating the split intransitive phenomenon for purposes of case, when it comes to agreement, the second conjugation still uses a completely independent set of agreement from that used by first and third conjugation verbs. Consider the following data repeated from Ch. 2:

(90) a. First conjugation verbs (-s):

a-k'et-eb-s PRV-do-TH-3SG	c'er-s write-3SG	kmn-i-s create-TH-3SG	a-čen-s PRV-discover-3SG
'He is doing it'	'He is writing it'	'He is creating it'	'He is discovering it'

b. Second conjugation verbs (-a):

xd-eb-a happen-TH-3SGII	mzad-d-eb-a prepare-INGR-TH-3SGII	tb-eb-a warm-TH-3SGII
'It's happening'	'It is being prepared'	'It's getting warm'

c. Third conjugation verbs (-s)

t'ir-i-s cry-TH-3SG	lap'arak'-ob-s speak-TH-3SG	cur-av-s swim-TH-3SG	dug-s boil-3SG
'He's crying'	'He's speaking'	'He's swimming'	'It's boiling'

Although the theory of modularity I am advocating allows for the possibility that case and agreement do not follow the same principles (indeed, they are wildly divergent in some paradigms), a purely *syntactic* (i.e. GF-functional) argument of antiagreement as articulated here would suggest that we should see, *ceteris paribus*, similar case and agreement throughout the present series. This we clearly do not see.

Finally, the one case of a verb which would putatively not undergo antiagreement, *icis* ‘know’, is clearly a syntactic relic of the Old Georgian permansive screeve (Tuite 1998: §5.2). This screeve was a screeve of the aorist series which denoted gnomic contexts which are always true. Because the permansive was a screeve of the aorist series, it received the same case array as the aorist and optative. This screeve died out however and has left only this one verb in common use²³. It is easier to say that this verb assigns quirky case to its arguments than to base the entire case-assignment system on it, as it is otherwise completely unproductive.

3.4 Conclusion

This chapter has surveyed the complicated interrelation of case, agreement and transitivity and shown that approaches that rely solely on constituency, grammatical function, argument structure, or conceptual properties as in role structure would all independently fail to give an adequate characterization of Georgian morphosyntax. Georgian lacks the constituency structures that would motivate a syntactic analysis that makes reference to constituent asymmetries. Perhaps more importantly, although I have shown that Harris’ original intuition that grammatical relations are relevant to Georgian is correct and that grammatical relations are not reducible to constituency, I differ with her analysis because it makes the wrong predictions about binding, feature subcategorization for number and animacy, and feature hierarchy effects as with the person-function constraint. A different kind of valency-changing analysis which treats the present series

²³ There is one other verb which survived into the early modern period also from the permansive: *uc'qis* ‘know’, which has the same meaning and case-array as *icis* ‘know’. However, in modern spoken Georgian, this verb is archaic, and so I do not believe our theory should account for it.

as a kind of antipassive, too, fails to make the right predictions about passivization, causativization, and the person-function constraint.

Rather than seeking to reduce case, agreement and transitivity to one kind of process, I have argued that Georgian represents a complicated many-to-many web of relationships: case is not isomorphic to agreement, and different kinds of case have different motivations for their realization. This is a very important conclusion: it means that when speakers internalize grammatical system, they do so along a number of different dimensions, each of which can relate to other dimensions in a variety of different ways. Now that I have shown the relevant grammatical dimensions of Georgian, we can begin to look in more detail about morphological hierarchies.

PART II:
FEATURE HIERARCHIES IN NATURAL LANGUAGE

§4. Morphological Hierarchies and the Autonomy of Morphology

In the last two chapters, we saw that much of the attention that Georgian has received has sought to treat morphological processes as isomorphic to constituent structure, or grammatical relations, or other domains, but that all such accounts make the wrong predictions, miss generalizations, or both. Because of that, it was argued that the complicated case and agreement system of Georgian is best accounted for by interaction between these separate modules: the many-to-many mapping is, indeed, a surface many-to-many relation. This chapter will extend that view by making four primary claims about the internal structure of morphology:

- Morphological feature hierarchies are the epiphenomena of rule blocks and the narrow feature specification provided by individual grammars as in Georgian;
- Features that are found in syntax or semantics may also have morphological analogues which are however entirely *sui generis* (cf. Sadock 1991; Spencer 2004, Anderson 2001);
- Such morphological features, like all features, fall into proper natural classes, which are described by feature geometries (cf. Harley and Ritter (2002));
- Feature geometries constrain the possible morphological hierarchies, and that, along with Pāṇini’s principle, morphological feature hierarchies are epiphenomena of realization rule interactions, and how those rules map onto autonomous syntactic structures rather than morphemes as such.

However, much needs to be explained before we can get to these conclusions. In §4.1 I will lay out the pretheoretical issues involved in Georgian agreement morphology relevant to hierarchies, and address why they should be called hierarchies in the first place. Having introduced the basic descriptive facts concerning morphological hierarchies, in §4.2, we will take a look at the first of various other morphological theories that have used Georgian to advance particular views of morphology-syntax

interface, starting with morpheme-based Distributed Morphology analyses by Halle and Marantz (1993). Then we will look at very different analyses that do not make reference to the morpheme, starting with Anderson (1992) in §4.3, and then in §4.4, Stump (2001). In §4.5, we will examine three different problems with the amorphous account which seem to favor a morphemic account: syntactic noun incorporation in Old Georgian, violations of the ‘no-phrase’ constraint, and then violations of word-internal anaphoric islands.

4.1 The basics of affix competition in Georgian

The first place to start with a discussion of morphological hierarchies in Georgian is a brief discussion of its complicated morphological agreement system. Georgian transitive verbs agree, in general, with both subjects and objects. The complexity comes not from the number of arguments agreed with, but the exact feature specifications each morpheme takes, the blocking effects that occur irrespective of feature specification, and the peculiar process of inversion that appears to invert what function as subject and object markers in the present and aorist series of verb tenses into object and subject markers, respectively, in the perfect series. In light of the evidence presented in Ch. 3 for inversion being actually much weaker than has been supposed, I will take it that the apparent inversion in what follows is actually a result of morphological realization rules rather than an actual inversion of distinct morphemes. But first, the forms themselves.

4.1.1 The Present and Aorist Series

Traditional Georgian grammar speaks of ‘screeves’ (a morphological paradigm of six verb forms inflected for person and number) which are grouped together into supercategories of ‘series’ which are characterized morphologically by a common stem form and syntactically by a common case array. To give a sense of how hierarchies and the blocking that is the basis for hierarchies are relevant, let’s first look at the present and aorist (un-‘inverted’) screeves (present and simple past) of the present and aorist series.

Table 4.1. Present Screeve Paradigm of *xedva* ‘see’

Obj.						
Subj.	1 st sg	Pl	2 nd sg	Pl	3 rd sg	pl
1 st sg			g-xed-av	g-xed-av-t	v-xed-av	v-xed-av
Pl			g-xed-av-t	g-xed-av-t	v-xed-av-t	v-xed-av-t
2 nd sg	m-xed-av	gv-xed-av			xed-av	xed-av
Pl	m-xed-av-t	gv-xed-av-t			xed-av-t	xed-av-t
3 rd sg	m-xed-av-s	gv-xed-av-s	g-xed-av-s	g-xed-av-t	xed-av-s	xed-av-s
Pl	m-xed-av-en	gv-xed-av-en	g-xed-av-en	g-xed-av-en	xed-av-en	xed-av-en

Aronson 1982 summarizes the properties of ‘object’ marking in Georgian with five “rules”:

- (1) a. A first person object cannot occur with a first person subject, nor can a second person object occur with a second person subject.
- b. The v- marking first person subject is always dropped before the g- marking second person object. (The presence of a second person object marker g- and the absence of a third person subject marker suffix is generally sufficient to indicate a first person subject, e.g., *g-xed-av* ‘I see you’ *g-nax-e* ‘I saw you’ [...])
- c. When the subject of a verb is first person plural and the object is second person plural, only one plural marker –t can occur. E.g., *g-xed-av-t*¹ can mean:
 - (a) I (v-; rule 2) see you all (*g-...-t*).

¹ In the formulation of his rule, Aronson actually uses the verb *ga-g-i-g-eb-t* ‘I/we will understand you/y’all’, but I have used *g-xed-av-t* instead for purposes of clarity. Nothing substantive rests on this substitution.

- (b) We (*v-...-t*; rule 2) see you (*g-*).
- (c) We (*v-...-t*; rule 2) see you all (*g-...-t*).

The determination of the meaning of such a form is either through context or by the use of personal pronouns.

- d. When a 3Sg. Subject marker ending in *-s* occurs with a second person plural object (*g-...-t*), the *-s* is lost. Thus the form *g-xed-av-t* above can also have the meaning:
 - (d) He (*-s*) sees you all (*g-...-t*).
- Again, context or pronouns will eliminate ambiguity.
- e. When a third pl. subject ending occurs with a second pl. object (*g-...-t*), the object plural marker *-t* is dropped. Thus, a form such as *g-xed-av-en* can mean:
 - (a) They (*-en*) see you (*g-*).
 - (b) They (*-en*) see you all (*g-...-t*). [...]

These are in effect statements about morphological feature dependencies, the conditions under which a given morpheme may occur. We can reword these feature dependencies in a more formal fashion:

(2)	a.	$-t > -s:$	$\text{Pl}^2 > \text{3SG} [\text{PRES}]^3$
	b.	$m- > v-$	$1\text{SG} > 1$
	c.	$g- > v-:$	$2 > 1$
	d.	$-en > -t:$	$3\text{PL} [\text{PRES}] > \text{PL}$

In the aorist series of screeves (including the aorist, the optative and the conjunctive), we see essentially the same set of morphological dependencies; indeed, many morphemes are essentially unchanged from the present screeve we saw above.

Consider the following paradigm:

² *-t* can mark 3 person plural objects with the *u-* preradical vowelprefix, or subjects in inversion constructions.

³ These are not marked for grammatical relation because of the inversion constructions in perfect screeves; see Ch. 3 and below for more information.

Table 4.2. Aorist Screeve Paradigm of *xedva* ‘see’

Subj.	Obj.		2 nd sg	Pl	3 rd sg	pl
	1 st sg	pl				
1 st sg			g-nax-e	g-nax-e-t	v-nax-e	v-nax-e-t
pl			g-nax-e-t	g-nax-e-t	v-nax-e-t	v-nax-e-t
2 nd sg	m-nax-e	gv-nax-e			nax-e	nax-e
pl	m-nax-e-t	gv-nax-e-t			nax-e-t	nax-e-t
3 rd sg	m-nax-a	gv-nax-a	g-nax-a	g-nax-a-t	nax-a	nax-a
pl	m-nax-es	gv-nax-es	g-nax-es	g-nax-es	nax-es	nax-es

There are precisely five differences between this paradigm and the previous one:

- (3) 1. The suppletive stem for the aorist series: *xed-* vs. *nax-*⁴;
- 2. The present/future stem-formant *-av* (or one of its allomorphs) is deleted/absent as in all aorist series screeves, including modals like the optative;
- 3. Verbs with a 3Sg subject have *-a* instead of *-s*;
- 4. Verbs with a 3Pl subject have *-es* instead of *-en*;
- 5. The screeve marker for first and second person is *-e*, as in *g-nax-e*; first and third conjugation (but not second conjugation) verbs do not have any screeve marker in the present for first and second person.

Just as with the present screeve, a number of markers representing the same morphological features stand in the same dependency relation, differing only for the marking of tense features:

- (4) a. m- > v-: 1SG > 1
- b. g- > v-: 2 > 1
- c. -es > -t: 3PL [AOR] > PL

There are two exceptions. First, *-a*, the marker of third person singular aorist subjects (and below, in inversion constructions, of objects), does not compete with *-t* like

⁴ The real semantic difference between the two is that *-xed-* is a stem for imperfective aspect, while *-nax-* is for perfective aspect. Because aorist past tense verbs are typically also completive in aspect, they usually use the perfective stem instead of the imperfective. Using the perfective stem with present series verb morphology provides a future reading: *nax-av-s* “he will see it”, much as in Russian.

the third person singular present marker *-s* does. When an argument is plural, and there is a third person singular aorist marker, both surface:

- (5) g-nax-a-t
 2-see.PF-AOR3SG-PL
 “He saw y’all”

Secondly, and what has to my knowledge never been noticed before in the most of the theoretical literature, while the present series forms lack screeve markers in the first and second person in transitive and unergative conjugations, all verbs in the aorist have screeve marker suffixes bearing not only tense features (distinguishing present from simple past, and present perfect from pluperfect) but also person features without any reference to subject or object features (see more on pluperfect below):

- | (6) | <i>Uninverted</i> | <i>Inverted</i> |
|-----|---|--|
| a. | m-nax-e
1SG-see.PF- 1/2
‘You saw me’ | d. m-e-nax-e
1SG-PRV-see.PF- 1/2
‘I had apparently seen you’ |
| b. | g-nax-e
2-see.PF- 1/2
‘I saw you’ | e. g-e-nax-e
2-PRV-see.PF- 1/2
‘You had apparently seen me’ |
| c. | v-nax-e
1-see.PF- 1/2
‘I saw him/her/it/them’ | |

The interesting thing about these screeve markers is that they are systematically underspecified for person: in (6a), the *-e* in *m-nax-e* tells you that the subject is second person, while in (6b) *g-nax-e*, the same marker tells you that the subject is first person. Exactly the same is true of the inverted forms: the same marker tells you the object is second person in (6d), while in (6e) the marker tells you the object is first person. The

implication of this is that the third person suffixes (e.g. *-a* ‘AOR3SG’) can thus be seen to be in competition with the first or second person suffixes, since although the third person is always only registered as a suffix, the first and second person arguments are (in some paradigms) realized as both a prefix and a suffix:

- (7) a. m-nax-a (*m-nax-e-a)
 1SG-see.PF-AOR3SG
 ‘He saw me.’

b. g-nax-a (*g-nax-e-a)
 2-see.PF-AOR3SG
 ‘He saw you’

c. m-e-nax-a (*m-e-nax-e-a)
 1SG-PRV-see.PF-AOR3SG
 ‘I had apparently seen him’

d. g-e-nax-a (*g-e-nax-e-a)
 2-PRV-see.PF-3SG
 ‘You had apparently seen him’

Thus we can add to the above hierarchies the following:

- (8) 3SG [AOR] > 1 or 2 [AOR]

However, this does not exhaust the morphological verbal categories of Georgian. Ditransitive verbs also show special inflectional morphology distinct from that shown for monotransitive verbs. Georgian has traditionally been said to have four different morphological ‘series’ of notional indirect object agreement markers: the *u*-series, the *h*-series, the *e*-series and the *a*-series:

Table 4.3. ‘Version’ markers

u-series		h-series		e-series		a-series	
Sg	Pl	Sg	Pl	Sg	Pl	Sg	Pl
<i>1st</i>	m-i- gv-i-	m-	gv-	m-e- gv-e-	m-a- gv-a-		
<i>2nd</i>	g-i- g-i-...-t	g-	g-...-t	g-e- g-e-...-t	g-a- g-a-...-t		
<i>3rd</i>	u- u-...-t	h/s/0-	h/s/0...-t	e- e-...-t	a- a-...-t		

As suggested by the morphemicization, these paradigms actually consist of an object marker identical to that of the transitive plus a ‘preradical vowel’ or ‘version’ marker. We can prove that these markers occupy a different morpheme slot from that of the ‘subject’ marker *v-*, and the ‘object’ markers *m-*, *gv-*, *g-*, since these series markers are compatible with an adjacent subject *v-* prefix:

- (9) v-u-gzavn-i
 1-PRV-send-TH
 ‘I am sending it to him’

As noted in Ch. 3, the functional contrast among the four kinds of ‘preradical vowels’ or ‘version markers’ following the object marking does not map easily onto particular syntactic contexts. Some verbs will simply subcategorize for a particular kind of series-marker, e.g. *mi-v-s-c’er* ‘I will write him it; I will write him’ takes the *h*-series⁵, while verbs like *gzavn-* ‘send’ in (9) above take *u*-series. Yet others take the *e*-series markers, e.g. *m-e-č’v-eb-a* ‘I doubt it’, or the *a*-series (*m-a-kv-s* ‘I have it’, *m-a-xs-ov-s* ‘I remember it’). These are, in other words, morphological contrasts, pure and simple.

⁵ The *h*-series third-person alternates are morphophonologically determined: -h occurs before g, k, k', q, p, p'; -s before d, t, t', dz, c, c', j, č, č'; and -o before all remaining consonants and before all vowels.

4.1.2 The Present Perfect and Pluperfect

These same sets of person and series markers, which in the present/future and aorist series indicate the presence of syntactic (*in*)direct objects for (di)transitive verbs, are used prominently throughout the paradigm of perfect series verb forms (present perfect, pluperfect, conjunctive perfect⁶) to indicate the presence of syntactic *subjects*, reflecting so-called inversion. Because the ‘object’ morphology is now used for subjects, a completely separate system of object marking has been grammaticalized historically based on forms of the verb ‘be’ for first and second person objects: *-var* and *-xar*⁷. Aronson (1990) claims there is differential object marking contrasting first and second person with the third person: *-s* notably appears where one would expect *-en*; also when 3Pl > 1/2sg, the expected *-t* does not surface (both facts bold-faced). It is probable, though, that this represents dialectal variation: a quick internet search proved that *g-i-nax-av-t* does indeed exist⁸.

Table 4.4. Present Perfect Screeve Paradigm of *xedva* ‘see’

Subj.	Obj.					
	<i>Ist sg</i>	<i>Pl</i>	<i>2nd sg</i>	<i>pl</i>	<i>3rd sg</i>	<i>pl</i>
<i>Ist sg</i>			m-i-nax-av-xar	m-i-nax-av-xar-t	m-i-nax-av-s	m-i-nax-av-s
<i>Pl</i>			gv-i-nax-av-xar-t	gv-i-nax-av-xar-t	gv-i-nax-av-en	gv-i-nax-av-en
<i>2nd sg</i>	<i>g-i-nax-av-var</i>	<i>g-i-nax-av-var-t</i>			<i>g-i-nax-av-s</i>	<i>g-i-nax-av-s</i>
<i>Pl</i>	<i>g-i-nax-av-var-t</i>	<i>g-i-nax-av-var-t</i>			<i>g-i-nax-av-s</i>	<i>g-i-nax-av-s</i>
<i>3rd sg</i>	<i>v-u-nax-av-var</i>	<i>v-u-nax-av-var-t</i>	<i>u-nax-av-xar</i>	<i>u-nax-av-xar-t</i>	<i>u-nax-av-s</i>	<i>u-nax-av-s</i>
<i>Pl</i>	<i>v-u-nax-av-var</i>	<i>v-u-nax-av-var-t</i>	<i>u-nax-av-xar</i>	<i>u-nax-av-xar-t</i>	<i>u-nax-av-t</i>	<i>u-nax-av-t</i>

⁶ This is a screeve that is now entirely restricted to the saying of toasts at *supras*, or drinking banquets.

⁷ For an argument about why these are not synchronically forms of ‘be’, see 4.2 below.

⁸ On 23 September 2008, using Google with Georgian unicode script to rule out other search strings.

The pluperfect paradigm is likewise characterized by inversion, but uses the same stem as the aorist. Unlike the perfect, the pluperfect is a perfect mirror image of the aorist, in that the very same screeve markers that mark first or second person subjects are now object markers, and vice-versa⁹. No suffixed forms of the verb ‘to be’ are used here. The primary difference is that third plural objects are morphologically registered as third singular objects – which, notably, is exactly the same asymmetry shown in third plural objects in the present perfect. What is even more relevant for the feature geometry is the relationship between the *v-* and *g- / m- / gv-*.

Table 4.5. Pluperfect Screeve Paradigm of *xedva* ‘see’

<i>Subj.</i>	<i>Obj.</i>					
	<i>1st sg</i>	<i>Pl</i>	<i>2nd sg</i>	<i>pl</i>	<i>3rd sg</i>	<i>pl</i>
<i>1st sg</i>			m-e-nax-e	m-e-nax-e-t	m-e-nax-a	m-e-nax-a
<i>Pl</i>			gv-e-nax-e-t	gv-e-nax-e-t	gv-e-nax-a	gv-e-nax-a-t
<i>2nd sg</i>	<i>g-e-nax-e</i>	<i>g-e-nax-e</i>			<i>g-e-nax-a</i>	<i>g-e-nax-a</i>
<i>Pl</i>	<i>g-e-nax-e-t</i>	<i>g-e-nax-e-t</i>			<i>g-e-nax-a-t</i>	<i>g-e-nax-a-t</i>
<i>3rd sg</i>	<i>v-e-nax-a</i>	<i>v-e-nax-a-t</i>	e-nax-e	e-nax-e-t	e-nax-a	<i>e-nax-a</i>
<i>Pl</i>	<i>v-e-nax-a-t</i>	<i>v-e-nax-a-t</i>	e-nax-e-t	e-nax-e-t	e-nax-a-t	<i>e-nax-a-t</i>

In the present and aorist screeves, *v-* marks a first person subject; in the perfect and pluperfect screeves, the very same marker indicates first person objects. The *m-/gv-* markers are inverted: they mark objects in the present and aorist but subjects in the perfect and pluperfect. The crucial difference between them is that *g-* is marked only for second person, and *m-* and *gv-* for first singular and plural respectively. What this shows clearly enough is that these affixes bear no marking for grammatical relations *at all*. The

⁹ This is even true for that relatively small number of verbs which take aorist series screeve markers in the 1st or 2nd person of *-i* instead of *-e*. In the aorist, this *-i* references the subject, but in the pluperfect of these same verbs, it marks 1st or 2nd person objects: *mo-v-k’al-i* ‘I killed him’ vs. *mo-g-e-k’al-i* ‘You had killed me’.

properties of inversion are triggered by something external to the system of morphology itself, namely a generalization about how syntax relates to argument structure, and morphology necessarily tracks only one of these.

4.1.3 Summary of Morphological hierarchies

What we saw in our discussion of morphological hierarchies is that certain morphemes compete for a single slot on the verb, and as a result of this competition only one surfaces. This competition is repeated in (12) below:

- | | | |
|------|--|-----------------------------------|
| (12) | a. -t > -s: | any PL > 3SG [PRES] ¹⁰ |
| | b. m- > v- | 1SG > 1 |
| | c. g- > v-: | 2 > 1 |
| | d. -en / -nen ¹¹ / -es > -t: | 3PL > any PL |
| | e. -a > -e | 3SG [AOR] > 1 or 2 [AOR] |

What this shows us that when it comes to morphological distinctions, there seem to be no consistent patterns between particular person features and other person features: consider the apparent paradoxes such as [1, 2] PL outranking 3SG, while 3PL outranks [1, 2] Pl, where between *-t* and *-s*, local persons outranks third person, while between *-en* and *-t*, third outranks local. When we turn to syntax, we will see something quite different. But first, we should examine how formal theories have tried to analyze these blocking phenomena in Georgian. In each case, though differing in details, each theory

¹⁰ These are not marked for grammatical relation because of the inversion constructions in perfect screeves; see below for more information.

¹¹ This form is the 3PI imperfective ending. It has the same asymmetry as the other 3PL endings in other tenses.

will find that the morphological hierarchy results either from Pāṇini’s principle, or rule ordering, or a combination of both. Morphological hierarchies, in other words, are epiphenomena and not a result of formal stipulations in the grammar.

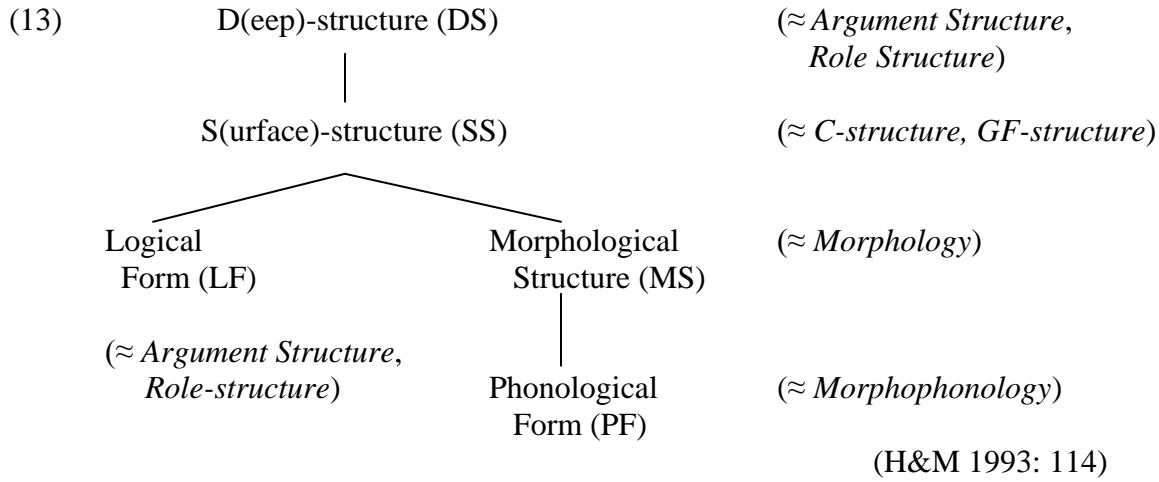
4.2 Distributed Morphology and Inflectional Blocking

Although Halle and Marantz’s article laying out the groundwork of Distributed Morphology (hereafter DM) was actually published after Anderson (1992), to be discussed in 4.3, and was in some sense a reaction to it, there are a number of reasons to discuss it before the other theories to be discussed here. First, it represents what is now a conservative view: that not only words, but also parts of words, constitute Saussurean signs in the form of the morpheme; the later set of theories that we will discuss reject this view. Perhaps more importantly, DM represents a widespread view about modular interaction based on syntactocentrism, a view which this thesis will reject. As such it behooves us to consider what insights it might or might not capture.

4.2.1 The Architecture of Distributed Morphology

In common with much Generative work in formal syntax, DM assumes a multistratal hierarchical conception of modularity: the output of one module’s processes serves as the input for other modules, and where mismatches occur, they are resolved module internally, and not at the interface of modules. This conception thus abides by what Jackendoff (2005) calls ‘interface uniformity’: structures of the grammar at the

interfaces are always isomorphic to one another. The specific view envisioned by Halle and Marantz (1993) is structured as follows:



This conception thus not only differs from the current one in how modules relate to one another, but in how it divides the pie up into modules as such. Grammatical Functions have no formal place in this system, as they are taken to be epiphenomenal properties of SS. Similarly, DM conflates thematic properties, which I place in Role-structure, and logical properties of quantification and distributivity, which I argued properly belong to a module like Argument Structure.

Unlike other generative approaches to morphology (e.g. Lieber 1992), H&M do not assume that morphological structure has identical phrasal structure to that which they posit for syntax: morphology does not have analogous notions of syntactic ‘heads’, ‘complements’, and ‘specifiers’. A consequence of this is that whether an affix is a prefix, suffix, circumfix or infix is logically independent of the phrasal projection that motivates it in syntax (TNS, INFL, AGRS, AGRO, or what have you). This is accomplished by the

fact that the number of and relationship between terminal nodes in SS and MS may be altered by fusion, fission and movement rules. As they put it,

'[A] terminal element may be moved from one position in a tree and adjoined to a terminal element in another position by head-to-head movement; structurally adjacent nodes may be merged; sister terminal nodes may be fused into a single terminal node; and a given node may be fissioned into two.' (H&M 1993: 116)

DM thus is an immensely powerful device to achieve isomorphism. Unless further constrained, the mismatch between SS and PF levels of the derivation may be resolved by essentially an unbounded number of such fusion and fission operations.

4.2.2 Georgian as a case study of featural operations

H&M argue that the blocking effects we saw with the inflectional morphology in 4.1 reflect such nodal operations. They refer to just a small subset of the inflectional paradigms discussed above, the present screeve of transitive verbs. Here is a slightly corrected version of the data they were looking at¹²:

- (14) With 3rd person object: X draw(s) 3rd person
- | | |
|--------------------------------------|------------------------------------|
| a. v-xat'-av
'I draw him' | b. v-xat'-av-t
'We draw him' |
| c. Ø-xat'-av
'You (sg.) draw him' | d. Ø-xat'-av-t
'Y'all draw him' |
| e. xat'-av-s
'He draws him' | f. xat'-av-en
'They draw him' |

¹² Corrected to include glottalization and to mark that the thematic suffixes are indeed separate on a morphemic analysis.

With 3rd person subject: 3rd person draws X

- | | | | |
|----|------------------------------------|----|-------------------------------------|
| g. | m-xat'-av-s
'He draws me' | h. | gv-xat'-av-s
'he draws us' |
| i. | g-xat'-av-s
'He draws you (pl)' | j. | g-xat'-av-(s)-t
'He draws y'all' |
| k. | xat'-av-s
'He draws him' | l. | xat'-av-s
'he draws them' |

I-you and you-me forms

- | | |
|----|--|
| m. | g-xat'-av
'I draw you (sg)' |
| n. | m-xat'-av
'you (sg) draw me' |
| o. | g-xat'-av-t
'we draw you (sg or pl)' or 'I draw you (pl)' |
| p. | gv-xat'-av
'you (sg) draw us' |
| q. | gv-xat'-av-t
'you (pl) draw us' |

H&M make the observation that unlike first and second person markers, third person appears to systematically follow rather than precede the stem position and, they claim, it does not determine when the *-t* plural suffix is triggered. They follow work from Nash-Haran (1992), who argues that these prefixes are actually clitics. From this they formulate an analysis in which the prestem position constitutes a clitic-cluster for *all* first and second person ‘and some special third person’ features; subsequent to this in the derivation, a fission rule extracts the plural marking ‘unless the [+pl] is part of the [+1], Dat argument’:

(15) *Fission rule:*

- $$\text{Cl} + \text{Stem} \xrightarrow{\quad} [\text{+Pl}] + \text{Cl} + \text{Stem} \text{ (linear order irrelevant)}$$
- |
[+Pl]
(unless the [+pl] is part of the [+1], Dat argument)

This fission rule is crucial for their analysis: it is intended to explain why first person pronouns are marked for both person and number (*me* ‘1Sg’ vs. *čven* ‘1Pl’, and *šen* ‘2Sg’ vs. *tkven* ‘2Pl’), while at the same time certain forms such as *v-xat'-av-t* ‘We draw him’ have person marking in the prefix with plural marking in a separate suffix. That is, the fission rule takes a syntactic input where person and number are fused and de-fuses them, creating the observed morphosyntactic mismatch.

There are many serious problems with this analysis, both empirical and methodological. First, by all standard independent criteria for distinguishing clitics from affixes proper (e.g. those of Zwicky and Pullum 1983), *contra* Nash-Haran (1992), these markers in no way resemble clitics¹³. This is an important point, so it is worth demonstrating this fully, which I do in the following table:

¹³ After writing this I discovered that Anderson (2005) has basically the same criticism of Nash-Haran’s clitic analysis.

Table 4.6: Criteria for distinguishing Clitics vs. Affixes

	More clitic-like	Less clitic-like
a. Clitics represent a low degree of selection respect to their host; affixes have a high degree of selection (<i>g-xed-av</i> ‘I see you’ * <i>g-kartveli</i> ‘you are Georgian’)		√
b. Arbitrary gaps are characteristic of affixes, not clitics (*(<i>x</i>)- <i>ar-t</i> [2-be-PL] ‘y’all are’; (* <i>x</i>)- <i>amb-ob-t</i> [2-speak-TH-PL], ‘y’all speak’; <i>c'a-v-sul-var</i> ‘I apparently left’ with multiple exponence but <i>c'a-(<i>x</i>)-sul-xar</i> ‘you apparently left’) ¹⁴		√
c. Morphophonological idiosyncrasies are typical of affixes, not clitics (<i>v-</i> is not deleted before a cluster in <i>v-c'k'mu-i</i> ‘I am whining’, but it is deleted before another /v/ in <i>c'a-[v]-ved-i</i> ‘I left’)		√
d. Semantic idiosyncrasies are typical of affixes, not clitics (- <i>var</i> in <i>v-u-nax-av-var</i> ‘he has apparently seen me’ represents the patient; - <i>var</i> in <i>mo-v-di-var</i> ‘I go’ represents the agent.)		√
e. Syntactic rules can affect affixed words, but not clitic groups.		√
f. Clitics can attach to material already containing clitics; affixes cannot.		N/A

The data in Table 4.6 summarize a number of Zwicky and Pullum (1983)’s tests to distinguish between clitics and affixes, and in each case, the prefixes in question behave more like proper affixes than clitics. Clitics are usually taken to be syntactically promiscuous in that they do not discriminate much or at all between different phrasal categories in a clause to attach to. The prefixes in Georgian, as in (a), are highly selective: they attach exclusively to verbs, and not to other categories, such as common nouns, with which they are semantically compatible *qua* predication. In (b), we see that the Georgian

¹⁴ Following standard convention, ‘*(*x*)’ means ‘ungrammatical without *x*’, while ‘(**x*)’ means ‘ungrammatical with *x*’

affixes also are characterized by a number of arbitrary gaps in paradigm formation: only two verb roots, ‘to be’ and ‘to go’, and their derivatives, take the *x-* prefix for second person, and only in some paradigms¹⁵. The affixes are also plagued by morphophonological idiosyncrasies because of historical phonological rules which are no longer synchronically operative. An example is (c), in which the *v-* prefix inexplicably does not surface because the following root begins with a /v/; this form is especially problematic, because Georgian usually does allow germination of consonants as long as a morphological boundary (as here) intervenes (cf. *da-mzad-d-eb-a* PVB-ready-INGR-TH-3SGII ‘it’s being prepared’). So it is something of a mystery, on a clitic analysis, why the *v-* fails to be realized. It is harder to imagine contexts in which semantic and syntactic criteria differ, and where the semantics of the prefixes are idiosyncratic. However, certain forms with multiple exponence of person-marking do pose problems with the mapping of morphology and role-structural semantics. Certain verbs such as *mi-v-di-var* PVB-1-go.PRES-1 ‘I go’ take what appears to be a suffixed form of ‘to be’ in certain paradigms, while all transitive verbs take such suffixes to mark first or second person objects in present perfect paradigms. Because the subjects of the first class are usually also agents, while the objects are usually patients, the same set of suffixes mark different kinds of semantic relations that would not be expected if person-markers in Georgian were clitics, as in (d). Lastly, syntactic rules clearly identify these morphs as affixes: as noted in Ch. 2, quantifiers obligatorily combine with singular nouns, and quantified NPs also trigger singular agreement on verbs:

¹⁵ ‘To be’ takes the *x-* second person prefix in the present, *x-ar* 2-be.PRES ‘you are’, but ‘to go’ only takes it in the future: *c'a-x-val* PVB-2-go.FUT ‘you will go’.

(16)	qvela	k'ac-i	dga-s / *dga-nan	ezo=ši
	all.NOM	man-NOM	stand-3SG / *stand-3PL	courtyard=in
‘All the men are standing in the courtyard.’				

There happen not to be any clear tests for Zwicky and Pullum’s last criterion.

Thus, there is no reason to assume that any of these markers ever ‘start out’ in one particular syntactic position and then become attached to their host by a cliticization rule. Another problem (alluded to above) is one that most of the theoretical literature has missed: that person features show up not only in the prefixes in the first and second person, but also in the suffixes in some paradigms. This is true both of the screeve signs discussed above, but also more interestingly with first person objects of perfect series transitive verbs, which unlike the aorist screeve signs are not underspecified for person:

(17)	v-u-nax-av-var	(cf. u-nax-av-xar
	1-PRV-see.PF-TH-1	PRV-see.PF-TH-2
	‘He has apparently seen me.’	‘He has apparently seen you’)

In this construction, historically the syntactic subject was in the nominative and the syntactic indirect object was dative – the basis of inversion. As argued in Ch. 3, this is no longer a tenable analysis synchronically, and the morphology here is more evidence of that. Here, the *v-* prefix that we saw throughout the paradigm is coupled with what morphologically looks like the first person present tense form of ‘be’, *v-ar* ‘I am’. Synchronously, this has no syntactic reflex as a separate auxilliary verb, but simply is now grammaticalized as an agreement marker. If it were a true auxilliary cliticized to its host, we would expect three things to happen:

- (18) a. *v-* would not be necessary as a prefix to represent first person in addition to the auxilliary already so inflected (Georgian has real auxilliary constructions with participles, so why wouldn't it look like them?);
 b. We would expect that the third person object for this verb would also be a clitic form of 'to be'.
 c. One would be able to move the form of 'be' away from its host under some contexts.

All of these predictions of the clitic analysis turn out to fail. As is clear from the above example, first person has multiple exponence both as a prefix and the special suffix. Secondly, the third person form of stems with thematic suffix *-av* or *-am* does not use a form that looks like 'be': one says *u-nax-av-s* PRV-see.PF-TH-3SG 'He has apparently seen him'. This *-s* is the same *-s* used in the present paradigm (though here agreeing for objects). The fact that some younger speakers analogize the third person to look like a clitic form or *aris* 'be' (*-a*) as *unaxia* 'he has apparently seen him' in fact shows that we are dealing with paradigmatic relations, not syntactic relations as such, since most verbs have a thematic suffix other than *-av* or *-am*. Thirdly, one cannot move the apparently affixed *var* 'I am' away from *v-u-nax-av-var* 'he has apparently seen him' or the *xar* 'you are' from *u-nax-av-xar* 'he has apparently seen you' despite the otherwise great freedom of constituent placement in a clause: **var v-u-nax-av* and **xar u-nax-av*. For all of these reasons, the suffixes that look like the verb 'be' have been simply grammaticalized, are no longer 'be', and now simply host person and number features but, it bears repeating, not grammatical relations (see Ch. 3 on inversion).

More worryingly, the rule gets around one major exception, those with 1Pl *m-set* prefixes such as *gv-xed-av* 'you see us' but no plural *-t* marking the object, by literally stipulating an exception in the rule itself, making the logic of the exercise circular.

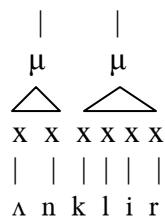
Another circularity is actually more deeply rooted: the rule does not explain why fission should take place at all, other than that it is needed to account for why the syntax does not match word structure. Why, for example, could there not be a rule that did exactly the reverse by fusing first and second person person- and plural-features but not third person suffixes ‘except special third person features’? Well, the answer is that that would not be a proper Georgian verb. But that’s exactly the question at hand. The rule stipulates the outcome, rather than giving a plausible understanding of it, and does so at the cost of an unbounded number of derivations within MS. I take it that for all these reasons, DM is both too powerful and too weak to explain Georgian morphological processes.

4.3 Amorphous morphological theories, part 1: Anderson (1992)

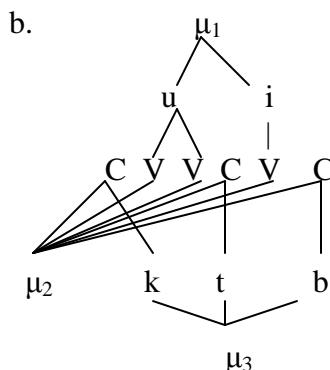
The more general problem with the DM conception of the morpheme is that its assumptions about interface uniformity means that the features it represents are simultaneously a coherent unit across all modules: whether it be semantic predicates, syntactic phrasal projections, argument structure, or what have you, a feature is a feature is a feature. In this and the next section, we will examine theories of morphology that in some ways radically depart from the now traditional view of morphemes as miniature signs, and in some ways reflect a continuation of late 20th century views on morphology, starting with Anderson (1992).

In beginning our discussion with Anderson’s model of *A-morphous Morphology*, it is important to understand that, Anderson did not see his denial of sign-status to parts of words as the radical departure that many of his contemporaries do. For him, it is a

return to a view Saussure himself would probably have endorsed that was more or less universally held before the rise of American Structuralism in the early 20th century. In that conceptualization, centered as it was on phonological contrast and the notion of the paradigm, the sign was taken to be a more or less direct mapping between the string of phonemes that make up phonological words, the *signifiants*, and the semantic mental representation of individual words, the *signifiés*. What the Post-Saussurean Structuralists did could be seen as a logical extension of the abstraction behind the phoneme into the domain of meaning: just as phonemes group phones together, morphemes group phonemes into meaning-bearing groups. In principle, for each phoneme there should be exactly one morpheme onto which it is mapped. Consider Anderson's example:



(Anderson 1992: 52)



kuutib
‘was caused
to write’

(Anderson 1992: 58)

The morpheme thus provided a way to ensure semantic compositionality goes all the way down, an especially attractive prospect considering the highly complex morphological systems from some indigenous languages of the Americas, Asia and Africa that early 20th century structuralists were exposed to. As Anderson also points out, this view was taken more or less unaltered into generative linguistics later in the century. As (19b) shows, even the most intractable examples of nonconcatenative morphology

seemed amenable to a morphemic analysis at the right level of representation, as with the Arabic word *kuutib* ‘was caused to right’, whose ‘lexical’ content consists of consonants and whose ‘grammatical’ content consists of vowels.

So, what facts would make one question such a simple and intuitive analysis? In Ch. 2, we already alluded to a variety of different problems and showed how each actually has Georgian exemplars: zero morphs (the systematic lack of any marking for vocalic stem nominals in the nominative singular), meaningless morphs (stranded thematic suffixes in causative constructions, desinences like *-vl* and *-il* in inceptives, etc.), cumulativity (all the screeve markers bearing features for person, number, tense, and mood), subtractive morphs (zero-grade ablaut in some verbs, truncating nominal stems), and above all multiple exponence. A further problem in Georgian not discussed above but specifically cited by Anderson concerns *insufficient exponence* (1992: 85-87): a situation where a verb can indicate syntactic categories, but where in a given context it fails to do so. Consider the following Georgian verb forms:

- | | |
|---|--|
| (20) a. mo-g-k'l-av-s
PVB-2-kill-TH-3SG
‘He will kill you.’ | d. mo-m-k'l-av-s
PVB-1SG-kill-TH-3SG
‘He will kill me’ |
| b. mo-v-k'l-av
PVB-1-kill-TH
‘I will kill him’ | e. mo-k'l-av
PVB-kill-TH
‘You will kill him.’ |
| c. mo-g-k'l-av
PVB-2-kill-TH
‘I will kill you’ | f. mo-m-k'l-av
PVB-1SG-kill-TH
‘You will kill me.’ |

The forms in (20a-f) show that Georgian verbs can manifest overt agreement for all persons, and sometimes, as in (20a) and (20d), both subject and object appear to be relatively straightforwardly marked. It is interesting, then, that in some contexts, namely

when both arguments of the verb are speech act participants, despite the fact that the morphological resources exist to register both persons one of them, here first person, fails to do so¹⁶. Such evidence constitutes the crux of the argument behind a theory of morphology that is autonomous from both syntactic and phonological processes: the syntax does differentiate between arguments – all of these can optionally take emphatic pronouns exactly like their English translations do obligatorily -- but certain arguments appear to be ‘blocked’ from morphological expression.

4.3.1 Morphosyntactic Representations

Anderson takes such problems with the morpheme at face value. For him, they demand some form of the Separationist Hypothesis. In place of the classical morpheme, Anderson partitions it into two distinct representations:

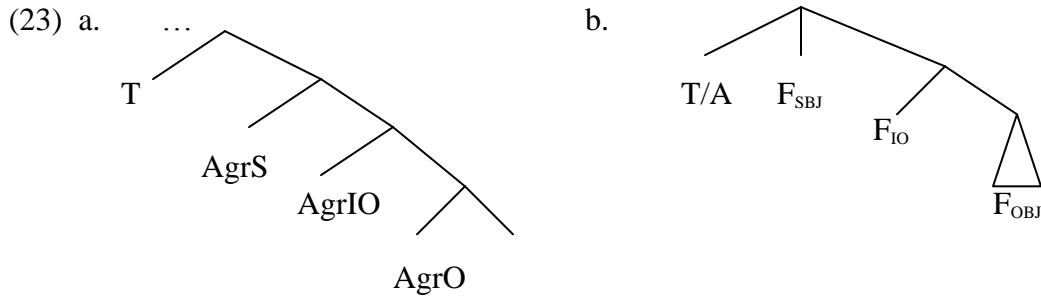
- (21) a. **Morphosyntactic Representations** (MSRs), the only aspect of word-structure visible to syntax.
b. **Word-Formation Rules** (WFRs) governing the actual phonological spellout of MSRs.

The first of these levels of morphological representation basically consists of an array of layered features that under normal circumstances directly map onto configurational properties of the immediately dominating phrasal node:

- (22) a. Ordinary monotransitive verbs (= 1st Conj) : [T/A, F_{SBJ} [F_{OBJ}]]
b. Ditransitive verbs (also 1st Conj.): [T/A, F_{SBJ} [F_{IO} [F_{OBJ}]]]

¹⁶ It need hardly be mentioned that of course this cannot be a result of phonological reduction: both /vg/ and /gv/ clusters are perfectly licit in Georgian complex onsets.

In this manner, Anderson's theory captures the truism that the properties of morphological paradigms usually do indeed 'agree' with their formal analogues in syntax. Just as, he believes, syntax is characterized by branching nodes representing formal asymmetries of constituency, morphology too has asymmetries in the form of nesting within MSRs. One could well equivalently translate the matrix notation into tree notation:



The crucial point here is the number and the relation of asymmetries encoded. Whereas the syntactic structure that Anderson assumes branches rather strictly binarily, MSRs need not show the same number of asymmetries, as here where the head of T asymmetrically c-commands the Agr nodes, while in the MSR the feature representation of tense and aspect is symmetrical with respect to the morphological subject feature. Anderson confirms this view by pointing to certain Georgian constructions where regular, productive morphology appears to bear no obvious correlate in syntax:

- (24) a. sonat'a da-**u**-k'ar-i čem=tvis
 sonata.NOM PVB-PRV-play- AOR 1/2 1Sg=for
 'You played a sonata for me' (Anderson 1992: 150)
- b. [T/A F_{SBJ} [Ø [F_{OBJ}]]]

If this verb were a typical benefactive ditransitive, we would expect the agreement to be **da-m-i-k’ar-i* ‘you played it for me’, where the *-m-i-* represents the first person of the *u*-series of ‘indirect object’ marking. That this does not lead to a contradiction with the postpositional phrase ‘for me’ is good evidence that the indirect object marking for third person (*-u*-, in bold) is truly expletive; the benefactee is not merely pro-dropped. Anderson’s theory is fully capable of capturing this fact by simply making the middle layer of structure obligatorily null, to be filled as if it were a zero-place predicate and thus third person singular (cf. *c’vim-s* [rain-3SG] ‘it’s raining’).

More or less the same kind of reasoning can apply to the contrast between unaccusative second conjugation verbs (*-a* subject in 3Sg present) and unergative third conjugation verbs (*-s* subject in 3Sg present). Anderson argues that the mismatch between the two comes not, as argued here in Ch.3, from argument structure, or syntax, but is rather a purely formal morphological contrast:

- (25) a. Unaccusative second conjugation MSR: [T/A F_{SBJ}]
 b. Unergative third conjugation MSR: [T/A F_{SBJ} [Ø]]

That is, for Anderson, the third conjugation has the same subject agreement *-s* as transitives because, morphologically, it *is* transitive. Although he assumes that both classes of intransitive pattern the same syntactically (there being a single subject in each), morphologically the *-s* is triggered whenever there is an object layer in the MSR irrespective of the verb’s behavior in syntax proper, and irrespective of whether that object layer has any content. This is analogous to saying that third person is not truly

null in Georgian, since the *-s* ‘suffix’ (though of course for Anderson there are no suffixes as such) actually bears features for both 3rd subject and 3rd object.

The system can also be extended to cases where intransitives either optionally or obligatorily take indirect objects (and not direct objects). In the traditional Kartvelological tradition (Shanidze 1953, Aronson 1982, Aronson and K’iziria 1999), these verbs were called absolute intransitives (without IOs) and relative intransitives (with IOs) respectively. This distinction, it should be noted, is orthogonal to that between unergatives and unaccusatives, both of which classes of ‘intransitive’ can indicate additional participants. For some relative intransitives, it is clear that the verb simply subcategorizes for an indirect object, and that this is therefore an actual argument in GF-structure despite the agreement morphology:

- (26) Gela gv-e-lod-eb-a me da Zurab-s
 Gela.NOM 1PL-PRV-wait-TH-3SGII 1Sg and Zurab-DAT
 ‘Gela is waiting on me and Zurab.’

Here, the verb is formally a second conjugation unaccusative intransitive with both subject (*-a-*) and indirect object (*gv-e-*) agreement, and the added argument/participant is obligatory¹⁷. Anderson does not note it, but adding optional benefactive arguments, with

¹⁷ Why not simply call this a (morphological) transitive verb? Aside from the conjugational pattern looking like an unaccusative verb (with *-a* 3Sg agreement), the case array of this verb always takes a subject in the nominative case, just like other unaccusatives:

- (i) *Ivane(*m)* *e-lod-a* *mas*
 John(.NOM/*-NARR) PRV-wait-AOR3SG 3SGDAT
 ‘John waited on him’

This is thus a mismatch between GF-structure and A-structure: there is a subject and an object, but the case-array and agreement pattern like an unaccusative intransitive verb. This is more evidence that case and agreement have nothing to do with grammatical function status.

the corresponding agreement, is an extremely productive process, and in all respects except morphology exactly parallels alternative constructions with a syntactic adjunct:

- (27) a. am saǵamo-s sadil-is šemdeg Tamrik'o
 this.DAT evening-DAT dinner-GEN after Tamrik'o.NOM
 lamaz aria-s gv-i-mǵer-i-s supra=ze
 beautiful.DAT aria-DAT 1PL-PRV-sing-TH-3SG party=on
 ‘Tonight Tamrik'o is singing a lovely aria for us this evening
 after dinner at the party.’
- b. mǵer-i-s Sulik'o-s čven=tvis
 sing-TH-3SG Suliko-DAT 1PL=for
 ‘She is singing ‘Sulik'o’ for us.’

Here we are dealing with not so much subcategorization for a grammatical function – the benefactee is an optional adjunct in both cases – but rather the morpholexical registration in one (27a) but not the other (27b) of that adjunct. These optional benefactives thus constitute another mismatch between argument structure and morphology: no argument is present, but the verb in one case looks as if there were one there. Anderson specifically cites the verb *elodeba* ‘wait for’ as an instance of adding an indirect object in the MSR where none is present in the syntax: [T/A F_{IO} [F_{SBJ}]] (Anderson 1992: 151). Because this awkwardly looks just like a regular transitive verb with the morphological object corresponding to the syntactic subject (inner brackets) and the morphological indirect object corresponding to the syntactic subject (outer brackets), Anderson proposes to fix this by adding an expletive Ø into the rule: [T/A Ø [F_{IO} [F_{SBJ}]]]¹⁸.

¹⁸ It is not clear what Anderson is trying to accomplish here. He seems to have mistakenly thought that this verb behaves like a 4th conjugation verb with a dative subject and nominative object – at least, this is what MSR would derive. In fact, as the example shows, the person waiting is in the nominative, and the person waited on is in the dative, suggesting he simply misunderstood the verb's morphosyntax.

The last problem in MSRs that Anderson addresses is the most central one: morphological inversion. Since, *contra* Harris (1981), Anderson denies that inversion has any syntactic manifestations – indeed, he claims that the entire argument for syntactic inversion is actually based on paradigmatic evidence and not syntax as such – the issue at hand is how to convert the regular transitive agreement system into the inverse one by reference to the structure of MSRs. He does this with a special MSR that constitutes a formal subset of the others:

- (28) [+ Series III, \emptyset [F_{SBJ} [F_{OBJ}]]]

This MSR thus predicts that, for verbs that undergo inversion (and recall that unaccusatives never do so), the syntactic object is mapped onto the morphological object, the syntactic subject is mapped onto the morphological indirect object. There are a number of empirical problems with this approach, but before we address them, we must first look at the other half of A-morphous morphology: word-formation rules.

4.3.2 Word-Formation Rules

MSRs, by themselves, would make little sense without an overt manifestation. This is where WFRs come in. Anderson adopts more or less the same structure as Aronoff (1976), the feature matrix of the MSR being paired with a phonological string:

- (29) a. [2nd, OBJ] \leftrightarrow /gX/
 b. [1st, SUBJ] \leftrightarrow /vX/
 c. [1st, -PL, OBJ] \leftrightarrow /mX/

d. [1st, +PL, OBJ] ↔ /gvX/

Clearly, as stated, these rules do not actually construct fully inflected words. How does Anderson accomplish this? He does so by assuming that such pairings of MSRs and WFRs (the left and right side of the equation, respectively) are ordered into disjunctive blocks: within each block, only one rule may apply, and within each block there is a language particular extrinsic ordering of rules. This has the effect of creating templatic effects in morphology. The appearance of competition between morphemes in other theories for Anderson is thus really a question of which rules are in which blocks, and what their respective relative extrinsic ordering is. This explains why the *g*- second person prefix appears to ‘win out’ over the *v*- first person prefix, despite there being for Anderson no actual affix in either case:

(30)	$\left(\begin{array}{c} 1. \text{ g-} \\ [2 \text{ Obj}] \\ 2. \text{ v-} \\ [1 \text{ Subj}] \end{array} \right)$	nax -e ‘saw’ [1 or 2 Subj or Obj]	\leftrightarrow	/gnaxe/ ‘I saw you’
------	---	--------------------------------------	-------------------	------------------------

This is the first of several types of disjunction: rule-block disjunction. However, recall that in some contexts, the person feature and number feature are fused in one prefix (*m-* ‘first singular’, *gv-* ‘first plural’), while in other cases they are found in separate affixes (*g-* ‘2nd, and *v-* ‘1st, vs. *-t* ‘PL’). There is some confusion in the literature about exactly which arguments can be pluralized with *-t* and which cannot. Anderson lists the following syntactic contexts in which a *-t* may surface to mark plurality:

- (31) a. first or second person plural noninverted subjects;
 b. second person plural noninverted objects (direct or indirect);
 c. second or third person plural inverted subjects; and
 d. first or second person plural inverted objects.

This actually contradicts the paradigms quoted in Aronson (1982), where third person plural inverted constructions in the present perfect and the pluperfect (namely, inverted contexts) do not take the *-t* plural marker: *v-u-nax-av-var* ‘they have apparently seen me’ and *u-nax-av-xar* ‘they have apparently seen you (sg.)’, not the same forms with *-var-t* and *-xar-t*, respectively. In my experience, the published paradigms greatly underestimate the variation in speaker behavior: the distribution of *-t* for some speakers is sensitive to much more than just grammatical function status, a point we will return to later. Be that as it may, what is important here is the generalization that Anderson draws from the list of contexts in (31): all they have in common is that they (a) are contexts where a noun phrase can be registered on the verb and (b) where there is no more specific affix for that particular context. That is, the rule is quite simple:

- (32) /X/ → /Xt/ in the context of [+PL] (i.e., whenever the feature [+PL] occurs anywhere in the MSR) (Anderson 1992: 132)

The second condition is, in a methodological sense, more important than the first: it is a restatement of Pāṇini’s principle. That is, in Anderson’s formalism, though *-t* does not belong to the same block of rules as *gv-* ‘first plural’, the latter is more specific than just ‘plural’ and thus gets chosen over *-t*, despite the fact that *gv-* belongs to an *earlier* rule block.. He uses this to explain why *gv-nax-e-t* must mean ‘you (pl.) saw us’, not ‘you (sg.)

saw us' with multiple marking for plurality, both *gv-* and *-t*. This is the second of two types of disjunction effects seen in Anderson's theory so far: Pāṇinian 'elsewhere' blocking.

4.4 Stump (2001) and the Pāṇinian Principle

In many respects, Stump (2001)'s theory of Paradigm Function Morphology (or PFM for short) closely resembles the kind of constructs that Anderson proposed in his 1992 work. Like Anderson, Stump rejects the notion of a signhood being extended to constituents below the level of the word, and like Anderson, Stump's response involves an inferential realizational theory of morphology in which morphological processes have no actual entry in the lexicon (and thus are inferred) and in which the mapping between sound and grammatical function is many-to-many (and thus realizational).

The basic formalism for PFM is thus in many respects fundamentally similar: it involves an equational rule with information about systematic properties of paradigms and morphosyntactic properties on one side of the equation with the corresponding phonological properties on the other, much like that mentioned in Ch. 2:

- (33) a. $\text{RR}_{N,\tau, C}(<X, \sigma>) = <X\alpha, \sigma>$
- b. $\text{RR}_{I, \{\text{NUM: PL}\}, N}(<X, \sigma>) = <Xeb, \sigma>$
("eb marks plural nouns belonging to Rule Block I")

It is necessary to unpack this rather dense formalism. Here, 'RR' stands for a realizational rule that consists of the following three subcomponents: an indication that this rule belongs to a particular block N of rules ('I'), much as in Anderson's theory; an

indication of the morphosyntactic feature(s) τ that the rule represents ('{NUM: PL}'); and the syntactic category C that the rule applies to ('N[oun]'). In the next sections, I will discuss three aspects of these rules in more detail, detail necessary to understand how Stump thinks blocking processes work in Georgian: feature-theory, rule-blocks, and paradigmatic structure.

4.4.1 How a Realizational Rule works: features, set-theory, and unification

Because Stump has a different set of assumptions about how syntax works -- unlike Anderson, he takes syntax to be monostratal and based on unification of features across syntactic phrases -- the middle variable ' τ ' may include not just features for person and number that we associate with arguments, but also tense or evidentiality or any other features which may be manifested on the head of the phrase, as in (34):

(34)	FEATURE	PERMISSIBLE VALUES	(Stump 2001: xx)
	VFORM	fin, pple	
	VCE	act, pass	
	TNS	pres, imp, aor	
	PRET	yes, no	
	MOOD	indic, impv	
	NUM	sg, pl	
	PER	1, 2, 3	
	GEN	masc, fem, neut	
	AGR	{...}	

Stump formalizes this well-formedness condition on features as follows:

- (35) a. For each property $F:v \in \tau$, $F:v$ is available to lexemes of Category C and v is a permissible value for F .
- b. For any morphosyntactic feature F having v_1, v_2 as permissible values, if $v_1 \neq v_2$, and $F:v_1 \in \tau$, then $F:v_2 \notin \tau$.

Stump assumes that features may be either ATOMIC, and so can only have one value per feature; or they may be SET-VALUED, and so may have more than one value. For example, all the features in (34) but the last are atomic-valued. Now, because unlike Anderson Stump's view of syntax is based on unification, he must have some formal definition of what it means to unify features across words. He does this with a superset-set relation which he terms featural EXTENSION, defined formally as follows:

- (36) Where σ and τ are well-formed sets of morphosyntactic properties, σ is an EXTENSION of τ iff (i) for any atom-valued feature F and any permissible value v for F , if $F:v \in \tau$, then $F:v \in \sigma$; and (ii) for any set-valued feature F and any permissible value ρ for F , if $F:\rho \in \tau$, then $F:\rho' \in \sigma$, where ρ' is an extension of ρ .

This is very dense, so this too needs to be clarified. Stump provides the following example that shows what he really means is that for any subset of features there is a possible superset to which it belongs, and this is what he terms the extension. So for example, if you have a set of features {TNS: PRES, AGR: {PER:1, NUM:PL}}, then this is the extension/superset of each of the following subsets (some of which are not proper subsets):

- | | |
|---|---------------------------|
| (37) a. {TNS: PRES, AGR: {PER:1, NUM:PL}} | f. {AGR: {PER:1, NUM:PL}} |
| b. {TNS: PRES, AGR: {PER:1}} | g. {AGR: {PER:1}} |
| c. {TNS: PRES, AGR: {NUM:PL}} | h. {AGR: {NUM:PL}} |
| d. {TNS: PRES, AGR: {}} | i. {AGR: {}} |
| e. {TNS: PRES} | j. {} |

Now, here is where unification becomes clearly and formally defined in terms of its extension (superset):

- (38) Where σ and τ are well-formed sets of morphosyntactic properties, the UNIFICATION ρ of σ and τ is the smallest well-formed set of morphosyntactic properties such that ρ is an extension of both σ and τ .

In other words, a noun may carry features for person, number and gender, and a verb may carry features for tense, person and number, and the unification of these features will be the intersection of those two sets: person and number. This is what Stump means by the ‘extension’. This formalism will be necessary to understand why Stump believes Georgian agreement does not simply arbitrarily rank second person over first person and, according to him, in fact follows Pāṇini’s principle in its entirety. Before we can get to this, we must complete our discussion of two other elements of Stump’s theory: rule blocks, and morphophonological metageneralizations.

4.4.2 How a Realizational Rule works: rule blocks and rule interaction

As with Anderson’s theory, PFM groups realizational rules together into blocks of rules. Within each rule block, rules are simply listed for their attributes and their phonological expression. Here, for example, is how Stump would characterize regular case formation in Georgian:

- (39)
- a. $RR_{II,\{\text{CASE: NOM}\},N}(<X, \sigma>) = <XCi, \sigma>$ ('-i marks nominative case')
 - b. $RR_{II,\{\text{CASE: DAT}\},N}(<X, \sigma>) = <Xs, \sigma>$ ('-s marks dative case')
 - c. $RR_{II,\{\text{CASE: NARR}\},N}(<X, \sigma>) = <XVm, \sigma>$ ('-m marks narrative case')
 - d. $RR_{II,\{\text{CASE: GEN}\},N}(<X, \sigma>) = <XCis, \sigma>$ (etc.)
 - e. $RR_{II,\{\text{CASE: INST}\},N}(<X, \sigma>) = <XCit, \sigma>$
 - f. $RR_{II,\{\text{CASE: ADV}\},N}(<X, \sigma>) = <XCad, \sigma>$
 - g. $RR_{II,\{\text{CASE: VOC}\},N}(<X, \sigma>) = <Xo, \sigma>$

- h. $\text{RR}_{\text{II}, \{\text{CASE: NOM}\}, \text{N}}(\langle X, \sigma \rangle) = \langle XV, \sigma \rangle$
- i. $\text{RR}_{\text{II}, \{\text{CASE: NARR}\}, \text{N}}(\langle X, \sigma \rangle) = \langle XCma, \sigma \rangle$
- j. $\text{RR}_{\text{II}, \{\text{CASE: GEN}\}, \text{N}}(\langle X, \sigma \rangle) = \langle Xs, \sigma \rangle$
- k. $\text{RR}_{\text{II}, \{\text{CASE: INST}\}, \text{N}}(\langle X, \sigma \rangle) = \langle XVti, \sigma \rangle$
- l. $\text{RR}_{\text{II}, \{\text{CASE: INST}\}, \text{N}}(\langle X, \sigma \rangle) = \langle XVd, \sigma \rangle$
- m. $\text{RR}_{\text{II}, \{\text{CASE: VOC; 'PROPER NAME'}\}, \text{N}}(\langle X, \sigma \rangle) = \langle X, \sigma \rangle$

Each of these rules is annotated as belonging to Rule Block II. Note that there is no one-to-one relationship between morphosyntactic features and the phonological realization. Thus one rule, (39i), realizes one suffix of the narrative case, *-ma*, in the environment of a consonant stem, e.g. *kalak-* ‘city’, while a separate rule, (39c), which has the same morphosyntactic features is realized with a different suffix *-m* because a different stem, e.g. *k'ilo-* ‘dialect, patois’ ends in a vowel. Thus, the RRs have the ability to describe affixal variants that are phonologically conditioned. Stump also envisions morphophonological metarules intended to explain the inverse: phonological rules that are morphologically conditioned. Such rules have often (Kiparsky 1982, 1985) been taken to represent lexically distinct levels in phonology, such that *div[ai]ne* is distinct from *div[I]nity*, but no such change occurs between *def[ai]ne* and *def[ai]nable*. In Georgian, synchronic strictly phonological rules of any kind are rare, and most of them (e.g. final devoicing) are not directly sensitive to morphological structure as this English example is. For that reason, I will not explore the implications of Stump’s morphophonological metageneralizations any further.

Now, because realization rules are all ordered in a different rule block from that which triggers the normal pluralization rule for nouns given above in (40), we make the prediction that in Georgian plural features and case features are agglutinative, which is in fact what happens under normal circumstances:

(40)	kalak-	eb	-i
	city	PL	NOM
		by (33b)	by (39a)

Thus, RRs give formal theoretical substance to apparent templatic effects in morphology.

However, Georgian also provides examples of apparent paradoxes where two ‘slots’ appear to merge for purposes of some construction. The stylistically marked plural forms constitute such a paradox. Recall that in Georgian, plural forms, but not singulars, retain for some construction types the Old Georgian fusional affixes bearing both number and case features:

- (41) a. Nominative plural: -ni
 b. Vocative plural: -no
 c. All other cases, plural: -ta

It is probable that modern Georgian speakers do not analyze the *-n* as a distinct plural suffix (though it probably originated as such historically; see Harris (1985) for more discussion). Unlike the agglutinative plurals, where the plurality and case features show up separately in different slots, it is impossible to doubly mark either of the two features for the same argument¹⁹:

¹⁹ Modern Georgian elliptical constructions may indeed doubly mark case with *Suffixaufnahme* when the possessum is elided. It is noteworthy that the possessive *čem-i* ‘my’ has the syntax of a modifier for a genitive NP, not a dative NP:

vis saxl-s e-ʒ-eb? čem-i megobr-isa-s
 whose.DAT house-DAT PRV-seek-TH my-GEN friend-GEN-DAT
 ‘Whose house are you looking for? My friend’s [house]. (Boeder 2005)

- (42) a. *kalak-eb-ta
 city-PL-GEN.PL
 ‘of the cities’
 b. *kalak-ta-s²⁰
 city-DAT.PL-DAT
 ‘for the cities’

Such ‘portmanteau rule blocks’ challenge the notion of neatly arranged unitary templatic slots because they appear to occupy two (generally adjacent) slots in the templatic structure at the same time without multiple realization, here that of both the plural suffix and the case suffix. Stump is aware of such problems, and has developed a formalism within PFM to account for it which appeals essentially to the notion that a realizational rule is specified for two different rule blocks at the same time. We could reformulate the competition as he does for Georgian nouns in the following way:

- (43) a. $RR_{[I,II],\{\text{CASE: NOM; NUM: PL}\},N}(<X, \sigma>) = <Xni, \sigma>$
 b. $RR_{[I,II],\{\text{CASE: VOC; NUM: PL}\},N}(<X, \sigma>) = <Xno, \sigma>$
 c. $RR_{[I,II],\{\text{CASE: }\{\text{DAT; NARR; GEN; INST; ADV}\}; \text{ NUM: PL}\},N}(<X, \sigma>) = <Xta, \sigma>$ ²¹

These rules refer effectively to two different Rule Blocks simultaneously, which I arbitrarily name ‘I’ and ‘II’ though any distinct names would suffice. Stump formalizes the relation between the two rule blocks by a Function Composition Default rule as follows:

²⁰ Such a construction is grammatical on the elliptical reading ‘for the cities’ X’, where *-ta* is GEN.PL. Such *Suffixaufnahme* constructions, however, are yet a different kind of morphosyntactic mismatch (see n 19). Certain divergent mountain dialects, such as Tush and Khevsur, optionally also allow multiple exponence of features even without Suffixaufnahme: *soplel-eb-t* [villager-PL-NARR.PL] ‘villagers’ (Wier Ms.)

²¹ Where ‘;’ means any one, but not more than one, of these case features can serve as input for the rule.

- (44) Function Composition Default: (Stump 2001: 142)
 $\text{RR}_{[n, m], \{\}, \text{U}}(\langle X, \sigma \rangle) =_{\text{def}} \text{Nar}_n(\text{Nar}_m(\langle X, \sigma \rangle))$

This default rule serves as a metaconstraint telling the system how to interpret any realization rule that refers to more than one rule block n and m . Thus, Stump's PFM analysis is able to handle some rather sophisticated and subtle aspects of Georgian inflectional morphology.

Now that we have explored the nature of rule-blocks, there is one final, and crucial, aspect of Stump's analysis that sets it apart both from other amorphous theories like Anderson's and from morphemic theories like those of Distributed Morphology. This is that PFM assumes no extrinsic ordering of rules within each block. Stump elevates this to being the central principle behind all blocking phenomena. In prose, it is stated as (45), or more formally in (46):

- (45) **The Pāṇinian Determinism Hypothesis (PDH):**
 Competition among members of the same rule block is in all cases resolved by Pāṇini's principle.
- (46) **Pāṇinian well-formedness condition on inflectional rule blocks:**
 If Q and R are inflectional rules belonging to the same block b , then for any expression X and any complete and well-formed set σ of morphosyntactic properties appropriate to X ,
 either a. Q and R are not compatible relative to X and σ ,
 or b. Q and R are compatible relative to X and σ and
 either i. one is narrower than the other
 or ii. there is a third rule in block b which is compatible with Q and R relative to X and σ and is narrower than both Q and R .
 (Stump 2001: 23)

In other words, within rule blocks there cannot be, as with Anderson's theory, extrinsic (and therefore presumably language specific) rule ordering that determines which of two

competing affixes surfaces on the verb. This makes the prediction that no two realization rules can be specified for exactly the same number of features, since neither would be narrower than the other; or, if such existed, we would predict the realization to be essentially random as to which surfaces. It also makes the prediction that morphological feature hierarchies always result from ultimately distinct RR specifications. As we will now see, Georgian verb agreement proves to be problematic if we take the PDH to be an absolute generalization.

4.4.3 Stump's analysis of Georgian and problems with Pāṇinian Determinism

Both Anderson and Stump focus on two particular families in which inflectional blocking appears to occur: Algonquian languages such as Potawatomie, and Kartvelian languages such as Georgian. Both of them are characterized by blocking effects of agreement morphology. Stump's characterization of Georgian is more or less identical (47) in 4.3.2 above merely with the PFM notation²²:

- (47) a. $\text{RR}_{\text{PREF}, \{\text{AGR (su)}: \{\text{PERS: 1}\}\}, \text{v}}(\langle X, \sigma \rangle) = \langle vX, \sigma \rangle$
- b. $\text{RR}_{\text{PREF}, \{\text{AGR (ob)}: \{\text{PERS: 1}\}\}, \text{v}}(\langle X, \sigma \rangle) = \langle mX, \sigma \rangle$
- c. $\text{RR}_{\text{PREF}, \{\text{AGR (ob)}: \{\text{PERS: 1, NUM: PL}\}\}, \text{v}}(\langle X, \sigma \rangle) = \langle gvX, \sigma \rangle$
- d. $\text{RR}_{\text{PREF}, \{\text{AGR (ob)}: \{\text{PERS: 2}\}\}, \text{v}}(\langle X, \sigma \rangle) = \langle gX, \sigma \rangle$ (Stump 2001: 70)

That is, neither of them question that these affixes subcategorize for particular grammatical relations. As we have shown in Ch. 3, this traditional assumption actually has remarkably little foundation to it. However, even if we assumed that these prefixes were not marked for particular grammatical relations, and were rather marked only for

²² Stump's formulation is not quite accurate, since there are multiple 'prefixal' rule blocks, not just the one suggest by 'pref'. However, this does not really affect the logic of his argument, as it could be easily amended.

person and number features, we would not get rid of the underlying problem about affix competition, since each of these affixes is assumed to bear only one grammatical relation, not features for both or all arguments in the clause. Thus, removing the one feature would still render the relevant competing rules with equal numbers of features, as follows:

- (48) a. $RR_{PREF,\{AGR : \{\text{PERS: 1}\}\},v}(<X, \sigma>) = <\text{v}X, \sigma>$
- b. $RR_{PREF,\{AGR : \{\text{PERS: 1}\}\},v}(<X, \sigma>) = <\text{m}X, \sigma>$
- c. $RR_{PREF,\{AGR : \{\text{PERS: 1, NUM: PL}\}\},v}(<X, \sigma>) = <\text{gv}X, \sigma>$
- d. $RR_{PREF,\{AGR : \{\text{PERS: 2}\}\},v}(<X, \sigma>) = <\text{g}X, \sigma>$

As we saw, in Anderson's analysis, such data required a language specific stipulation of extrinsic rule ordering within blocks: both (48a) and (48d) belong to the same block, and yet it is (48d) and not (48a) that unquestionably surfaces when there is both a first person subject and second person object. However, it is a clear counterexample to the PDH, since there is no obvious sense in which these two RRs differ in terms of their morphosyntactic feature specifications. How does Stump respond to this problem?

Stump's answer relies on the notion of extension discussed above. Stump assumes that realization rules can apply in two different modes (Stump 2001: 72): UNEXPANDED mode and EXPANDED mode. Rules applying in unexpanded mode are essentially the basic form of a realization rule that realizes a particular morphosyntactic property set. Rules applying in expanded mode, however, realize every well-formed extension of a property set. Stump notates this difference with ' $\leftarrow \tau \rightarrow$ ', where τ is the set of morphosyntactic features that the realization rule targets:

- (49) a. Format for RRs applying in unexpanded mode:
 $RR_{N,\tau,C}(<X, \sigma>) = <X\alpha, \sigma>$
- b. Format for RRs applying in expanded mode:
 $RR_{N, \leftarrow \tau \rightarrow, C}(<X, \sigma>) = <X\alpha, \sigma>$

Recall that the notion of extension is a set-theoretic property of morphosyntactic feature specifications. It essentially refers to any superset in the clause of which the feature specification of a feature in τ is a member. This is tantamount to the RR being able to look up beyond the word level as the features unify in the syntactic tree, and finding a node where the features within τ exist, but along with other features, which may also oddly include empty sets for feature specifications like tense along the lines of ‘TENSE: {}’, as Stump’s example makes clear. This is crucial for Stump’s claim that the Pāñinian Determinism Hypothesis always holds, because an expanded rule would thus find additional features within its feature set. This would have the effect of creating a difference between a realization rule that targets just one feature, say ‘AGR: {PERS: 1}’ and an expanded rule that targets one feature plus other features as a result of that expansion: ‘ \leftarrow AGR: {PERS: 2} \rightarrow ’. That is, expanded rules necessarily would always ultimately target more features than unexpanded rules because they can look up into the syntactic tree to find more features during unification.

This argument is rather complex, but this is essentially how Stump approaches the problem of blocking in Georgian. Basically, the rule that wins out in Georgian, that which makes verbs agree with second persons (*g-*) over first persons (*v-*), wins because it applies in expanded mode, while the rule which applies to first persons applies in unexpanded mode. Stump never makes this explicit for the Georgian prefixes, but this is how he would formalize the difference:

- (50) a. $RR_{\text{PREF}, \{\text{AGR (su): } \{\text{PERS: 1}\} \}, v}(\langle X, \sigma \rangle) = \langle vX, \sigma \rangle$
 d. $RR_{\text{PREF}, \leftarrow \{\text{AGR (ob): } \{\text{PERS: 2}\} \} \rightarrow, v}(\langle X, \sigma \rangle) = \langle gX, \sigma \rangle$

Stump also takes on the blocking effects seen in suffixes. Anderson, following most Kartvelologists, had assumed that the *-t* suffix essentially bears only the feature '[+PL]' and is not specifically marked for grammatical function. In contrast, Stump seeks to bring suffixal morphological hierarchies, too, under the purview of the PDH by identifying different, though homophonous, *-t* suffixes. Stump highlights three different types of morphosyntactic contexts where *-t* surfaces:

- (51) a. forms marked for agreement with a 3PL subject uniformly lack *-t*, as in *mo-g-k'l-av-en* ‘they will kill you (PL)’
 - b. forms marked for agreement with a 1PL object lack *-t* as in *mo-gv-k'l-av* ‘you (SG) will kill us (unless the presence of a *-t* is motivated by that of a plural subject as in *mo-gv-k'l-av-t* ‘you (PL) will kill us’).
 - c. forms marked for agreement with a 3PL object lack *-t*, as in *mo-k'l-av* ‘you (SG) will kill them’ (again, unless the *-t* is motivated by a plural subject as in *mo-k'l-av-t* ‘you (PL) will kill them’)
- (Stump 2001: 83)

The first kind of context in (51a) is a clear case where both Anderson and Stump appeal to the Elsewhere Principle, as the *-en* suffix is clearly specified for both person (3RD) and number (PL). Thus, it would naturally outrank the *-t* suffix simply because if it did not it would never be manifested.

Stump parts ways with Anderson about the second context in (51b) and (51c). Anderson had accounted for the fact that the 1Pl prefix *gv-* does not trigger plural agreement with *-t* by assuming that narrower rules in earlier blocks trump later broader rules. This argument had been rather curious, since it seems to undermine the very notion of rule blocks in the first place, since the competition had not been *within* rule blocks, but *between* them (unless one assumes that the prefix and suffix rules belong to

the same block but realize the features phonologically in different places; this also weakens the argument for rule blocks). As for (51c), Anderson (1992: 131fn) had assumed that verbs simply do not agree with 3pl objects, in any contexts; hence, it is not surprising that a verb *mo-k'l-av-t* can only mean ‘you (pl) will kill him/them’, that is, the *-t* marks the subject, not the object. For Anderson, the fact that inverted subjects using ‘object’ morphology can manifest *-t* suffixes is a result of the fact that they are truly subjects, no longer objects, as they were, under very different assumptions, in Harris (1981):

- (52) mo-u-k'l-av-t
 PVB-PRV-kill-TH-PL
 ‘They apparently killed X (SG/PL)’

For Stump, these problems are a result of the fact that we are dealing not with one *-t* suffix, but at least three:

- (53) a. *-t₁*: encodes plural noninverted subjects and inverted objects, either first or second person;
 b. *-t₂*: encodes only 2nd Pl inverted subjects and 2nd pl noninverted objects.
 c. *-t₃*: encodes 3pl inverted subject.

Why this complex overlapping system? Stump argues, based on the material available to him, that the different *-t* suffixes target different syntactic contexts. He assumes, as Harris and others before him, that inversion is a true syntactic process that alters grammatical functions, albeit in a monostratal set-up. He points to the fact that inverted

first person objects (which use the ‘subject’ marking, since they are inverted) strangely appear not to be able to host the $-t$ suffix:

- (54) a. v-e-qvar-eb-i
1-PRV-love-TH-1/2
'X (SG/PL) will love me'
b. *v-e-qvar-eb-i-t
1-PRV-love-TH-1/2
'They will love me' (acceptable as: 'X (SG/PL) will love us')

However, second person inverted subjects can host the $-t$ suffix, where the $-t$ plural optionally modifies either the subject, or the object, or both:

- (55) g-e-qvar-eb-i-t (= - t_2)
2-PRV-love-TH-1/2-PL
'You (PL) will love me' (or 'you (SG/PL) will love us')

Stump thus takes this as evidence that there is a difference between $-t_2$ and $-t_3$: one can target both subjects and objects (2nd) while the other can target only subjects (3PL). However, since third person plural subjects (-en in the present, -nen in the imperfect, -es in the aorist) can block the realization of $-t$, Stump assumes that there must be two distinct suffixes $-t_1$ and $-t_2$, since the latter but not the former is restricted to second person contexts, and 3PL blocks first person plural $-t$ suffixes, too.

4.5 Assessment of Amorphous Theories

4.5.1 Advantages

How do Anderson and Stump's frameworks stand up to morphemic theories? Just as importantly, how does these theories stand up to the Georgian empirical data? The main virtue of both theories is methodological: that they take morphosyntactic and morphophonological mismatches seriously. It does not assume that the morphological structure of words must reflect, or even frequently reflects, generalizations about constituency or grammatical functions. As we saw in Ch. 2, Georgian lacks the relevant constituency asymmetries that might motivate a purely syntactic analysis, and as we saw in Ch. 3, analyses that try to link the morphology directly to grammatical function specifications also largely fail. Thus, both Anderson's and Stump's theories accomplish two important generalizations about morphology in Georgian:

- (56) a. Purely *morphological* questions of which ‘morphemes’ block which other ‘morphemes’ (via WFRs);
b. The *morphosyntactic* question of how particular morphological processes map onto grammatical functions (via MSRs, such as with inversion);

Previous analyses collapsed these two questions into one, and this is why they have difficulty achieving a comprehensive description of the empirical data. Stump's theory has both advantages while at the same time formalizing exactly what a rule block is, and when rule blocks can ‘collapse’ together to create portmanteau rule blocks as well as parallel rule blocks.

Another, less obvious but indeed more important effect of Anderson's theory is that it implicitly assumes that, because MSRs have an internal structure but that this structure is not isomorphic to syntax, in principle it is possible to account for systematic blocking patterns based not on the syntactic structure, but on purely morphological feature specifications. In Anderson's account, and unlike Halle and Marantz' account, it is possible to explain the existence of expletive agreement morphology such as in (57):

Here, in each case, the verb reflects morphological contrasts that never have any semantic or syntactic manifestation: it is ungrammatical to have an actual argument for *c'vims* ‘rain’²³, just as for *dauk'ari* ‘you played it’ there cannot be an overt dative-marked argument, normal 3rd person direct objects receiving no overt marking on the verb.

In Anderson's theory, it is also possible to explain why, when they are ranked, third person plural always outranks the simple plural suffix, irrespective of what other features of tense or mood that third person plural suffix might bear. Consider the following forms:

²³ Georgian does have an alternative construction that uses the verbal noun of *c'vims* plus the verb *mosvla* ‘come’: *c'vima mo-d-i-s* ‘rain is coming’. This of course has a completely different argument structure.

		3SG > 2SG	3SG > 2PL	3PL > 2PL
(58)	Future:	<i>g-nax-av-s</i> 2-see.PF-TH-3SG 'He will see you'	<i>g-nax-av-t</i> 2-see.PF-TH-PL 'He will see y'all'	<i>g-nax-av-en(-*t)</i> 2-see.PF-TH-3PL 'They will see you (SG/PL)'
	Present:	<i>g-xed-av-s</i> 2-see.IMPF-TH-3SG 'He sees you'	<i>g-xed-av-t</i> 2-see.IMPF-TH-PL 'He sees y'all'	<i>g-xed-av-en(-*t)</i> 2-see.PF-TH-3PL 'They see you (SG/PL)'
	Imperfect:	<i>g-xed-av-d-a</i> 2-see.IMPF-TH-IMPF-3SG 'He used to see you'	<i>g-xed-av-d-a-t</i> 2-see.IMPF-TH-IMPF-3SG-PL 'He used to see y'all'	<i>g-xed-av-d-nen</i> 2-see.IMPF-TH-IMPF-3PL 'They used to see y'all'
	Aorist:	<i>g-nax-a</i> 2-see.PF-AOR3SG 'He saw you'	<i>g-nax-a-t</i> 2-see.PF-AOR3SG-PL 'He saw y'all'	<i>g-nax-es(-*t)</i> 2-see.PF-AOR3PL 'They saw y'all'
	Perfect:	<i>u-nax-i-xar</i> PRV-see.PF-PF-2 'He has seen you'	<i>u-nax-i-xar-t</i> PRV-see.PF-PF-2-PL 'He has seen y'all'	<i>u-nax-i-xar-t</i> PRV-see.PF-PF-2-PL 'They have seen y'all'
	Pluperfect:	<i>e-nax-e</i> PRV-see.PF-1/2 'He had seen you'	<i>e-nax-e-t</i> PRV-see.PF-1/2-PL 'He had seen y'all'	<i>e-nax-e-t</i> PRV-see.PF-1/2-PL 'They had seen y'all'

Thus, in the Future, Present, Imperfect and Aorist, it is clear that a third plural subject suffix, whether *-en* (future and present), or *-nen* (imperfect) or *-es* (aorist) always surfaces over the number marking for simple plural if the two suffixes are in the same templatic slot. In other screeves, the perfect and pluperfect, it is impossible to tell , since the plural marking for one argument (*-t*) is the same as the plural marking for the other argument (*-t*). Thus in these two screeves, the 3SG>2PL and the 3PL>2PL are the same. And in some screeves, such as 3SG>2PL imperfects and aorists, the suffixed positions both surface and thus do not compete: there is no basis for a ranking of features here. Yet, since Anderson treats MSRs as distinct from syntax, it is possible to identify features of morphology that are distinct from features of syntax as such. Otherwise the generalization about 3Pl>2Pl forms is impossible to state.

4.5.2 General problems with Georgian: Anderson

So, Anderson's theory has much in its favor. However, Anderson's theory makes claims about Georgian that seem more motivated by figuring out how the morphology works with a preconceived view of syntax than by Georgian itself. Take for example Anderson's claim that the third conjugation is morphologically just like a transitive verb, except that it has an obligatorily null agreement marker for its object features. This was stated in the rule above and restated below as (59):

- (59) Unergative third conjugation MSR: [T/A F_{SBJ} [Ø]]

This argument was based on the fact that Georgian subject agreement has an *-s* marker for 3Sg in both the transitive (1st) and unergative (3rd) conjugations in the present, but not for unaccusatives (which take *-a* in 3Sg present). We can thus write Andersonian MSRs and WFRs like this:

- (60) a. Unergative: [Pres 3SG [Ø]] ↔ /Xs/
b. Unaccusative: [Pres 3SG] ↔ /Xa/

That is, this makes the assumption that transitives and unergatives constitute a natural class, as opposed to unaccusatives. This is a problem, then, for any data that has the opposite classing that groups transitives and unaccusatives as opposed to unergatives.

Unfortunately, such morphology does exist, in the form of future formation. Recall that transitive verbs mostly form their future by adding the perfectivizing preverb plus present tense morphology: thus *c'er-s* 'he's writing it' but *da-c'er-s* 'he will write it'.

Unaccusatives also form their futures in this way, as opposed to unergatives which form their future with the preradical vowel *-i-* plus the thematic suffix *-eb-*:

	Present	Future
(61) a. Unaccusatives:	c'itl-d-eb-a red-INGR-TH-3SGII 'It's getting red'	ga -c'itl-d-eb-a PVB -red-INGR-TH-3SGII 'It will get red'
b. Unergatives:	mğer-i-s sing-TH-3SG 'He's singing'	i-mğer-eb-s PRV-sing-TH-3SG 'He will sing'
c. Transitives	a-k'et-eb-s PRV-do-TH-3SG 'He's doing it'	ga -a-k'et-eb-s PVB -PRV-do-TH-3SG 'He will do it'

Thus it is not really accurate to say that the morphological realization of 3Sg *-s* is indicator of any kind of obvious natural *syntactic* class, since, using the same morphological criteria, one could come up with equally good data to suggest the opposite classing, though not from agreement. The problem is one of using morphological data to back up a conception of syntax that then feeds back into morphology: a circular argument, in other words. Anderson's null agreement marker simply becomes a restatement of the fact that unergatives have *-s* just like transitives without actually explaining why that is the case. It is a kind of covert syntactocentrism, albeit with a theory of morphology that is formally autonomous from syntax.

4.5.3 General problems with Georgian: Stump

Stump's theory presents problems different from that of Anderson. Unlike Anderson's theory, Stump's morphosyntactic features are no more or less than the

projection of syntactic features into the morphology. Whereas Anderson's syntactic features map onto morphological bracketing structures that are not isomorphic to the syntax, in Stump's theory, there is no obvious way to create expletive morphological constructions like those in (57) above. This is because the notion of extended realization rules relies on the ability to 'see' syntactic features higher up in the tree as the nodes unify to justify exceptionless application of the Pāṇinian principle. Thus, for Stump syntactic features and morphological features must be formally identical; otherwise, the extended rules would never find a superset that would justify choosing one rule (for example, *g-* 2nd person in Georgian) over another (the *v-* prefix). Thus, either the Pāṇinian principle is not absolute, or there are distinct morphological features that redundantly help create paradigms which do not always have any syntactic or semantic analogue, as the expletive constructions indicate.

Concerning the *-t* plural suffixes, there are also basic empirical problems. Stump claims that the *-t* suffix can never indicate the plurality of a third person direct object uninverted direct object (his *-t₃* can only mark the plurality of third person inverted subjects). However, it is well known that sometimes the *-t* marker can indeed mark the plurality of third person objects in noninverted constructions. Consider the following examples, cited in Tuite (1988: 134):

- (62) a. amxanag-eb-i a-xar-eb-en ertmanet-s
 comrade-PL-NOM PRV-happy-TH-3PL each.other-DAT
 'The friends make each other happy.'
 b. amxanag-eb-s a-xar-eb-t ertmanet-is amb-eb-i
 comrade-PL-DAT PRV-happy-TH-PL each.other-GEN news-PL-NOM
 'Each other's news make the friends happy.'

Here, the verb is a causative first conjugation verb in both cases, and thus the animate argument ‘comrade, companion’ can only be the grammatical subject in the first example, but the direct object in the second. In (62b), since the subject is inanimate, we would normally expect for that reason third person singular agreement: *a-xar-eb-s*. However, in this case the direct object has been topicalized, and we see *-t* instead. This is unexpected on Stump’s account where uninverted 3PL objects cannot trigger *-t* plural agreement. Tuite cites (*ibid.*) another even more interesting example from a grammatical work by Gogolašvili (1984: 14) where animacy cannot play any role:

- (63) mesame seri-is nak'vt-eb-s saerto punkcia
third.GEN series-GEN form-PL-DAT common.NOM function.NOM
a-ertian-eb-t
PVB-unite-TH-PL
‘A common function unites the forms of the third series...’

In this construction, which is also a causative first conjugation transitive verb, the syntactic direct object has been topicalized to the beginning of the clause, followed by the subject. Both arguments appear in their expected case for the present series: nominative for the subject, dative case for the direct object. What is unusual about this construction is thus not the clause structure, but what triggers the *-t* agreement for the object. As Tuite argues, this falsifies the traditional claim that in Georgian only animate arguments can trigger plural agreement on the verb, since here not only is neither argument animate, both arguments are actually abstract. What appears to be relevant here is not clause structure, grammatical function, argument structure or role-structural semantics, but structural properties of the discourse, specifically topicalization, as the object is in the

position of topics (see Wier (forthcoming) for more details). In any event, this only complicates Stump's approach, since he must add further $-t$'s marked for features of animacy and discourse structure if we follow Stump's view²⁴ that syntactic and morphological features are identical. This thus further erodes the notion that the PDH is absolute, since the morphological hierarchy is mostly easily stated by a simpler rule referring to just [+PL] outranks one which is more complex, [3SG].

4.5.4 The problem of syntactic noun-incorporation

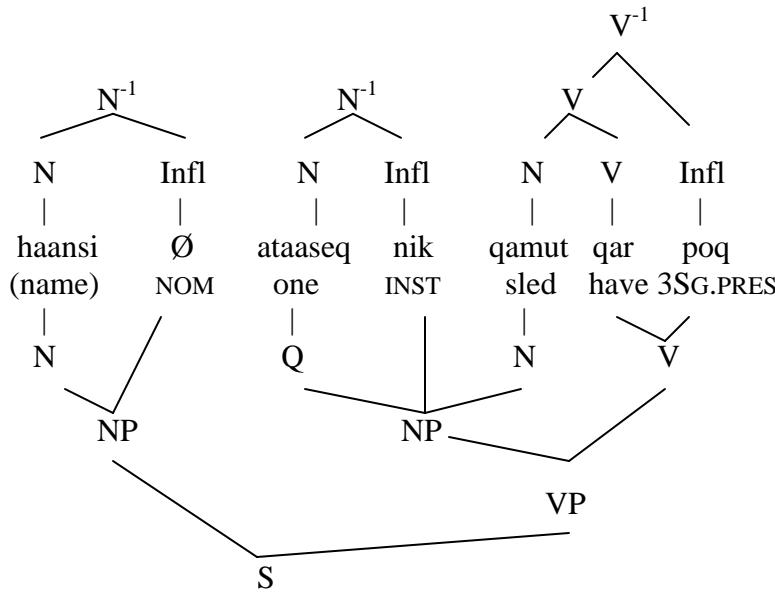
There are deeper problems with amorphous accounts of morphology. The most basic problem is that an amorphous account would predict that there are no processes – syntactic, semantic or otherwise – that affect parts of words to the exclusion of the rest of the word. Such construction types do exist, however. The most famous examples come from syntactic noun incorporation in a variety of languages in which an incorporated noun appears to behave for purposes of syntax as it were an independent noun. Consider the following Greenlandic example from Sadock (1985; cited in Anderson (1992: 24)):

²⁴ I had an interesting experience near Gerget'i Monastery in Stepanc'minda at the foot of Mt. Qazbek. The kindly woman who ran the hostel greeted me in the morning in the following way:

- (i) dila mšvidob-isa=t
 morning.NOM peace-GEN.EXT='PL'
 'Morning of peace (to you)'

This is a slight variation of the traditional Georgian greeting, only bearing the polite $-t$ plural suffix. The interest here lies in the fact that the woman was extending the polite plural suffix from verbal paradigms to a completely nominal paradigm. This shows that, indeed, polite $=t$ really ought to be seen as a different suffix from the homophonous plural $-t$ for at least some speakers, since it can be cliticized to hosts other than verbs.

- (64) a. Haansi ataatsinik qamuteqarpoq. 'Hans has a sled.'
 b.



For all Greenlandic nouns, like Georgian vocalic stems, the nominative case is phonologically null. What is relevant for morphological theory here is the fact that, as Sadock argued convincingly in Sadock (1980), Sadock (1986), and Sadock (1991), the nominal stem *qamut* 'sled' behaves as if it were an independent noun in terms of modifiers, but morphophonologically behaves as if it were a single word with the verbalizing derivational suffix *-qar* 'have'. This constitutes a *prima facie* case of internal complexity within words: *ataatsinik* behaves syntactically exactly like a regular modifier of a free noun, even though that noun is actually not (morphologically) free.

Modern Georgian does not have any clear case of noun incorporation remotely like this. All it has are noun-noun or noun-verb compounds much like English:

- (65) a. tav-mo-qvar-e
 head-[AGENT-love-AGENT]
 'proud' (lit. 'head-lover')

- b. c'qal-c'a-ğ-eb-ul-i
 water-PVB-take-TH-PART-NOM
 'a drowning person' (lit. taken by water) (Shanidze 1953: 162)

However, Old Georgian, despite being strikingly similar in many other morphological respects, did have a much wider range of incorporating processes. Mithun (1984) first classified NI into an implicational hierarchy of four different types:

- (66) Type 1: Noun Compounding
 Type 2: Case Manipulation
 Type 3: Manipulation of discourse-structure.
 Type 4: Classificatory NI.

Old Georgian probably exhibited each type to one degree or another (see Wier (forthcoming) for a more complete account of NI in Old Georgian), although certain types are exceedingly rare (such as Type 4), or perhaps simply not likely to surface in texts (Mithun 1984: 881). For our purposes, the relevant example is Mithun's fourth type, 'classificatory noun-incorporation'²⁵:

Type 4:

- (67) adgil-i-p'q'r-a mun, sada i-q'-o, or dğe.
 place-PRV-take-AOR3SG there where PRV-be-AOR3SG two day
 'He took the place there where he was for two days.'
 (Abuladze 1973: 2)

Here, the stem *adgil-* 'place' has been incorporated into the verbal complex in the position before the preradical vowel. Crucially, this stem is modified by a clause, despite

²⁵ One could argue that this incorporated stem is in the so-called absolute case, which is distinct in Old Georgian from the nominative and other cases by having no marker whatsoever. See Wier (forthcoming) about why appeal to the absolute case does not help answer the question, and is statistically unlikely. In any event, it does not explain the presence of overt marking in the next example.

the fact that that stem is no longer free. Such instances of apparent noun incorporation are rare in Georgian texts, but they do occur, both in incorporated and nonincorporated forms. Consider for example the following constructions from a text describing a siege of Constantinople, where in (68) the genitive plural *krist'eanetay* ‘of the Christians’ modifies the noun incorporated into the participle:

- (68) q^hel-is-a-mp'q'robel-i krist'eane-ta-y
 hand-GEN-PVB-take.PART-NOM Christian-GEN.PL-NOM
 ‘raising up the hands of the Christians’
 (*Obsidio Constantinopolis*, 28: ln. 31; Janašvili 1900)

In the following example (68), the same stem stands as a regular verbal argument, with the Old Georgian nominal plural *-ni*²⁶:

- (69) aḡ-i-p'q'r-n-es q^hel-ni
 PVB-PRV-take-OBJ.PL-3PLAOR hand-NOM.PL
 ‘They raised up [their] hands.’
 (*Obsidio Constantinopolis*, 34: ln. 20; Janašvili 1900)

It is not obvious on an amorphous treatment such as Anderson’s or Stump’s how such examples can be countenanced: what would motivate the genitival ending of the modifier? One would have to suggest that here the head noun is null in some way, which seems like a rather *ad hoc* explanation motivated more by modular isomorphism than by the data as such.

Anderson is aware of such arguments. In his analysis of K^wak'^wala, he points out that noun-incorporation there can be doubled by a free noun with the same stem formant:

²⁶ This is the same suffix used in modern Georgian as a stylistically marked variant. See. Ch. 2.

- (70) q'əmdzək^w-ila-ixsd-ida bəgwanəma-xa q'əmdzək^wi?
 salmonberry-give.feast-want-DET man-OBJ salmonberry
 'when] the man wants to give a salmonberry-feast [of salmonberries]'
 (Anderson 1992: 30)

As Anderson puts it for this and like examples, ‘the fact that the supposedly ‘incorporated’ material is in syntactically autonomous form presents a problem’. He does not exactly spell that out, but what he means is clear: under a movement-based analysis such as e.g. Baker (1988), one would predict such ‘doubling’ not to exist, since the movement would presumably leave no trace (in the nontechnical sense of that word) of its prior position. This problem, however, is really a reflection of the theory of syntax being assumed: in a theory of syntax which does not rely on the metaphor of movement, we predict such anaphoric relations to be no more unusual than *figurae etymologicae* like ‘to dance a dance’ or ‘to sing a song’ in English, which few would consider examples of incorporation²⁷.

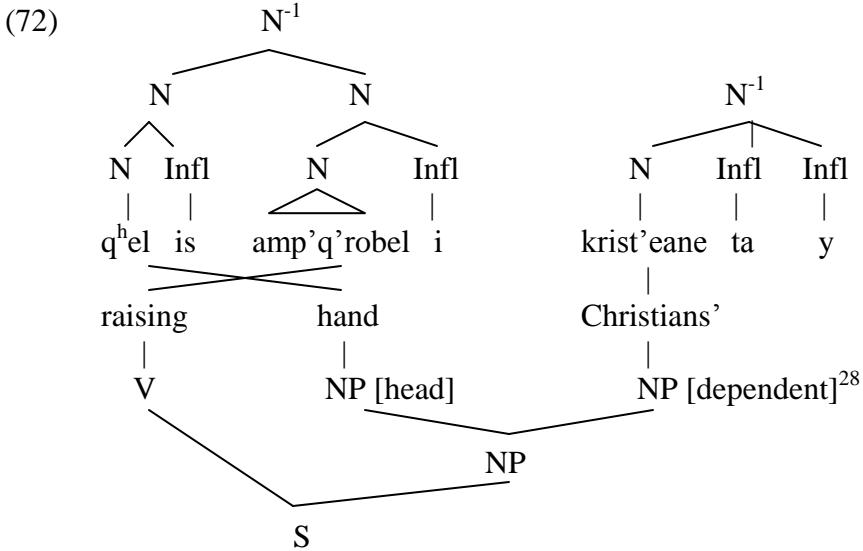
More to the point, this is clearly not the same kind of incorporation that Sadock referred to, which has a dependency with modifiers that look just like regular modifiers modifying a normal syntactic head. Anderson addresses such constructions in *Kʷak'ʷala* too, arguing that in fact the stranded modifier could be interpreted as a headless adjective:

²⁷ Though, for what it's worth, some do: cf. *Kayne (1994)*.

In other words, this is equivalent to saying that there must be in this language no contrast between a class of adjectives and nouns, since according to Anderson, any modifier can serve as the head of a NP. This is at first a plausible analysis for Georgian. In modern Georgian (and presumably in Old Georgian too, though of course it is difficult to verify without native speaker intuitions), there is no clear syntactic distinction between a class of adjectives and a class of nouns, since any modifier can, like the Kʷakʷala example, mean ‘things that are X’ simply by being treated as the syntactic head of the NP:

- (71) a. lurj-i c'ign-i
blue-NOM book-NOM
'the blue book'
- b. lurj-eb-i=a
blue-PL-NOM=be.3SG
'They are the blue ones'

However, this too rather misses the point. The interesting fact about the genitival example is that the *Suffixaufnahme* on the genitive form – in Old Georgian, genitives always agreed with the case of the noun they were modifying in addition to a genitive marker – is exactly the syntactic case the head noun would be expected to be in, the nominative. It is thus clearly not a head, and is marked as such. The Kʷakʷala example is silent on this point, since it lacks a clear morphological marking of what it would be modifying, if anything. To use Sadock's Autolexical formalism, we could say the genitival example has a structure much like the following:



There are two important mismatches here: The mismatch between the category of the verb (in syntax it is a verb, in morphology it is inflected like a participial noun, a typical instance of a ‘mixed’ category) and more directly for our purposes, the fact that the top-most morphological category does not correspond to the upper NP in syntax ‘hand of the Christians’. (I am assuming that Old Georgian was nonconfigurational like Modern Georgian and so did not have a VP, though that is not crucial to the point at hand.)

4.5.5 The problem of ‘No-Phrase Constraint’ Violations

In this section and the next, we will look at data presented in two important but largely overlooked articles by Alice Harris. The first, to be discussed in this section, explores the implications of morphosyntactic mismatches in Georgian that involve morphological words that appear to be derived from complete syntactic phrases. The

²⁸ Note that in Old Georgian genitives typically followed their head, the exact opposite of Modern Georgian. Most of the important differences between modern and Old Georgian are syntactic, not morphological.

second, to be discussed in 4.5.5, will address a different, morphosemantic mismatch in which free arguments appear to refer to proper subparts of morphological words, and not the words in their entirety.

What do we mean by ‘no-phrase constraint’ (hereafter NPC) violations? It basically refers to the claim by some (Bresnan and Mchombo 1995, Di Sciullo and Williams 1987) that words can be based on stems, roots or other words, but not on whole phrases. Harris (2002) focuses on a particular kind of partitive construction in Georgian that appears to violate this principle with a partitive postpositional phrase that appears to take a case in agreement with the quantifying NP as in (73):

- (73) a. **Partitive** *-gan-i*

ert-i	megobar-ta-gan-i	(*megobr-eb-isa-gan-i)
one-NOM	friend-GEN.PL-from-NOM	friend-PL-GENEXT-from-NOM
'one of the friends'		

b. **Locational** *-gan*

ert-i	megobr-eb-isa=gan ²⁹	
one-NOM	friend-PL-GENEXT=from	
'one from the friends'		

(Harris 2002: 1)

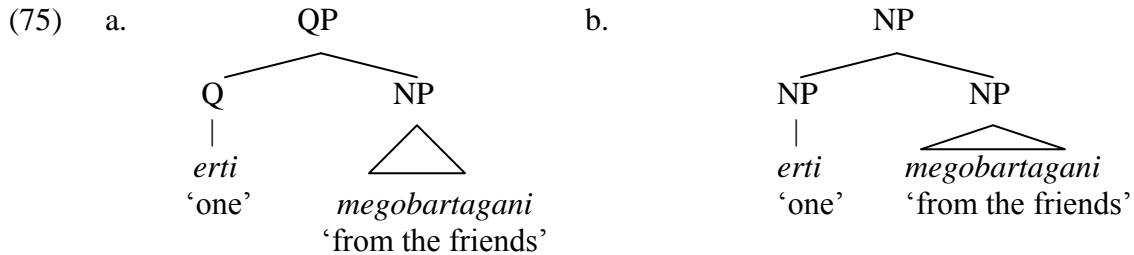
These two constructions resemble each other formally, both having the postposition =gan and in both quantifiers restrict a semantic set, except the first semantically represents a true partitive relation, while the latter represents the semantic source from which something originates. Formally, the first construction also obligatorily uses the Old Georgian set of fusional plurals mentioned in Ch. 2 which, though archaic for regular pluralization do occur productively in a variety of constructions unrelated to this (e.g. ellipsis). As Harris points out, it is also clear that in the locational construction, =gan is

²⁹ In her work, Harris writes out the postpositional use of *-gan* separately to emphasize that it is an enclitic postposition. My rendering difference is purely notational: everyone agrees on its clitic status.

truly a postposition and not a case ending, since it does not have to be obligatorily marked on each noun phrase, though it does trigger genitive case on the further NPs:

- (74) es c'eril-eb-i-a Ivane-sa da Mariam-isa=gan.
 this letter-PL-NOM-3SG.be John-GEN.EXT and Mary-GEN.EXT=from
 'These letters are from John and Mary.'

So, Harris thus asks: is the *-gan-i* construction, also, a postpositional clitic, and therefore attaching to a whole phrase and not a word? In other words, what kind of syntactic phrase structure does the construction bear: is the head the quantifier *erti* 'one' which takes an NP complement as in (75a), or is the head the derived NP as in (75b)?



Harris provides strong evidence that *megobar-ta-gan-i* is in fact the external syntactic head of an NP, not a complement to the quantifier *erti* 'one'. First, it is clear that these constructions behave exactly like derived head nouns, as they have exactly the same declensional pattern of modifier and modified as regular noun phrases:

- | | | | |
|------|------------|--------------|-------------------------|
| (76) | Nominative | ert-i | megobar-ta-gan-i . |
| | | one-NOM.MOD | friend-GEN.PL-from-NOM |
| | Narrative | ert-ma | megobar-ta-gan-ma |
| | | one-NARR.MOD | friend-GEN.PL-from-NARR |
| | Dative | ert | megobar-ta-gan-s |
| | | one.DAT.MOD | friend-GEN.PL-from-DAT |

Genitive	ert-i	megobar-ta-gan-is
	one-GEN.MOD	friend-GEN.PL-from-GEN
Instrumental	ert-i	megobar-ta-gan-it
	one-INST.MOD	friend-GEN.PL-from-INST

(Harris 2002: 2)

If *megobar-ta-gan-i* were the complement of a quantifier like English ‘one of the friends’, then we would expect that the quantifier itself would function as the syntactic head and therefore inflect for case like a modified head rather than a modifier phrase. As the case arrays above show, this is not the situation in Georgian: the quantifier behaves like a modifier for a head noun by not having the full set of case-forms (see Ch. 2 for more examples).

Another argument that Harris provides comes from the selectional behavior of clitics. As discussed in Ch. 2, Georgian has an enclitic particle *=ve* that tends to focus or emphasize an argument. This *=ve* clitic must be attached to a morphological word producing a new word, and cannot attach to a stem to produce a word. This makes the prediction that, if it attaches to the genitival suffix of locational *=gan*, but not that of partitive *-gan-i*, the genitival suffix of *-gan-i* is not in fact a morphological word after all. This prediction is actually borne out (77):

- (77) a. am megobr-isa=**ve**=gan
 this.OBL friend-GEN.EXT=**EMPH**=from
 ‘from this very friend’
- b. am megobr-isa-gan=**ve**
 this.OBL friend-GEN.EXT-from-**EMPH**
 ‘from this very friend’
- c. ama=**ve** megobr-isa=gan
 this.EXT=**EMPH** friend-GEN.EXT=from
 ‘from this very friend’
- (Harris 2002: 7-8)

- (78) a. * ert-i megobar-ta=ve-gan-i
 one-NOM friend-GEN.PL=EMPH-from-NOM
 ‘one of (the) friends indeed’

b. ert-i megobar-ta-gan-i=ve
 one-NOM friend-GEN.PL-from-NOM=EMPH
 ‘one of the friends indeed’

As Harris argues, this is indeed strong evidence that the partitive construction is now formally distinct from the cliticizing postpositional phrase with which it is related.

Now, here is where both a morphemic and amorphemic theories of morphology turn out to have complications not mentioned by Harris, Anderson or Stump. This is because, although in such constructions the nominal syntax appears to treat *megobar-tagan-i* as a head, in terms of agreement, the noun embedded inside the partitive construction can be relativized, and here the relative pronoun clearly bears different features from the quantifier as well as the exterior layer of case morphology on the partitive word, as in (79).

- (79) ert-i im c'ign-**ta**-gan-i, roml-**eb**-i=c sik'et-it
 one-NOM that.OBL book-GEN.PL-from-NOM which-PL-NOM=REL kindness-INST

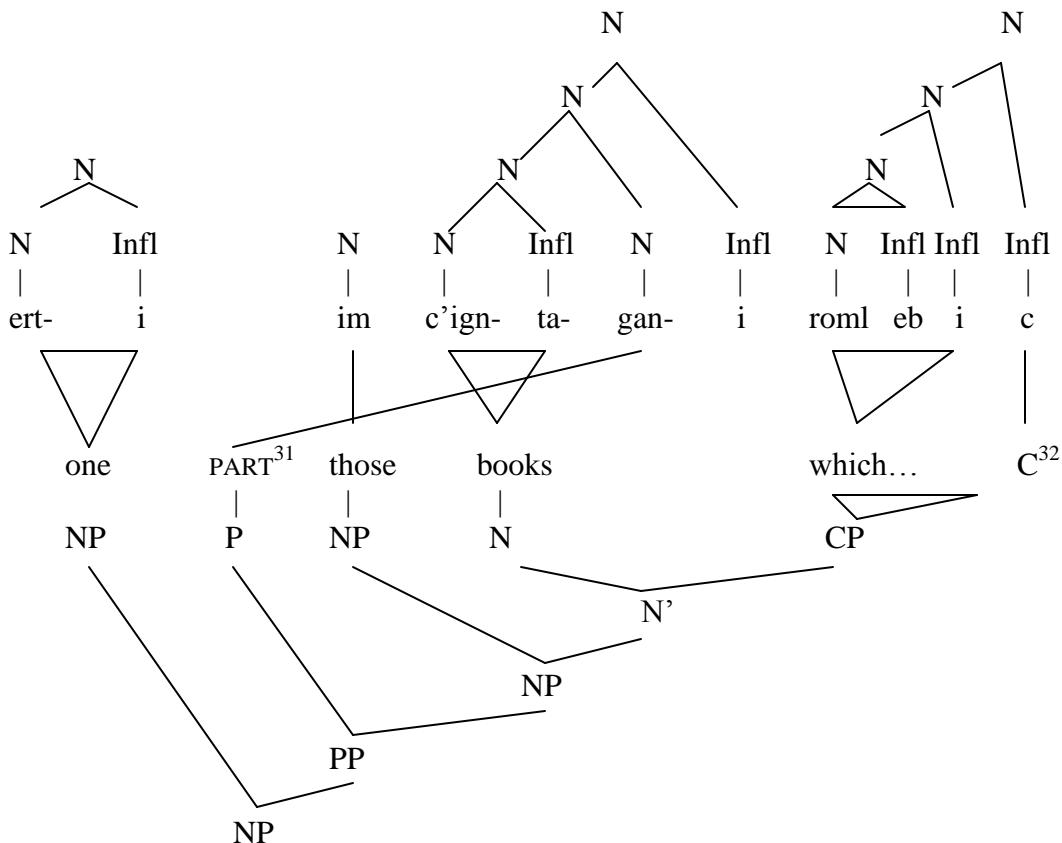
 da sinatl-it ga-vs-eb-en....
 and light-INST PVB-be.filled-TH-3PL
 'One of these books, which [PL] are filled with kindness and light...',³⁰

Here in this construction, the relative pronoun is plural, *romlebic*, and thus the relative clause can only be modifying the set of all books, despite the fact that the external number marking of the head noun is singular, not plural: it is not **c'ign-ta-gan-eb-i*.

³⁰ Quoted from an online account *Tanamedroveta P'ort'retebisatvis* [For Contemporary Portraits] by P'avle Ingoroqva of Alexandrian:
<http://www.hallf.com/contemporary.htm> (1 August 2011) and <http://www.hallf.com/contemporary.htm> (11 August 2011).

Two explanations present themselves. The first is that in Georgian, agreement is not a syntactic but a semantic phenomenon (itself a plausible analysis). The second is that agreement is still syntactic, but there is a mismatch between the nominal syntax and the morphological structure of the noun. Evidence that the latter is the case comes from the fact that the demonstrative modifier of *c'ign-ta-gan-i* is not in the nominative case *is* ‘that.NOM’ but rather takes the oblique form of the pronoun used for all other cases, *im* ‘that.OBL’, including the genitive. In other words, it looks like syntactically the modifier *im* really is determined by the genitive-case form *c'ign-ta* ‘of the books’, despite the fact that this genitive is actually embedded within a higher level morphological structure:

(80)



The graph in (80) illustrates the basic problems of the partitive construction. On the one hand, the internal syntax of the partitive construction requires that the relative clause somehow be able to ‘see’ the plural syntactic features (*romlebic*) of the internal head. On the other hand, the external syntax of the construction requires that *erti* serve as a syntactic modifier of a noun *c'igntagani*, since it agrees with it in case features (*ertma* *c'igntaganma*, *ert c'igntagans*, *erti c'igntaganit*, etc.) as if it were a regular modifier.

³¹ Here I place the partitive element before the NP for purposes of clarity to show how the relative clause modifies the head noun inside the syntactic adpositional phrase; the actual linearization is not the question, but rather the constituency facts. Furthermore, I denote it as ‘PART’ to distinguish it from the regular postposition *-gan* ‘from’ which has both different syntactic and different morphological properties, as mentioned above.

³² I treat the *=c* suffix here as a clitic complementizer, as it shows up on all relative pronouns immediately outside all case and number inflection: *roml-eb-i=c*, *roml-eb-ma=c*, *roml-eb-sa=c*, etc.

Such a construction seems to be necessary even if one must sacrifice endocentric syntactic generalizations that tend to hold cross-linguistically.

This kind of complicated construction has deep implications for the general theory of morphology, since on its face, the agreement really does seem to be peering inside the structure of the partitive construction to find the plural argument to agree with. This, in turn, seems to draw into question the amorphous theories that Anderson and Stump have put forth. Before we try to resolve these questions, I will turn to one further *prima facie* counterexample to amorphism in morphology: violations of anaphoric islands.

4.5.6 Amorphous Morphology and Violations of Anaphoric Islands

The last piece of evidence against amorphous accounts of morphology concerns referential dependencies between subcomponents of words and anaphora elsewhere in the clause. Harris cites Postal (1969) for the claim that morphological words are islands for purposes of reference, as in the English example in (81):

- (81) *He took the [[tea]_i]pot] and poured it_i into the cup.
(Harris (2001), citing Spencer (1994: 42))

In this construction, most English speakers will agree that the sentence cannot be construed so that the contents of the teapot were poured out³³; instead, it would have to take on the pragmatically odd reading whereby the teapot was itself converted into a

³³ In fact, the reading where the contents and not the container are being poured is fine with me. However, the existence of speakers for whom this is bad is enough to illustrate the problem.

liquid and poured into the cup. In English, likewise, it is impossible to add derivational affixes to referential pronouns, as in (82):

- (82) a. McCarthyite, *himite
b. childless, *youless
c. Clinton-like, *him-like. (Harris 2001, citing Postal 1969)

In the early generative literature on anaphora, it was assumed that such ungrammaticality was motivated by constraints against two kinds of anaphoric construction: outbound anaphora like the example of (82) above where an external anaphor is bound by a constituent of a word; and inbound anaphora, like those in (82), where the anaphor itself forms the base of a morphologically more complex word. In turn, these two principles were usually taken to be manifestations of a generalized Lexical Integrity Principle in which the internal constituency of words are inert to syntactic processes (Lapointe 1980, DiSciullo and Williams 1987, Bresnan 1995).

In her 2006 paper, Harris makes a strong case that indeed these kinds of anaphoric islands are not universal by any means as they show up in numerous contexts in Georgian where they are in fact common, and that the Lexical Integrity Principle is thereby considerably weakened. For example, she points to the fact that in Georgian, demonstrative pronouns have three levels of deixis: proximal, medial, and distal, in addition to a demonstrative with neutral deixis. For each of these levels of deixis, there corresponds a large number of correlative modifiers that alter the meaning in some way, though these do not belong to any obvious semantic natural class:

Table 4.7. Correlative chart of pronominals in Georgian (Harris 2006: 118)

PROXIMAL	MEDIAL	DISTAL	NEUTRAL	GLOSS
1. amis ‘this’	magis ‘that’	imis ‘that, yon’	mis ‘his, her’	
2. amis-odeni	magis-odeni	imis-odeni	mis-odeni	‘as many/much as she’
3. amis-peri	magis-peri	imis-peri	—	‘like it/this/that’ (dialectal only)
4. amis-nairi	magis-nairi	imis-nairi	mis-nairi	‘like him, this/that kind (of)’
5. amis-tana	magis-tana	imis-tana	mis-tana	‘like this/that’
6. amis-iani	magis-iani	imis-iani	mis-iani	‘her-ite’
7. amis-euli	magis-euli	imis-euli	mis-euli	‘having once belonged to him’
8. amis-eburi	magis-eburi	imis-eburi	mis-eburi	‘comparable to this/that’
9. sa-amis-o	sa-magis-o	sa-imis-o	sa-mis-o	‘for this/that’
10. u-amis-o	u-magis-o	u-imis-o	u-mis-o	‘without her’
11. am ‘this’	mag ‘that’	im ‘that, yon’		
12. am-gvari	mag-gvari	im-gvari		‘this/that kind (of)’
13. am-(o)deni	mag-(o)deni	im-(o)deni		‘this/that many’
14. am-nairi	mag-nairi	im-nairi		‘this/that kind (of)’
15. am-it’om	mag-it’om	im-it’om		‘for this/that reason’
16. ak ‘here’	mand ‘there’	ik ‘there, yonder’		
17. ak-auri	mand-auri	ik-auri		‘originating here/there’

In fact, many less ‘exotic’ languages have constructions like this marginally: just consider English *therefore*, *herewith* or German *dafür* ‘for it’, *deswegen* ‘because of it’. What is interesting is that Georgian has this so systematically and with essentially the entire pronominal system. Here are two of Harris’ examples³⁴:

- (83) Č’ianč’vela_i tav_{i,*j}-is-oden-a t’virt-s mi-a-tr-ev-d-a.
 ant.NOM self-GEN-QUANT-HAVING load-DAT PVB-PRV-carry-TH-IMPF-3SGIMP
 ‘The ant was carrying a load as big as itself.’

- (84) R-is-oden-a t’virt-s mi-a-tr-ev-d-a č’ianč’vela?
 what-GEN-QUANT-HAVING load-DAT PVB-PRV-carry-TH-IMPF-3SGIMP ant.NOM
 ‘What size load was the ant carrying?’

³⁴ Slightly altered, to indicate the morphological breakdown.

In (83), we see that the morphological reflexive³⁵ *tav-* is bound by the referential subject, despite being embedded rather deeply within the correlative's morphological structure. (This, for what it is worth, is not a participial construction of the normal type; it is exclusive to correlatives.) In (84), we see an analogous structure, but this time with a *wh*-construction. Like other *wh*-constructions (see Ch. 2.6), the focal element must surface preverbally; *č'ianč'vela miatrevda risodena t'virts? would be ungrammatical except as an echo-question. This is more evidence of how nonconfigurationality and the dedicated preverbal focus position interact: the *wh*-construction is derived, not basic, and still surfaces as if it were a regular *wh*-construction³⁶.

For a theory of morphology like that of Anderson or Stump that do not assume morphemes, their referential properties are problematic enough. However, there are actually examples that combine the NPC violations and violations of anaphoric islandhood. Consider for example the suffix *-indel-* ‘dating from’ (Harris 2006: 120; data below mine) which can take a demonstrative and an NP phrase and convert them into a declinable nominal form:

- (85) a. am c'el-s c'a-vid-a Amerik'a=ši
 this.OBL year-DAT PVB-go.AOR.3-AOR3SG America=to
 ‘He went to America this year.’
- b. es šenoba am-c'el-indel-i=a
 this.NOM building.NOM this-year-dating.from-NOM=be.3SG
 ‘This building dates from this year.’ (lit. ‘This building is a dating-from-this-year-one.')

³⁵ I call it the morphological reflexive because, as argued in Ch. 2 and 3, I do not agree with an account that uses the reflexive as a test for grammatical relations. It is unquestionably *morphologically* distinct from the nonreflexive possessive with *mis-*, however.

³⁶ This does not, however, actually disprove a movement-based theory in which the *wh*-word is generated in object position and then moves to satisfy some structural principle, as e.g. in Chomsky (1995). However, the derivation would necessarily become much more complicated.

Harris also cites examples where whole phrases can be productively used with circumfixes usually associated with morphological words:

- (86) **Gamsaxurdia_i** čem-i sa-q'var-el-i mc'eral-i=a,
 Gamsaxurdia.NOM 1SGPOSS-NOM FUT-love-PART-NOM writer-NOM=be.3SG
- da u-**am_i**-mc'eral-o-d kartul-i lit'erat'ura .
 and PRIV-**this**-writer-PRIV-ADV Georgian-NOM literature.NOM
- c'ar-mo-u-dgen-il-i=a
 PVB-VENT-PRIV-imagine-PART-NOM=be.3SG

'[Konst'ant'ine] **Gamsaxurdia_i** is my favorite writer, and without **this_i**, writer Georgian literature is unimaginable.' (Harris 2006: 121; my glossing)

In this construction, the entire phrase *es mc'erali* 'this writer' has been turned into a derived privative construction with the circumfix *u-...-o* to which the adverbial case has been added. *Uamc'eralod* ('this-writer-lessly') thus violates both the NPC, since it incorporates what we would normally think of as a whole phrase into the matrix of a single phonological and morphological word; and it violates morphological anaphoric islands, since the *am* is the oblique stem of the demonstrative pronoun which refers back to the subject of the previous clause. Such constructions are by no means rare. Indeed, their very productivity stands as a testament to the kinds of problems that first motivated the morpheme in the first place in the beginning of the 20th century: when morphology becomes involved in almost every level of the language, how could a language learner possibly make sense out of it, without having some intuitive notion of breaking words into pieces?

4.6 Conclusion

In this chapter, in §4.1, we examined the complex set of Georgian agreement markers and concluded that, based on the notion that hierarchies are defined by competition for a particular grammatical distribution, blocking processes in Georgian agreement constitute morphological hierarchies. We then looked at three different prominent theories that seek to reduce issues of morphological feature hierarchies to an epiphenomenon of a more general theory of morphology: Halle and Marantz (1993)'s Distributed Morphology approach (§4.2); Anderson (1992)'s A-morphous Morphology approach (§4.3); and Stump (2001)'s Paradigm-Function Morphology approach (§4.4). We concluded that each of these theories' analyses of the Georgian data fails in one or more ways. However, the answer wasn't obvious, since the data paradoxically seems to suggest that deriving hierarchies in both standard morphemic and amorphemic analyses won't work: multiple exponence phenomena seem to argue against the notion of morphemes and morphemic hierarchies, while processes like noun-incorporation and 'No-Phrase' constraint violations argue that refer to proper subparts of words seem to argue against amorphemic accounts, too. In the next chapter, we will propose an inferential amorphous account modelled on Stump (2001) with crucial changes that rely on the notion of (often) redundant modular specification of structures.

§5. Feature Geometries as Constraints on Morphological Hierarchies

Why have we spent so much time discussing obscure (though fascinating) constructional patterns in Georgian that do not necessarily impinge on the narrow aspects of morphological feature hierarchies? This is because if, as most scholars assume, morphological feature hierarchies are actually epiphenomena of the morphological system as a whole and not hard-wired or stipulated in the grammar, then we must identify how that morphological system works in general to identify where such hierarchies come from. Is it, or is it not, the case that morphemes provide an adequate account of morphological systems? The facts we reviewed in the last chapter shows that's not so easy to answer as it might appear. Here are the two basic conflicting sets of facts:

- (1) a. **FACT 1:** There is good evidence that the classical conception of the morpheme cannot stand as is: zero morphs, cumulativity, subtractive morphs, multiple exponence, insufficient exponence among other problems all suggest that the relationship between sound and word structure must necessarily be inferential and realizational in nature, as Anderson, Stump and others have argued.
- b. **FACT 2:** On the other hand, in a quasi-polysynthetic language like Georgian, morphology is so much a basic part of every utterance that there must be a relatively straightforward way for speakers to acquire morphological constructs like the partitive construction and anaphoric island violations that they could never possibly have heard before -- a classical poverty of the stimulus argument, but for morphology instead of syntax. Furthermore, the fact that that morphology can be wildly at variance from the syntactic or semantic structures does not remove from us the burden of finding a way of systematically relating the two to the extent that we can.

In what follows, I will try to reconcile these two facts by appeal to a version of Stump's PFM theory with three basic changes, for some of which we have already provided the evidence:

- (2)
 - a. *Morphological features are distinct from syntactic and semantic features*, even when redundantly specified. This will account for expletive morphology and dependencies that hold across paradigms that cannot be accounted for by reference to syntactic or semantic asymmetries. (§5.1-§5.2)
 - b. *Interface procedures* that map syntactic or semantic structures not onto a morpheme, *per se*, but to particular rules in rule blocks. Appearances notwithstanding, syntactic and semantic processes that refer to proper subconstituents of words will effectively be mapped onto cells in paradigms, not strings of phonological segments. (§5.2)
 - c. *The PDH does not hold absolutely*, and thus extrinsic rule ordering *a la* Anderson must take place at some level. What constrains extrinsic ordering (in addition to Pāṇini's Principle) is set-theoretic properties of feature geometries. (§5.3)

These three claims together will form the basis for a larger claim that hierarchies in all languages are epiphenomena of particular feature geometries within each module: morphological, syntactic, semantic and so forth, and not stipulated aspects of a speaker's knowledge of language.

5.1 On the Modular Autonomy of Feature Specifications

5.1.1 Background

On the face of it, for many modern linguists, feature specifications can only be syntactic or (for some) semantic. There is a certain intuition behind this. It is because for the most basic or obvious kinds of processes that make reference to features – agreement,

semantic selection – involve processes that act over phrases or clauses. Consider the following Ancient Greek paradigm:

(3)	egō paideu-ō ‘I educate’	hemeis paideu-omen ‘We educate’
	su paideu-eis ‘You educate’	humeis paideu-ete ‘You all educate’
	autos paideu-ei ‘He educate’	autoi paideu-ousi ‘They educate’
(4)	NOM egō ‘I’	
	ACC me	
	DAT (e)moi	
	GEN (e)mou	

That is, in traditional grammar we say that *egō* ‘I’ has particular features because of how it interacts with the verbs it combines with in a clause. We do not attribute features to that pronoun because of the *shape* of that pronoun: there is nothing in particular that *egō* has in common with *paideuomen* ‘we educate’ much less the other case forms like *emoi* ‘for me’, despite the fact that they all are said to bear a feature ‘first person’. However that is precisely because linguists tend to think in terms of morphemes in which morphological paradigms and syntactic phrase structures and semantic propositions all align. Thus if we are to find any basis for distinguishing morphological features from syntactic or semantic analogues in a theory of morphology without morphemes, we must find two things:

- (6)
 - a. The syntactic *and* semantic evidence must suggest one kind of feature marking, which is at odds with the morphology (otherwise, morphology itself is not shown to be autonomous);
 - b. The attribution of a feature must be based on a systemic property of *paradigms*, not narrowly on the phonological expression of those paradigms.

Morphological features will then simply be the labels for properties of those paradigm cells. In the following sections, we will examine evidence that paradigmatic cells truly are autonomous from syntactic or semantic structures they map onto: expletive agreement morphology, ‘agreement’ with syntactic adjuncts, quirky preverb behavior, and the lack of agreement with (mostly) inanimate arguments.

Examples from Georgian data

This claim that separate features for morphology exist is in fact not wholly new: it has been made by a number of other morphologists working on morphosyntax: Sadock (1991), Anderson (2001), Spencer (2004), Aronoff (1976) and Harley and Ritter (2002). However, Georgian data provides some rather convincing evidence that morphological paradigmatic properties are not motivated by syntax. We have already mentioned some examples of how argument structure, syntax and grammatical functions may be at variance with the morphological realization of some constructions: expletive agreement which lacks any semantic basis whatsoever as in (7); agreement for syntactic adjuncts lacking any obligatory realization in GF-structure or A-structure but being present in R-structure, as in (8).

- | | | |
|-----|--|--------------------------------|
| (7) | kar-i u -ber-av-s
wind-NOM PRV -blow-TH-3SG
‘The wind is blowing’ (expletive in bold) | (Anderson 1992; Anderson 2001) |
| (8) | gv-i-m <small>ğ</small> er-i-s vs. m <small>ğ</small> er-i-s čven=tvis
1PL -PRV-sing-TH-3SG sing-TH-3SG 1PL=for
‘She’s singing for us’ (Adjunct is bold) ‘She’s singing for us’ | |

5.1.1 Person marking manifested in choice of preverbs

Another piece of evidence that syntactic or semantic features, in this case for person, are distinct from morphological features that form paradigms comes from the behavior of preverbs with certain verbs of giving. With verbs of motion, the preverbs have relatively clear directional meanings: *ga-* ‘out’, *a-* ‘up’, *ča-* ‘down’, etc. (9a) With most verbs, however, the preverb simply serves to perfectivize the verb, as well as adding some nuance of semantic meaning; thus with (9b), the semantic relationship of writing to *ga-* ‘out’ to *c'er-* ‘write’ is only partially predictable compositionally:

- (9) a. a- 'up'
 da- 'down'
 ga- 'out'
 gada- 'through'
 mi- 'thither'
 mo- 'hither'
 še- 'in(to)'
 ča- 'down'
 c'a- 'away'

} -v-di-var
 1-move.PRES-1
 'I rise/fall/go out/pass/go/come...'

b. ga-v-c'er-e saavadmqopo=dan
 PVB-1-write-1/2.AOR hospital=from
 'I discharged him from the hospital.'

Now the interesting fact about this is that there is a third category of preverb usage in which a verb will alter its preverb depending on the person of the object. Consider the aorist paradigm of the *cema* ‘give’ (Manning 1996):

Table 5.1. Aorist Screeve Paradigm of *cema* ‘give’

Subj. ↓	Obj. →	1 st sg	Pl	2 nd sg	Pl	3 rd sg	pl
1 st sg				mo-g-e-c-i	mo-g-e-c-i-t	<i>mi-v-e-c-i</i>	<i>mi-v-e-c-i-t</i>
Pl				mo-g-e-c-i-t	mo-g-e-c-i-t	<i>mi-v-e-c-i</i>	<i>mi-v-e-c-i-t</i>
2 nd sg		mo-m-e-c-i	mo-gv-e-c-i			<i>mi-e-c-i</i>	<i>mi-e-c-i-t</i>
Pl		mo-m-e-c-i-t	mo-gv-e-c-i-t			<i>mi-e-c-i</i>	<i>mi-e-c-i-t</i>
3 rd sg		mo-m-c-a	mo-gv-c-a	mo-g-c-a	mo-g-c-a-t	<i>mi-s-c-a</i>	<i>mi-s-c-a</i>
Pl		mo-m-c-es	mo-gv-c-es	mo-g-c-es	mo-g-c-es	<i>mi-s-c-es</i>	<i>mi-s-c-es</i>

This paradigm is interesting not so much because of the regular inflectional morphology, which is more or less expected in Georgian ditransitive verbs. What is interesting for our purposes is that if the primary object is first or second person, then in addition to the regular inflectional morphology for subject and object, one must choose the preverb *mo-* ‘hither’ (forms in bold); while if the primary object is third person, then also in addition to the inflectional morphology, one must choose the preverb *mi-* ‘thither’ (forms in italics). That is, if we assume that syntactic features are identical to morphological features, we would have to come up with an explanation for why the very same preverb constructions are recruited to reinforce person-based inflectional patterns that are traditionally not thought of as inflectional, but rather derivational.

It seems much simpler in such cases simply to say that a syntactic or semantic [\pm PART] specification in one domain triggers *both* a particular kind of inflectional morphology *as well as* a particular kind of preverb – that is, that morphology itself has a nontrivial (in this case) many-to-one mapping into the other modules’ arguments’ features. It must be emphasized that this is not true of all verbs; this is only true of a handful of verbs’ paradigms, further testifying to its morphological character.

5.1.2 Different modular mappings of number morphology

Another type of mismatch between morphology and ‘semantax’ concerns plural agreement. Traditional Georgian grammar claims, and prescriptive norms try to uphold, the notion that Georgian verbs do not agree in number with inanimate arguments (10a), unless those inanimate arguments are motile (10b). We also saw above that descriptively this cannot be so: some verbs sometimes do agree with inanimate (indeed, semantically abstract) arguments if they bear the right discourse structure, as with (11) repeated from above:

- | | | | |
|------|---|----------------------------|---|
| (10) | a. kv-eb-i
stone-PL-NOM | did-i
big-NOM | ar-is / *ar-ian
be-3SG/ be-3PL |
| | ‘The stones are big.’ | | |
| | b. mankan-eb-i
car-PL-NOM | did-i
big-NOM | *ar-is / ar-ian
be-3SG/ be-3PL |
| | ‘The cars are big.’ | | |
| (11) | mesame seri-is
third.GEN series-GEN | nak'vt-eb-s
form-PL-DAT | saerto punkcia
common.NOM function.NOM |
| | a-ertian-eb-t
PVB-unite-TH-PL | | |
| | ‘A common function unites the forms of the third series...’ | | |
| | (cited in Tuite (1989: 134), from Gogolašvili (1984: 14)) | | |

An even more interesting intermediate example that illustrates how agreement is sensitive to things other than syntactic structure as such comes from examples which could have two different possible constructions. If one says:

- | | | | |
|------|--|-----------------------------------|------------------------|
| (12) | cxen-eb-i
horse-PL-NOM | ar-is / ar-ian
be-3SG / be-3PL | ezo=ši
courtyard=in |
| | ‘The horses [i.e., equestrian statues] are in the courtyard’ | | |

the default agreement is plural, since under normal circumstances one is speaking of living animals. However, if one is speaking of a number of equestrian statues or toy horses, then speakers differ on the issue (Rusudan Asatiani, p.c.): some speakers still require plural agreement, while other speakers can get either singular or plural agreement, and yet others just singular agreement. This again reinforces the idea that morphology is an independent dimension, which maps onto either syntax, or semantics, or other independent domains, but is logically distinct from them.

It is crucial to understand that in such examples, we are not speaking of ‘morphosyntactic’ features vs. ‘morphosemantic’ features, since the actual agreement forms in each case are exactly the same morphological forms. There is, in other words, no special morphology when one aligns morphology with semantic specifications rather than syntactic ones. Rather, there are only morphosyntactic or morphosemantic *processes*, i.e., rules that specify whether a realization rule, and therefore the paradigm cell it creates, tracks a syntactic or a semantic structure. Given this, we may assign the following default interface constraints¹:

- (13) a. GF-structure: [GF: [NUM: PL]]
 ↑
 R-structure: [Θ-stx: [MOTILE = +]]
 ↑
 M-structure: RR_{11, <Arg: {Num: Pl}>, v}(<X, σ>) = <Xt, σ>
 (i.e., ‘If the argument is specified for [+Motile] in Role-structure, then invoke Realization Rule for –t suffixation.’ This explains the inanimate constructions that nonetheless trigger plural agreement in (nb).)

¹ These interface rules are not intended to be an exhaustive analysis of Georgian number agreement. They notably leave out the effects of quantifiers, which obligatorily require arguments to be morphologically and syntactically singular, both in nominal and verbal morphosyntax, as pointed out in Ch. 2 and 3. These rules are only intended to show the way forward in relating nonmorphemic realization rules with other modules’ properties.

- b. GF-structure: [GF: [NUM: PL]]
 ↑
 R-structure: [Θ-stx: [PERC = +]]
 ↑
 M-structure: RR_{11, <Arg: {Num: Pl}>}, v(<X, σ>) = <Xt, σ>
 (i.e., ‘If the argument belongs to the class of entities specified for
 percipience (i.e., all animals) in Role-structure and is plural, then invoke
 Realization Rule for –t suffixation.’ This explains the general distinction
 between animate and inanimates triggering plural agreement)
- c. GF-structure: [GF: [NUM: PL]]
 ↑
 D-structure: [PART = TOP]
 ↑
 M-structure: RR_{11, <Arg: {Num: Pl}>}, v(<X, σ>) = <Xt, σ>
 (i.e., ‘If the discourse participant is a topic and a syntactic argument of the
 clause is plural, then invoke Realization Rule for –t suffixation.’)

Crucially, however, just because an argument has a featural specification ‘NUM: PL’ in GF-structure, this need not have any manifestation in morphosyntax, as e.g. when that argument is [-MOTILE] or [-PERC] or not the Topic, a set which includes a large and statistically frequent class of arguments. Furthermore, unlike Stump’s approach, the question becomes not which –t suffix rule to invoke, but when to invoke one and the same –t suffix, greatly simplifying and clarifying matters. Such metarules for the interface between modules would also under normal conditions not need to be extrinsically ordered, since their targeting conditions are not overlapping: not all [+MOTILE] arguments are animates specified for [+PERC], and not all arguments are discourse topics. Indeed, the existence of optionality of semantic or syntactic agreement in the equestrian statue case suggests that they cannot be so ranked, since speakers really do seem to have a choice about which rule to follow. The grammar is indeterminate with respect to plural agreement, resulting in speaker variation.

5.1.3 How ‘a-morphous’ morphological features map onto syntax and semantics

Now that we have addressed how a realizational rule makes reference to purely morphological features, we are ready to see how realizational rules map onto what appear to be proper subparts of words. Recall again the partitive construction from the last chapter:

- (14) ert-i im c'ign-**ta**-gan-i, roml-**eb**-i=c ...
one-NOM that.OBL book-GEN.PL-from-NOM which-PL-NOM=REL
'One of the books which(PL)...'

The complexity of this case lies in the fact that the constituency tests suggest that *c'ign-ta-gan-i* ‘of the books’ is the syntactic (C-structural) head for purposes of case marking, while for purposes of agreement, the incorporated noun really does look like it’s being modified by the relative clause. We can account for this by saying that this is a mismatch between morphology and both GF-structure and C-structure. We could therefore assume that the peculiarity lies in the fact that partitive *-ta-gan-* behaves like a single suffix in the same rule block as the standard pluralization *-eb-*:

- (15) RR_{1,ARG: {},N}(*X, σ*) = *Xtagan, σ*

This RR thus makes the claim that the *-ta-* which looks like the regular Old Georgian oblique plural *-ta* suffix has in fact been reanalyzed in modern Georgian as part of the partitive suffix itself. The reason for this is basically that partitive *-gan* never attaches to any regular plural suffix itself (**c'ign-eb-gan-i*), nor any other Old Georgian form (**-ni-gan-i*, **-no-gan-i*) but does take case after it. We argued earlier that regular *-ta* actually

constitutes a portmanteau rule block monopolizing the space of two distinct rule blocks; otherwise we would see **c'ign-eb-ta* or **c'ign-ta-s* as we argued earlier above. Yet here, the *-ta-gan-* seems to be occupying the same space as the *-eb-*, since the regular case suffixes can follow it: *-ta-gan-ma*, *-ta-gan-s*, *-ta-gan-it*, etc. That suggests that *-ta-gan* (in one rule block) has a different distribution from *-ta* (taking up the space of two).

Now, here is where the mismatch comes into play. This realization rule is then linked to the properties of an adposition in GF-structure:

$$(16) \quad \text{GF-stx:} \quad \left[\begin{array}{l} \text{ADJ} \\ \downarrow \\ \text{M-stx:} \end{array} \right] \left[\begin{array}{l} \text{PRED} \\ \text{COMP} \left[\begin{array}{ll} \text{'PART'} & \\ \text{CASE:} & \text{GEN} \\ \text{NUM:} & \text{PL} \end{array} \right] \end{array} \right]$$

$$\text{RR}_{1,\text{ARG: } \{\},\text{N}}(\langle X, \sigma \rangle) = \langle X\text{tagan}, \sigma \rangle$$

Note that the morpholexical category that the RR targets is distinct from its GF-structural analogue: in GF-structure, the construction is a postpositional adjunct, while in M-structure, the construction is a (morphological) noun. This explains why on the one hand, syntactically, it selects for a genitive case modifier external to the morphological word, *im* ‘that.OBL.’ in *im c'ign-ta-gan-i*; while on the other, it is morphologically a noun and therefore takes case like a regular noun (the *-i* on *c'ign-ta-gan-i*).

Here’s the significance: this shows that *we do not need morphemes to account for morphology even in those cases where it seems most salient*, as with syntactic noun incorporation here. We can do completely without morphemes as such as long as we are careful to distinguish purely morphological from purely syntactic generalizations. This in turn brings us back to our question of morphological feature blocking and feature hierarchies.

5.2 Rule blocks, non-Pāṇinian rule ordering and Feature Geometries

The last two sections argued for two general amendments to Stump's Paradigm Function theory of Morphology:

- (17) a. Unlike Stump (2001), the features that RRs target are not the same formal objects as those that syntactic or semantic rules target;
b. Syntactic or semantic processes that appear to target proper subparts of words, phenomena which Stump's theory does not encompass but in its spirit, are actually targeting RRs and the paradigm cells they create;

We also argued above for a third amendment: that Stumpian RRs must be, as with Anderson, extrinsically ordered. Stump made Pāṇini's Principle the central device of PFM to account for hierarchical phenomena in morphology. This was for Stump as much a methodological concern as it was an empirical one. As he puts it,

'This condition [the Pāṇinian Determinism Hypothesis – TRW] greatly restricts the range of analyses available (to linguists and to language learners) for complex inflectional systems: in languages whose realization rules realize single properties, [the PDH] has the effect of requiring these rules to be organized into featurally coherent blocks; in languages whose realization rules realize larger sets of morphosyntactic properties, [the PDH] requires members of the same block to participate in relations of comparative narrowness to the extent that they lack featural coherence. In all languages, [the PDH] excludes the existence of any rule block containing two or more rules which are applicable to some FPSP² <X, σ> but no one of which is narrower than all the others. Because the rule-ordering approach to resolving competition does not impose any comparable restriction on the constitution of rule blocks, it is less restrictive than the Pāṇinian approach.' (Stump 2001: 74).

Stump has a point here: given a processual rather than item-based theory of morphology, how can we restrain possible morphological blocking processes? Can a realization rule

² Or 'form/property set-pairing'.

impose essentially any kind of mapping between a feature and its phonological form in a paradigm? The morpheme itself was in effect one kind of constraint, since it compartmentalized features into things that resemble coherent units. However, without that constraint, and without a set-theoretic constraint such as the PDH, how can we prevent essentially any kind of process?

5.2.1 Features as labels of natural classes

The answer to this, I will argue, is that morphological systems are less constrained than Stump's PDH would have it, but not completely unconstrained. They are constrained by a different kind of set-theoretic notion, one inherent in the idea of features rather than one inherent in the idea of RRs as with the PDH. This is the notion of a feature geometry.

To clarify what we mean, let's review what we mean by a feature. At the beginning of 4.6, we gave reason to believe that morphological features are not equivalent to the actual cells in paradigms, but rather to labels that divide those cells up into natural classes. Consider the following paradigm arranged in cells:

Table 5.2. Aorist screeve of *gageba* 'understand'

ga-v-i-g-e PVB-1-PRV-understand-1/2 'I understood it'	ga-v-i-g-e-t PVB-1-PRV-understand-1/2-PL 'We understood it'
ga-i-g-e PVB-PRV-understand-1/2 'You understood it'	ga-i-g-e-t PVB-PRV-understand-1/2-PL 'Y'all understood it'
ga-i-g-o PVB-PRV-understand-3SG 'He understood it'	ga-i-g-es PVB-PRV-understand-3PL 'They understood it'

Morphological features are ways of saying that two or more different cells in a paradigm belong to a natural (morphological) class. For example, although the two cells shaded dark gray are not morphologically identical, they have in common that they are inflected as ‘first person’, and the cells shaded light gray are second person. But how many such classes are there, and what criteria must we use to identify something as a natural morphological class?

5.2.2 Early views

In the structuralist literature, scholars have often tried to suggest that, at least in some languages, third person constitutes the absence of any speech act participant. Though Forchheimer (1951: 6) notes a number of attempts to group second and third together as a group (de la Grasserie 1888, Boas 1911, van Ginneken 1911), a larger body of Structuralists put forth the opposite view that speech act participants typologically constitute a more ‘natural’ class (Wundt 1911, Schmidt 1919, Buehler 1934, Bloomfield 1938, as cited in Cysouw 2001). The argument in both camps was based on rather fuzzy *a priori* notions of ‘naturalness’: the first person was ‘objective’ and ‘personal’, and likewise the second person was also ‘personal’. Forchheimer, making a more concrete claim, fell into this second camp, enunciating a set of asymmetries between participants and third person as in (18):

- (18) a. 3rd person agreement is often zero, 1st/2nd person agreement is overt.
- b. Many languages have no 3rd person pronoun—or at least no nominative form.
- c. Many languages have distinct 1st & 2nd person pronouns only; for 3rd person they use demonstratives.

- d. Closely related languages often have cognate 1st and 2nd person pronouns but 3rd person pronouns which are not obviously related.
- e. 1st and 2nd person are often similar in form and inflection but dissimilar from that of 3rd person.
- f. 3rd person is much more subject to objective subdivisions such as class, gender, and location. (Forchheimer 1953:6; as cited in Harley and Ritter (2002: 487))

5.2.3 Cysouw (2001)

Another more recent study of morphological feature systems has been that of Cysouw (2001). Cysouw surveyed the pronominal and agreement systems of over 250 languages worldwide in an attempt to give a sense of what kinds of oppositions languages tend to encode, in at least some subsystems, and what kinds of syncretisms are likely to result from neutralizations of those oppositions. Cysouw concluded that languages tend not to actually encode the cardinality of arguments in morphology, but rather encode the notion of ‘groups’. Thus for most languages and in most contexts ‘first person plural’ and ‘second person plural’ do not actually represent two individuals acting simultaneously but a group of a first and second, etc, as follows:

- (19) Logically possible combinations of persons:
- a. 1+1* ‘we’ mass-speaking
 - b. 1+2 ‘we’, including addressee, excluding other
 - c. 1+3 ‘we’ excluding addressee, including other
 - d. 1+2+3 ‘we’, including addressee, including other
 - e. 2+2* ‘you all’, only present audience
 - f. 2+3 ‘you all’, addressee(s) and others
 - g. 3+3 ‘they’

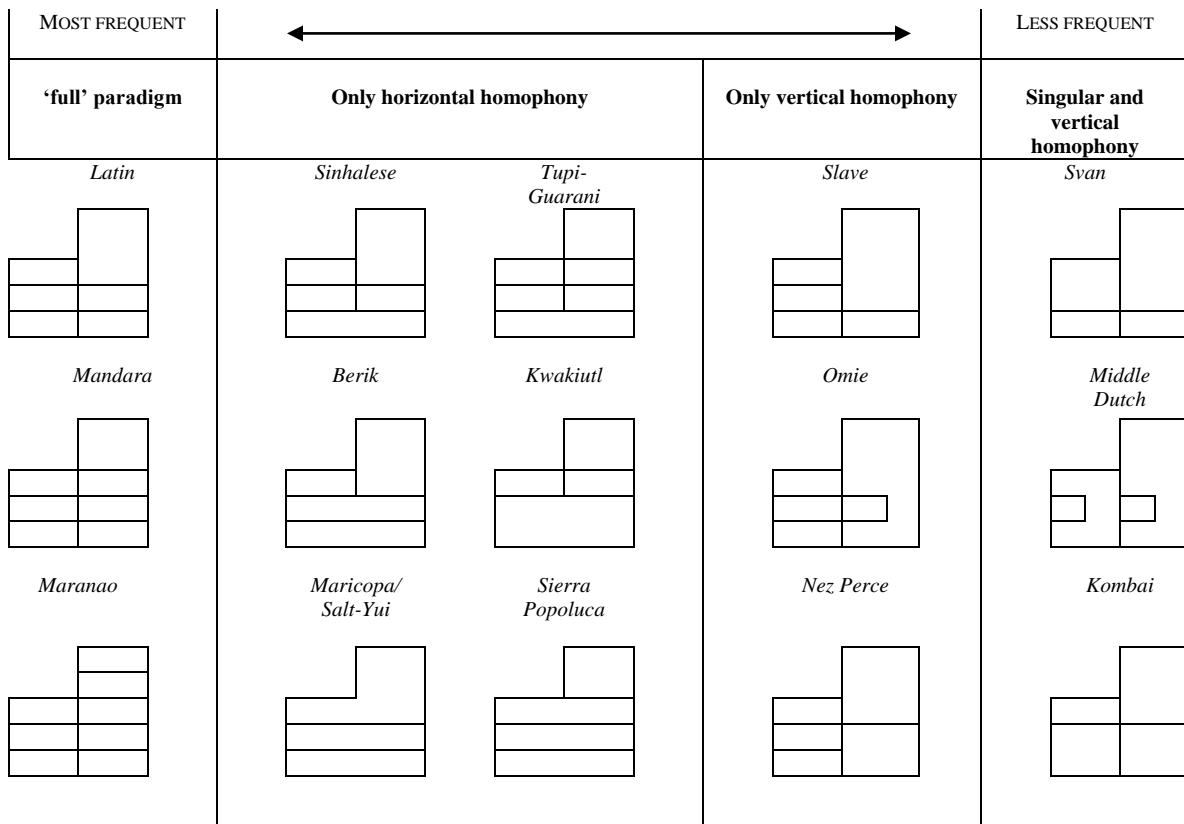
Because some of these combinations are exceedingly rare (1+1, 2+2) and appear to be only marginally if at all attested in the world's languages (Cysouw 2001: 72), Cysouw largely omitted them from his findings. This produces a possible paradigm for person and number:

- (20) Person and 'number' combinations (Cysouw 2001)

		'group'	
			1+2
			1+2+3
'singular'	1		1+3
	2		2+3
	3		3+3

What he did find is that essentially every combination of these persons and numbers exists in at least some language in some paradigm, though some syncretisms are rarer than others. Generally speaking, paradigms that are most 'complete' – for which a distinct pronoun or agreement marker exists for each cell in the typological paradigm – are more likely to be found crosslinguistically than those which syncretize two or more different cells together. Less intuitively, it also seems to be the case that when languages do collapse distinctions, they are more likely to conflate distinctions of person than distinctions of number, or, in Cysouw's terms they are more likely to have horizontal than vertical homophony. Least common are those languages which conflate both person and number distinctions, as shown in the following chart:

Table 5.3. Frequencies of common and semi-common paradigmatic structures, ordered to structural characteristics (chart taken from Cysouw 2001: 160).



Cysouw's study has many advantages. For one, it shows how salient certain categories are (e.g. an inclusive/exclusive distinction), as they arise over and over across many unrelated and geographically distant languages. Perhaps more importantly, it reinforces the view (argued in 5.1 above) that features are not identical to the phonological matrix that is used to convey them. This is because, contrary to the early views of the late 19th and early 20th centuries, features can and often do not follow any clear absolute typological natural classes. The collapse of number distinctions in the horizontal homophonous forms is a case in point: although they clearly often start the neutralization in the indexically least salient point (third person), and go up from there, the Omie and Middle Dutch paradigms that collapse first and third but not second show that they need not always do so. Thus, linking syncretism to feature-properties is not so straight-forward as it might appear.

However, for that very reason, if we are trying to determine what the actual inventory of features in an individual language is, Cysouw's typology actually obscures rather than clarifies the situation. Because Cysouw's typology creates types by citing single instances of syncretism rather than by looking at the entire grammatical system of a single language as a whole, it glosses over constructions that might suggest some other grouping.

A typical instance is Svan, another Kartvelian language spoken in Georgia and Abkhazia. Cysouw's Svan type was based on the formation of imperfect suffixes in Svan:

- (21) Svan imperfect person/number suffixes:

		'group'		
		'singular'	-ad	I+2
1		-äs		I+2+3
	2			I+3
3		-a	-ax	2+3
				3+3

(Cysouw 2001: 118, drawn from Tuite 1997: 28):

However, as Cysouw readily acknowledges, this is not the whole story, since first and second person in Svan also employ prefixes which distinguish first and second from each other as well as employing an inclusive/exclusive distinction:

- (22) Complete verb forms, ‘sb was preparing sth.’

		'group'		
		'singular'	l-a-mär-a-d	I+2
1		xw-a-mär-äs	xw-a-mär-a-d	I+2+3
	2	x-a-mär-äs	x-a-mär-a-d	I+3
	3	a-mär-a	a-mär-a-x	2+3
				3+3

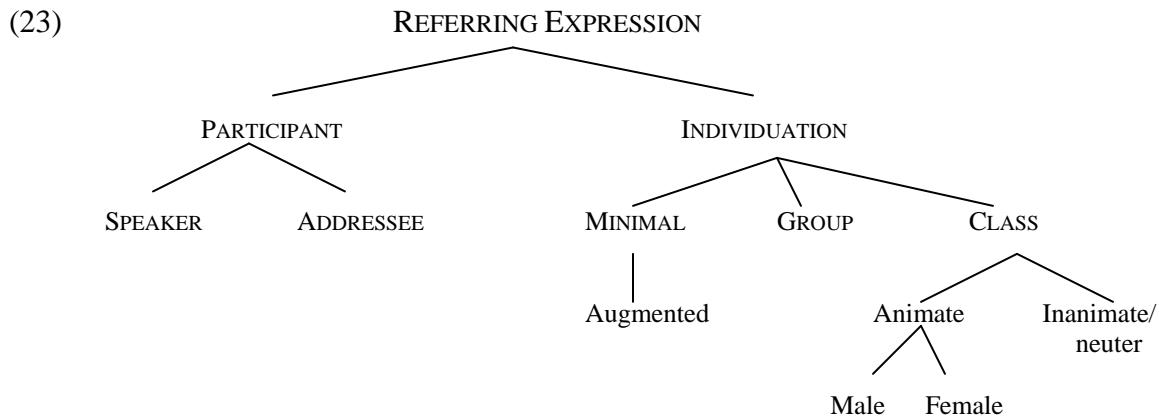
(Upper Bals dialect, Tuite 1997:28)

Furthermore, the /a/ of *-ad* and *-ax* is in fact a separate morpheme on a morphemic analysis, the Svan equivalent of Georgian’s thematic suffix. Thus, in a theory of morphology as advocated here, where morphemes are not discrete theoretical constructs, one of two things must happen. Either (1) ‘types’ are relativized to the particular realization rules that build suffixal paradigms, making them essentially indistinguishable from ‘constructions’; or (2) Svan really belongs to Cysouw’s Mandara type, since the fully inflected verbs distinguish almost every possible cell. This case illustrates why it is

important to have a carefully worked out theory of morphology, since it affects the typologies that one creates.

5.2.4 Harley and Ritter (2002)

Like Forchheimer, Harley and Ritter (2002; hence forth H&R) also support such an analysis grouping first and second together as a natural class; as they put it: ‘We attribute this distinction between 1st and 2nd person, on the one hand, and 3rd person on the other, to the fact that the reference of the former is determined by the changing discourse roles, whereas the reference of the latter is fixed’ (2002: 487). That is, the ‘I’ of one speaker is their interlocutor’s ‘you’, whereas for both the referent of ‘he’ can stay the same. It is safe to say that, when asked, probably most working linguists have adopted some version of this intuition. However, for H&R, radical underspecification, in which the negation of a feature is equivalent to the absence of that same feature, is the centerpiece of their theory of feature geometry. They posit a geometry like the following:



The above tree encodes the dependency relationships that H&R posit between features. As noted above, any [SPEAKER] will necessarily imply a [PARTICIPANT]. Other than this, H&R assume that the only constraint on feature combination is semantic in nature, and that features get their actual interpretation not from their inherent content, but from their existence in particular lexical items. Thus an argument marked just [MIN] is singular, and one marked just [GR] is plural, but one marked with both [MIN] and [GR] is dual or paucal, and one marked [[MIN] [GR] [AUG]] is either trial or paucal (as these latter two never contrast in any language). Furthermore, some combinations are ruled out on ‘semantic’ grounds: this is held to explain why an argument cannot be simultaneously [MASC] and [FEM] at the same time.

Among other problems with this conception, not only does it assume that syntactic and morphological and semantic features are identical (a fact not widely enough recognized, as noted above), but it is not at all clear, given the formal nature of these features as descriptors of *natural classes* even in H&R’s conception why any two features that are not in a subset-superset relation (as with e.g. [SPEAKER] and [PARTICIPANT]) would be ruled out on semantic grounds. Why aren’t [MASC] and [FEM] compatible if [MIN] and [GP] are, and if features obtain their actual ‘meaning’ by contrast rather than by inherent content? H&R don’t explain.

But a more important reason to question H&R’s syntactocentric conception is, as Nevins (2007) also notes, that it creates awkward and very unintuitive problems for a theory of morphology, where sometimes syncretisms appear to exist not between first and second person, but between first and third person or second and third person, as well.

Consider the following two paradigms from German:

(24) **Syncretism between first and third person inflections**

Present, regular verb

ich	kaufe	wir	<i>kaufen</i>
du	kaufst	ihr	kauft
er	kauft	sie	<i>kaufen</i>

Subjunctive I

ich	<i>kaufe</i>	'I buy'	wir	<i>kaufen</i>
du	kaufest	'you buy'	ihr	kauft
er	<i>kaufe</i>	'he buy'	sie	<i>kaufen</i>

Subjunctive II

ich	<i>kaufte</i>	wir	<i>kauften</i>
du	kauftest	ihr	kauftet
er	<i>kaufte</i>	sie	<i>kauften</i>

(25) **Syncretism between second and third person stem forms**

Present tense, irregular verb

ich	sterbe	'I am dying'	wir	<i>sterben</i>
du	<i>stirbst</i>	'you're dying'	ihr	sterbt
er	<i>stirbt</i>	'he's dying'	sie	<i>sterben</i>

All of these forms syncretize at least some forms together (marked in italics). With a verb like *kaufen* 'buy', the simple present only collapses the distinction between first and third person plural, while in the subjunctive the distinction between first and third collapses completely (though they stay distinct in number). Other, irregular verbs like *sterben* 'die' make different syncretisms: here, the second and third singular stems are the same and different from the first person (but with different suffixes!), while in the plural the first and third plural remain syncretized as opposed to the second (indeed, there are no verbs in the language where this latter syncretism does not hold for all paradigms).

The implication of these kinds of data is that the argument that a language like German does not have a third person fails to account for those domains where paradigm structure systematically retains that distinction. That is, even where a stem like *stirb-*

syncretizes between second and third person, the separate inflectional morphology may still retain a three-way first~second~third contrast (*sterbe*~*stirbst*~*stirbt*). Thus the argument that a language lacks a morphological third person cannot merely be based on the specific syncretism of two or more features in some paradigms; to really prove that we are dealing with the complete *absence* of a morphological feature, we must show that there are *no* paradigms for any morphological structure which distinguish those features.

McGinnis (2005) also makes a similar distinction. As she puts it:

'It is important here to distinguish between syncretism and what I call CONFLATION. Syncretism arises when a distinction between two syntactic representations is neutralized morphologically. Some cases of syncretism are systematic, while others presumably involve accidental homophony, for instance as the result of independent sound changes. Conflation, by contrast, arises when a distinction permitted by universal grammar is absent from the syntax of a particular language. Languages with a dual category may show syncretism between dual and singular (e.g. see H&R, pp. 492–93 on Hopi), but languages without a dual category conflate the dual with the plural.' (McGinnis 2005: 701).

For McGinnis, while syncretism is purely morphological in character, conflation is a syntactic phenomenon, as the category in question would not take part in any agreement or other process that she takes to be syntactic. However, this is not quite accurate: it is logically possible for *any* other module to manifest (or not to manifest) some distinction that is simply never manifested in morphology. Animacy in Georgian is a case in point. Georgian is clearly sensitive to role-structural features like [PERC] or [MOT], since arguments that are [+PERC] or [+MOT] (i.e. animate or motile entities) trigger plural number agreement, while those that are [-PERC] and [-MOT] do not. In this case, though, the actual role-structural feature that does this triggering is never morphologically manifested whatsoever – Georgian is remarkably free of anything even

closely resembling morphological gender. And yet it must be there to explain number agreement. And as argued above, these are not syntactic features; they are clear *semantic* natural classes, or at the very least, only an *a priori* principle of synctactocentrism would motivate such a claim which really ought to be and can be decided empirically.

Indeed, it also seems possible for two constructions A and B to be syntactically or semantically syncretized as well so that, in a given context, the contrast between them is neutralized, even though other clearly syntactic or semantic contexts require that feature. One such case concerns constructions in Finnish, Russian and other languages where for purposes of one kind of agreement there *cannot* be a feature [GP], as is actually the case in the H&R schema, but for purposes of other kinds of agreement there *must* be a feature [GP]. The example below comes from Finnish, which features a distinction between agreement with ‘natural’ and ‘accidental’ conjuncts of two singular nouns (Dalrymple and Nikolaeva 2007), in which two arguments that are pragmatically natural can receive pluralization, while two arguments that are pragmatically unnatural (‘accidental’) do not:

- (26) a. Iloiset [mies ja poika] lähtivät yhdessä käsi kädessä.
happy.PL man and boy left.3PL together hand hand.INES
‘The happy [man and boy] left together hand in hand.’
- b. *Han osti uudet [talon ja auton].
he bought.3SG new.ACC.PL house.ACC and car.ACC
‘He bought a new [house and car].’

In this case, the ‘natural’ conjunct *mies ja poika* ‘man and boy’ allows plural agreement on the agreeing adjective, while in the case of the ‘accidental’ conjunct *talon ja auton* ‘house and car’, the plural agreement is impossible. If we assume that such examples involve a neutralization of an agreement system for plurality based on semantic

features while having identical morphological properties, it seems both syncretism and conflation are (potential) logical properties of *all* feature systems as such, rather than a purely syntactic or morphological phenomenon. I will later (in the next chapter) adopt intramodular conflation as a metric to prove the *nonexistence* of a feature within a given module.

5.2.5 Nevins (2007)

Although H&R's conception of underspecification has been widely adopted, not all people agree that radical underspecification is strictly possible. Nevins (2007) e.g. has made a different kind of argument. Rather than being merely nonexistent, third person is present in his ontogeny of features, but particular processes are relativized to it rather than the feature being underspecified as such. Discussing the debates of underspecification in phonology, he put it thus:

'[W]hile underspecification made a feature F invisible for process X, it turns out that feature F is *required* to state the environment for some other process Y. The solution to this problem came with Calabrese (1995), who proposed that it is not F which is underspecified, but X and Y which are relativized in their domain of visibility. More specifically, Calabrese proposed that rules may be parameterized to include reference to ALL VALUES, only CONTRASTIVE VALUES, or only MARKED VALUES.' (Nevins 2007: 286)

The third person, Nevins argues, thus exists in all domains, though individual processes are annotated for whether they are or are not sensitive to its presence. As an example he discusses the famous examples of Spanish 'spurious' *se*, in which a third person object

pronoun preceding another third person object pronoun is ruled out as in (27). This can be amended by replacing it with the reflexive pronoun:

- (27) *A Pedro, el premio, le lo dieron ayer
to Pedro the prize 3.DAT 3.ACC give.PAST.3PL yesterday
'To Pedro the prize they gave yesterday.'
- (28) A Pedro, el premio, se lo dieron ayer
to Pedro the prize 3.REFL 3.ACC give.PAST.3PL yesterday
'To Pedro the prize they gave yesterday.'

In this context, as Nevins points out, it is impossible to state this constraint without reference to some notion of a third person. This is because, if we assume radical underspecification a la H&R (2002), we would get a feature specification like the following:

- (29) [REFERRING-EXPRESSION] [REFERRING-EXPRESSION]

which also includes the set of speech act participants, which also belong to this set in H&R's schema, but have different kinds of interactions between person and case/grammatical function. Like H&R, however, Nevins is implicitly assuming a kind of featural isomorphism across modules: a third person in syntax is also a third person in morphology. As we have already shown in 5.1 and in the last chapter, there is ample reason to question this belief – especially in a case such as this where we are dealing with morphological clitic forms of pronouns, a classic morphological problem. This is by no means a problem with Nevins alone; it is clear that Forchheimer's list, too, reflects the same confusion that many writers (Noyer 1992, Harley and Ritter 2002, Nevins 2007, etc.) have made. It conflates two basic levels of analysis:

- (30) a. *Interlinguistically*, does a feature's presence in one language necessarily imply its presence in all languages?
 b. *Intraprogrammatically*, can we say that if a language has a feature, then that feature necessarily exists in all modular domains simultaneously?

This thesis will answer ‘no’ to both questions, partly on empirical grounds and partly on methodological: given that features describe natural classes, we cannot assume their presence until we have actually demonstrated their presence in one or all languages.³.

5.3 Morphological features in Georgian

In the following sections, we will establish criteria in Georgian that show that Georgian indeed must have a morphological category of third person. This will support a view that endorses underspecification but relativizes that underspecification to separate modular feature geometries.

5.3.1 The morphological status of SAPs in Georgian

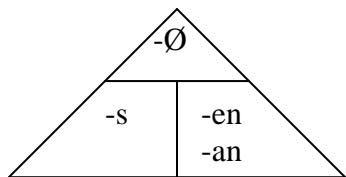
Above we saw that a Georgian paradigm like *gageba* ‘understand’ shows a clear contrast between paradigms in first or second person. Georgian morphology allows us to make a further claim based on the behavior of screeve markers (here, the *-e* suffix). These formants are systematically underspecified for person, but not completely so: they are incompatible with third persons. Thus, Georgian also must have a morphological category ‘speech act participant’, constituting both kinds of gray cells. This is a

³ The question is also confused by many different, and sometimes incompatible, notions of markedness. For a good survey of views on the notion of markedness, see Haspelmath (2005).

systematic fact about all of Georgian morphology and not just a peculiarity of the aorist screeve: all paradigms contrast participants to third person. Because the first and second person plurals are a separate morphological category (with the *-t* suffix), Aronson (1990) portrayed these schematically as triangles for different screeves, with the top half referring to first and second persons of both numbers:

(31) Screeve forms

a. *Present (1st and 3rd Conj)*
[transitives and unergatives]



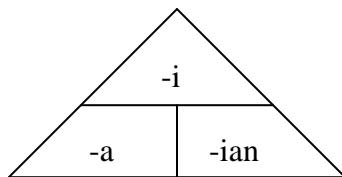
Tense: [PRES]
Person: [PART]; [3] [SG]; [3] [PL]
Mood: [REALIS]

Imperfect/conditional

-d-(od)- +

Tense: [PAST]
Person: [PART]; [3] [SG]; [3] [PL]
Mood: [REALIS] (for imperfect)
[IRR] (for conditional)

b. *Present (2nd Conj)*
[unaccusatives]



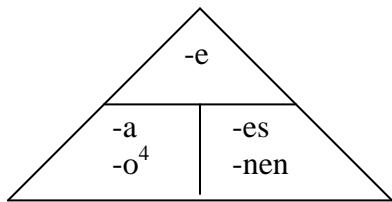
[PRES]
[PART]; [3] [SG]; [3] [PL]
[REALIS]

Conjunctive present/future

-d-(od)- +

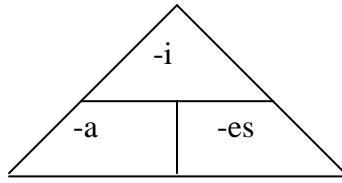
[PAST]
[PART]; [3] [SG]; [3] [PL]
[IRR]

Aorist “Weak” (regular) endings



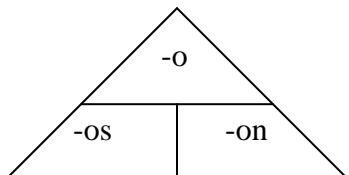
Tense: [PAST]
 Person: [PART]; [3] [SG]; [3] [PL]
 Mood: [REALIS]

Aorist “Strong” endings



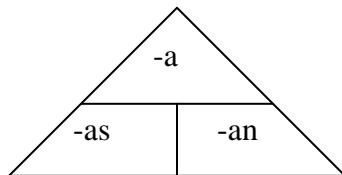
[PAST]
 [PART]; [3] [SG]; [3] [PL]
 [REALIS]

Optative “Weak” (regular) endings



Tense: [PAST]
 Person: [PART]; [3] [SG]; [3] [PL]
 Mood: [IRR]

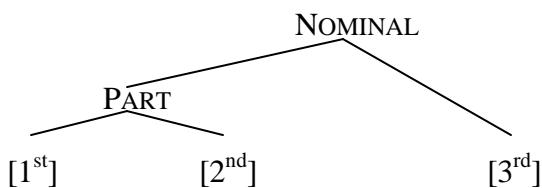
Optative “Strong” endings



[PAST]
 [PART]; [3] [SG]; [3] [PL]
 [IRR]

What these paradigmatic facts suggest is that in Georgian, although first and second person must belong to separate classes, they together form a systematic superset as distinct from all non-SAPs:

(32)



Such set-theoretic hierarchies of features are also called feature geometries, in the sense that any rule or process that affects a superset necessarily affects all features lower down in the geometry (cf. Noyer 1992), or conversely that any process that refers to the

⁴ Some of these forms are distinguished by morphophonemic criteria. *-o* here, e.g., is used for the nontrivial number of roots that have no vowel.

absence of nodes higher up (say [PART]) also implies the absence of nodes lower down (such as [1st]). Unlike the feature geometries proposed by Heidi Harley and Elizabeth Ritter discussed above, this hierarchy is a purely morphological hierarchy that encodes the relationship between the formal label ‘PART’ and its feature dependents that apply to paradigmatic structures. That is, the geometry is a constraint telling us that you can never have the feature [1st] without having the feature [PART] as well *as part of the morphology*; whether [1st] and [2nd] form a natural class in syntax or semantics is in principle an independent empirical question. Such a feature-geometrical account allows us to remove a lot of clutter from realization rules. Consider the following rule for the realization of screeve signs in the aorist as in the above paradigm:

$$(33) \quad \text{RR}_{\text{SCR}, \{\text{ARG: }\{\text{PART}\}, \text{TENSE: AOR, MOOD: REAL}\}}, v(\langle X, \sigma \rangle) = \langle Xe, \sigma \rangle$$

Thus, instead of writing many separate rules, for [1st] and [2nd] for both subject and object status, or a disjunctive rule, we can target both features at the same time. The analysis of basic agreement presented in 4.1 shows that this is not just syncretism, but rather a genuine underspecification of morphological features. Otherwise, it would be hard to explain why one and the same affix can reflect completely different combinations of a feature plus subject or object status, as long as some participant is involved;

- | | |
|--|---|
| (34) a. v-nax-e
1-see.PF-1/2
‘I saw him’
b. m-nax-e
1SG-see.PF-1/2
‘You saw me.’ | d. v-e-nax-e
1-PRV-see.PF-1/2
‘You had apparently seen me’
e. m-e-nax-e
1SG-PRV-see.PF-1/2
‘I had apparently seen you’ |
|--|---|

- | | |
|---|--|
| c. g-nax-e
2-see.PF-1/2
‘I saw you’ | f. g-e-nax-e
2-PRV-see.PF-1/2
‘You had apparently seen me’ |
|---|--|

In each case, we have an identical *-e* suffix, which reflects that some argument, either the subject or the object, is either a first or second person. Yet, even without the so-called inversion constructions in (34d-f), we would have to say that, because it shows up both with 1>3 and 2>1 combinations, the affix simply registers the presence of some speech act participant.

5.3.2 The morphological status of non-SAPs

This kind of argumentation shows that in Georgian first and second person must constitute a natural morphological class, PARTICIPANT. On its face, Georgian would appear to have a class of third persons as well, given the overt marking for third person (Forchheimer’s first criterion (18a)). However, as we saw above, that in itself does not also prove that third person constitutes a morphological class as distinct from participants, as third persons could simply be marked [-PART]. The question is tricky, because it implies that we can distinguish between a morphological class’s *positive* specification as opposed to the *lack* of any specification for the *other* class, i.e. between [3rd] and [-PART].

The answer to this question I believe lies in being clear about exactly what criteria are being invoked to identify a natural class within a given module. To show that a class of morphological third persons exists separate from the simple absence of a speech act participant, one must show that there exist morphological processes that target only third persons, to the exclusion of first or second person. In Georgian a number of such

processes do exist. Consider, for example, the behavior of aorist third person singular of regular verbs of all conjugations, which take *-a*, as in (35):

(35) a.	ga-a-k'et-eb-s PVB-PRV-do-TH-3SG 'He will do it'	ga-a-k'et-a PVB-PRV-do-AOR3SG 'He did it'
b.	ağ-mo-a-čen-s PVB-VENT-PRV-discover-3SG 'He will discover it'	ağ-mo-a-čin-a PVB-VENT-PRV-discover.AOR-AOR3SG 'He discovered it'

However, a nontrivial number of first conjugation verbs which lack vowels in their stems underlyingly (i.e., excluding verbs which occasion zero-grade ablaut in certain tenses and persons) and have a thematic suffix of *-eb* or *-ob*, along with all unaccusative second conjugation verbs derived from them, take *-o* instead of *-a* for the third person singular suffix (Aronson 1990: 116-117):

(36) a.	da-i-c'q-eb-s PVB-PRV-start-TH-3SG 'He will start it'	da-i-c'q-o PVB-PRV-start-AOR3SG 'He started it'
b.	ga-a-č-eb-s PVB-PRV-open-TH-3SG 'He will open it'	ga-a-č-o PVB-PRV-open-AOR3SG 'He opened it'
c.	mi-i-č-eb-s PVB-PRV-get-TH-3SG 'He will get it'	mi-i-č-o PVB-PRV-get-AOR3SG 'He got it'

Although seemingly a gratuitously obtuse morphological generalization, this is by no means the only such rule in Georgian verb agreement. To cite another example, first and third conjugation present and future screeve verbs with thematic suffix in *-i* do not take a third person plural suffix in *-en* as other verbs do (37a), but rather *-an* (37b):

- | | | |
|---------------------|----------------------|--------|
| (37) a. da-i-č'er-s | da-i-č'er-en | (*-an) |
| PVB-PRV-catch-3SG | PVB-PRV-catch-3PL | |
| 'He will catch it' | 'They will catch it' | |
| b. m̥ger-i-s | m̥ger-i-an | (*-en) |
| sing-TH-3SG | sing-TH-3PL | |
| 'He's singing' | 'They're singing' | |

Another example comes from the way one small subclass of first conjugation transitive verbs form their synthetic passive second conjugation forms. While most second conjugation verbs take a third person singular in the present and future in *-a*, as in (38a), first conjugation verbs with thematic suffix *-am* as in (38b) can take *-i-s* instead⁵:

- | | 1 st Conj. Transitive | 2 nd Conj. Unacc. Intrans. |
|---------------------------|----------------------------------|---------------------------------------|
| (38) a. da-mal-av-s | da-i-mal-eb-a | |
| PVB-hide-TH-3SG | PVB-PRV-hide-TH-3SGII | |
| 'He will hide it' | 'It will be hidden' | |
| b. c'ar-mo-tkv-am-s | c'ar-mo-i-tkm-i-s | |
| PVB-VENT-pronounce-TH-3SG | PVB-VENT-PRV-pronounce.II-TH-3SG | |
| 'He's pronouncing it' | 'It is being pronounced' | |

Such examples are important not just for the understanding of Georgian morphosyntax, but more generally for linguistic theory, since they show that the common notion that 'third person does not exist' cannot be taken exactly at face value. One might have cited Forchheimer's criterion (18a), since Georgian does indeed have overt third person suffixes. However, this would not have clearly proven that the effect is morphological, since such overt suffixes on some theories (e.g. Halle and Marantz (1993)'s) are clitics and therefore have a manifestation in syntax. But the strange kinds of generalizations above were based on unquestionably *morphological* dependencies between different

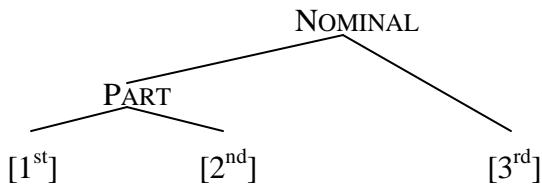
⁵ For some speakers, in colloquial Georgian this construction is superceded by a form more consistent with regular second conjugation formation: *c'ar-mo-i-tkm-eb-a* 'it is being pronounced' (Aronson 1990: 64).

affixes – these cannot be treated as clitics. Thus third person is not merely an *absence*, it is an actual *presence* – in morphology.

5.3.3 The role of feature geometries as constraints on realization rule interaction

In chapter four and above, it was argued that morphological hierarchy effects that derive from blocking rules cannot be based, as per Stump (2001), on a purely Pāṇinian notion of intrinsic rule ordering based on elsewhere-conditions. In its place, I argue that a different kind of set-theoretic notion based on feature geometries constrains when and how a realization rule may apply within a rule block. Imagine, for example that we are dealing with a language like Georgian in which there is clear evidence for a supercategory of participants dominating both first and second person, as with the above geometry:

(39)



In that case, there could never be a realization rule that realized the higher node, PARTICIPANT, when a rule within the same rule block specified a lower more specific feature. This kind of constraint is similar to Stump's PDH in that a more specific rule necessarily must be realized before a less specific rule, otherwise there would be no evidence for former at all. However, it is not identical: Stump's PDH relies on quantitative differences in the number of features being realized -- the Georgian object

prefix *gv-* [1st, Pl] outranks other prefixes like *v-* [1st] or *g-* [2nd] because it has more actual features, and is in that sense logically ‘narrower’.

The above conceptualization based on feature geometries relies on a different sense of ‘narrowness’: a feature is narrower than another if it is subordinate to another in the feature geometry. Thus, a realization rule for first person in the same rule block as one marked for participants would be ordered before that latter rule, because if not, it would never have a chance to be realized. On the other hand, two prefixes such as *v-* [1st] and *g-* [2nd] with exactly the same number of features, but which do not stand in a superordinate-subordinate relationship to each other in the feature geometry, will be extrinsically ordered. This is important, since it allows for the same features in different languages and in different rule blocks to be ordered in different, sometimes contradictory ways. It will be directly relevant to us in Georgian when we look closer in the next chapter on Georgian syntax, in which it will be argued that the rankings seen in morphology differ from those seen in syntax.

5.4 Conclusion

In this chapter we have surveyed a number of ideas about feature systems and concluded that the problems associated with what Jackendoff (2005) called ‘interface uniformity’ actually extend much further than just construction types, but even to the atoms constructions are made of: the features themselves. The Georgian data further show that such features are organized in set-theoretic hierarchies: first and second within a larger class of participants, and that positive evidence for a class of third persons exists

in morphology. This is important, because in the next chapter I will argue that in *syntax* there is no such equivalent natural class of third persons, and this will form part of a larger argument that hierarchies in natural language arise as an attempt to deal with this ontological mismatch.

§6 Syntactic hierarchies: the formal manifestation of functional traits

The last two chapters focused on the fundamental morphological problems that Georgian presents morphosyntacticians: how do we account for apparent competition between different kinds of word-building processes? In this chapter, I will focus on a different kind of competition based on the notion of harmonic alignment of particular (syntactic) features with particular grammatical functions. For this we will focus on a construction already discussed in passing in previous chapters: the ditransitive person-function constraint (PFC), otherwise known in the literature variously as ‘object-camouflage’ (Harris 1981), ‘tavization’ (Tuite 1989), the ‘Person-Case constraint’ (Bonet 1994, Boeckx 2008, etc.), or the ‘Person-Role constraint’ (Haspelmath 2004). In brief, recall that this constraint ruled out the realization of a third person with the primary object and at the same time first or second person with the second object:

- (1) 3 OBJ; 1 or 2 OBJ2
- a. *vano-m (šen) še-a-dar-a givi-s
Vano-NARR 2Sg PVB-PRV-compare-AOR3SG Givi-DAT
‘Vano compared you to Givi’
 - b. *vano-m (me) še-a-dar-a givi-s
Vano-NARR 1Sg PVB-PRV-compare-AOR3SG Givi-DAT
‘Vano compared me to Givi’

The varying names given to the same basic set of data belie a general confusion about what it consists in, and where it comes from. Haspelmath (2004) identified five basic approaches in the formalist literature to this kind of construction.

- (2) a. Ban on doubly filled slots (Togeby 1982; Emonds 1975)
 b. Case constraint is inviolable and innate (Bonet 1994)
 c. Clash between positional alignment constraints (Duranti 1979; Gerlach 1998)
 d. Markedness of person and case values (Grimshaw 2001)
 e. Harmonic association of person and role scales (Farkas and Kazazis 1980, Rosen 1990)

This chapter will not seek to answer all the specific claims of the increasingly large literature on the subject, except to look at two of the most prominent kinds of analyses, which boil down to:

- a (morpho-)syntactic analysis that equates grammatical functions with the surface distribution of case and/or constituency structure, at least at some level of representation (Perlmutter 1971, Harris 1981, Bonet 1994, Boeckx 2008, Adger and Harbour 2007, etc.)
- and a semantic counteranalysis in which person aligns optimally not with particular grammatical functions, but with particular thematic roles (Haspelmath 2004).

As we will see, data from Georgian and other Kartvelian languages present complexities for both syntactic and semantic accounts. We turn first to the syntactic account of Bonet (1994).

6.1 Bonet (1994) and the equivalence of grammatical function and surface case

Although she was not the first to discuss the constraint – it was identified in Romance languages as early as Meyer-Lübke (1899), and was prominently discussed in Perlmutter (1971), Kayne (1975), and Harris (1981) – Bonet’s has probably become the standard starting point in syntactically oriented analyses. Bonet’s study focuses on the behavior of clitic combinations in various Romance languages, such as her native Catalan:

- (3) *Me li ha recomanat la senyora B.
 1SgAcc 3SgDat has recommended the Mrs. B.
 ‘Mrs. Bofill has recommended me to him/her.’
- (4) (*)Te m' ha recomanat la Mireia.
 2Sg 1Sg has recommended the Mireia
 a. ‘Mireia has recommended me to you.’
 b. ‘Mireia has recommended you to me.’

In Catalan, while the combination [3rd PO, 1st/2nd SO] as in (3) is unacceptable for all speakers, the combination in (4), involving only local persons either as primary or as second objects, are ungrammatical for some, grammatical for others, and for yet others are grammatical in only one of the two readings (4a) or (4b). Such data raise the question: for those speakers who accept combinations of local persons, but not a third person primary object and local second object, are they abiding by the same constraint as those speakers for whom all such sentences are ungrammatical? Bonet (1994) ultimately claimed that they are indeed two sides of the same coin, constituting a strong and a weak version of the constraint, which she assumed to be universal. She formalized them as follows:

- (5) *me lui / I-II Constraint (later termed the PCC):
 a. **STRONG** version: the direct object has to be third person
 b. **WEAK** version: if there is a third person object, it has to be the direct object.

Furthermore, for a number of years, the literature on such examples focused to a large extent on the *morphological* character of the constraint, as all the best known examples involved clitic pronouns that were part of the same phonological word as the

following verb. For example, the well known constraint on spurious *se* (repeated in (6) for convenience) in Spanish didn't have any obvious syntactic justification:

- (6) *A Pedro, el premio, le lo dieron ayer
to Pedro the prize 3.DAT 3.ACC give.PAST.3PL yesterday
'To Pedro the prize they gave yesterday.'
- (7) A Pedro, el premio, se lo dieron ayer
to Pedro the prize 3.REFL 3.ACC give.PAST.3PL yesterday
'To Pedro the prize they gave yesterday.'

In a morphological analysis, the curious requirement not to have two third persons can explain the behavior of clitics, which involve a mismatch, at the least, of the phonological with the syntactic word. For this reason, Bonet (1994) also stipulated a codicil that the constraint was restricted to reduced forms such as clitics:

- (8) Both the direct object and the indirect object are phonologically weak.

Between this and the feature constraint, Bonet's constraint is a true morphosyntactic constraint, operating both at the level of morphology and at the level of syntax.

6.1.1 Bonet (1994)'s account of the Georgian data

Bonet also specifically cited the above Georgian data in (1) in support of her thesis that the constraint was syntactic and morphological. She cited Harris showing that the constraint in Georgian only applies to full arguments of regular finite clauses. As noted in Ch. 2, Georgian has a number of nonfinite constructions based on masdars

(verbal nouns). Although these constructions have the same underlying argument structure as regular finite clauses with finite verbs, their surface syntax (both C-structure and GF-structure, in my terms) differs, as noted by Harris (1981: 153), in that the masdar in a number of formal ways behaves more like a noun than a verb:

(9) **Properties of masdars**

- a. They decline like nouns:

rc'men-a	rc'men-a-s	rc'men-it	rc'men-is
believe-MAS.NOM	believe-MAS-DAT	believe.MAS-INST	believe-GEN

- b. They have number, when they are concrete and not mass-nouns:

mo-gon-eb-a	mo-gon-eb-eb-i
PVB-remember-TH-MAS	→ PVB-remember-TH-PL-NOM
'remembering, memory'	'memories'

- c. They may have quantifiers and adjectives:

ert-i	txovna	sašinel-i	t'quil-i
one-NOM	requesting.MAS.NOM	terrible-NOM	lying-NOM
'one request'			'the terrible lie'

- d. They may be possessed:

Givi-s	t'quil-i
Givi-GEN	lying-NOM
'Givi's lie.'	

- e. They may cooccur with positionals:

t'quil-is	šesaxeb
lying-GEN	about
'about the lie'	

- f. They may be modified by relative clauses:

čxub-i,	romel-i=c	v-nax-e
fighting.MAS-NOM	which-NOM=REL	1-see.PF-1/2AOR
'the fight which I saw'		(Harris 1981: 153)

The thematic theme of such nominalizations (in my argument structural terms, their [-r] argument) is realized as a surface possessor, while the recipient is realized with a postpositional phrase headed by *-tvis* 'for'. The interesting fact is that, in stark contrast to the above finite constructions, the nominalized form in (10b) does not abide by the PCC constraint:

(10) a. **2 REC; 3 TH**

mis-i	ča-bar-eb-a	šen=tvis
3POSS-NOM	PVB-render-TH-MAS.NOM	2SG=for
'turning him over to you' (lit. 'his rendering to you')		

b. **3 REC; 2 TH**

šen-i	ča-bar-eb-a	mis=tvis
2SgPoss-NOM	PVB-render-TH-MAS.NOM	3Sg.GEN=for
‘turning you over to him’ (lit. ‘your rendering to him’)		

This is expected if the constraint has a syntactic manifestation: varying the constituency structure (which for Bonet is isomorphic to grammatical functions) ought to change the PCC’s effects. Another kind of nominalization (not treated as such by Harris, though it has the same nominal distribution as the regular masdars) is the purpose clause constructed by a future participial in the adverbial case, what Harris (1981) calls the ‘infinitive’:

(11) **2 TH**

Gela	mo-vid-a	šen-s	sa-nax-av-ad
Gela.NOM	PVB-see.AOR.3-AOR3SG	2SGPOSS-ADV.MOD	FUT.PART-see.PF-TH-ADV
‘Gela came to see you.’			

In this construction, the ‘infinitive’ has the typical distributional properties of a noun: it takes case (*-ad* adverbial case), and the thematic theme surfaces in the special form the possessive pronouns take for modifier form of the adverbial case¹. Like the gerundive above, the ‘infinitive’ also stands in contrast to the finite forms, since the person constraint does not hold:

¹ This looks like the dative case, but in fact one of the peculiarities about the possessive pronouns is that they have a different paradigm for modifiers (though see Aronson and K’iziria 1998: 340 for more information on dialectal diversity in modifier paradigms). Compare the *-s* ‘DAT’ suffix with the *-s* ‘ADV’ suffix:

mi-s-c-a	šen-s	mama-s	šen-s	megobr-ad
PVB-3SG-give.AOR-AOR3SG	2SGPOSS-DAT	father-DAT	2SGPOSS-ADV	friend-ADV
‘He gave it to your father as your friend.’				

- (12) **3 REC; 2 TH**
- | | | |
|---|----------------------|---------------------|
| Gela | mo-vid-a | šen-s |
| Gela.NOM | PVB-see.AOR.3-AOR3SG | 2SGPOSS-ADV.MOD |
| ča-sa-bar-eb-l-ad | | masc'avlebl-is=tvis |
| PVB-FUT.PART-render-TH-PART-ADV | | teacher-GEN=for |
| ‘Gela came to turn you over to the teacher’ (Bonet 1991: 191; Harris 1981: 164) | | |

What these forms show is that syntax truly is relevant to the nature of the constraint (at least in Georgian), since a purely semantic account based on thematic roles makes the wrong predictions. It would predict that these two constructions based on (c-structural) nominalizations would behave like the finite system, and yet they do not.

6.1.2 Problems with Bonet (1994)

There are number of problems with Bonet’s account of Georgian. First, the condition that the arguments in question must be ‘phonologically weak’ is not borne out by Georgian, even if one assumes that the agreement affixes are clitics, since the overt pronouns are not obviously weak in her sense, or at least do not form a phonological word with the verb:

- (13) *me qovelvis mo-m-e-c’ona-namdvil-ad is*
 1SG always PVB-1SG-PRV-like-AOR3SG real-ADV 3SG.NOM
‘I always really liked him.’

In (13), the two pronouns can in principle be phonologically separated from the verb. However, the above example reveals a much bigger problem with Bonet’s (later) characterization of the constraint as one on ‘case’ as such: the first and second person

pronouns lack the crucial case forms for nominative, narrative and dative case – the three ‘grammatical’ or ‘core’ cases.

As adumbrated earlier in our discussion of inversion, the problem is not restricted to the pronominal system, but also exists in the regular nominal system, but for the opposite reason: while the first and second person pronouns *lack* enough (morphological)² cases for the constraint to depend straightforwardly on case, the regular nominals manifest the constraint despite being realized in *too many* cases, as it were, by virtue of the changing array of cases across different series.

- (14) a. Present series [$\text{NOM}_{\text{AG}} \sim \text{DAT}_{\text{REC}} \sim \text{DAT}_{\text{TH}}$]

*Ivane	Mariam-s	šen	a-dzl-ev-s
John.NOM	Mary-DAT	2SG	PRV-give.PRES-TH-3SG
‘John is giving you to Mary.’			
- b. Aorist series [$\text{NARR}_{\text{AG}} \sim \text{DAT}_{\text{REC}} \sim \text{NOM}_{\text{TH}}$]

*Ivane-m	Mariam-s	šen	mi-s-c-a
John-NARR	Mary-DAT	2SG	PVB-3-give.AOR-AOR3SG
‘John gave you to Mary.’			
- c. Perfect series [$\text{DAT}_{\text{AG}} \sim -\text{TVIS}_{\text{REC}} \sim \text{NOM}_{\text{TH}}$]

*Ivane-s	Mariam-isa=tvis	šen	mi-u-c-i-a
John-DAT	Mary-GEN=for	2SG	PVB-PRV-give.PERF-PERF-3SG
‘John has apparently given you to Mary.’			

As suggested earlier, the constraint seems not only to be ignoring case as such, but even constituency structure, as the thematic recipient in the perfect is encoded not by any case at all, but by a postpositional phrase headed by *-tvis* ‘for’. This is a problem for any theory of syntax, such as Bonet (1994)’s, that assumes that grammatical relations are

² One could of course argue that morphological case is distinct from something like abstract Case (or Kase, a KP (cf. Bittner and Hale 1996)). Although I have in fact argued that case in syntax (which deals with the overall system of case-assignment: in a given syntactic distribution what case would you expect?) can be distinct from morphological case (which deals with the narrow particulars of how a given paradigm is formed), in this particular instance there is no particular reason to believe the system of case-*assignment* itself has changed because of a very narrow syntactic constraint like this one.

isomorphic to (or rather, derived from) constituency structures, and that furthermore morphological case marking is a manifestation of that relationship. In the next section, we will see how the diversity of case-marking systems across the family as a whole throw this fact even more sharply into relief.

6.2 Person-Function Constraint Patterns across the Kartvelian family

We have already discussed the morphological, syntactic and semantic implications of the standard Georgian case system (in Ch. 3). Kartvelian languages present an interesting test case of the Person-Case Constraint not just because of the splits seen in standard Georgian, but also because of the diversity in case-marking and case-alignment seen across the family as a whole. This is because among the four Kartvelian languages are represented three different case-alignment systems, broadly construed: while Georgian and Svan both have roughly similar though typologically unusual split-S or active/stative alignments of their case-marking system along with tense/aspect splits, Mingrelian has a peculiar nominative-accusative alignment, and closely related Laz has a different split-S alignment of case without tense/aspect splits³. Beyond the diversity between the different Kartvelian languages, there is also a great variety of internal dialect diversity in Georgian itself. These cases provide an even more interesting window onto how the constraint works, because an analysis of the PFC that encompasses the various systems of Georgian dialects would constitute research into the kind of microlinguistic dialect variation that Richard Kayne and others working within the Principles and

³ See also Lacroix (forthcoming), who argues that in the Arhavi dialect of Laz the split-S alignment has become an ergative alignment plain and simple.

Parameters paradigm are looking for. Thus, in the following sections, we look at each of these systems in turn to see how they work and what implications they might have for the formal theories we have been examining.

6.2.1 The case marking system of Svan and the PFC

We first turn to a case-marking system that is remarkably similar to that of Standard Georgian, even though the actual resources used to create it come in most cases from very different sources. Like Georgian, Svan has a split-S case system with two conjugations of intransitives, one whose case marking patterns like the subject of a transitive (with *-d* or *-m* narrative case, depending on declensional class), and one whose subject patterns like the object of a transitive (with nominative case in *-e*, umlaut or the bare stem, again depending on declensional class). Also like Georgian, Svan has different arrays of cases in different series, and like Georgian the present series represents a neutralization of case across conjugational classes reminiscent of the antipassive construction discussed in Ch. 3 and which Harris (1985) hypothesized to be the origin of the tense-aspect split in the case system of Georgian. Consider the following present and aorist series forms:

- (20) a. **Present** series, transitive : [NOM_{AG} ~ DAT_{TH}] (Harris 1985: 43)
- | | | |
|-------------------------------------|-------------------|---------------|
| <i>dīna</i> | a-t'wr-æl-i | let'wr-æl-s |
| girl.NOM | PRV-light-MED-AOR | candle-PL-DAT |
| 'The girl is lighting the candles.' | | |
- b. **Aorist** series, transitive : [NARR_{AG} ~ NOM_{TH}]
- | | | |
|-----------------------------|-----------------|---------------|
| <i>dīna-d</i> | an-t'war-āl-e | let'wr-æl |
| girl-NARR | PVB-light-MED-3 | candle-PL.NOM |
| 'The girl lit the candles.' | | |

- (21) a. **Present** series, unaccusative intransitive: [NOM_{TH}]
 didæb-i leqed *q'er* lāt-šw gar i-sgwj-in-i
 glory-GEN coming holy.fire.NOM night-INST only PRV-go.HON-PASS-3SG
 ‘The Coming-in-Glory holy fire only comes by night’
 (Tuite 1997: 46)
- b. **Aorist** series, unaccusative intransitive: [NOM_{TH}]
 ašxw-žīn nišgwey sopel žīkān-xæn-ču *an-p'ær*
 one.OBL-on 1PL.EXCL.POSS village.NOM above-from-down PVB-fly.AOR
mir ej-k'ælib, ere lamp'ær-šāl x-e-bid
 something.NOM that-kind that lantern-like 3OBJ-PRV-burn.STAT
 ‘Once in our village, something began to fly down from above that
 burned like a lantern. (Tuite 1997: 47)
- (22) a. **Present** series, unergative intransitive: [NOM_{AG}] (Harris 1985:43-44)
 dede i-č'k'uār-d-a
 mother.NOM PRV-think-IMPF-3SG
 ‘Mother was thinking’
- b. **Aorist** series, unergative intransitive: [NARR_{AG}]
 dede-d ad-č'k'ūr-e
 mother-NARR PVB-think.AOR-AOR3SG
 ‘Mother thought.’

Following Tuite, I summarize the full syntactic case-arrays of Svan classes in the following table as Set-A and Set-P respectively, which, syntactically speaking, function in much the same way as the conjugational classes of Georgian.

Table 6.1. The distribution of case across series and conjugational classes in Svan.

Series / Conj.	Class A transitive	Class P intrans.	Class A intrans.
Present	SUBJ: NOM _{AG} DO: DAT _{PAT} IO: DAT _{REC}	NOM _{PAT}	NOM _{AG}
Aorist	SUBJ: NARR _{AG} DO: NOM _{PAT} IO: DAT _{REC}	NOM _{PAT}	NARR _{AG}

(Tuite 1997: 21)

There is one feature of Svan that distinguishes it from Georgian and that is not its system of case assignment, but rather its agreement system. Like Old Georgian, all Svan dialects preserve a system of inclusive and exclusive first person plural agreement for both subject and object (though like in Georgian there are complicated rules of morphological blocking involved in their realization). This is relevant, as many theories of grammar assume that case and agreement are both linked to grammatical functions, and thus assume they will align.

Table 6.2. Svan agreement patterns. (Tuite 1997: 23)

SET A ('SUBJ')			SET B ('OBJ')		
	SG	PL	SG	PL	
1 st	xw-	excl. incl.	xw-...-(§)d l-...-(§)d	m-	n-
2 nd	x-		x-...-(§)d	j-	gw-
3 rd	(l)-, -s, -a		(l)-...-x	x-	j-...-x x-...-x

Thus we are now ready to see how the PFC works in Svan, in two dialects: Upper Bals (UB) and Lower Bals (LB). Because Svan's overall system of case-assignment roughly parallels Georgian, both across different conjugation classes and across tense-aspect combinations, the data below make clear that Svan constitutes another counterexample to the idea that the constraint is a question of case and that case is a direct manifestation of grammatical function, since like Georgian, the case arrays change while the constraint stays in effect.

For comparison, let's start with a typical example with a third person indirect object and a third person direct object as in (23). In both dialects surveyed, present screeve verbs have a NOM ~ DAT ~ DAT array, Aorist screeve verbs have NARR ~ DAT ~

NOM arrays, and Perfects have DAT ~ POSTPOSITION ~ NOM arrays. Thus, a different array is used in each series, and like Georgian, perfects appear to completely demote an original indirect object to a postpositional phrase; in Georgian, this is *-tvis* ‘for’, whereas in Svan this postposition is *-d* ‘for’. Unlike Georgian, however, there is overt object agreement for third persons, with *x*:

(24) **3 IO > 3 DO (with IO agreement)**

- a. **Present** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2_{DAT}]

Vano	Anzor-s	x-a-mjōn-e	Givi-s	(Upper Bals)
Vano.NOM	Anzor-DAT	3-PRV-compare-3SG	Givi-DAT	
Vano	Anzor-s	x-a-mjen-i	Givi-s	(Lower Bals)
Vano.NOM	Anzor-DAT	3-PRV-compare-3SG	Givi-DAT	
‘Vano is comparing Anzor to Givi.’				
- b. **Aorist** [SUBJ_{NARR} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2_{NOM}]

Vano-d	Anzor	da-x-majōn-e	Givi-s	(UB)
Vano-NARR	Anzor.NOM	PVB-3-compare-3	Givi-DAT	
‘Vano compared Anzor to Givi.’				
Vano-d	Anzor	da-x-majon-e	Givi-s	(LB)
Vano-NARR	Anzor.NOM	PVB-3-compare-3	Givi-DAT	
‘Vano compared Anzor to Givi.’				
- c. **Present Perfect** [SUBJ_{DAT} + AGR ~ OBJ_{POSTPOSITION} ~ OBJ2_{NOM} + AGR]

Vano-s	Anzor	do-x-majūn-a	Giwi-š-d.	(UB)
Vano-DAT	Anzor.NOM	PVB-3-compare-3	Givi-GEN-TFM	
‘Vano has apparently compared Anzor to Givi’				
Vano-s	Anzor	do-x-majon-a	Giwi-š-d.	(LB)
Vano-DAT	Anzor.NOM	PVB-3-compare-3	Givi-GEN-TFM	
‘Vano has apparently compared Anzor to Givi’				

Third person direct objects of ditransitives are the statistical norm in Svan, Georgian and probably every spoken human language. Like Georgian, when the direct object is second person as in (25), the PFC comes into force and the verb cannot agree with the indirect object as is usually the case. In Svan, however, unlike Georgian, because agreement for third person objects is overt, we can test this directly, and the result is the contrast

between (25a) with *x*- third person object agreement and (25b) with *j*- second person object agreement. Thus Svan is like Georgian in a more fundamental way: although they differ in the possibility of overt realization of agreement, they both manifest a hierarchical kind of agreement that operates exclusively for ditransitives, as the verb simply agrees with whichever object is more salient in the person hierarchy.

(25) **3 IO > 2 DO**

- a. **Present screeve** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2]

*Vano	Anzor-s	<u>x</u> -a-mjōn-e	si.	(UB)
Vano.NOM	Anzor-DAT	3-PRV-compare-3	2SG	
'Vano is comparing you to Anzor.'				
- b. **Present screeve** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} ~ OBJ2 + AGR]

Vano	Anzor-s	<u>j</u> -a-mjōn-e	si.	(UB)
Vano.NOM	Anzor-DAT	2-PRV-compare-3	2SG	
'Vano is comparing you to Anzor'				

Also: 'Vano is comparing you to Anzor.'
- c. **Aorist** [SUBJ_{NARR} + AGR ~ OBJ_{DAT} ~ Obj2 + AGR]

Vano-d	Anzor-s	da-j-majūn-e	si.	(UB)
Vano-NARR	Anzor-DAT	PVB-2-compare-3	2SG	
'Vano compared you to Anzor.'				

Vano-d	Anzor-s	da-j-majon-e	si.	(LB)
Vano-NARR	Anzor-DAT	PVB-2-compare-3	2SG	
'Vano compared you to Anzor.'				
- d. **Present Perfect** [SUBJ_{DAT} + AGR ~ OBJ_{POSTPOSITION} ~ OBJ2]

*Vano-s	Anzor-iš-d	do-x-majūn-a	si.	(UB)
Vano-DAT	Anzor-GEN-TFM	PVB-3-compare-3	2SG	
'Vano has apparently compared Anzor to you'				

*Vano-s	Anzor-iš-d	do-x-majon-a	si.	(LB)
Vano-DAT	Anzor-GEN-TFM	PVB-3-compare-3	2SG	
'Vano has apparently compared Anzor to you'				

(26) **3 IO > 1 DO**

- a. **Present screeve** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2]

*Vano	Anzor-s	x-a-mjōn-e	mi.	
Vano.NOM	Anzor-DAT	1SG-PRV-compare-3	1SG	
'Vano is comparing me to Anzor.'				
- b. **Present screeve** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} ~ OBJ2 + AGR]

Vano	Anzor-s	m-a-mjōn-e	mi.	
Vano.NOM	Anzor-DAT	1SG-PRV-compare-3	1SG	
'Vano is comparing me to Anzor'				

c. **Aorist** [SUBJ_{NARR} + AGR ~ OBJ_{DAT} ~ OBJ2 + AGR]

Vano-d	Anzor-s	da-m-majūn-e	mi.
Vano-narr	Anzor.nom	pvb-1Sg-compare-3	1Sg
‘Vano compared Anzor to me’			

d. **Present Perfect** [SUBJ_{DAT} + AGR ~ OBJ_{POSTPOSITION} ~ OBJ2]

*Vano-s	Anzor-iš-d	do-x-majon-a	mi.
Vano-DAT	Anzor-GEN-TFM	PVB-1-compare-3	1SG
*Vano-s	Anzor-iš-d	do-x-majūn-a	mi
Vano-DAT	Anzor-GEN-TFM	PVB-1-compare-3	1SG

Svan is like Georgian in another respect: just as Georgian has two strategies to get around the PFC, tativization and second-object agreement, likewise Svan has an exactly analogous construction based on the word for ‘head, self’:

(27) [1, 2] IO; [1,2] DO; tavi-construction

a. **Present** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2]

Eji	m-i-wz-u	mi	isgu	txum.
that.NOM	1SG-PRV-send-3AOR	1SG	2SGPOSS	self.DAT
‘He is sending you to me.’				

b. **Aorist** [SUBJ_{NARR} + AGR ~ (OBJ_{DAT}) + AGR ~ OBJ2]

Ejnem	ä-m-zəz-u	isgu	txwim
That.NARR	PVB-1SG-send-AOR3SG	2SGPOSS	self.NOM
‘He sent you to me.’			

c. **Present Perfect** [SUBJ_{DAT} + AGR ~ OBJ ~ OBJ2[TAVI-CONSTX]]

Ejis	o-x-zəz-a	mi	isgu	txwim.
That.DAT	PVB-1-send-3	1SG	2SGPOSS	self.NOM
‘He has apparently sent you to me.’				

d. **Present Perfect** [SUBJ_{DAT} + AGR ~ OBJ ~ OBJ2[ADJ]]

Ejis	o-x-zəz-a	mi	txwoud
that.DAT	PVB-1-send-3	1SG	self.ADV
‘He has apparently sent you to me’			

Just as with Georgian, the illicit local pronoun can be converted to a third person headed by *txwim* ‘head, self’, which bears all the normal case features of an argument for a given tense-aspect combination. However, in addition to this, a third strategy exists, as in (27d):

the illicit first or second person second object must be converted to an oblique form in the adverbial case. As you can see in the following examples in (28), first and second persons are not completely symmetrical with respect to the tativization-constructions. The peculiarity lies in the fact that this asymmetry is only present in the perfect series. Compare the perfect form in (27c-d) above with those in (28c-e) below:

(28) **Argument ‘demotion’ strategies**

- a. **Present** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2]

Eja	j-i-zz-i	si	mišgu	txum.
This.NOM	2-PRV-send-3	2SG	1SGPOSS	self.DAT
‘He is sending me to you.’				
- b. **Aorist** [SUBJ_{NARR} + AGR ~ (OBJ_{DAT}) + AGR ~ OBJ2]

Ejnem	ä-j-zəz-u	mišgu	txvim.
This.NARR	PVB-2-send-AOR3SG	1SGPOSS	self.NOM
‘He sent me to you.’			
- c. **Present Perfect** [SUBJ_{DAT} + AGR ~ OBJ ~ OBJ2[TAVI-CONSTX]]

*ejas / mič	o-x-zəz-a	si	mišgu	txvim
This-DAT	PVB-3-send-3	2SG	1SGPOSS	self.NOM
‘He sent me to you.’				
- d. **Present Perfect** [SUBJ_{DAT} + AGR ~ OBJ[ADJ] ~ OBJ2[ADJ + TAVI-CONSTX]]

ejas / mič	o-x-zəz-a	isgowd	mišgu	txvim
This.DAT	PVB-3-send-3	2SG.ADV	1SGPOSS	self.NOM
‘He has apparently sent me to you.’				

In (28c) with a first person indirect object and a second person direct object, the tativization construction is grammatical, while the inverse form in (28c) with a second person indirect object and a first person direct object is not. The second person argument must instead be encoded as in (28d) as an oblique form in the adverbial case. Why this is so is not immediately clear, but in all likelihood it has to do with the fact that perfect series verb forms in Svan are defective in being unable to register first or second person objects, unlike their Georgian counterparts.

However, an even more fascinating fact comes from appositional constructions with a [1,2] + 3 indirect object and a [1, 2] + 3 direct object. In Georgian, as we saw above, these constructions are completely symmetrical: the verb can agree with either the direct or the indirect object as long as that agreement is first or second person. Crucially, the feature value of the whole appositional phrase is treated in Georgian as a local argument: third person agreement is not possible, despite the fact that one constituent of the appositional phrase is third person. Svan is different in this respect: as you can see in the Upper Bals data in (29b), the *x*- third person object prefix shows that in Svan some dialects can treat appositional phrases as third person phrases rather than as local phrases as in Georgian. Note furthermore that it is precisely the less salient grammatical function, OBJ2 which receives third person agreement. I will return to this fact later on in more detail, but suffice it to say now that this illustrates that even when a case array stays constant, as all the forms below do (all are aorist verbs with a Narr ~ Dat ~ Nom array, making each function clearly distinct), the agreement pattern may differ one from the other.

- (29) [1,2] + 3 IO; [1,2] +3 DO

- a. **Aorist** [SUBJ_{NARR} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2]
 Kartvel-är-d la-i-majün-e-x sgäy os-är (UB)
 Georgian-PL-NARR PVB-2-compare-3-PL 2Pl Ossetian-PL.NOM
 näy k'osov-äl-s
 1Pl Kosovar-PL-DAT
 ‘The Georgians compared you Ossetians to us Kosovars’

Kartvel-är-d	la- <i>I</i> -majon-e-x	sgä	osär	(LB)
Georgian-PL-NARR	PVB- <u>2</u> -compare-3-PL	2Pl	Ossetian-PL.NOM	
nä	k'osoovoel-är-s			
1Pl	Kosovar-PL-DAT			
‘The Georgians compared you Ossetians to us Kosovars’				

- b. **Aorist** [SUBJ_{NARR} + AGR ~ OBJ_{DAT} ~ OBJ2 + AGR]
 Kartvel-är-d la-x-majōn-e-x sgäy osär (UB)

Georgian-PL-NARR PVB-3-compare-3-PL 2Pl Ossetian-PL.NOM
 näy k'osov-äl-s

1Pl Kosovar-PL-DAT
 ‘The Georgians compared you Ossetians to us Kosovars.’

- Kartvel-är-d la-j-majon-e-x sgä osär (LB)
 Georgian-PL-NARR PVB-2-compare-3-PL 2Pl Ossetian-PL.NOM

nä k'osovoel-är-s
 1Pl Kosovar-PL-DAT
 ‘The Georgians compared you Ossetians to us Kosovars.’

(30) **Agreement with 1Pl argument: both inclusive and exclusive possible**

- a. Kartvel-är-d la-gw-majōn-e-x sgäy os-är
 Georgian-PL-NARR PVB-1PLIN-compare-3-PL 2Pl Ossetian-PL.NOM
 näy k'osov-äl-s (UB – inclusive 1Pl OBJ)
 1Pl Kosovar-PL-DAT
 ‘The Georgians compared you Ossetians to us Kosovars.’

- Kartvel-är-d la-n-majōn-e-x sgäy os-är
 Georgian-PL-NARR PVB-1PLEX-compare-3-PL 2Pl Ossetian-PL.NOM
 näy k'osov-äl-s (UB – exclusive 1Pl OBJ)
 1Pl Kosovar-PL-DAT
 ‘The Georgians compared you Ossetians to us Kosovars.’

6.2.2 The case marking system of Mingrelian

Originally, Mingrelian and Laz formed a dialect continuum stretching from about Sukhumi on the Black Sea all the way to Trabzon in Turkey, having already split from Georgian around the middle of the first millennium BC (Harris 1985). However, because the intermediary dialect regions are now largely Georgian-speaking, it is safe to say that the two speech varieties are now separate languages. The interesting fact about these two otherwise relatively closely related languages (about as different as Spanish and Italian) is that they have both changed an original split-S system in opposite directions.

Mingrelian did this by extending the original narrative case marking used for unergatives in the aorist to mark the subjects of unaccusatives as well. Consider for example the following transitive sentences in Present and Aorist series:

- (31) a. Present series, transitive : [NOM_{AG} ~ DAT_{REC} ~ DAT_{TH}] (Harris 1985: 55-56)
- | | | | |
|------------|-----------------|-----------|-----------|
| muma | a-rʒ-en-s | cxen-s | skua-s |
| father.NOM | PRV-give-TH-3SG | horse-DAT | child-DAT |
- ‘Father is giving the child a horse.’
- b. Aorist series, transitive : [NARR_{AG} ~ DAT_{REC} ~ NOM_{TH}]
- | | | | |
|-------------|---------------------|-----------|-----------|
| muma-k | (ki)-meč-u | cxen-i | skua-s |
| father-NARR | PVB-give.AOR-AOR3SG | horse-NOM | child-DAT |
- ‘Father gave the child a horse.’
- (32) a. Present series, unaccusative intransitive: [NOM_{TH}]
- | | | | |
|---------|-----------|--|--|
| k'oč-i | ğur-u | | |
| man-NOM | die-3SGII | | |
- ‘The man dies.’
- b. Aorist series, unaccusative intransitive: [NARR_{TH}]
- | | | | |
|----------|---------------|--|--|
| k'oč-k | do-ğur-u | | |
| man-NARR | PVB-die-3SGII | | |
- ‘The man died.’
- (33) a. Present series, unergative intransitive: [NOM_{AG}]
- | | | | |
|----------|---------------|-------------|--|
| ʒəbi | (teli dğa-s) | muš-en-s | |
| girl.NOM | (all day-DAT) | work-TH-3SG | |
- ‘The girl is working all day.’
- b. Aorist series, unergative intransitive: [NARR_{AG}]
- | | | | |
|-----------|------------------|--|--|
| ʒəbi-k | (ko)-sxap-u | | |
| girl-NARR | PVB-dance-AOR3SG | | |
- ‘The girl danced’

I summarize these case-array patterns in the present and aorist series in the following table, drawn from Harris (1985: 58):

Table 6.3. Case patterns in Mingrelian across conjugations and series.

Series / Conj.	Class 1	Class 2	Class 3
Present	SUBJ: NOM _{AG} DO: DAT _{PAT} IO: DAT _{REC}	NOM _{PAT}	NOM _{AG}
Aorist	SUBJ: NARR _{AG} DO: NOM _{PAT} IO: DAT _{REC}	NARR _{PAT}	NARR _{AG}

Thus, whereas Georgian and Svan both have two conjugations of intransitives which are distinct in both their case and agreement patterns, in Mingrelian only the agreement distinguishes unaccusatives from unergatives (present series unaccusatives take *-u* (32a) while unergatives take *-s* (33a)), while all conjugations take nominative case subjects in the present and narrative case subjects in the aorist. Thus what makes the Mingrelian system unusual is not differences between different kinds of verbs – all verbs in a given series takes a consistent case form for the subject – but rather that the case of the *subject* in the present series, the nominative, is now the case of the *object* in the aorist series, and the case of the subject in the aorist series is narrative case. Thus, case-marking covertly marks tense in Mingrelian, even though, unlike Georgian and Hindi and other languages with splits, this split does not result in a change in the actual alignment between the different tenses. Perhaps even more importantly, like Georgian, Mingrelian is another counterexample to the idea that case and agreement pattern together; here they clearly do not.

Because this system is clearly different from that of Georgian, Mingrelian is another interesting test case for the PFC. As with Georgian, a 3IO > 3DO construction presents no problems, though the perfect series in Mingrelian is formed by apparent inversion of the arguments, resulting in a dative-case subject, a nominative case OBJ2,

and an oblique-cased OBJ in the allative case *-(i)ša*, and thus in Mingrelian perfect series' indirect objects are not formed with a postpositional phrase as in Georgian and Svan.

(34) 3 IO > 3 DO (with IO agreement)

- a. **Present** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} ~ OBJ2]

Vano	Anzor-s	a-dar-en-s	Givi-s
Vano.NOM	Anzor-DAT	PRV-compare-TH-3SG	Givi-DAT
‘Vano is comparing Anzor to Givi’			
Also: ‘Vano is comparing Givi to Anzor’			
- b. **Aorist** [SUBJ_{NARR} + AGR ~ OBJ_{DAT} ~ OBJ2_{NOM}]

Vano-k	Anzor-i	še-a-dar-u	Givi-s.
Vano-NARR	Anzor-NOM	PVB-PRV-compare-AOR3SG	Givi-DAT
‘Vano compared Anzor to Givi.’			
- c. **Perfect** [SUBJ_{DAT} + AGR ~ OBJ ~ OBJ2_{NOM}]

Vano-s	Anzor-i	še-u-dar-eb-u	Givi-ša?
Vano-DAT	Anzor-NOM	PVB-PRV-compare-TH-3	Givi-ALL
‘Vano has apparently compared Anzor to Givi.’			

Also, like Georgian and Svan, even though its case system is different, Mingrelian shows evidence of a hierarchical object agreement for ditransitives, since the verb can exceptionally agree with the OBJ2 if that OBJ2 is a more salient first or second person argument. Compare the data in (35b, e) with the analogous Georgian and Svan forms above in Ch. 2 (44-45) and (27c-d), respectively.

(35) 3 IO > 2 DO

- a. **Present** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} ~ OBJ2]

*Vano	Anzor-s	a-dar-en-s	si
Vano.NOM	Anzor-DAT	PRV-compare-TH-3SG	2SG
‘Vano is comparing you to Anzor.’			
- b. **Present** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} ~ OBJ2 + AGR]

Vano	Anzor-s	g-a-dar-en-s	(si)
Vano.NOM	Anzor-DAT	2-PRV-compare-TH-3SG	2SG
‘Vano is comparing you to Anzor.’			
- c. **Aorist** [SUBJ_{NARR} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2_{NOM}]

Vano-k	Anzor-s	še-g-a-dar	(si)
Vano-NARR	Anzor-NOM	PVB-2-PRV-compare	2SG
‘Vano compared you to Anzor.’			

- d. **Perfect** [SUBJ_{DAT} + AGR ~ OBJ_{ALL} ~ OBJ2_{NOM}]
 Vano-s Anzor-iša še-u-dar-eb-u si
 Vano-DAT Anzor-ALL PVB-PRV-compare-TH-3SG 2SG
 ‘Vano has apparently compared you to Anzor.’
- e. **Perfect** [SUBJ_{DAT} + AGR ~ OBJ_{ALL} ~ OBJ2_{NOM} + AGR]
 Vano-s Anzor-iša še-u-dar-eb-u-ku
 Vano-DAT Anzor-ALL PVB-PRV-compare-3Sg-1/2Sg
 ‘Vano has apparently compared you to Anzor.’
- (36) 3 IO > 1 DO
- a. **Present** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} ~ OBJ2]
 *Vano Anzor-s a-dar-en-s ma
 Vano.NOM Anzor-DAT PRV-compare-TH-3SG 1SG
 ‘Vano is comparing me to Anzor’
- b. **Present** [SUBJ_{NOM} + AGR ~ OBJ_{DAT} ~ OBJ2 + AGR]
 Vano Anzor-s m-a-dar-en-s ma
 Vano.NOM Anzor-DAT 1SG-PRV-compare-TH-3SG 1SG
 ‘Vano is comparing me to Anzor.’
- c. **Aorist** [SUBJ_{NARR} + AGR ~ OBJ_{DAT} + AGR ~ OBJ2_{NOM}]
 Vano-k Anzor-s še-m-a-dar-u ma
 Vano-NARR Anzor-DAT PVB-1SG-PRV-compare-3SG 1SG
 ‘Vano compared me to Anzor’
- d. **Perfect** [SUBJ_{DAT} + AGR ~ OBJ_{ALL} ~ OBJ2_{NOM}] (no AGR on either OBJ)
 Vano-s Anzor-iša še-u-dar-eb-u ma
 Vano-DAT Anzor-ALL PVB-PRV-compare-TH-3SG 1SG
 ‘Vano has apparently compared me to Anzor.’
- e. **Perfect** [SUBJ_{DAT} + AGR ~ OBJ_{ALL} ~ OBJ2_{NOM} + AGR]
 Vano-s Anzor-iša še-v-u-dar-eb-u-ku ma
 Vano-DAT Anzor-ALL PVB-1-PRV-compare-TH-3SG-1/2SG 1SG
 ‘Vano has apparently compared me to Anzor.’

Also, just as with Svan and Georgian, Mingrelian can circumvent the PFC by converting an illicit first or second person OBJ2 into a third person phrase headed by *dudi* ‘head, self’. Here are some examples with a first person OBJ and a second person OBJ2:

- (37) [1, 2] IO; [1,2] DO; *dudi*-construction
- a. **Present** [SUBJ_{NOM} + AGR ~ OBJ + AGR ~ OBJ2 [TAVI]]
 tina ku-mo-m-i-jgóan-an-s ma skan dus.
 that.NOM PVB-VENT-1SG-PRV-send-TH-3SG 1SG 2SGPOSS self.DAT
 ‘He is sending you to me.’

- b. tik ku-mo-m-i-jğon-u ma skan-i dud-i.
 that.NARR PVB-VENT-1SG-PRV-send-AOR3SG 1SG 2SGPOSS-NOM self-NOM
 ‘He sent you to me’
- c. tis ku-m(o)-u-jğon-u-ku ma skan-i dud-i
 that.DAT PVB-VENT-PRV-SEND-3SG-1/2SG 1SG 2SGPOSS-NOM self-NOM
 ‘He apparently has sent you to me.’
- (38) [1,2] + 3 IO; [1,2] +3 DO
- a. *Kortu-ep-k tkva os-ep-i
 Georgian-PL-NARR PVB-PRV-compare-3PLAOR 2PL Ossetian-PL-NOM
 čki k'osovoel-ep-s
 1PL Kosovar-PL-DAT
 ‘The Georgians compared you Ossetians to us Kosovars.’
- b. Kortu-ep-k tkva os-ep-i
 Georgian-PL-NARR PVB-2-PRV-compare-3PLAOR 2PL Ossetian-PL-NOM
 čki k'osovoel-ep-s
 1PL Kosovar-PL-DAT
 ‘The Georgians compared you Ossetians to us Kosovars.’
- c. Kortu-ep-k tkva os-ep-i
 Georgian-PL-NARR PVB-1PL-PRV-compare-3PLAOR 2PL Ossetian-PL-NOM
 čki k'osovoel-ep-s
 1PL Kosovar-PL-DAT
 ‘The Georgians compared you Ossetians to us Kosovars.’

6.2.3 Preliminary Conclusions

What we have seen in this section and the last is that while the Georgian and Kartvelian constraints have a syntactic dimension, different evidence suggests that syntax (if we take case to be isomorphic to grammatical functions and constituent structures) cannot be the whole answer. On the one hand, the PFC cannot be a purely semantic constraint, because nominalizations and nonfinite clauses based on them are not affected by the constraint. On the other hand, if we assume, as Harris (1981, 1985), Bonet (1994) and many others often do, that case (in Georgian, at least) is a manifestation of something syntactic in nature, the complicated case-systems that surveyed across different Kartvelian languages and dialects pose an apparent paradox, because they obviously do

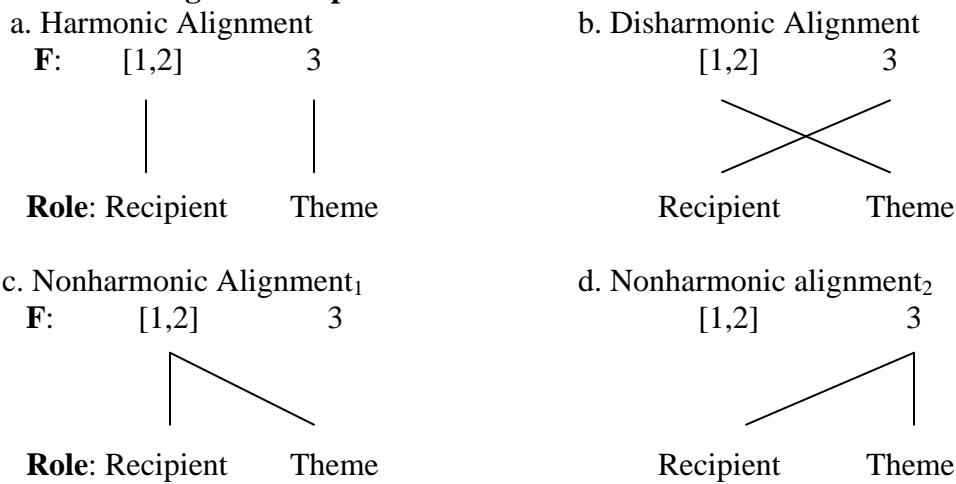
not have any effect on the constraint whatsoever. Furthermore, even grammatical functions that are encoded as postpositional phrases in constituency-structure (such as the peculiar indirect objects in the perfect series encoded with *=tvis* ‘for’) are treated as regular arguments of the clause, and not as adjuncts in terms of the constraint.

6.3 Haspelmath (2004) and the Ditransitive Person-Role Constraint

6.3.1 Harmonic vs. Disharmonic associations

As we have seen, the purely syntactic accounts of what I have called the Person-Function Constraint have numerous difficulties. Aside from the apparent lack of VP-constituent asymmetries in Georgian that would justify a purely constituency-based analysis, and the above problems and the lack of generality of explanation more than anything else motivated Haspelmath to look for a different explanation. In his 2004 paper, Haspelmath proposed that instead of looking for an explanation in terms of constituency or grammatical relations, both of which vary too much to explain its generality across languages, the constraint must rather be functionally based on frequency patterns based on which particular thematic roles are likely to be aligned with which particular participants in the discourse, as follows:

Table 6.4. Alignment of person and roles



Although Haspelmath's analysis assumes discrete thematic roles, this analysis constitutes an immediate improvement over virtually all previous analyses, because it disentangles the person-role specifications of previous either-or generative analyses from case and constituency structure: languages can, indeed, have disharmonic alignments of person and role, although it is disfavored even in those languages where it is allowed (as with Haspelmath's native German).

There is an even more important result of Haspelmath's explanation of the constraint. Haspelmath assumes that the reason why one particular feature gets aligned with one particular thematic role prototypically has to do ultimately with its *topicworthiness*: their likelihood (formally, in terms of frequency) to become topics of a discourse:

- (39) **Topicality-Role Constraint:** “Grammars are likely to put restrictions on Recipient-Theme combinations to the extent that the Recipient argument is not inherently more topicworthy than the Theme argument” (Haspelmath 2004: sec. 6.3)

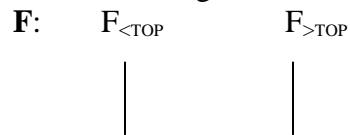
This means that the constraint is not specifically a question of person features as such, but is rather a much more general constraint on the alignment of topical arguments with particular kinds of speech-act roles: not just first or second persons will be associated with recipients, but also definite, or pronominal or animate or other topicworthy kinds of semantic arguments will, too, as in (n).

(40)	<i>More topicworthy</i>	<i>Less topicworthy</i>	(Haspelmath 2004: §6.2)
	<i>Recipient</i>	<i>Theme</i>	
	first/second person	third person	
	pronoun	full NP	
	proper name	common noun	
	animate	inanimate	
	definite	indefinite	

In this sense, languages tend to redundantly cospecify different features in a discourse, as this aids the communicative process as a whole. Thus the alignment according to Haspelmath actually has the more generalized format in (n):

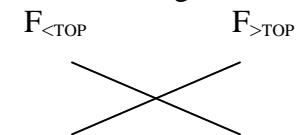
Table 6.5. Alignment of features and roles

a. Harmonic Alignment

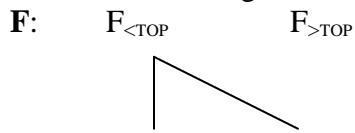


Role: Recipient Theme

b. Disharmonic Alignment

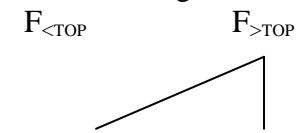


c. Nonharmonic Alignment₁



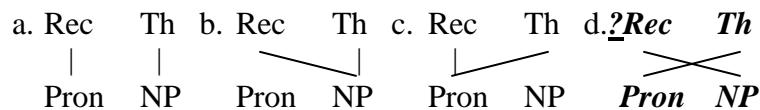
Role: Recipient Theme

d. Nonharmonic alignment₂

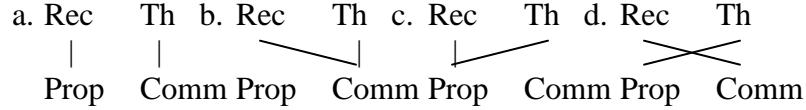


The implication is that different kinds of features may vary independently from person depending on how and when dysharmonic associations of a feature and role are allowed. I tested this principle in Georgian by systematically testing different combinations of pronouns, proper nouns and animate arguments with different thematic roles a la Haspelmath, and found that indeed speakers find disharmonic associations cause grammaticality to degrade noticeably. Thus, if the recipient is a regular NP, but the theme is a third person pronoun, as shown by the Pronominal-Role Constraint in (41) below speakers find this less natural than the reverse, or if both arguments of the ditransitive are equal in relative topicality. Likewise, if both the recipient and the theme are inanimate, or if the recipient is inanimate and the theme animate, the construction is seriously degraded, as in (42)-(43).

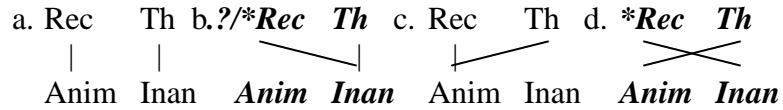
(41) **Pronominal-Role Constraint:**



(42) **Proper-noun-Role Constraint**



(43) **Animacy-Role Constraint**



However, the fact that not all features form a kind of cascading multiply embedded hierarchy – disharmonic associations of person or pronoun or animacy and role trigger it, while proper nouns in (42) do not – is a reminder that the Silversteinian hierarchy of

features was not intended to be one single hierarchy (as it was later understood by e.g. Dixon (1979, 1994)), but rather a general principle of asymmetry that can arise in different construction types in different ways.

6.3.2 Problems with the role-based account

So, Haspelmath's role-based account of the behavior of ditransitives has much to say for it. It cuts through the morass of syntactocentric analyses that seemed inexplicable on generative accounts and grounds the PFC in a larger context that involves the way features map onto particular construction types. However, as noted above in the discussion of Bonet, Haspelmath's purely role and frequency based analysis fails to take into account contexts where the narrowly based syntactic parameters of a construction do constrain the behavior of the constraint. Nominalizations, and any construction formally based on them such as masdar-infinitives, do not manifest the constraint as they would be expected to do so if thematic roles were the only relevant factor, as in (44) repeated from (10) above:

- (44) a. **2 REC; 3 TH**
mis-i ča-bar-eb-a šen=tvis
3POSS-NOM PVB-render-TH-MAS.NOM 2SG=for
‘turning him over to you’ (lit. ‘his rendering to you’)
- b. **3 REC; 2 TH**
šen-i ča-bar-eb-a mis=tvis
2SgPoss-NOM PVB-render-TH-MAS.NOM 3Sg.GEN=for
‘turning you over to him’ (lit. ‘your rendering to him’)

Note that such constructions are, statistically speaking, far less frequent than the finite verb forms from which they are derived – which calls into question the notion of frequency being the underlying factor in the finite constructions.

Another kind of construction type (not mentioned by Bonet) that is not based on nominalizations, but is one that casts doubt on a purely role-based analysis, comes from derived ditransitives based on causatives of other verbs that result in ditransitives, as in (45) below. These present a different problem from the nominalizations: while nominalizations alter the morphosyntactic structure of a verb but keep the thematic structure constant, causative verbs alter the thematic structure of verbs as well as the morphosyntactic structure. This means that if the thematic role were really the salient factor behind the constraint, we would expect these causative constructions not to pattern exactly like other underived ditransitive verbs. In fact, they do, as is clear comparing *cema* ‘give’ in (45) with *dasc’avlineba* ‘make teach’ in (46):

(45) **Underived ditransitive verb ‘give’**

- a. *Ivane a-ʒl-ev-s ekim-s me
Ivane.NOM PRV-give.PRES-TH-3SG doctor-DAT 1SG
'Ivane is giving me to the doctor.'
- b. *Ivane-m mi-s-c-a ekim-s me
Ivane-NARR PVB-3-give-AOR3SG doctor-DAT 1SG
'Ivane gave me to the doctor.'
- c. *Ivane-s mi-u-c-i-a ekim-isa=tvis me
Ivane-DAT PVB-PRV-give-PF-3SG doctor-GEN=for 1SG
'Ivane has apparently given me to the doctor.'

(46) **Derived causative ditransitive verb ‘make teach’**

- a. *Zurab-i da-a-sc’avl-in-eb-s Mariam-s me
Zurab-NOM PVB-PRV-teach-CAUS-TH-3SG Mary-DAT 1SG
'Zurab is making Mary teach me'
- b. *Zurab-ma da-a-sc’avl-in-a Mariam-s me
Zurab-NARR PVB-PRV-teach-CAUS-AOR3SG Mary-DAT 1SG
'Zurab made Mary teach me'

- c. *Zurab-s da-u-sc'avl-in-eb-i-a Mariam-isa=tvis me
 Zurab-DAT PVB-PRV-teach-CAUS-TH-PF-3SG Mary-GEN=for 1SG
 'Zurab has apparently made Mary teach me'

(47) Both repair strategies for causative ditransitives violating the PFC available:

- a. *Tavization strategy:*

Zurab-ma da-a-sc'avl-in-a	Mariam-s čem-i tav-i
Zurab-NARR PVB-PRV-teach-CAUS-AOR3SG	Mary-DAT 1SGPOSS-NOM self-NOM
'Zurab made Mary teach me.'	

- b. *Second-object agreement strategy:*

Zurab-ma da-m-a-sc'avl-in-a Mariam-s me
Zurab-NARR PVB-1SG-PRV-teach-CAUS-AOR3SG Mary-DAT 1SG
'Zurab made Mary teach me.'

These derived ditransitive verbs behave in every way exactly like regular ditransitive verbs do – they have the same case arrays, the same agreement patterns, everything. This is surprising on Haspelmath’s account, since the latter would normally be described as having thematic roles of CAUSER ~ CAUSEE ~ THEME (depending on one’s theory of the number and nature of thematic roles) and so should not be targeted by a constraint that addresses how features interact with RECIPIENTS and THEMES.

6.3.3 The PFC as a Constraint over Grammatical Functions

So, we have seen that both a syntactocentric and semantocentric analysis fail to capture the precise distribution of the constraint: the constraint cannot be reduced to case, as with Bonet, but it also cannot be reduced to a semantic calculus of thematic roles, as with Haspelmath. I believe the answer to this problem lies in separating out the constraint itself, from the kinds of constructions that might be used to circumvent it. As we saw in

each of the Kartvelian languages above, each language actually has multiple constructional solutions:

(48) **‘Tavi’-constructions:**

a. *Georgian:*

Ivane-m	ga-m-i-gzavn-a	me	šen-i	tav-i
IVANE-NARR	PVB-1SG-PRV-send-AOR3SG	1Sg	2SGPOSS-NOM	self-NOM
‘John sent you to me.’				

b. *Svan:*

Ejnem	ä-m-zəz-u	mi	isgu	txwim
That.NARR	PVB-1SG-send-AOR3SG	1Sg	2SGPOSS	self.NOM
‘He sent you to me.’				

c. *Mingrelian:*

tik	ku-mo-m-i-jğon-u	ma	skan-i	dud-i.
that.NARR	PVB-VENT-1SG-PRV-send-AOR3SG	1Sg	2SGPOSS-NOM	self-NOM
‘He sent you to me’				

(49) **Second-object agreement:**

a. *Georgian:*

Vano-m	Anzor-s	še-m-a-dar-a	me
Vano-NARR	Anzor-DAT	PVB-1SG-PRV-compare-AOR3SG	1Sg
‘Vano compared me to Anzor.’			

b. *Svan:*

Vano-d	Anzor-s	da-m-majūn-e	mi.
Vano-narr	Anzor.nom	PVB-1Sg-compare-3	1Sg
‘Vano compared Anzor to me’			

c. *Mingrelian:*

Vano-k	Anzor-s	še-m-a-dar-u	ma
Vano-NARR	Anzor-DAT	PVB-1SG-PRV-compare-TH-3SG	1Sg
‘Vano compared me to Anzor.’			

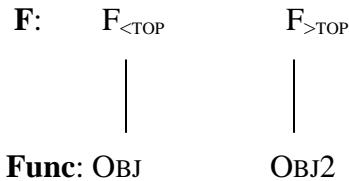
(50) **Oblique-case form**

ejas / mič	o-x-zəz-a	isgowd	mišgu
This.DAT	PVB-3-send-3	2SG.ADV	1SGPOSS self.NOM
‘He has apparently sent me to you.’			

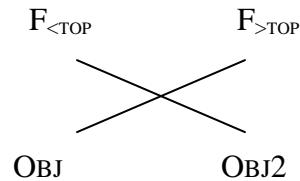
Such constructions are responses not, as per Haspelmath, to an illicit alignment of features and roles, but rather to a non- or disharmonic association of features and grammatical functions, as follows:

Table 6.5. Alignment of features and ditransitive grammatical functions

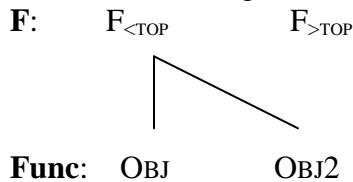
a. Harmonic Alignment



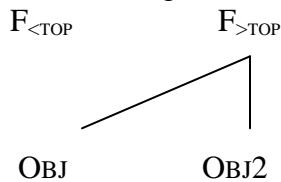
b. Disharmonic Alignment



c. Nonharmonic Alignment₁



d. Nonharmonic alignment₂



By assuming a less semantic, but equally nonconstituent-based mechanism like grammatical functions, we can abstract away from the problems that constituency- and thematic-based analyses bring with them. There is another advantage to this: this is that by separating out the actual feature asymmetry itself from how it maps onto particular grammatical functions, we can separate out generalizations about ditransitive constructions from related but autonomous monotransitive person-function constraints found e.g. in Algonquian and Carib languages (about which I will discuss more in the last chapter). Thus, the *syntactic* manifestation of the constraint is not one constraint, but many, depending on exactly which grammatical function and features one is talking about.

6.4 Syntactic Features in Georgian

Before we finish this survey of syntactic hierarchies in Georgian and other Kartvelian languages, it is important to clarify the nature of the hierarchy. In the last two chapters, we saw that morphological hierarchies typically take the form of morphological blocking rules: rules are ordered in blocks, and (*contra* Stump (2001)) are extrinsically ordered within those rule blocks to achieve. We posited that rather than constraining extrinsic rule ordering by Panini’s generalization, rules are constrained by feature geometries, which model subset-superset relationships among features, and that a number of processes do in fact suggest the presence of a third person feature. This was used to explain why it’s possible for third person plural to block first or second person plural in the first place – because it exists as a discrete category, in morphology.

6.4.1 The absence of syntactic third person

The PFC data across Kartvelian languages above has shown that quite a different situation obtains in syntax: in no case does a third person category ever preempt a first or second person category for purposes of the constraint, but is rather preempted by it. This leads to an apparent paradox: in morphology, third person plural appears to outrank first or second person plural, yet on a purely syntactic level, where issues of paradigm formation cannot be involved, local arguments appear always to outrank third person:

- (51) Morphological hierarchies:
- $3\text{PL} > [1, 2]\text{PL}$
 - $[1, 2]\text{PL} > 3\text{SG}$
- Syntactic hierarchies:
- $[1, 2] > 3$

There are other facts that suggest the same paradox. For example, in Georgian it is possible syntactically for a third person noun phrase to agree with a first or second person verb if its referent includes the speaker/hearer. The inverse, however, where an NP that includes a first or second person may nonetheless receive third person agreement, is *not* possible. Consider the following two clauses, the first taken from a novel by Nodar Dumbadze:

- (52) **Third person arguments agree with First-plural verb:**

mere k'iser-c'a-grʒel-eb-ul-eb-i da ga-pitr-eb-ul-eb-i
 then neck-PVB-long-TH-PART-PL-NOM and PVB-become.pale-TH-PART-PL-NOM

v-i-qur-eb-i-t sagamocdo purcel=ši
 1-PRV-look.at-TH-1/2.IICONJ-PL examination sheet=to
 ‘...then with neck stretched out and pale we look at the exam sheet...’
 [lit. ‘then neck-outstretched-ones and having-become-pale-ones we-look-at...’]
*(Me, Bebia da Ilarioni [Grandmother, Ilarioni and Me], by Nodar Dumbadze,
 Aronson and K'iziria 1999: 135)*

- (53) **Local person plural arguments cannot agree with third person plural verbs:**

- *Ivane-m da me nax-es
 Ivane-NARR and 1SG see.PF-3PLAOR
 ‘Ivane and I saw it...’
- *Ivane-m da šen nax-es
 Ivane-NARR and 2Sg see.PF-3PLAOR
 ‘Ivane and you saw it.’
- Ivane-m da me / šen (v)-nax-e-t
 Ivane-NARR and 1SG / 2SG (1)-see.PF-1/2-PL
 ‘Ivane and I / you saw it.’

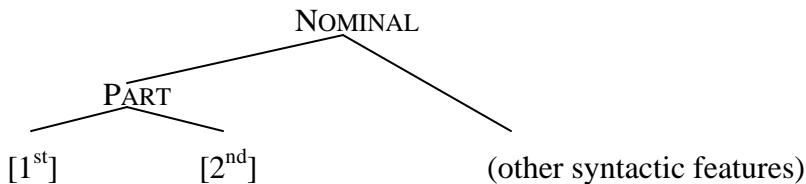
When you compare (52) and (53), NPs that are ostensibly third person like *k'iserc'agrʒelebulebi* ‘ones with necks outstretched’ and *gapitrebulebi* ‘those who have

'become pale' can be syntactically treated as if they were first person plural, and crucially no overt local pronoun is present. In contrast, conjoined NPs of which one member is a first or second person must agree with the local argument instead – syntactically, the local argument is not 'invisible' in the way third persons seem to be. What such examples show is that there is an asymmetry in terms of whether a given argument can be or must be realized in verb agreement. In these cases, the question is not how a paradigm is formed, but rather what the triggering environment is for a given kind of agreement. Such facts only reinforce the idea that syntactically third person truly cannot outrank local arguments. This apparent paradox can be resolved if we assume that, in contrast to morphology and line with much Structuralist theorizing of the last century, in fact there is *no* feature third person – in syntax. The hierarchy is consistent because, syntactically, nothing cannot outrank something.

6.4.2 Feature Geometrical representation

As a consequence of this, we can create a formal feature geometry that is particular to syntax, one in which third person is truly just the absence of a local person feature:

(54)



6.5 Conclusions

This chapter has looked at evidence for purely syntactic hierarchies in Georgian and other Kartvelian languages and found that indeed not only can one distinguish rules that create asymmetries between different purely syntactic features, these hierarchies may be at variance with hierarchies that exist in morphology as a result of distinct processes for constructing paradigms. In other words, the two domains of morphology and syntax, though they often overlap, are formally autonomous from one another and should be treated as such in any formal analysis. In the next chapter, we will tie these two strands of argument together with a reassessment of feature hierarchies cross-linguistically and reassess what ultimately creates feature asymmetries in the first place.

§7. Feature hierarchies as epiphenomena of markedness

The last three chapters have looked closely at different kinds of constructions in Georgian that manifest different kinds of hierarchies, and we have separately shown that features fall into morphological and syntactic natural classes described by feature geometries. But we have not provided a formal account linking these two facts together. In this chapter, we will broaden this picture to a more inclusive typological and cross-linguistic picture of what feature hierarchies really are, where they come from and what their significance is. In doing so, in §7.1, we will first go back to the *locus classicus* which first laid out many of the basic properties of feature hierarchies across a number of different construction types: Silverstein (1976). In §7.2 we will examine two articles that question the typological universality of Silverstein’s argument: Filimonova (2005) and Bickel (2008). Then in §7.3, I will argue both cases represent a misunderstanding of Silverstein’s views and that what few genuine counterexamples that exist are actually a result of the modular nature of feature assignments and consequently of feature hierarchies. In §7.4 we will formalize these generalizations within a Neo-Silversteinian theory of neutralization relativized to particular modules. Finally, in §7.5, I will conclude by looking at what significance feature hierarchies have for the study of natural language

7.1 Silverstein (1976): ‘Hierarchy of Features and Ergativity’

Silverstein’s theory of feature hierarchies existed as part of a larger movement in the wake of the Generative approaches to linguistics to find ways to constrain the ability

of transformations to produce surface outputs. He notes: ‘without any restrictive formal control over the power of postulated transformational rules based on given surface data, we can transform an arbitrary proposed underlying structure into an attested surface form’ (1976: 115). Often misunderstood (e.g. by Wierzbicka 1981, Dixon 1994, Bickel 2008, etc.), the argument was not that some kind of grammatical hierarchy exists in a kind of platonic space constraining construction types simply by being imposed on them as such. Rather, referential hierarchization of noun phrase types is but one part of a larger conception of how grammatical space is divided up along different dimensions. In his later work, Silverstein (1981) makes clear that he views hierarchy effects as the DEPENDENT manifestation of a number of INDEPENDENT variables which are too often confused in the literature:

- (1) Independent variables of grammatical description:
 - i. the inherent referential content of the noun phrases [roughly equivalent to qualia structure in terms of this thesis];
 - ii. ‘case-relations’ like Agent-of, Patient-of, Dative-of [roughly equivalent to theta structure];
 - iii. the (logical) clause-linkage type connecting two (or more) clause-level structures in a complex or compound sentence [roughly my argument-structure];
 - iv. the reference-maintenance relations of arguments of predicates across discourse-level structures [roughly my information structure].

Though some of the details of this conception are somewhat different in execution from those adopted in this thesis and from other frameworks, the basic notion of several different parallel and independent dimensions of linguistic representation is actually a common one (Sadock 1991, Jackendoff 1997, Culicover and Jackendoff 2005, Bresnan 2001, Sag, Wasow and Bender 2003, etc.). What is relevant is not just the asymmetries of

features themselves, but how properties of one subsystem are mapped onto properties in another subsystem. Silverstein's system basically consisted of classical Structuralist feature analysis based on semantic markedness relations. In this view, a feature [F] bears a specification '+' or '-' for positive and negative specification in a class, straightforwardly as follows:

Table 7.1. Feature specification of noun phrases (Silverstein 1976: 117)

		A	B	*	C	D	E	F	G	H	I	J	K	
a.	[±ego]	+	+	+	+	+	+	-	-	-	-	-	-	} 'person'
b.	[±tu]	+	+	+	-	-	-	+	+	+	-	-	-	
c.	[±plural]	+	+	-	+	+	-	+	+	-	+	+	-	} 'number'
d.	[±restricted]	+	-	(+)	+	-	(+)	+	-	(+)	+	-	(+)	

- | | |
|----------------------------------|---------------------------|
| A. first person inclusive dual | G. second person plural |
| B. first person inclusive plural | H. second person singular |
| C. first person exclusive dual | I. third person dual |
| D. first person exclusive plural | J. third person plural |
| E. first person singular | K. third person singular |
| F. second person dual | |

By rule, the absence of specification for a feature is understood to be equal to the negative specification of that feature:

(2) **Rule of residual semantic interpretation (coding):**

Let grammatical feature $[F_i]$ code semantic property A. then $[+F_i]$ means 'A' while $[\neg F_i]$ is interpreted as a failure to specify A, i.e., $[\neg F_i]$ means $\neg A$. But residually, $\neg A \rightarrow \neg \neg A$ (i.e., $[\neg F_i]$ can be interpreted as the negative of A).

That is, although Silverstein's feature theory is formally distinct from those such as Harley and Ritter (1999) which use radical underspecification, the actual practical implications of using positive and negative specifications is not all that different.

Neutralization is actually central to Silverstein's entire view of hierarchization, a fact which has often been lost on many commentators on feature hierarchies. The reason is that hierarchies are only the epiphenomenal result of a *unidirectional* neutralization of a given semantic feature with respect to other semantic features, as in (3):

(3) **Unidirectional neutralization:**

$[F_i]$ neutralized with respect to $[F_j, F_k, \dots] \rightarrow [F_j, F_k, \dots]$ never neutralized with respect to $[F_i]$.

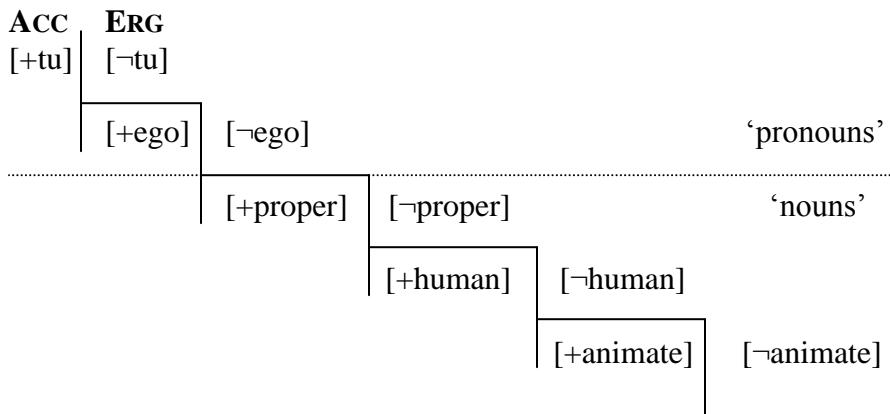
That is, the hierarchy results from a process that affects a given feature in a given constructional context, not from a stipulation of how that feature always relates to all other features in an absolute sense. In other constructional contexts, the features F_j, F_k might neutralize with respect to F_i , eliminating unidirectionality and thus erasing the impression of hierarchization. Because neutralization is held to be a language-particular phenomenon, even if the set of features were to be universal, one could still speak coherently of language-particular hierarchies varying one from another.

This second implication is just as important as the first: that generalizations about the cross-linguistic hierarchization of features are autonomous from how they are manifested in particular languages. This is important, because most theories (McCarthy 2002, Kuno and Kuburaki 1977, Dixon 1994, Croft 2003 etc.) that stipulate the hierarchy crosslinguistically also stipulate the same hierarchy for any given language. In Silverstein (1976), this is clearly not the case: an implicational universal about whether one feature implies the presence of a second feature in the system is logically independent of how particular features are neutralized in particular languages:

- (4) **Universal of hierarchization of features:**
Language L uses $[\pm F_j]$ → Language L uses $[\pm F_i]$
- (5) **Universal of markedness hierarchization of features:**
Language L uses $[\pm F_i]$ for $[\alpha F_k]$ → Language L uses $[\pm F_i]$ for $[\neg \alpha F_k]$, where ‘ α ’ is usually taken to be ‘+’.

Unidirectional neutralization of markedness values leads to a progressively expanding, multiply embedded hierarchy of values by which ‘+’ values are all relatively highly ranked argument types, and ‘−’ are all relatively low-ranked argument types. Dependent rules then target value specifications for features along a given part of the hierarchy. An example could be like the following, the famous set for ergativity splits:

- (6) A potential simple lexical split of case-marking (1976: 122)



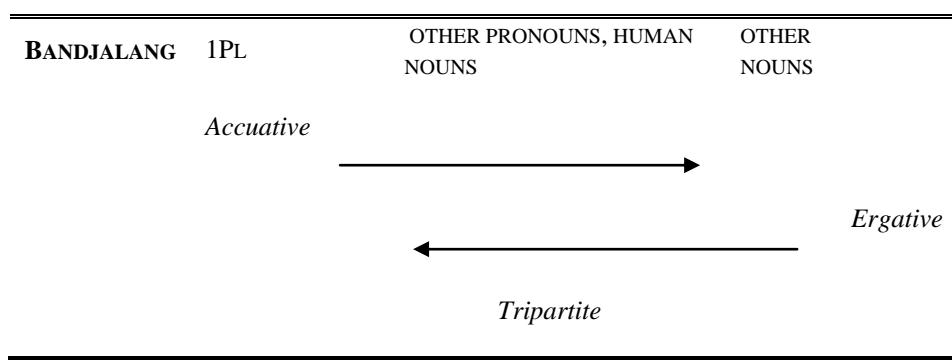
Thus, in this classic example of a possible set of grammatical splits, features that are positively specified are predicted to be able to be assigned particular grammatical case forms along a contiguous part of feature clines. Bandjalang, for example, assigns accusative case marking (NOT accusative alignment!) to all NPs from local personal

pronouns all the way down to human NPs, while at the same time assigning ergative case to all NPs except first person plural:

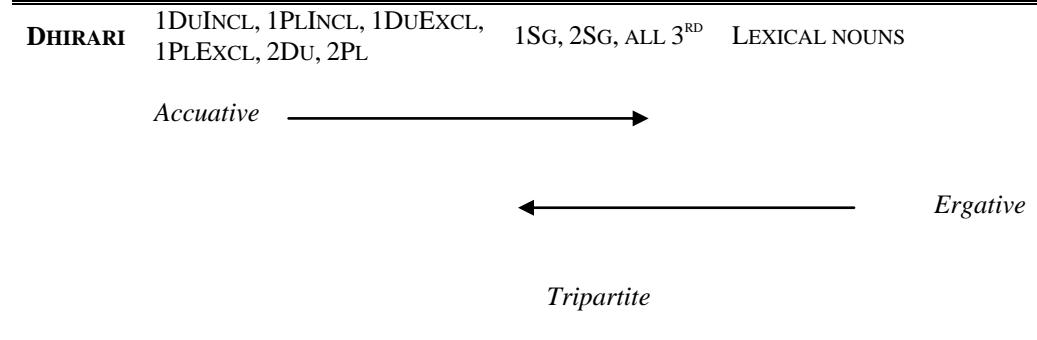
Table 7.2. Bandjalang split-system:

	A	B	C	D	E	F	G	H	I
Ego	+	+	-	-	-	-	-	-	-
Tu	(-)	(-)	+	+	-	-	-	-	-
Plur			+		+	-	-		
Fem						+	-		
Pro						+	+	-	-
Hum								+	-

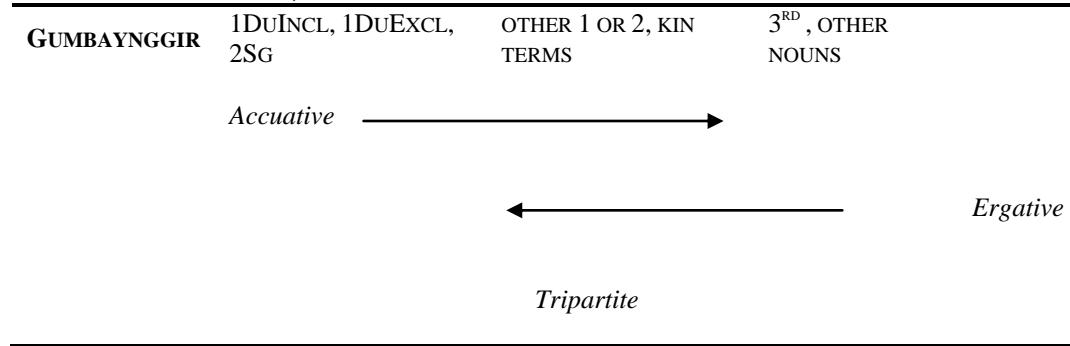
A. first plural
B. first singular
C. second plural
D. second singular
E. third plural
F. third sg. feminine
G. third sg. masculine
H. human nouns
I. other nouns



In Bandjalang, the only NP that is exclusively marked with an accusative marker is first person plural. This kind of evidence has often (Dixon 1994, Carminati 2005, etc) been taken to suggest a kind of indexical person hierarchy with first person at the top and progressively moving further from a personal deictic center. However, it is clear that this was not the intention. Another language cited by Silverstein, Dhirari, marks all first person plurals and duals with an accusative marking, all first and second person singulars and all third person pronominals with a tripartite system, and all lexical nouns with an ergative alignment:

Table 7.3. Dhirari split system (Silverstein 1976: 126-127)

In this language, it is not that the person hierarchy is irrelevant – all first and second person plural pronouns outrank all third. Rather, it is a combination of at least two features that is needed to produce the hierarchical effect, as first and second singular pattern exactly like third person pronominals for purposes of case marking. A third even more complicated example of case-marking assignment is that of Gumbaynggir (Eades 1979), where the first dual inclusive and dual exclusive pronouns, along with second singular, pattern accusatively, while other local persons and kin terms have a tripartite system, and other nouns and pronominal forms have a purely ergative system:

Table 7.4. Gumbaynggir split-system (Silverstein 1976: 128; Eades 1979; Filimonova 2005: 85)

As Eades notes, the kinship terms have a special place in the system. Gumbaynggir discourse avoids reference to third person pronouns with humans generally, instead referring to humans with kinship and ‘section’ terms. What is relevant here is that this system provides even stronger evidence against the idea that the hierarchy is a stipulative fact about universal grammar: some local arguments pattern accusatively, while others don’t; some nonpronominal arguments have a tripartite case-marking system, while others don’t. And most saliently, not only do different languages make different cut-off points along the hierarchy, the exact ordering of features in the hierarchy may vary somewhat from language to language as a result of differing markedness values and neutralization processes.

7.2 Filimonova (2005) and Bickel (2008)¹

The significance of the hierarchies identified by Silverstein for ergative languages is that hierarchization is not merely a property of ergativity, or even case-marking, but a wide-spread patterning that comes up in construction after construction in many languages around the world *independent of those constructions*. In the last chapter, we saw how this was so in Kartvelian in ditransitive constructions: there, it was clearly not the case as such that triggered the constraint, but rather an association of particular features with particular grammatical functions irrespective of what case they were assigned – a rather different question from the Australian examples above. Possibly because it seems to be so deeply embedded in natural languages like this, Silverstein’s

¹ Both articles surveyed here are quite nuanced and should be referred to directly. This review is intended both to provide a larger context for my modular theory of features and feature hierarchies, as well as to set the record straight about Silverstein’s original proposal.

article spawned a voluminous and still growing literature on variations of and explanations for feature hierarchies in various languages and theoretical frameworks. However, although different schools of thought have debated whether ‘the’ hierarchy is a stipulated fact, or just an epiphenomenon, few have actually challenged the substance behind it.

Filimonova (2005) has started a recent trend in this opposite direction: not only is the hierarchy not a stipulated fact, she calls into question the markedness-based motivation for accusative constructions being high on the hierarchy, and ergative constructions being low. After a lengthy discussion of the historiography of linguistic hierarchies, she posits three basic kinds of counterevidence:

- (7) a. the likelihood of being A and P varies across languages;
- b. in some languages, reverse markedness encoding suggests (on at least one definition of markedness) that general alignment types cannot universally be associated with particular ends of ‘the’ hierarchy;
- c. in some languages, discontinuities exist in marking along ‘the’ hierarchy, so that two NP-types, one high and one low in the hierarchy, might be marked accusatively/ergatively, while some other NP-type in between the two types takes ergative/accusative marking.

We will now look at each of these objections in turn, as well as Bickel (2008)’s similar objections, before we assess to what extent they are truly problematic for Silverstein’s original proposal.

7.2.1 Likelihood of being A or P

Assuming that Silverstein was arguing for a single semantically-based hierarchy, rather than multiple hierarchies which transitively give the appearance of one hierarchy, Filimonova points out that an exclusive focus on the ‘meaningful’ basis of the hierarchy does not really fit well with real-world properties of biological animacy. As she puts it,

“However, what is conceived of as an animacy or personality hierarchy matches a biological animacy ranking only roughly, nor does it appear to be a consistent modelling of the notion of a proneness to act or be acted upon. In addition to semantic criteria, formal criteria need to be applied at the upper end of the hierarchy to distinguish between grammatical classes of NPs, i.e., personal pronouns and nouns, human proper names and human common names, kinship (or personal) terms in particular. This division has nothing to do with the animacy or personality of referents or their likelihood to be agents or patients in the proper sense: the referents of 1st and 2nd personal pronouns are not more animate or personal than those of proper names (e.g., *Albert Einstein*) or of NPs with human common names (e.g., *Nobel Laureate* or *founder of relativity theory*).” (Filimonova 2005: 83).

To illustrate this, she points to the Gumbaynggir data discussed above, where kinship terms appear to be ranked higher than third person pronouns. Two examples which she does not discuss, but which make her point more clearly, might be the system of agreement found in Navajo direct and inverse constructions, and the Georgian system of plural marking discussed in previous chapters:

- (8) **Navajo inversion constructions**
- a. ashkii *łij'* yi-ztal
 boy horse DIR-kick.PAST
 ‘The boy kicked the horse.’
 - b. ashkii *łij'* bi-ztal
 boy horse INV-kick.PAST
 ‘The boy was kicked by the horse.’
- (9) human > nonhuman animate > inanimate

(10) **Georgian plural marking**

- a. bič'-eb-i tamaš-ob-en ezo=ši
 boy-PL-NOM play-TH-3PL courtyard=in
 ‘The boys are playing in the courtyard.’
- b. mankan-eb-i dga-nan garet
 car-PL-NOM stand-3PL outside
 ‘The cars are outside.’
- c. kv-eb-i mdinare=ši ar-is/*-ian
 stone-PL-NOM river=in be-3SG/*3PL
 ‘The stones are in the river.’

In the Navajo inverse construction, arguments that are unequal in rank are determined by an animacy hierarchy as in (9), with *yi-* marking a relatively more animate subject, and *bi-* a relatively more animate object; if the two are equal in animacy, then inversion is optional, as in (8b). However, in Navajo the notional definition of ‘animacy’ includes many things in the animate class that physically speaking properly belong in the inanimate class, like cars, wind, rain, etc. (Thompson 1989; Willie 1991). Likewise, as discussed in previous chapters, in Georgian what has often been taken to be an ‘animacy’ effect is actually considerably more complicated than just a calculus of semantic properties. For Filimonova, such examples are important because, for her, semantic meaning is a mapping from a morphosyntactic entity in the grammatical system onto some one or more entities in the real world, rather than onto the mental conceptualization of that world. If that is so, then Silverstein’s semantic-grounding of ‘the’ hierarchy is misplaced because the hierarchy clearly treats some ‘semantically inanimate’ entities as animate ones.

7.2.2 Reverse-markedness encodings

A second more complex kind of counterevidence that Filimonova posits against Silverstein concerns the nature of markedness in a language and what criteria one uses to say that a construction is relatively marked. Crosslinguistically, it is more common for one member of a case opposition to be overtly marked rather than both (De Lancey 1981). In languages with an accusative alignment, this is normally the accusative case marking the transitive object, while in languages with an ergative alignment this is the ergative case marking the transitive subject. In Silverstein's work, this was directly related to how the hierarchy comes into being: arguments with the unexpected relation low on the hierarchy are more likely to manifest some overt indication of accusative case, while arguments high on the hierarchy are more likely to manifest an overt indication of ergative case². However, a smaller number of languages overtly code arguments in the opposite fashion, with the nominative case in accusative languages, and the absolute case in ergative languages, as the table below.

- (11) **Marking distributions in different alignment systems**
(adapted from Filimonova 2005: 84)

NOMINATIVE-ACCUSATIVE		ERGATIVE-ABSOLUTIVE	
a.	<i>Nominative as unmarked case</i>		<i>Absolutive as unmarked case</i>
Nominative	-Ø	Absolutive	-Ø
Accusative	-x	Ergative	-x

² Note that this is the opposite of the tendency towards orientation towards a particular *alignment*: accusative alignment is predicted to be high on the hierarchy, and ergative alignment is predicted to be low on the hierarchy.

b. Accusative as unmarked case		Ergative as unmarked case	
Nominative	-x	Absolutive	-x
Accusative	-Ø	Ergative	-Ø

The potential problem for the theory of hierarchies arises when feature-based splits occur in one of these less common languages, since it would predict a reverse hierarchy in which we would expect accusative alignments at the low end of the scale and ergative alignments at the high end.

In fact, some so-called marked-nominative languages do have feature-based splits in their case-marking system. Dardic languages, for example, often have ergative constructions in the past tense with an oblique case for the agent and nominative case (also usually controlling agreement) for the patient. As Filimonova points out, citing work by Edel'man (1965), there is an added interesting twist, in that usually a nominative construction can also be used whereby the subject takes on nominative case and the object takes an oblique case, as in these examples from Tirahi:

- (12) a. mala gana putr-asi jawāb dita
 father.NOM elder son-POSTP answer give.PAST
 'Father gave the elder son an answer.'
- b. sure putr̥ tānu māl jama kere.
 little.MASC son.NOM his property.OBL gathered
 'The young son gathered his goods and chattels.' (Filimonova 2005: 88, citing Grierson (1925: 410) and Edel'man (1965: 114))

In this language, the pronominals apparently do not have this flexibility, as they must use the ergative construction:

- (13) a. mē dita wa
 1SG.OBL give.PASTPART be.PAST.3SG.MASC

‘I beat (him)’ [sic]

- b. te le bāna kāma adam-asi ačita ti
2SG.OBL DEMthing.NOM who man-POSTP buy.PASTPART be.PRES.3SG.MASC
‘From which man have you bought this thing?’ (Filimonova 2005: 88, citing
Edel’man 1965: 117-118)

This is a problem because it seems to suggest that the higher end of the hierarchy has an ergative alignment while the lower end has an accusative alignment. Filimonova cites other instances of this same kind of hierarchy-reversal, mainly from other closely related Dardic languages (such as Yazgulami and Parachi), so while such instances may be rare, and often cluster in one family like this, at least *prima facie* they pose difficulties for the markedness analysis.

In such languages, the markedness reversal is one where nouns show an accusative pattern, while pronouns show an ergative one. On the grounds that a neutral alignment pattern can be considered the same as being (overtly) unmarked for a given feature, Filimonova also holds that Georgian pronominals constitute a counterexample to an analysis based on markedness, since first and second person pronouns never inflect for case, as in (14):

- (14) a. Me kartvel-i šen Amerik’el-s g-nax-av
1SG Georgian-NOM 2SG American-DAT 2-see.PF-TH
‘I, a Georgian, will see you, an American.’
b. Me kartvel-ma šen Amerik’el-i g-nax-e
1SG Georgian-ERG 2SG American-NOM 2-see.PF-1/2
‘I, a Georgian, saw you, an American.’ (Filimonova 2005: 94)

She points to the fact that the ‘ergative’ case can also be used with certain classes of intransitives, as in (15b). As she puts it: “Such a distribution of S and A marking as opposed to P corresponds to an accusative pattern (and should be referred to as such, in spite of the marking of certain NPs by an ergative case)” (2005: 94).

- (15) a. Me kartvel-i v-i-mğer-eb
 1SG Georgian-NOM 1-PRV-sing-TH
 ‘I, a Georgian, will sing.’
 b. Me kartvel-ma v-i-mğer-e
 1SG Georgian-ERG 1-PRV-sing-1/2
 ‘I, a Georgian, sang’ (Filimonova 2005: 95)

We will return to the basic empirical and conceptual problems with this argument shortly, but suffice it to say for now that if this were the whole story, then Filimonova could reasonably say that a neutral patterning high on the hierarchy with an accusative patterning low on the hierarchy could indeed on one reading constitute a counterexample to the expected distribution.

7.2.3 Scalar continuity

Filimonova’s last main objection to Silverstein’s hypothesis has to do with instances of interruption to the hierarchy’s continuity. Because the hierarchy was grounded in markedness, it is expected that neutralization will always be unidirectional, resulting in continuous stretches of the hierarchy being marked in a particular way. However, there are a small number of putative counterexamples in the literature.

In Washo, for example, it is claimed that third person free pronouns make an overt distinction between subject and object forms (Mallinson and Blake 1981: 64):

		S	A	O
Free	Noun	-∅	-∅	-∅
	1	lé·	lé·	lé·
	2	mí·	mí·	mí·
	3	gí·	gí·	gé·
Bound	1	l ^e -	l ^e -	?l-
	2	m-	m-	?m-

In this paradigm, bound forms pattern differently from free forms, in that first and second person bound forms do have an (expected) accusative alignment while their free forms do not. This is thus not unlike the situation in Georgian, where first and second person pronouns do not make any contrast, while third person pronouns do ('*me* [1SGNOM] : *me* [1SGNARR] vs. '*is* [3SGNOM] : *man* [3SGNARR]').

7.2.4 Bickel (2008)

Another recent study that calls into question the original formulation of Silverstein (1976) is Bickel (2008)'s wide typological study of person splits in verb agreement and case-marking, with special attention to Kiranti languages of Nepal. On the assumption that Silverstein posited a single hierarchy, and that *alignment* patterns were assigned to particular stretches of his hierarchy rather than morphs targeting particular combinations of feature specifications, he distinguished two different potential kinds of analysis of feature hierarchies:

- (17) **The Marking-based Relational Hierarchy Hypothesis:**
 a. For A arguments, the odds for zero case-marking correlate positively with the

- rank of the argument on the referential hierarchy.
- b. For P arguments, the odds for zero case-marking correlate negatively with the rank of the argument on the referential hierarchy.
 - c. For transitive direction marking, the odds for zero direction marking are higher for argument scenarios where A ranks higher than P ('direct' scenarios) than for scenarios where P ranks higher than A ('inverse' scenarios)
- (18) **The Alignment-based RG hypothesis**
- a. For a given grammatical relation in any kind of construction, the odds for accusative alignment correlate positively with the rank of the argument in that relation on the referential hierarchy.
 - b. For a given grammatical relation in any kind of construction, the odds for ergative alignment correlate negatively with the rank of the argument in that relation on the referential hierarchy.

Although the two kinds of directionality involved in the alignment-based hypothesis in (na-b) are logically distinct from one another, he conflates the two on the grounds that languages where neutral alignments are involved (as with Georgian) are irrelevant for disproving the theory:

- (19) **Alternative version of the Alignment-based RG hypothesis:**
 For a given grammatical relation in any kind of construction, the distribution of accusative and ergative alignments tends to follow the referential hierarchy in such a way that accusative alignment is found on higher and ergative alignment on lower segments of the hierarchy.

Bickel systematically tested this with two kinds of data: person/number splits in verb agreement, and case-marking splits. The first category is rather rare crosslinguistically; in Bakker and Siewierska (2006)'s broad-based database of 402 verb agreement systems in the languages of the world, Bickel found only 12 languages with any kind of split based on the referential hierarchy at all, and most of these actually

adhered to the generalizations found in Silverstein (1976), as shown in the following table (adopted from Bickel (2008: 194)).

Table 7.5. Verb agreement with RH-sensitive alignment splits in Bakker and Siewierska (2006)

Language	Split, as coded in the database	Stock	Location
Ainu	1s, 2 accusative; 1p tripartite	Isolate	E. Eurasia
Chácobo	1s, 2s, 3s, 1p, tripartite; 2p, 3p accusative	Panoan	S. America
Comox	1, 2 accusative; 3s tripartite	Salish	N. America
Kamass	1, 2 accusative; 3 tripartite	Uralic	Eurasia
Paumarí	1,2,3p accusative; 3s, 3d ergative	Arauan	S. America
Seri	1s tripartite; 2s, 2p accusative; 3 neutral (zero)	Isolate	N. America
Yimas	1,2 tripartite; 3 ergative	Lower Sepik	Papua New Guinea
? Maricopa	1,2 accusative; 3 neutral (zero)	Yuman	N. America
? Maung	1, 2 accusative; 3 ergative	Iwaidjan	Australia
? Nez Perce	1, 2 accusative; 3 ergative	Plateau Penutian	N. America
? Tepehua	1, 2 accusative; 3 neutral	Totonac-Tepehuan	C. America
? Washo	1, 2 accusative; 3 ergative ³	Isolate	N. America

Because the AH, as defined above, only makes a prediction about the relative placement of accusative versus ergative alignment patterns, for various reasons, he finds that almost all of these languages do not constitute clear counterevidence to it: either they manifestly abide by it (Paumarí, Maung, Nez Perce), or an irrelevant neutral alignment is involved (Maricopa, Tepehua) or they involve tripartite alignment for which Bickel argues the AH makes no clear predictions (Ainu, Chácobo, Comox, Kamass, Seri). In some cases, such as Paumarí and Chacobo, some nonlocal person/number combinations pattern along with the local forms, while others don't; for Bickel, these are issues of paradigm formation, and thus don't constitute major problems for the AH.

The larger point is whether these generalizations about person and number have any kind of statistical significance. If there are seven languages with person-splits and all

³ According to Sapir, Washo does not have third person pronouns, using demonstratives for this purpose. Alan Yu (p.c.) questions the claimed ergative properties of Washo.

of these are consistent with the AH, that still results in a .015 probability in a χ^2 randomization test:

“...there is only weak evidence to reject the null hypothesis of a chance distribution. The actually attested score of relatively clear cases (2:0) is not significant at all. And if one were to discover only one clear counterexample... the evidence for rejecting the null hypotheses would dissipate even under the best-case scenario for the hypothesis....” (Bickel 2008: 196)

But Bickel argues that such languages do exist, in the form of a number of Kiranti languages of Nepal. These languages often show both head-marking and dependent-marking constructions, and apparent exceptions to the AH appear in both kinds of constructions. Consider the following agreement forms in Puma:

Table 7.6. Split ergativity in Puma (taken from Bickel 2008: 197)

	A	S	P
1s	- η (>3) -na (>2)		- ηa (NPST) -o η (PST)
1d		-ci~c Λ	
	ni-...-ci~c Λ (>2)		
1p	-m (>3) ni-...-i~ni(n)~n Λ		-i~ni(n)~n Λ
2s		t Λ -	
			-na (1s>)
2s		t Λ - ... -ci~c	
			-na-ci (1s>)
2p		t Λ -...-i~ni(n)~n Λ	
	t Λ -...-m		
3s		- ϕ	-u~i
	p Λ - (>1)		
3d	ni-p Λ -...-ci~c Λ (>1) ni-...-ci~c Λ (>2)	p Λ -ci~c Λ	
3p	p Λ - (>3s) ni-p Λ - (>1s) ni-p Λ -... -i~ni(n)~n Λ (>1s) ni-...-i~ni(n)~n Λ (>1s)	m Λ -	-ci

The following are some examples using real data (Bickel 2008: 198-99):

- (20) Involving first persons:
- a. puks-o η (1sS)
go-1sS/P.PST
'I went'
 - b. p Λ -pukd-o η (1sP)
3S/A-take-1sS/P.PST
'S/he took me.'
 - c. t Λ -pukd-o η (1sP)
2-take-1sS/P.PST
'You took me.'
 - d. pukd-u- η (1sA)
take-3sP-1sA
'I took him'

- e. puk-na-a (1sA)
take-1>2-PST
‘I took you.’
- (21) Involving third persons:
- a. ø-puks-a (3sS)
3sS/A-go-PST
‘S/he went’
 - b. ø-pukd-i (3sP)
3sS/A-take-3sp
‘S/he took him/her’
 - c. t_A-pukd-i (3sP)
2-take-3sp
‘You took him/her’
 - d. pukd-u-ŋ (3sP)
take-3sP-1sa
‘I took him/her’
 - e. ø-pukd-i (3sA)
3sS/A-take-3sp
‘S/he took him/her’
 - f. ø-t_A-pukd-a (3sA)
3sS/A-2-take-PST
‘S/he took you.’
 - g. p_A-pukd-ŋ (3sA)
3s/a-take-1sS/P.PST
‘S/he took me.’

Although this system is very complicated, and alignment is not consistent for any given person feature, on its face it appears to constitute counterevidence to the idea that a particular end of the hierarchy is associated with a particular alignment type, because certain person/number combinations of the paradigm do collapse together into particular alignments, and these alignments appear in the wrong place. Whereas we would expect local persons to syncretize together to form nominative/accusative alignment, we find markers like *-ŋa* and *-i* / *-ni(n)* / *-n_A* marking S and P functions instead. Even worse, at the bottom of the hierarchy, especially with the overt prefix *m_A-*, we find an accusative alignment instead. Although these are not quite as ‘robust’ as Bickel suggests -- the forms

with third person A's are more frequently tripartite than accusative as such, and Bickel himself does not believe that null marking (as with 3Sg) should have the same theoretical status as overt markers -- they nonetheless still run contrary to the prediction.

For Bickel, this is sufficient reason to reject the AH. However, as he puts it, the alternative Marking Hypothesis might be an artifact of more fundamental Zipfian frequency effects:

'[W]e know from discourse studies that A arguments are more frequently topical, i.e., filed by referents higher on the hierarchy, while P arguments are more frequently NPs with referents lower on the hierarchy, especially rhematic and new referents.... [a]s per Zipf's law, more frequent patterns generally tend to be less overtly marked and therefore, higher-ranking As and lower-ranking Ps are more likely to be zero-marked than lower-ranking As and higher-ranking Ps.' (2008: 204)

Following Siewierska (2004), he questions the implication of this – that less frequent kinds of grammatical-relations marking such as e.g. marking only inanimates As or animate Ps will be statistically as common as the AH would suggest – and in its place proposes a third marking hypothesis (2008: 205):

(22) **GR-based RH Hypothesis:**

If grammatical relations (of any construction, with any alignment) have restricted access based on the referential hierarchy, the odds for this access correlate positively with the rank of an argument on the referential hierarchy.

This is actually not entirely unlike the proposal made in the last chapter on syntactic hierarchies: that there is a tendency to create harmonic alignments of particular features with grammatical *functions* rather than thematic *roles* or argument-structural arguments as such.

7.3 Problems with Filimonova's and Bickel's critiques

So, how well do these critiques actually hold up? As noted at the beginning of this chapter, one of the biggest problems with the field of grammatical feature hierarchies lies in the general confusion of terms of the debate and often unstated assumptions that different scholars have made about those terms. It should be clear from the above précis that this is true of critiques of Silverstein (1976) as much as the many analyses that have cited him (often mediated through secondary and tertiary literature).

For example, Filimonova and Silverstein disagree in what it means to be a ‘semantic’ feature on which hierarchization is ultimately based. For Silverstein, the referential properties of semantic predicates are not simply descriptions of facts about the noumenal world *an sich*, but rather the phenomenal mental representation of that world. If not, it would not only be impossible to speak coherently about the semantic properties of lexical items like ‘unicorn’ or ‘minotaur’ which have no actual physical existence in the real world, but more fundamentally about *any* state of affairs that is not the case: you can’t point to not-ness. This might sound like an abstruse point, but it’s important, because Silverstein’s entire theory is predicated on the notion that formal class distinctions can be neutralized in certain grammatico-conceptual contexts. The ‘+’s and ‘−’s refer to *conceptual* categories, and a given lexical item in a given language may not fall into the ‘same’ conceptual category that the ‘same’ lexical item in another language would. Thus Filimonova’s first objection falls to the side.

Secondly, as noted recently by Haspelmath (2006), since the early 20th century linguists of all stripes have increasingly adopted the term ‘markedness’ (or ‘marked’,

‘unmarked’, etc.) as a kind of undifferentiated pretheoretical notion, often in wildly divergent ways. Haspelmath identified at least twelve different kinds of markedness which he groups into four main supercategories polysemously related to the others through Wittgensteinian family resemblances (2006: 26):

- (23) a. **Markedness as Complexity:** e.g. ‘In German, the phonological opposition *t:d* is neutralized syllable-finally in favor of *t*, which shows that *d* is the mark-bearing member of the opposition.’
b. **Markedness as Difficulty:** ‘A singular/plural pair like book/books is less marked than sheep/sheep because the latter is not iconic.’
c. **Markedness as Abnormality:** ‘Absence of noun incorporation is the unmarked case, and the presence of productive noun incorporation has to be triggered by a specific parametric property.’
d. **Markedness as a multidimensional correlation:** ‘The singular is more marked than the plural, and the plural is more marked than the dual.’

Each of these categories consists of one or more subtypes. What concerns us in this context is the three subtypes of (23a):

- (24) **MARKEDNESS AS COMPLEXITY**
a. **Trubetskoyan markedness:** markedness as a specification for a phonological contrast (see (23a) above for an example).
b. **Semantic markedness:** markedness as specification for a semantic distinction (‘In the English opposition dog/bitch, dog is the unmarked member because it can refer to male dogs or to dogs in general.’)
c. **Formal markedness:** markedness as overt coding (‘In English, the past tense is marked (by -ed) and the present tense is unmarked.’)

Although they are often conflated together, it is not difficult to find examples of a mismatch between formal (which might be syntactic or morphological) and semantic markedness. For example, in English the semantic distinction between a (male) *dog* and a *bitch* is not marked by any overt morphological or syntactic contrast; they are both

simplex (= ‘monomorphemic’) and have the same syntactic features. In German, in contrast, exactly the same semantic contrast is marked overtly in a different way: *Hund* ‘dog’ is basic, while *Hind-in* ‘dog-FEM’ is overtly signaled by a feminine suffix plus umlaut. It is clear from Filimonova’s discussion that she intends something closer to the notion of overt markedness in (24c): ‘[T]he assumption about functional, economic, encoding is based on canonical accusative and ergative patterns, with one case morphologically unmarked (-Ø) and the other represented through an overt marker (-x)’ (Filimonova 2005: 84).

In contradistinction to this, it is equally clear that Silverstein intended something closer to (24b), as overt expression of feature specifications is for Silverstein a DEPENDENT variable, as he repeatedly stressed in Silverstein (1981), and this is determined by the several INDEPENDENT variables noted above in 7.1, of which the referential properties of predicates are only one. This is probably in part a problem with the particular morphemic theories of morphosyntax which Filimonova seems to hold, since they imply a kind of isomorphism between semantic, paradigmatic and syntactic properties of clauses.

But abstracting away from that, this still poses problems for her counterevidence even on nonmorphemic approaches. Let’s reconsider Filimonova’s appositional example in (14-15). As argued in previous chapters, Georgian is a particularly bad example to cite, precisely because evidence for a unitary S category of intransitive predicates in argument structure is difficult to find in both case and agreement patterns. Most scholars of Georgian (Harris 1981, Holisky 1981, Tuite 1989, Vamling 1989, Wier 2005, etc.), now view this as a problem with a view of typology that gives a *n*-ary choice of stipulated

hypostasized ‘ergative’ vs. ‘accusative’ etc. types, rather than a more fine-grained analysis of the syntax-semantics interface⁴. Another example of this in Georgian comes from the behavior of imperatives whose subjects are first or second person in apposition with a third person phrase, as in (25):

- (25) **POSITIVE IMPERATIVE:** same as aorist form
- a. **Ditransitive verb** [SUBJ_{NARR} ~ OBJ_{DAT} ~ OBJ_{2NOM}]::
 Tkven masc'avlebl-eb-**ma** a-sc'avl-e-**t**
 2Pl teacher-PL-**NARR** PRV-teach-1/2-**PL**
 st'udent'-eb-s gak'vetil-i
 student-PL-DAT lesson-NOM
 ‘You teachers please teach the students the lesson.’
 - b. **2nd Conj. intransitives: 'unaccusative'/'stative'** [SUBJ_{NOM}]
 Tkven masc'avlebl-eb-**i** da-brun-d-i-**t** exla
 2Pl teacher-PL-**NOM** PVB-return-INGR-1/2-**PL** now
 ‘You teachers please return now.’
 - c. **3rd Conj. intransitives: 'unergative'/'active'** [SUBJ_{NARR}]
 Tkven momğerl-eb-**ma** i-mğer-e-**t** exla
 2Pl singer-PL-**NARR** PRV-sing-1/2-**PL** now
 ‘You singers sing now please.’

In Georgian, positive imperatives are based on the aorist screeve’s stem form, but not only are morphologically identical to the aorist form, the arguments of those verbs also take the cases expected for the aorist. Normally of course the subject of an imperative is not overtly expressed, but when it is, as with these appositional constructions, a pronoun unmarked for case nonetheless still triggers agreement for its features on the verb. Even more interestingly, negative imperatives, do exactly the same thing, even though their case arrays are completely different:

⁴ In fact, the only major exceptions to this are the works of Hewitt (1987; 2008; 1995 *passim*; etc) and those who have cited his work. It is now a small minority view in the field for reasons articulated in Ch. 3 and 4.

- (26) **NEGATIVE IMPERATIVE:** *nu* + present or future screeve form

- a. **Ditransitive verb** [SUBJ_{NOM} ~ OBJ_{DAT} ~ OBJ2_{DAT}]:

Tkven masc'avlebl-eb-**i** nu a-sc'avl-eb-**t**
 2Pl teacher-PL-NOM NEG.IMP PRV-teach-TH-PL
 st'udent'-eb-s gak'vetil-s
 student-PL-DAT lesson-DAT

‘You teachers please don’t teach the students the lesson.’

- b. **2nd Conj. intransitives: ‘unaccusative’/‘stative’** [SUBJ_{NOM}]

Tkven masc'avlebl-eb-**i** nu da-brun-d-eb-i-**t** exla
 2Pl teacher-PL-NOM NEG.IMP PVB-return-INGR-TH-1/2-PL now
 ‘You teachers please don’t return now.’

- c. **3rd Conj. intransitives: ‘unergetic’/‘active’** [SUBJ_{NOM}]

Tkven momgerl-eb-**i** nu mger-i-**t** exla
 2Pl singer-PL-NOM NEG.IMP sing-1/2-PL now
 ‘You singers please don’t sing now.’

Unlike the positive imperative, the negative imperative uses the negative particle *nu* for commands, and is based on the present or future screeve form of the verb, and accordingly a different kind of case system with nominative case for subjects in each form and only dative case for any objects⁵. All of these subjects should be agents in Filimonova’s terms by virtue of the fact that imperatives must have some agency over their actions to be true imperatives (and so agents cannot be not equal to arguments in argument structure). For our purposes, the interest lies in the fact that the system essentially ignores the case used from one form to another, as the case-less pronominal subject still triggers *-t* plural agreement on each verb. Thus, it is simply not true that second person is ‘unmarked’ even in the overt sense – it is still overtly distinguished in relations of agreement. In the terms adopted in chapter 5, then, the behavior of pronouns is a case of paradigmatic SYNCRETISM, not CONFLATION, within a morphological domain.

⁵ As noted in Aronson (1990: 145), the negative imperative above is the ‘polite’ negative imperative. There is also an ‘impolite’ negative imperative that uses the regular negator *ar* ‘not’ and inflects like the OPTATIVE: *ar ga-a-k’et-o* ‘don’t do it!’. Because the optative and aorist both belong to the same series, they use the same case forms, so this ‘impolite’ negative imperative has the same case arrays as the positive imperative based on the aorist in (na-c).

What this and the Washo example (which likewise manifests a syncretism of case distinctions for local persons) is the need to distinguish how paradigms are constructed in morphology from how the features project into syntactic grammatical function (and argument-structural) categories. In Georgian, as we saw, the featural neutralization (= intramodular conflation) of third person is truly one only of syntax, and not of morphology, and in that case Silverstein's neutralization-based analysis holds up exactly as predicted: there are no syntactic contexts *sensu stricto* where third person actually outranks first or second, and many where first or second outrank third.

In fact, all the more challenging counterexamples provided by both Filimonova and Bickel are actually counterexamples of paradigm formation rather than syntactic processes as such. In no instance did they (or anyone they cite) actually show that a *syntactic* process was sensitive to a hierarchy where third persons outrank first or second persons, or any other two sets of features that would contradict hierarchization as with Silverstein. In the case of the Kiranti languages, what Bickel showed was actually that the way verb paradigms are formed involves an ergative alignment in first person singular and plural, while third person sometimes involves an accusative alignment. He did not show that e.g. the conditioning factors that *trigger* (syntactic) agreement with those features involved a third person outranking a first or second person. He could have done this by showing for example in appositional phrases combining a local person and a third person, the feature that percolates to the DP level is third person rather than the local person. Another kind of potential counterevidence would be that, contrary to the theory of harmonic association with grammatical functions that was posited in Ch. 6, Kiranti languages actually prefer an association of OBJ2 with first or second person and

OBJ1 with third person. Or again, in the domain of superiority effects, long-distance dependencies in question formation in English and other languages disprefer fronting of a question word marked as [-ANIM] before another question word marked as [+ANIM], as in (26):

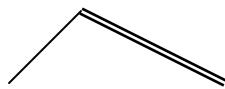
- (26) a. Who bought what?
 b. *What did who buy?

If one could show that there were a language that had the inverse of this, in which (26a) was ungrammatical but (26b) was not, this would also be counterevidence against Silverstein's view of hierarchization – or at least, that in some languages there must also exist a discrete category of syntactic third persons, inanimates, or other such features. I summarize such potential counterevidence in (27).

(27) **Potential counterevidence:**

a. *Appositional constructions:*

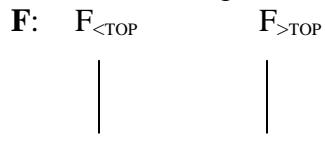
DP [PERS: 3], *[PERS: 1/2]



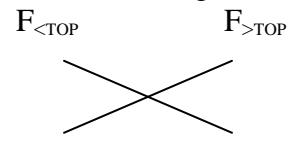
DP[PERS: 1/2] DP[PERS: 3]

b. *Feature-Function family of constraints:*

Disharmonic Alignment



Harmonic Alignment



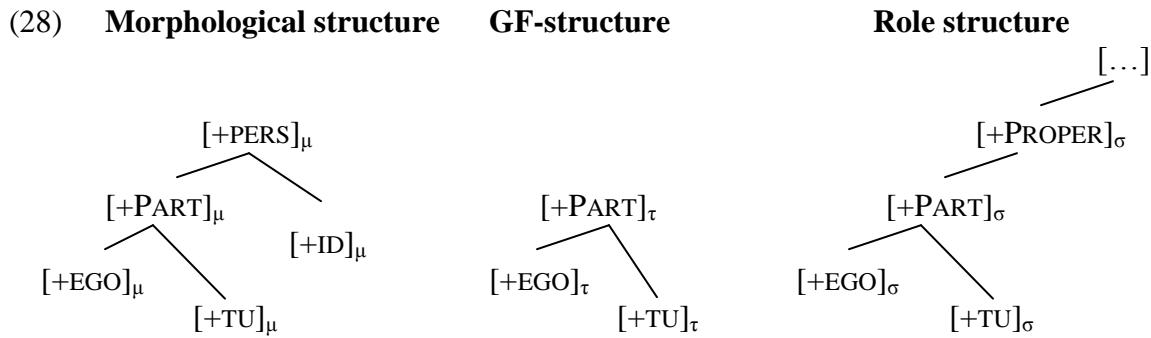
c. *Superiority effects on question formation:*

[Q, -ANIM] [Q +ANIM] V ; *[Q, +ANIM] [Q -ANIM] V

As far as I know, no such languages exist. The ultimate value of Georgian for the study of hierarchies, in fact, is that it throws into sharp relief how hierarchies might differ according to construction type within the same language. Reification of ‘the’ hierarchy, therefore, into a theoretical primitive obscures far more than it clarifies.

7.4 A Neo-Silversteinian analysis of feature hierarchies as Feature Geometrical Metaprinciples

The above argument then paints a rather conservative picture of how feature hierarchies work. We can however actually go further than this and state the above generalizations about feature hierarchies at a more general level. If features represent natural classes, and different linguistic modules have different natural classes labeled by such features, then we can begin to describe in a more general way how features in one module map onto features in other modules, as with the following fragment of a multidimensional feature geometry:



In this section, I will note at least three general metaprinciples of hierarchization that result from a feature-geometrical view:

- (29) **Feature Geometrical metaprinciples of hierarchies:**
- The Covariation Principle (CP)
 - The Dominance Principle (DP)
 - The Intermodular Interface Principle (IIP)

As we will see, the significance of these principles is that they will allow us to talk in very general terms about how the different logical properties of feature systems arise and interact with each other, allowing us to abstract away from narrow particulars in our discussion while at the same time maintaining the flexibility to describe very different feature systems cross-linguistically.

7.4.1 The Covariation Principle

The first of these principles derives possible hierarchies from the inventory of features within a given language. It makes the prediction that no hierarchy between any two features α and β will be found in which positive evidence can be said to exist for both of those two features:

- (29) **Covariation Principle:** the existence of hierarchy variation will covary with the presence or absence of a given feature in a language's featural inventory.

- (30) $[F] \& \neg[G] \rightarrow [F]$
 |
 [GF↑]

This principle has three logical manifestations in language, which I call **conflictual** and **nonconflictual** covariation, along with **hierarchy nonvariation**:

- (31) CONFLICTUAL COVARIATION: $\forall F, F$ the set of features, $\forall C, C$ the set of constructions: $\exists F_i \& \exists F_j \rightarrow C_x [F_i > F_j] \& C_y [F_i < F_j]$.
- (32) NONCONFLICTUAL COVARIATION: $\forall F, F$ the set of features, $\forall C, C$ the set of constructions: $\exists F_i \& \exists F_j \rightarrow \neg C ([F_i > F_j] \vee [F_i < F_j])$.
- (33) HIERARCHY NONVARIATION: $\forall F, F$ the set of features, $\forall C, C$ the set of constructions: $\exists F_i \& \neg \exists F_j \rightarrow \forall C [F_i > F_j]$

Conflictual covariation refers to the coexistence within a given language of two or more constructions where, in Construction X, a feature F_i outranks another feature F_j , while in Construction Y, the inverse holds where F_j outranks F_i . Nonconflictual covariation refers to a situation in which there are *no* constructions in which two features F_i and F_j are ranked with respect to each other. Logically this actually consists of two different subtypes. The first is when both features in a given module exist and compete for realization in some construction (e.g. a block of realization rules), but in which the choice of ranking is simply free variation or linked to the properties of other modules (as with agreement in Georgian appositional constructions being linked to relative focal properties). The second is like the first, but in which two features never actually compete for realization in a restricted domain, and so cannot manifest hierarchical effects. For obvious reasons, nonconflictual covariation of hierarchies usually concerns the first of these.⁶ The third implication of the CP is stated in (33): if there is a feature F_i but no feature F_j , then of necessity F_i always outranks F_j . This last subprinciple is actually a kind

⁶ An alternative formulation with the same effect is when two possible features are both simply not present in the language or in a given module, and therefore also never compete. However the nonexistence of competition is not logically the same as denying the existence of any two given features, and so I do not treat this as a true subtype of nonconflictual covariation.

of restatement of Silverstein's principle of unidirectional neutralization, but within a feature theory that encompasses distinct modular features.

Thus, for example, we predict that if a language has two syntactic features $[EGO]_τ$ and $[TU]_τ$, we will expect that either (a) some purely syntactic contexts will rank $[EGO]_τ$ over $[TU]_τ$, and others will rank $[TU]_τ$ over $[EGO]_τ$ – conflictual covariation -- or (b) that in all syntactic contexts both $[EGO]_τ$ and $[TU]_τ$ will be unranked with respect to each other – nonconflictual covariation. In Georgian and many other languages, the subprinciple of hierarchy nonvariation in (33) would explain why in Person-Function Constraint contexts, first and second person are never ranked with respect to each other consistently. Because Georgian lacks a syntactic feature for third person, the ranking of the other two person categories with respect to it is completely invariant: syntactic first and second persons always outrank syntactic third person, even though they manifest nonconflictual covariation by being globally unranked with respect to each other. This is an important property of the feature geometrical metaprinciples: they do not describe global hierarchies but only how one feature relates to another feature in a local sense, such that a different pairing of features may manifest a different aspect of the principle.

On the other hand, in morphology, because Georgian does have a category of third person in paradigm formation, morphological blocking processes *are* sensitive to its presence, and therefore realization rules that refer to third persons *can* be extrinsically ranked before first or second person in morphology – though they need not. Whether morphological processes actually *do* rank third person over first or second person (or vice versa) in a given language and within a given paradigmatic construction is probably best thought of as a diachronic question of how morphs grammaticalize in the first place in

particular constructions and in particular languages or dialects, rather than a synchronic generalization of morphological theory *per se*. Thus, in some languages, it will simply be impossible to tell if the particularities of morphological blocking processes are the result of particular grammaticalization pathways, or the lack of a feature as such. In general, however, the covariation principle, in Silverstein's and the Structuralists' terms, can be seen as an artifact of the way modular neutralization of features works, and is an automatic side-effect of it.

7.4.2 The Dominance Principle

Another kind of hierarchy involves the superset-subset relation. Feature geometries are in effect notational variants of lexical default rules such as the following as shown in (34a) and (34b):

- (34) a. [F]
 |
 [G]
- b. α α
 [F_j] \rightarrow [F_i]

That is, if lexical item α has a feature [F_j], then α also has the feature [F_i] superordinate to [F_j]. This property of geometries makes strong predictions, since any claim about the geometry constitutes a claim about the natural classes which rules might manipulate. Languages with certain kinds of lexical hierarchies may take advantage of

this fact and assign default grammatical properties (e.g. grammatical functions ($GF \uparrow$) like SUBJ or thematic role features in theta structure) to daughter nodes (or rather, to subsets) of the form (35):

$$(35) \quad \exists F_i \ \& \ \exists F_j \ \& \ ([F_j] \rightarrow [F_i]) \quad \rightarrow \quad \begin{array}{c} F_j \\ | \\ GF \uparrow \end{array}$$

We may call this property of feature geometries the **Dominance Principle**:

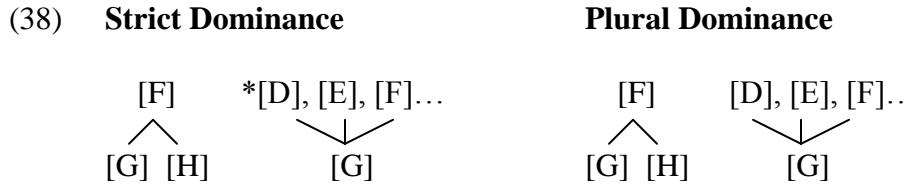
- (36) **Dominance Principle:** if a language has a lexical default rule predicating the existence of some features on the existence of others, producing a feature hierarchy, then lexical default rules governing grammatical functions assign those functions to subordinate features before superordinate features.
- Thus, in Georgian, we saw this principle implicitly invoked in Chs. 4-5, in which it was argued that the Paninian Determinism hypothesis of Stump (2001) could not be maintained, but that feature hierarchies themselves constituted a weaker constraint on how morphological realization rules may behave and interact with each other, because morphs like the screeve signs in Georgian are marked only as [+PART], and not specifically marked for either first or second person. Because first and second person also imply the feature [+PART], this principle has the implication that a morphological rule for [+EGO] and [+TU] would necessarily include [+PART], but not the inverse: [+PART] does not imply specifically either [+EGO] or [+TU]. The DP thus enforces a kind of Paninian logic: if you are going to realize a rule for a superordinate feature (like [+PART]) or a competing subordinate feature (like [+EGO]) which is a logic subset of it, then you realize the subset first, otherwise there would be no evidence for the existence of that subset in the first place.

Like the CP, the DP too has origins in classical markedness theory, and is logically much like Silverstein's Universal of hierarchization in (n) in 7.1 above, albeit

stated on purely language internal terms and not as a crosslinguistic generalization. It may come in two varieties: Strict Dominance and Plural Dominance.

- (37) a. **STRICT DOMINANCE:** all features may have one and only one superordinate feature in a feature geometry.
 b. **PLURAL DOMINANCE:** features may have two or more superordinate features in a feature geometry.

Graphically, these two varieties may be described as follows (38):



Because in my conception subordinate features are actually formal grammatical subsets of superordinate features, these two varieties of the principle necessarily conflict⁷. Although in principle both are equally logically possible, the empirical evidence is less clear. The crucial point is that the features would have to be *sui generis* – only syntactic features over syntactic features, and so forth.

The choice between these two views of dominance could have important effects on linguists' notion of categoriality. If Strict Dominance proves to be correct, that would seem to support the classical view of categories as consistent with Cantorian sets. On the other hand, the discovery that features may be multiply dominated within feature geometries would lend support to a view of ‘fuzzy’ categories as postulated by many

⁷ An alternative conception, in which features are logically but not ontologically connected would remove much of the predictive power of feature geometries, but would allow both forms to coexist for different kinds of feature relationships.

Cognitive grammarians (e.g., Lakoff 1987). Furthermore, should we discover such multiple dominance, are there any constraints to how many features may dominate a single feature in a feature geometry, or may an unlimited number do so? And if there are constraints, then what is their origin? In this thesis, I will assume that features indeed can be reduced to a classical notion of proper sets, and that appearances to the contrary lie not in plural dominance but in modular specification of features, i.e., features that appear to be nondiscrete actually formally constitute two or more separate analogous but not homologous features in another module. However, the formal proof of this fact is far from simple and lies well beyond the scope of this dissertation.

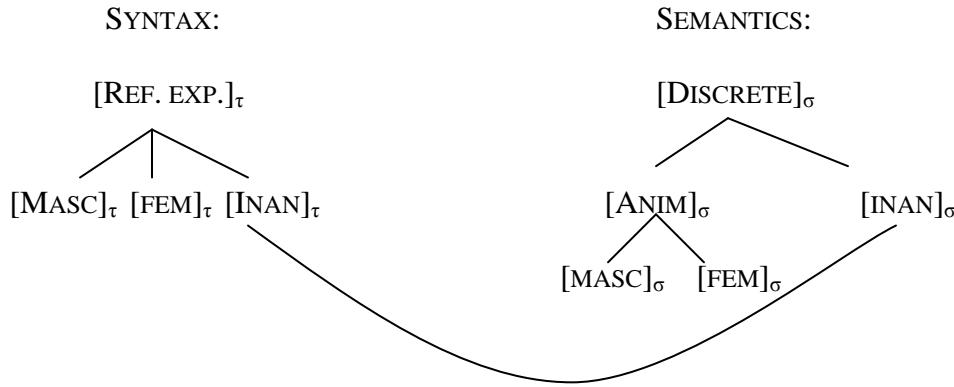
7.4.3 The Intermodular Interface Principle

The third principle or constraint is the **Featural Intermodular Interface Principle**. This principle governs featural homologies that exist in separate linguistic modules. As we have seen, lexical items that bear one feature in one module (say, syntax) prototypically will bear an analogous feature in other modules (semantics or morphology): a first-person pronoun will bear not merely $[EGO]_τ$ but also $[EGO]_σ$, and syntactically animate nouns ($[ANIM]_τ$) will normally be semantically animate as well ($[ANIM]_σ$). I am adopting this view essentially unchanged from Sadock (1991: 39), in which lexical items redundantly specify linguistic distributions of features independently of one another.

However, based on my definition of feature geometries – that dependent features in a geometry are ontological subsets and not just logical dependents – it is impossible to have a true feature hierarchy that will result from one feature X in one hierarchy being

actually subordinate, rather than simply analogous, to a feature X' in another module's geometry, as in (40):

- (40) Possible intermodular feature dependencies⁸:



This is because of the nature of modularity itself: the entities and constructs in one module exist autonomously from those in other modules, and while one feature in one module might be logically dependent on a feature in another (e.g., a rule that says ' $[MASC]_\tau \rightarrow [MASC]_\sigma \rightarrow AGR$ ' in a system with grammatical gender stipulates that agreement only take place when an argument is both formally and functionally masculine), those features will not be able to be actual subsets of each other, as the features in each module are in some sense incommensurable, fundamentally formally distinct from one another. Therefore the IIP states:

- (41) **Intermodular Interface Principle:** feature hierarchies that exist across modules, rather than within them, are impossible.

⁸ This is not intended to be an analysis of any particular language, but only an illustration of how analogous features in different modules might have non-analogous relationships to yet other features in their separate geometries, as here where an inanimate argument is opposed in syntax to two masculine and feminine features, while in semantics such features are subsets of animate entities.

Without such a principle, we actually weaken the very modular conception of grammar that we have been seeking to establish.

7.5 Conclusions

These principles – that of modularity and discrete categoriality – ultimately form the basis for an entire view about the processes underlying human language use. The crucial fact, perhaps not fully realized in earlier literature, is that the nature of linguistic categorization and modularity are linked: not only are the different levels of representation not inherently isomorphic to each other, the features and categories they manipulate aren't either. The necessary consequence of that is the possibility that asymmetries in features that result from competition over a restricted realization space – hierarchies – are also necessarily module-bound, and the fact that they usually align has to do not with the set of tools humans have to understand the linguistic environment around them, but rather, in all likelihood, that redundancy across modules canonically helps reinforce the speech stream and aide in communication. These facts say much about how humans interact with the world around them as one lens through which they experience that world.

§8. Epilogue

We set out at the beginning of this study to demonstrate two fundamental aspects of Georgian grammar, and by extension all natural language grammars, which I call the Modularity Hypothesis and the Categorical Corollary:

- (1) **Modularity Hypothesis:** the knowledge that people have about their languages consists of a set of different domains of representation, none of which can be reduced to any of the others, nor is intrinsically isomorphic to any other.
- (2) **Categorical Corollary:** within each domain, features act as labels for natural classes, and those features refer *only* to that domain – even when other domains of representation redundantly cospecify analogous features.

The modularity hypothesis is actually not new: as noted in Ch. 1, in some sense it goes back to de Saussure and the early structuralists. However, what is being recognized by an increasing number of researchers – whether it be Sadock’s Autolexical Grammar, Jackendoff and Culicover’s Simpler Syntax, or the different but equally monostratal Lexical-Functional Grammar or Head-Driven Phrase Structure approaches -- is the extent to which speakers of natural languages identify a number of levels of representation and beyond the sound and meaning of the early Structuralists.

This thesis has argued broadly for this multimodular approach, and specifically that many aspects of Georgian grammar only make sense if speakers are identifying at least the following levels:

- Grammatical-function structure
- Constituency structure
- Argument structure

- Role structure
- Morphological structure

What has traditionally taken to be ‘syntax’ involves both grammatical functions and constituency, but separately; ‘semantics’ involves both argument structure and role structure, but separately; and morphology may map into any of these autonomous domains. In Chs. 2 and 3, we looked at various structures of Georgian case and agreement and concluded that both case and agreement in Georgian are the morphological manifestation of argument structure, and cannot be reduced to grammatical functions, constituency structure or even purely cognitive representations as in role structure, as has been assumed by almost everyone working in the field. This work laid the foundation for the modularity hypothesis. Following on this, in Chs. 4-7, we established the grounds for discussion of what features are, both in Georgian and cross-linguistically, and where asymmetries between them in the form of feature hierarchies come from.

In many ways, I do not believe the foregoing account is the last word about either Georgian or feature hierarchies. To begin with, there are many areas only briefly touched on which require much greater elaboration. For example, the role of qualia structure is presumably where all semantic features are represented, but are they finite in number, and why do only certain kinds of semantic oppositions become encoded with analogous (but not homologous!) morphological and syntactic features, and not other possible oppositions? Presumably these questions have something to do with how humans encode the external world with internalized categories of meaning, but extremely little of this process is properly described much less understood. Additionally, this thesis only

occasionally hinted at the existence of additional domains of representation, such as discourse and information structure – the behavior of topicalized plural object arguments in Ch. 5, for example. This is a whole domain of research which is surely relevant, but for which I could not devote precious space in this work. People have devoted entire careers and years of their life to it – Ellen Prince’s work on topicalization vs. focus constructions, or Dahlstrom’s work on information structure in Meskwaki narratives.

Perhaps the more interesting question is to what extent the generalizations I have made about the set-theoretical properties of Georgian morphology and syntax are applicable more broadly. There are many languages and entire language families – Algonquian, Athabaskan, Kiowa-Tanoan, Carib, to name just a few -- with so-called inverse constructions and alignments which are obviously relevant for any discussion of feature hierarchies. What, if anything, do all of these languages have in common? Do they all have morphological processes that group realization rules together in blocks as well as syntactic constraints like the ditransitive PFC? Or can languages have morphological blocking processes or syntactic feature-function constraints without the other? This thesis would suggest that they can, but since the relevant syntactic tests (especially) have not always been pursued on all such languages, it is not always clear from the literature what is a morphological generalization and what is a syntactic generalization. In the best documented families, such as Algonquian, specialist literature has begun to reveal a far more complex picture of feature hierarchies that is much in line with the picture presented here based solely on Georgian. Nonspecialist literature has often said of this family that it has a single great hierarchy as follows (Dixon 1994, Brittain 2003):

- (3) 2 > 1 > 3 ANIM PROX > 3 ANIM OBV > 3 ANIM FURTHER OBV > 3 INAN

Crucially, unlike many ergative languages from Australia and Austronesia where, if they are ranked, first person outranks second person, Algonquian has almost always been taken to represent an exception because of the behavior of personal prefixes which, like Georgian, are not annotated for grammatical function:

- (4) a. ni-wa·pam-a··w (Plains Cree; Dahlstrom 1986: 38-41)
1-look.at-DIR-3
'I am looking at him.' (1>3)
 - b. ni-wa·pam-ekw-w [> niwa·pamek]
1-look.at-INV-3
'He is looking at me.' (3>1)
- (5) a. ki-na·θ-i-n [> kina·sin] (ibid. 29)
2-fetch-DIR-SG
'You fetch me.' (2>1)
 - b. ki-na·θ-eti-n [> kina·titin]
2-fetch-INV-SG
'I fetch you.' (1>2)

In such a language, not only are the prefixes not annotated for function, there is a clear asymmetry between them, since second person appears to outrank first person: whether it is subject or object, the prefix that appears is the one for second person.

However, it is now increasingly being recognized that this very broad generalization is not in fact very accurate when one looks more carefully at a variety of verb and noun paradigms both within individual Algonquian languages and across them. Two recent studies of the Algonquian directional system are central to this heterodox argument: Zuñiga (2002) and Macaulay (2005). Although the two authors have different

goals and different viewpoints, they both provide strong arguments to the effect that, if morphology is our criterion for ranking second over first person, then all of the Algonquian languages actually provide examples of ranking paradoxes, in which second outranks first for one set of affixes, while first outranks second for another set of affixes.¹

One such example comes from Cree and involves both the aforementioned person prefixes of independent indicative paradigms as well as plural suffixes which are also marked for person features. As noted above, the prefixes have a clear fixed hierarchy that ranks second person over first. Like these person prefixes, the plural suffixes bearing person features are also unmarked for grammatical function, as we can see in examples (6):

- (6) a. ki-wa·pam-i-na·n² (Dahlstrom 1986: 47)
 2-look.at-DIR-1PL
 ‘You (SG/PL) see us.’

b. ki-wa·pam-i-na·wa·w
 2-look.at-DIR-2PL
 ‘You (PL) look at me.’

c. ki-wa·pam-i-n
 2-look.at-DIR-1/2SG
 ‘You (SG) look at me.’

In each form, the relative direction is held constant, and the only difference is the number marking. The key fact is the possible meanings of (6a) vs. (6b). In (6a), the second person subject can be either singular or plural, while the first person object must be plural. The form in (6b) behaves differently, in that the second person subject is obligatorily

¹ In what follows I will mostly be referring to Macaulay (2005), though the reader is encouraged to look at Zuñiga (2002).

² Bloomfield (1962) and Macaulay (2005) offer an alternative analysis in which the theme signs for contexts involving two arguments are not direction markers at all, but object agreement pure and simple. Nothing in what I have to say about this hangs on this question, however. See Macaulay (2005) for more information.

plural, and there is no overt indication of the number of the first person argument at all.

As noted by Dahlstrom (1986: 48), the number of the first person argument is actually an inference, and it is crucially this inference that allows her, Zuñiga and Macaulay to deduce the existence of a separate hierarchy for the suffix position along the following lines:

Macaulay looked at a number of other Algonquian languages and found even more patterns, as summarized in her table below:

Table 8.1. Local hierarchy variation in different Algonquian languages

LANGUAGE	POSS. PREFIXES	VERB PREFIXES	PLURAL SUFFIXES	THEME SIGNS
Menominee	2 > 1	2 > 1	1 > 2	SAP > 3
Cree (Pattern 1)	2 > 1	2 > 1	1 > 2	SAP > 3
Cree (Pattern 2)	2 > 1	2 > 1	2 > 1	SAP > 3
Micmac	2 > 1 and 1 > 2	2 > 1	1 > 2	SAP > 3
Blackfoot	2 > 1	2 > 1	1 > 2	(1 > 2)
Arapaho	2 > 1	2 > 1	no ranking	(SAP > 3)

(table taken from Macaulay 2005: 21)

This kind of variation is clearly consistent with the epiphenomenal analysis of hierarchies proposed in Ch. 7, but because the relevant syntactic tests have not been carried out for a large number of the language family's members (Dahlstrom 1986, Dahlstrom forthcoming, and Rhodes 1976 being notable exceptions) it is still not clear whether, or to what extent, syntactic hierarchies exist and match or don't match the morphological hierarchies in each of the family's languages. And Algonquian is only one such family,

so it seems there is a great deal of space for discussion and future research about feature hierarchies in natural languages.

REFERENCES

- Adger, David and Daniel Harbour. 2007. ‘Syntax and Syncretisms of the Person-Case Constraint.’ *Syntax* 10(1): 2-37.
- Amiridze, Nino. 2006. *Reflexivization strategies in Georgian*. University of Utrecht Dissertation.
- Anderson, Stephen. 1992. *A-morphous morphology*. Cambridge: CUP.
- Anderson, Stephen. 2005. *Aspects of the Theories of Clitics*. Oxford: OUP.
- Apridonidze, Shukia. 1986. *Sit'qvaganlageba axal kartulši*. [Word order in modern Georgian.] Tbilisi: Mecniereba.
- Aronoff, Mark. 1976. *Word formation in Generative Grammar*. Cambridge, Mass.: MIT Press.
- Aronson, Howard. 1990. *Georgian, a reading grammar*. Slavica.
- Aronson, Howard, and Dodona K'iziria. 1998. *Georgian language and culture, a continuing course*. Slavica.
- Asatiani, 1982. *Mart'ivi c'inadadebis t'ip'ologiuri analizi (tanamedrove salit'erat'uro enis masalaze)*. [Typological analysis of simple sentences (from materials in the contemporary literary language.)] Tbilisi: Mecniereba.
- Beard, Robert. 1987. “Lexical Stock Expansion.” In: E. Gussmann (ed.) *Rules and the Lexicon: Studies in Word Formation*. Lublin: Catholic University Press, 24-41.
- Beard, Robert. 1995. *Lexeme Morpheme Base Morphology*. Albany: Suny Press.
- Bittner, Maria, and Kenneth Hale. 1996. ‘Ergativity: toward a theory of a heterogeneous class.’ *Linguistic Inquiry* 27(4): 531-604.
- Bickel, Baltasar. 2008. ‘Referential scales and case alignment: reviewing the typological evidence.’ Scales. Linguistische Arbeits Berichte, Institute for Linguistics, University of Leipzig. pp. 1-38.
- Bloomfield, Leonard. 1935. *Language*. Chicago: University of Chicago Press.
- Bloomfield, Leonard. 1962. *The Menomini Language*. New Haven: Yale University Press.
- Boeckx, Cedric. 2008. The Person Case Constraint and Patterns of Exclusivity. In *Agreement restrictions*, ed. R. D'Alessandro, S. Fischer, and G. Hrafnbjargarson, 87-101. Berlin: de Gruyter

- Bonet, Eulalia. 1991. Morphology after syntax: pronominal clitics in Romance. PhD dissertation, MIT.
- Bonet, Eulalia. 1994. The Person-Case constraint: a morphological account. MIT Working Papers in Linguistics.
- Bresnan, Joan (ed.). 1982. *The Mental Representation of Grammatical Relations*. Cambridge, MA: The MIT Press.
- Bresnan, Joan. 2001. *Lexical-Functional syntax*. Malden, MA: Blackwell.
- Bresnan, Joan and J. M. Kanerva 1989. ‘Locative Inversion in Chiche.a: A Case Study in Factorization in Grammar’. *Linguistic Inquiry* 20, 1-50.
- Bresnan, Joan and L. Moshi. 1990. ‘Object Asymmetries in Comparative Bantu Syntax’. *Linguistic Inquiry* 21, 147-185.
- Bresnan, Joan and A. Zaenen. 1990. ‘Deep Unaccusativity in LFG’. In: K. Dziwirek, P. Farrell, and E. Mejias-Bikandi (eds.): *Grammatical Relations: A Cross-Theoretical Perspective*. Stanford: CSLI Publications, pp. 45-57.
- Brittain, Julie. ‘A Distributed-Morphology account of the syntax of the Algonquian verb.’ Ms. <http://homes.chass.utoronto.ca/~cla-acl/2003/Brittain.pdf>
- Butt, Miriam. 1995. *The Structure of Complex Predicates in Urdu*. Stanford CA: CSLI Publications/Stanford Linguistics Association.
- Chomsky, Noam. 1981. *Lectures on Government and Binding: The Pisa Lectures*. Berlin: Mouton.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge: MIT Press.
- Croft, William. 2001. *Radical Construction Grammar: syntactic theory in typological perspective*. Oxford: OUP.
- Culicover, Peter, and Ray Jackendoff. 2005. *Simpler Syntax*. Oxford: Oxford University Press.
- Dahlstrom, Amy. 1986. Plains Cree Morphosyntax. PhD. Diss, UC-Berkeley.
- Di Sciullo, Anna-Maria & Edwin Williams. 1987. On the definition of word. Cambridge, MA: MIT.
- Dowty, David. 1991. ‘Thematic Roles and Argument Selection.’ *Language* 67(3): 547-619.

- Duranti, Alessandro. 1979. ‘Object clitic pronouns in Bantu and the topicality hierarchy.’ *Studies in African Linguistics* 10.1: 31-45. Emonds 1975
- Emonds, Joseph. 1975. ‘A transformational analysis of French clitics without positive output constraints.’ *Linguistic Analysis* 1: 3-24.
- Falk, Yehuda. 2006. *Subjects and Universal Grammar: an explanatory theory*. Cambridge: Cambridge University Press.
- Farkas, Donka & Kostas Kazazis. 1980. Clitic pronouns and topicality in Rumanian. *Chicago Linguistic Society* 16: 75-82. Gerlach 1998
- Filimonova, Elena. 2005. ‘The noun phrase hierarchy and relational marking: Problems and counterevidence.’ *Linguistic Typology* 9(1): 77-113.
- Grimshaw, Jane. 2001. ‘Optimal clitic positions and the lexicon in Romance clitic systems.’ In Legendre, Géraldine, Jane Grimshaw & Sten Vikner (eds.) *Optimality-theoretic syntax*. Cambridge/MA: MIT Press. 205-240.
- Gurevich, Olya. 2006. Constructional Morphology: the Georgian Version. PhD Dissertation, University of California, Berkeley.
- Halle, Morris, and Alec Marantz. 1993. ‘Distributed Morphology and the Pieces of Inflection.’ In K. Hale and S.J. Keyser, eds., *The View From Building 20: Linguistic Essays in Honor of Sylvain Bromberger*, Cambridge, MA: MIT Press, 111-176.
- Harley, Heidi and Elizabeth Ritter. 2002. “Person and Number: a feature-geometric analysis”, in *Language* 78.3: 482-eoa.
- Harris, Alice C. 1981. *Georgian Syntax: a study in Relational Grammar*. Cambridge: CUP.
- Harris, Alice C. 1985. *Diachronic syntax: the Kartvelian Case*. New York: Academic Press.
- Harris, Alice C. 2009. ‘Exuberant exponence in Batsbi.’ *NLLT* 27(2): 267-303.
- Haspelmath, Martin. 2004. ‘Explaining the Ditransitive Person-Role Constraint: A usage-based approach.’ Constructions online: <http://www.constructions-online.de/articles/35/>
- Haspelmath, Martin. 2006. ‘Against Markedness (and what to replace it with).’ *Journal of Linguistics* 42(1): 25-70. CUP.

- Holisky, Dee-Ann. 1981. Aspect and Georgian Medial Verbs.
- Jackendoff, Ray. 2002. *Foundations of Language: Brain, Meaning, Grammar, Evolution*. Oxford/New York: Oxford University Press, 477
- Kayne, Richard. 1975. *French syntax*. Cambridge, MA: MIT Press.
- Kayne, Richard. 1994. *The antisymmetry of syntax*. Cambridge, MA: MIT Press.
- Lakoff, George. 1987. *Women, Fire and Dangerous Things*. Chicago: University of Chicago Press.
- Lieber, Rochelle. 1992. *Deconstructing morphology: word formation in syntactic theory*. Chicago: University of Chicago Press.
- Manning, Paul. 1996. ‘Mi- and mo- revisited: the development of the category of orientation in Old Georgian.’ *Proceedings of the Non-slavic Languages of the USSR Conference*. Chicago: Chicago Linguistic Society.
- Matthews, Peter. 1972. *Inflectional morphology: a theoretical study based on aspects of the Latin verb*. Cambridge: CUP.
- McGinnis, Martha. ‘On markedness asymmetries in person and number.’ *Language* 81(3): 699-718.
- Meyer-Lübke, Wilhelm (1899). *Grammatik der romanischen Sprachen. 3. Band: Syntax*. Leipzig: O.R. Reisland.
- Nash-Haran, L. 1992. ‘La categoric AGR et l'accord en Georgien.’ *Recherches Linguistiques* 21:65-79.
- Nevins, Andrew. 2007. ‘The representation of third person and its consequences for person-case effects.’ *NLLT* 25(2): 273-313.
- Noyer, R. 1992a. *Features, positions, and affixes in autonomous morphological structure*. Doctoral dissertation, MIT
- Palmer, F. R. 1994. *Grammatical roles and relations*. Cambridge: CUP.
- Perlmutter, David M. 1971. *Deep and surface structure constraints in syntax*. New York: Holt, Rinehart and Winston.
- Perlmutter, David M. 1980. ‘Relational grammar’. In E. A. Moravcsik & J. R. Wirth (Eds.), *Syntax and semantics: Current approaches to syntax* (Vol. 13, pp. 195-229). New York: Academic Press.

- Pollard, Carl, and Ivan Sag. 1994. *Head-driven Phrase Structure Grammar*. Chicago: University of Chicago Press.
- Pustejovsky, James. 1991. ‘The generative lexicon.’ *Computational Linguistics* 17(4): 409-441.
- Pustejovsky, James. 1995. ‘Aspects of coercion and logical polysemy.’ *Journal of Semantics* 12: 133-162.
- Rhodes, Richard. 1976. ‘The Morphosyntax of the Central Ojibwe Verb’ Ph.D. dissertation, University of Michigan.
- Rosen, Carol. 1990. ‘Rethinking Southern Tiwa: The geometry of a triple-agreement language.’ *Language* 66.4: 669-713.
- Sadock, Jerry. 1991. *Autolexical Syntax*. Chicago: University of Chicago Press.
- Sadock, Jerry. Forthcoming. An Autolexical analysis of English verb classes.
- Shanidze, Akaki. 1953. *kartuli gramat'ik'is sapuʒvlebi, I: morpologija* [The fundamentals of Georgian grammar I: morphology]. Tbilisi: TSUG.
- Silverstein, Michael. 1976. ‘Hierarchy of Features and Ergativity’. Grammatical categories in Australian languages, ed. By Robert M. W. Dixon, 112-71. Canberra: Australian Institute of Aboriginal Studies.
- Silverstein, Michael. 1981. ‘Case marking and the Nature of Language.’ *Journal of Australian Linguistics* 1: 227-47.
- Silverstein, Michael. 1987. ‘Cognitive implications of a referential hierarchy.’ *Social and Functional Approaches to Language*. Orlando: Academic, pp. 125-64
- Skopeteas and Fanselow. 2009. ‘Focus in Georgian and the expression of contrast.’ Lingua, in press.
- Spencer, Andrew. 2004. ‘Morphology: an overview of central concepts.’ In L. Sadler & A. Spencer (eds.) *Projecting Morphology*, 67-109. Stanford: CSLI Publications.
- Stump, Gregory. 2001. *Inflectional morphology: a theory of paradigm structure*. Cambridge: CUP.
- Togeby, Knud. 1982. *Grammaire française. Vol. I: Le nom*. Copenhagen: Akademisk Forlag.

- Tuite, Kevin. 1998. *Kartvelian morphosyntax: Number Agreement and Morphosyntactic Orientation in the South Caucasian Languages*. Munich: LINCOM.
- Wier, Thomas. 2005. ‘Georgian and Pivots.’ Proceedings of the 2005 LFG Conference.
- Yuhara, Ichiro. 2008. A Multimodular Approach to Case-Assignment in Japanese: a study of complex and stative predicates. PhD Dissertation, University of Chicago.