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Chapter 1

Introduction

In the last two decades theoretical approaches such as the Minimalist Program and Distributed Morphology have made morphological data from agreement one focal point of linguistic research. Among the data that was influential is the agreement paradigm from Georgian, figuring in approaches that are embedded in either or both of these traditions: It has played a role in Distributed Morphology (Halle & Marantz, 1993) and influenced proposals for the theory of agree, such as Béjar & Rezac (2009).¹ In this thesis I discuss Georgian paradigm from a new perspective, and compare it to new data from a related South Caucasian language, the Pazar dialect of Laz, and propose that the common (and partly new) generalizations are best captured in a spanning account of morphology (Nanosyntax), in which a cyclical, bottom-up spellout determines the distribution of the affixes.

The approach I propose captures both the insight from the syntactic approaches (such as a prefixal preference for tracking a local object), and those from the previous morphological ones (such as the fact that an object's plurality is expressed suffixally only if there is no plural prefix) by suggesting that morphology operates in a way that parallels the derivational steps of syntax, and spelling

¹It also figures prominently in alternative approaches such as A-Morphous Morphology (Anderson, 1992) and Paradigm Function Morphology (Stump, 2001).

out spans of features. Additionally it accounts for systematic restrictions on the co-occurrence of certain affixes that have not been previously discussed as a genuine phenomenon; a position that I challenge by showing that the same constraints are present in both languages, but partly solved differently.

The thesis is structured as follows: As a first step Chapter 2 will introduce the well known data from Georgian and discuss the peculiarities of the paradigm, followed by the corresponding data from Laz, and a discussion of differences and common generalizations. Chapter 3 details previous approaches to the Georgian data, with occasional comments on their extendability to Laz where relevant. Chapters 4 and 5 introduce Nanosyntax as the theoretical background, as well as the basic proposals I make for the internal structure of ϕ . Chapter 6 applies these ideas to the paradigms at hand and discusses the advantages of this approach, followed by chapters on some open questions and, finally, conclusions.

Chapter 2

South Caucasian Agreement

In this section I will first introduce the much discussed agreement data from Georgian from a “pre-theoretical”, descriptive perspective, laying out the peculiarities of the paradigm, and describe the basic distributional properties of the relevant morphological items. In a second step I will introduce new data from another South Caucasian language, the Pazar dialect of Laz, spoken in the eastern part of the Black Sea region in Turkey, in the province of Rize. As with the Georgian data I will discuss the relevant distributional properties of the affixes. In a final step I will lay out the generalizations we can draw from comparing both these paradigms, and show that certain peculiarities do – albeit in different form – hold over the paradigms of both languages, suggesting the need for an analysis capable of capturing the commonalities as well as the variation systematically. This will lay the ground for a discussion of previous analyses of Georgian in the next section, where each recap will be followed by a very brief discussion of the respective analysis’s applicability to the Laz data.

2.1 The Data – Part 1: Georgian

Prefixes The aspect that has probably received the most attention is the distribution of the prefixes. This pattern is not derivable via reference to features of a

single argument, as shown in (1). While ‘g-’ and ‘m-’/‘gv-’ occur whenever the object is second or first person respectively, ‘v-’ only occurs in 1>3 contexts, i.e. its distribution cannot be described by making reference only to the subject’s features, as evidenced by its failure to occur in (1e). There are four or five different prefixes (depending on the stance on a zero prefix), three of which seem to be clear object markers; the apparent (overt) out-lier then is ‘v-’.

(1)

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- -∅	m- -∅-t	m- -s	m- -en
1Pl	—	—	gv- -∅	gv- -∅-t	gv- -s	gv- -en
2Sg	g- -∅	g- -∅-t	—	—	g- -s	g- -en
2Pl	g- -∅-t	g- -∅-t	—	—	g- -t ^a	g- -en
3Sg	v- -∅	v- -∅-t	-∅	-∅-t	-s	-en
3Pl	v- -∅ ^b	v- -∅-t	-∅	-∅-t	-s ^c	-en ^d

Table 2.1: Georgian Verbal Agreement, Present/Future Tense (based on Vogt (1971, p. 85f), Aronson (1990, p. 169ff))

^a According to Vogt (1971) there is an alternative form ‘g- -s’[’]. He analyzes ‘t’ as ‘-st’->‘-t’[’]. Aronson (1990, p. 170, rule 4) only mentions ‘g- -t’[’].

Hewitt (1995, p. 131f) states that for this form, where ‘g- -s-t’[’] would be expected, the ‘-s’[’] is deleted (i.e. the form found is ‘g- -t’[’]). He also states that earlier forms of Georgian did in fact have the form ‘g- -s-t’[’].

Tschenkéli (1958, p. 354) suggests that the prescriptive norm is to use ‘g- -t’[’], but that all three forms, ‘g- -s’[’], ‘g- -t’[’] and ‘g- -s-t’[’] can be found across different dialects.

In Halle & Marantz (1993, p.117) the form is given as ‘g- (-s)-t’[’]; in their analysis they delete the ‘-s’[’] in the course of the derivation.

^b In Vogt (1971) the table on p. 85 suggests the form ‘v- -t’[’] here, the example that follows the table in (2), however, does not have a suffix ‘-t’[’]. There is no ‘-t’[’] in Tschenkéli (1958, p. 355) either, nor does Aronson (1990) suggest the existence of such a form. I will assume the ‘-t’[’] to be a misprint.

^c Again Vogt (1971) suggests that the form ‘t’[’] (in his analysis ‘-st’->‘-t’[’]) also exists. I could, however, not find reference to this form in other grammars. Tschenkéli (1958) explicitly states that -t cannot occur here.

^d The alternative form ‘-en-t’[’] also exists according to Vogt (1971). I found no reference to this form in the other grammars.

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- -di	m- -di-t	m- -da	m- -dnen
1Pl	—	—	gv- -di	gv- -di-t	gv- -da	gv- -dnen
2Sg	g- -di	g- -di-t	—	—	g- -da	g- -dnen
2Pl	g- -di-t	g- -di-t	—	—	g- -da-t	g- -dnen
3Sg	v- -di	v- -di-t	-di	-di-t	-da	-dnen
3Pl	v- -di	v- -di-t	-di	-di-t	-da	-dnen

Table 2.2: Georgian Verbal Agreement, Imperfect (based on Aronson (1990, p. 171))

- | | |
|--|---|
| <p>a. <i>mo-g-ḱlav</i>
FUT.PV-2-kill

'I will kill you_{sg}.'</p> | <p>b. <i>mo-m-ḱlav</i>
FUT.PV-1-kill

'You_{sg} will kill me.'</p> |
| <p>c. <i>mo-v-ḱlav</i>
FUT.PV-1-kill

'I will kill him.'</p> | <p>d. <i>mo-∅-ḱlav</i>
FUT.PV-2-kill

'You will kill him.'</p> |
| <p>e. *<i>mo-v-g-ḱlav</i>
FUT-1-2-kill

'*I will kill you.'</p> | <p>f. <i>mo-g-ḱlav</i>
FUT-2-kill

'I will kill you.'</p> |

Aronson (1990, p.171)

Plural Marking Plural marking is neither clearly correlated with a morphological position, nor can any argument always trigger plural morphology.

The first thing to note is that there is a general restriction on plural agreement: Third person objects generally are incapable of triggering plural agreement, the rows with third person singular and third person plural objects are always identi-

cal.¹ In contrast, all other types of arguments, namely local subjects, local objects and third person subjects do trigger number agreement.²

The Georgian paradigm shows three distinct ways of marking plurality:

The *first* one is prefixal, and can be seen in the contrast between the rows with 1SG vs 1PL objects: The form of the prefix is ‘*m-*’ with 1SG objects, and ‘*gv-*’ when the object is 1PL. The suffixal markers occurring with both types of objects are identical, i.e. 1PL objects do not trigger any of the other two markings, nor is ‘*gv-*’ blocked by any other marker.

The *second* one is suffixal, occurring with third person subjects: The Tense/Aspect marker that co-occurs with these also varies with the subject’s number, being e.g. ‘*-s-*’ with 3SG subjects in the Present tense, and ‘*-en-*’ with 3PL subjects. Unlike the prefixal, first person object marking of number, this type of marking does show blocking effects in interaction with the *third* type of marking, i.e. the suffix ‘*-t-*’. This suffix, like the pre- and unlike the other suffixes does occur across different Tense/Aspect paradigms. It can be triggered by 2PL objects, 2PL subjects and 1PL subjects, i.e. by all local arguments except the one (1PL objects) that has its own specific marker (‘*gv-*’). This results in a syncretism between 1SG>2PL, 1PL>2SG and 1PL>2PL. The suffix bleeds the 3SG subject marker ‘*-s-*’ in the Present, but not ‘*-da-*’ in the Imperfect. It is also bled by the 3PL subject markers, resulting in a syncretism between 3PL>2SG and 3PL>2PL.

Tense-Aspect Dependency Georgian agreement affixes fall into two classes: There is a set of suffixes that varies with Tense, Aspect and a verb’s conjugation class.³ These always constitute sets of three, namely a third person singular

¹I will not treat this phenomenon in this thesis, see section 6.1 for an argument that this requires treatment as an independent syntactic phenomenon.

²One might argue that only one argument triggers plural agreement in 1PL>2PL. As only one marker occurs, and both arguments could have triggered it (as shown by 1PL>2SG, 1SG>2PL), it would not be a priori clear, which argument does so. In Chapter 6 I will argue that ‘*-t-*’ spells out two plural features in this case.

³Georgian conjugation classes correlate with different argument structures, thus might ultimately be relatable to the fine structure of *v*. See e.g. Harris (1981), Harris (1982) for a detailed

subject suffix, a third person plural subject suffix, and a local subject suffix.⁴ In contrast, all prefixes and the plural marker ‘-t’ are constant across paradigms.

2.2 The Data – Part 2: Pazar Laz

The paradigms from Pazar Laz,⁵ given in tables 2.3 and 2.4, share many of the properties of their respective Georgian counterparts; in fact the distributional facts are identical for 23 out of the 28 paradigm cells (cf. the two present tense paradigms in tables 2.1 and 2.3). The differences between the two languages can be summarized as follows:

1. The first difference between Pazar Laz and Georgian is the absence of ‘gv-’ in Laz; only three out of the four overt prefixes of Georgian have a counterpart. As Georgian ‘gv-’ is the only prefix sensitive to number, the prefixes in Laz are uniformly insensitive to number features as a result of this absence; this in turn seems to allow a first person object’s plural feature to influence the form the suffix takes, i.e. unlike Georgian ones, Laz 1PL objects pattern with other local arguments with respect to plural marking.
2. Unlike Georgian, a local object’s plural feature’s spellout depends entirely on the person of the subject. If the subject is local, it triggers ‘-t’, if the subject is third person, it triggers ‘-an’/‘-es’. This results in a highly symmetric spellout of plurality; all forms with at least one plural argument that is not a third person object are ambiguous between the subject, the object or both being plural.
3. Both Laz and Georgian have no forms of the type *‘-s-t’ or *‘-en-t’, i.e. the third

analysis of Unaccusatives given in terms of Relational Grammar, but very much applicable.

⁴See above-mentioned section 6.3 for a complete list of these.

⁵The Pazar Laz data under discussion was collected mostly during a field work course at Boğaziçi University, in the spring term 2010. Part of the research of that seminar was published in Öztürk & Pöchtrager (2011). My thanks go to our informant, Ismail Bucaklishi, and also to my teachers, Balkız Öztürk, Aslı Göksel and Markus Pöchtrager. Additional data was collected in the following years together with my friend and colleague Ömer Demirok, whose work, Demirok (2013), is the most detailed study of case, agreement and argument structure in Pazar Laz to date and which should be considered to supercede the respective chapters in the grammar, as it contains important corrections.

person subject markers appear to be incompatible with an individual morpheme spelling out a local object's plural feature. They do show different avoidance strategies though, with Georgian bleeding 's' in 3SG>2PL, and 't' in 3PL>2PL, and Laz using the third person subject plural marker 'es' in both forms, i.e. bleeding 't' by symmetrically expressing plurality.

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- \emptyset ^a	m- \emptyset -t	m- -s	m- -an
1Pl	—	—	m- \emptyset -t	m- \emptyset -t	m- -an	m- -an
2Sg	g- \emptyset	g- \emptyset -t	—	—	g- -s	g- -an
2Pl	g- \emptyset -t	g- \emptyset -t	—	—	g- -an	g- -an
3Sg	v- \emptyset	v- \emptyset -t	\emptyset	\emptyset -t	-s	-an
3Pl	v- \emptyset	v- \emptyset -t	\emptyset	\emptyset -t	-s	-an

Table 2.3: Laz Verbal Agreement, Present Tense

^a Note that the distribution of affixes in past and present tense is identical, with the exception of a present tense counterpart of 'i'. To highlight this symmetry, the paradigm is given with a zero suffix.

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- -i	m- -i-t	m- -u	m- -es
1Pl	—	—	m- -i-t	m- -i-t	m- -es	m- -es
2Sg	g- -i	g- -i-t	—	—	g- -u	g- -es
2Pl	g- -i-t	g- -i-t	—	—	g- -es	g- -es
3Sg	v- -i	v- -i-t	-i	-i-t	-u	-es
3Pl	v- -i	v- -i-t	-i	-i-t	-u	-es

Table 2.4: Laz Verbal Agreement, Past Tense

2.3 Summary

In summary, the paradigms of Laz and Georgian share a great many properties: They both have a set of prefixes, the distribution of which cannot be explained by reference to the features of just one argument, and which are constant across each language's Tense/Aspect/Verb Class variations. They both have a plural suffix *'-t'*, also constant across these variations, and which in both languages cannot co-occur with the 3.PL.TAM markers, i.e. they both do not allow for *'*-en-t'* type structures. The distribution of *'-t'* shows one asymmetry between the two languages, it occurs in 3SG>2PL in Georgian, but not in Laz; this asymmetry has a counterpart in the distribution of the 3.SUBJ+PL markers *'-es'* and *'-an'* in Laz which spreads into this form; additionally this form is also able to spread into 3>1PL forms in Laz, presumably because Laz lacks the 1.PL.OBJ marker *'gv-'*. Both languages disallow the co-occurrence of s-type markers (3.SG subjects) with *'-t'*, but Georgian lacks *'-s'* in the relevant cell (3SG>2PL), whereas Laz lacks *'-t'* (3SG>1/2PL), and *'-an'* is used instead.

Curiously, across both languages there are only two paradigm cells where both arguments can mark their plurality independently, namely Georgian 3PL>1PL, 2PL>1PL – i.e. those cells with a plural subject and the 1PL object marker *'gv-'*. In all other cells, one plural marker has to suffice even when two plural arguments appear.

(2) *Explananda*

- (i) TAM-independent Prefixes, multi-argument sensitivity/competition
- (ii) TAM-independent Suffix *'-t'*
- (iii) Constraint on *'-en'* type suffixes and *'-t'*: *'*-en-t'*
- (iv) Constraint on *'-s'* type suffixes and *'-t'*: *'*-s-t'*
- (v) Widespread avoidance of Bi-Plurality (except Georgian 3PL>1PL, 2PL>1PL)

In the next section I will lay out some previous analyses, and how they tackled

some of these phenomena; after that I will try to derive these facts from a spanning account of spellout, suggesting that they are best captured by proposing that, due to cyclicity, Laz and Georgian potentially allow the lowest object features to be spelled out before the rest, but may leave an object's plural feature to form a constituent with the subject features; in the same vein I will suggest that the occurrence of '*v-*' is best described not as competition, but as spanning over the features of a third person object and a first person subject, '*v-*' essentially being a 1>3 marker.

Chapter 3

Previous Analyses

In this Chapter I will introduce previous approaches to the Georgian paradigms. The phenomena have been variably treated as morphological (i.e. PF) phenomena, e.g. by Halle & Marantz (1993), or as core syntactic: Béjar & Rezac (2009) take the prefixes of Georgian as evidence for a cyclically expanding search space of an agreement probe; Lomashvili & Harley (2011) take the same phenomenon as evidence for a phase based cyclicity of spellout.

In Chapter 6 I will suggest that treating the spellout of agreement as a morphological phenomenon is essentially the right direction, but that the interaction between different affixes (e.g. *-t'* bleeding *-s'*, the prefix's preference for tracking local objects) can be best accounted for if we assume morphology to operate on spans in binary branching syntactic structure.

3.1 Halle & Marantz (1993)

In one of the founding papers of Distributed Morphology (DM), Halle & Marantz (1993) devise a complex apparatus of morphology that triggered much research into the relationship of syntax and morphology since. Like Nanosyntax (see

Chapter 4) they assume that spellout is post-syntactic,¹ that competition for insertion is constrained by an elsewhere principle, and that the level of morphology exhibits hierarchical structure of the syntactic, binary branching type. In this step, DM attempts to capture the fact that “[i]n many cases the hierarchical structure of phonological material (affixes) [...] recapitulates the hierarchical organization of functional morphemes in the syntax” (p. 113). DM might therefore be said to be among the first systematic attempts to account for the Mirror Principle’s (Baker, 1985) morphological side.

DM generally assumes morphology to read off the syntactic structure, built from heads which have internal feature matrices with no internal structure. This stage is then manipulated by certain processes, such as *i)* **(Structure Manipulation)** *fissioning* a given node into two nodes, or *fusing* two sister nodes into one *ii)* **(Feature Manipulation)** *impoverishing* a given structure, i.e. deleting a certain feature in a specified context, and *iii)* **(Morpho-phonological Manipulation)** *readjustment*² of a certain structure after spellout has taken place. The loci of vocabulary insertion are the (potentially manipulated) terminals; vocabulary items are assumed to be under-specified, i.e. they are potential candidates for every terminal that forms a superset of their specification.³

In their analysis of Georgian Halle & Marantz (1993) find the most salient features of the paradigm to be *i)* the inability of third person to surface in the pre-stem position, and *ii)* their inability to trigger the plural suffix ‘-t’. To solve this, they follow Nash (1992) in assuming that the prefixes of Georgian are in fact the result of a clitic cluster that incorporates all local arguments.⁴ These are

¹This is a simplification, of course; Nanosyntax assumes morphology to be intertwined with syntax in a way that allows it to actually influence later steps of the derivation, an idea that is ruled out in DM. In this thesis, however, I will not propose any such interaction.

²Readjustment rules seem to not figure prominently in the theory anymore.

³For a general overview of DM see Harley & Noyer (1999), Embick & Noyer (2007), Bank *et al.* (2012). For a more extensive discussion of the way Georgian and Laz data can be treated within a DM approach, see a much earlier version of the ideas laid out in this thesis, Blix (2012a).

⁴Nash (1992) is a French article and my understanding of French is very limited. My impression, however, is that the article’s argument for a clitic cluster analysis is precisely the fact that it cannot be a (syntactic) AGR head, as it makes reference to features of (local) subjects and objects. If this is

fused into a single node, with any plural feature fissioned off, unless the plural feature is part of a first person object (to account for 'gv-', which occurs only with 1PL objects):

(3) *Fission*

Cl + Stem \rightarrow [+pl] + Cl + Stem (linear order irrelevant)

|

[+pl]

Unless the [+pl] is part of a [+1], DAT argument.

Halle & Marantz (1993, p.118, their (3))

They then suggest that '-t' spells out the plural feature that has been fissioned off; this rule creates the context for its insertion. The fact that '-t' is absent in 3PL>2PL contexts is solved by suggesting that a specific impoverishment rule deletes the plural feature in precisely this context, i.e. when the additionally present fused [Tense + Agreement] node contains [3 PL]. This node has three possible candidates for insertion, a zero one for local subjects, '-s' for third person singular and '-en' for third person plural subjects. The fact that 3SG>2PL disallows '-s' is solved by suggesting that the vocabulary item does indeed get inserted, but then is deleted later on by a readjustment rule.⁵

The approach deals with the fact that only local arguments seem to trigger prefixal structure by following the clitic cluster analysis; since this node contains material only of local arguments, third person is not present in the prefixal node. They suggest that the apparent preference for object marking over subject marking is a result of specificity: While the object markers spell out case and person features, the subject marker 'v-' spells out first person only; thus the elsewhere principle resolves the competition.

indeed the argument there is no motivation independent of the morphological facts that are to be explained that would support the clitic cluster analysis.

⁵This also misses the fact that the form is in fact '-Ø-s', with only '-s' being bled, as can be shown from comparison with additional data. See section 6.3 for details. The DM approach could, however, capture this by postulating another fission rule.

3.1.1 Laz

Halle & Marantz (1993) can be adapted to the Laz data by suggesting that Laz does not contain the restriction in the fission rule, i.e. every plural feature is fissioned in Laz, as opposed to all but that of a first person object. To account for the symmetry of plural spellout (i.e. the fact that Laz ‘-an’ can spell out 3SG>1/2PL), the approach would have to suggest that a plural feature next to a third person subject agreement node gets fused to that node: In effect the plural feature gets transferred from one node to another.

The approach, however, fails to capture many of the common constraints systematically: Since the preference for object markers over subject markers is merely an effect of lexical specification, every other ranking would be possible as well (e.g. by suggesting that ‘v-’ spells out case, but ‘g-’ does not); the fact that the generalization remains the same for Laz and Georgian, is at least reason for suspicion. The same is true for the fact that ‘-t’ does not generally (but see section 6.3.1) co-occur with third person subject markers in either language (though the avoidance strategies differ) – it is treated as a random, not a systematic effect in the system.

3.2 Béjar (2003), Béjar & Rezac (2009)

Béjar & Rezac (2009) (as well as Béjar, 2003) focus exclusively on the prefixes in Georgian and suggest that the occurrence of the respective markers is best treated as a syntactic phenomenon, i.e. they suggest that the prefixal preference for objects over subjects ought to be taken seriously as a phenomenon. They suggest that Georgian belongs to a class of languages that “can be characterized as having a *single core agreement slot*” (p. 35, emphasis mine) and suggest that the competition between the internal argument vs. the external argument controlling this slot is syntactically determined by *person hierarchy driven agreement displacement*.

The general argument they pursue takes as basic the idea that a morphological slot

(here: the prefix) is a direct correlate of a syntactic probe; from this perspective they suggest that the controller of the Georgian prefix, i.e. the argument that enters the agree relation, is best described as in (4a), cf. the relevant affixes in (4b).

(4) a. Local Object > Local Subject > Third Person

b. 'gv-' (1PL), 'm-' (1SG), 'g-' (2) > 'v-' 1, '∅-' (2) > '∅-' (3)

Béjar (2003) calls this an Anti-Superiority effect: Both the external and the internal arguments are potential candidates for the agreement relation with the probe. The internal argument intervenes, but only if it is not third person.

They interpret this as evidence for a probe on *v* that first probes downwards in the typical c-command fashion (Chomsky, 2000, 2001). They diverge from Chomsky's proposal in suggesting that phi-features have complex internal structure, as in table 3.1, which they derive from the feature geometry in Harley & Ritter (2002b):

3rd	2nd	1st
[π]	[π]	[π]
	[Participant]	[Participant]
		[Speaker]

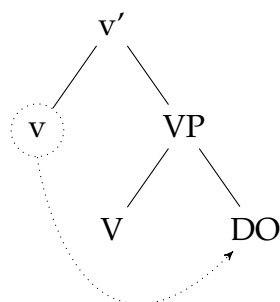
Table 3.1: Person Specifications (Béjar & Rezac, 2009)

These structures show entailment relationships (an argument specified for [Speaker] cannot lack the other two features, for example), and both probes and arguments can be specified for any of the three possible structures. They then revise the matching requirement of Chomsky (2001), such that a given argument matches the probe if it carries a subset of the probe's uninterpretable features: A probe specified only for [π] will result in the behavior familiar from e.g. Romance or Germanic languages, namely agreement with the first argument in the domain.⁶ A probe specified for [π , π Participant], however, will agree with

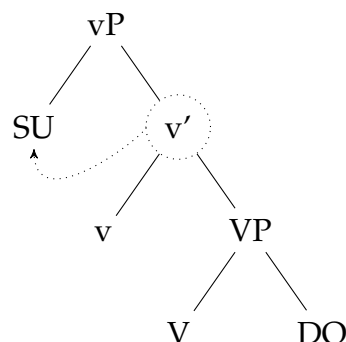
⁶As they note on page 45 this means divorcing the feature valuation from the resulting

the first argument it c-commands as well; if, however, this argument matches only $[\mu\pi]$, $[\mu\text{Participant}]$ will remain active. In the next application of merge then, this remaining active feature projects (i.e. it is located at the bar-level) c-commanding the specifier. At this position it engages in a second-cycle probing:

(5) First Probing



(5') Second Probing



The difference between first and second cycle probing may result in morphological differences, such as 'm-' vs 'v-' in Georgian:

(6) a. *m-xedav-s* $3 \rightarrow 1 = \text{First Cycle (1.I)}$
1.I-see-x

'He sees me.'

b. *v-xedav* $1 \rightarrow 3 = \text{Second Cycle (1.II)}$
1.II-see

'I see him.'

Béjar & Rezac (2009, p. 51, their (18))

Béjar & Rezac (2009) do not discuss the question of number agreement, but Béjar (2003) does. She divorces number from person agreement, and suggest that singular is total underspecification, i.e. absence of number. The number probe is high (i.e. on T), thus preferentially targets the subject; a singular subject, however, does not intervene. This proposal fails to account for the occurrence

morphological expression, as a probe specified for only $[\mu\pi]$ (German, Romance etc) can clearly result in morphological expression of the full feature structure.

of ‘*gv-*’ as the first person plural object marker (and the simultaneous absence of ‘*-t*’). It also offers no account for the difference between 3SG>2PL and 3PL>2, as in (7), nor can it account for the distribution of the other suffixes, ‘*-s*’ and ‘*-en*’ (merely glossed “*x*” or “*TNS*” in both publications, cf. (6)).

- | | |
|--|--|
| (7) a. <i>g-xedav-(*-s)-t</i>
2.I-see-PL

‘He sees you _{pl} .’ | b. <i>g-xedav-en</i>
2.I-see-TNS

‘They see you _{sg/pl} .’
Aronson (1990, p. 171) |
|--|--|

As Béjar (2003) herself notes on page 130, the account also makes the incorrect prediction of Unaccusatives triggering first cycle agreement.

Below I will therefore argue that the analysis of Georgian in terms of agreement displacement fails to account for the data and will instead take minimal pairs such as (8) as evidence for full-fledged agreement with both subject and object, taking seriously their own claim that “the most direct evidence [for the operation Agree] is morphological covariance of two elements” (Béjar & Rezac, 2009, p. 35):

- | | |
|---|---|
| (8) a. <i>m-xedav-∅</i>
1.OBJ-SEE-L.SUB

‘You _{sg} see me.’ | b. <i>m-xedav-s</i>
1.OBJ-SEE-3.SUB

‘He sees me.’
Aronson (1990, p. 171) |
|---|---|

As ([counetrex]) clearly shows the suffix co-varies with the subject’s φ -features, suggesting that Georgian does show subject agreement, even when the prefix shows agreement with the object.

3.3 Lomashvili & Harley (2011)

Lomashvili & Harley (2011) is an attempt to derive the apparent preference of

the prefix to track local internal arguments rather than external ones by means of phasal spellout (Chomsky, 2000, 2001), a markedness condition on Agree, and a morphological template in the sense of Noyer's (1992) discontinuous bleeding. That is to say, they try to replace cyclic agree with standard downwards agree, relating the preference in timing to the phasal nature of v P and CP and by means of limited *positions of exponence*.

Like Béjar (2003) and Béjar & Rezac (2009), they focus exclusively on the prefixes and the plural suffix '-t', giving the following justifications:⁷

- (9) a. "We assume with Béjar, that the 3rd-person number agreement suffixes of Georgian, which vary with series [...], are realizations of Tense features secondarily conditioned by number'

Lomashvili & Harley (2011, p. 236)

- b. "As Béjar (2003) points out, because they vary with different tense and aspect features in the way 'pure' agreement markers do not, they require a separate analysis. We assume they do not compete for the same positions-of-exponence as the [+participant] agreement morphemes"

Lomashvili & Harley (2011, p. 238f)

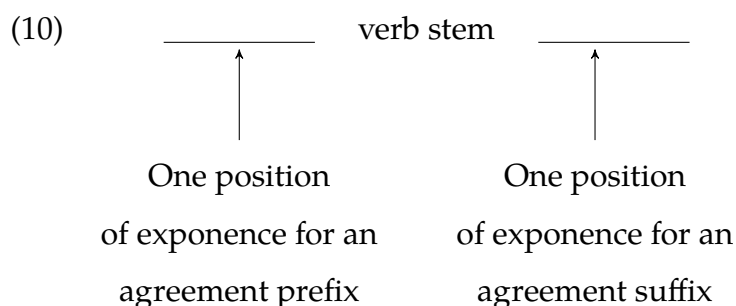
Like Béjar (2003), Béjar & Rezac (2009) they follow Harley & Ritter (2002a) in decomposing person features as in table 3.2 (cf. table 3.1), albeit subsequently using binary features. They also adopt the markedness strategy, suggesting that only [+participant] arguments can enter agree relations with φ -probes: Third person arguments are able to receive case, but cannot value the probes on v and T.

⁷Not only is this unsatisfactory as an explanation, considering that the argument of fusion with tense would, if generalized, lead to the conclusion that many Indo-European languages do not in fact have agreement, it also (similarly Bejar's (2003) & Bejar & Rezac's (2009) glossing of affixes as "x") ignores the fact that there are always three different affixes, one of which (the one co-occurring with local subjects) just happens to be zero with first conjugation (i.e. transitive) verbs in the present, but not with other conjugations and not in other TAM contexts. See, e.g. Aronson (1990), page 112, where the pattern is '-e', '-a', '-es'; section 6.3 lists all relevant suffix patterns.

3rd	2nd	1st
RE	RE	RE
	Participant	Participant
		[Speaker]

Table 3.2: Person Specifications (Lomashvili & Harley, 2011)

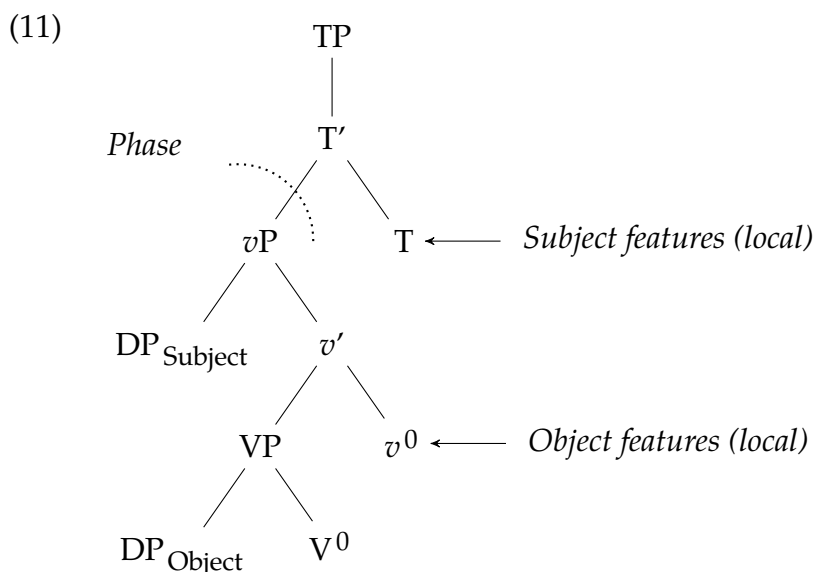
Following Noyer's (1992) analysis of Semitic agreement patterns, they suggest that the Georgian verb has the following morphological template:



Lomashvili & Harley (2011), p.244, their (13)

The competing prefixes for the left slot are those that can spell out subject features (on *T*) or object features (on *v*); the fact that 'g-' and 'm-'/'gv-' occur in 1>2 / 2>1 contexts, i.e. that they win over the competing subject prefixes 'v-' and '∅-' is derived from the phasal nature of spellout: Once the derivation of *v**P is complete, it is sent to PF.⁸ There only the object prefixes are candidates, since the TP level has not yet been derived; vocabulary insertion takes place, the slot is thus filled, and a later local subject cannot be spelled out anymore; syntactic agreement, however, takes place in the usual way and deletes the uninterpretable features, allowing for a converging derivation. In this sense, they try to extend Halle & Marantz (1993) with a proposal that does account for the preference for object agreement systematically.

⁸This is a noteworthy deviation from Chomsky's proposal, as it requires that *v*⁰ itself is sent to PF, as opposed to its complement domain only. For obvious syntactic reasons, [Spec,*v**] must remain accessible to the computation.



This contrasts with a derivation with a third person object. These cannot value the probe on v (which then must be a case-only probe in order to not crash the derivation, akin to some kind of empty default agreement that does not receive any spellout). In this case then, the subject features on T can be spelled out by ' v -' and ' \emptyset -' respectively.⁹

Since they do not treat the suffixes ' $-s$ ', ' $-\emptyset$ ' and ' $-en$ ' – supposedly occupying a different slot, albeit clear co-occurrence restrictions –, they suggest that the only candidate that can ever compete for the second slot is ' $-t$ ',¹⁰ getting inserted whenever there is a plural feature from an agreeing (i.e. local) argument that has not been spelled out. This way they are able to derive all cells but one: The non-occurrence of ' $-t$ ' in 3PL>2PL cases (resulting in 'g-V-en(*-t)') is unexplained. They resort to an impoverishment rule, deleting the respective plural feature.¹¹

It is worth noting that these mechanics deviate significantly from most DM approaches in strongly divorcing structure and spellout. The slots are not derived at MS, but exist as an independent constraint on the notions pre- and suffix, i.e.

⁹3>3 does not produce any agreement, therefore no affixes are inserted.

¹⁰They specify the candidates as pre- or suffixes lexically, but see their fn. 6, suggesting that this should be related to more general principles.

¹¹They do not comment on the absence of ' $-s$ ' in 3SG>2PL.

their approach loses much of the important insights DM contributed to the understanding of the relation between syntactic and morphological structure.¹² The plural feature's status remains somewhat unclear, as the terminal node (e.g. *v*) into which a prefix is inserted has been spelled out, suggesting an automatic fissioning.

In a second step the analysis is extended to so-called Inversion structures, i.e. those with dative subjects. Since these are not under discussion here, I will leave out that part, merely noting in passing that they do not treat a most interesting part of the Inverse paradigm, namely the fact that in Inversion contexts third person plural dative subjects can trigger plural agreement if and only if the object is also third person.¹³ Instead they explicitly state that third person arguments cannot trigger '-t' (p. 255). It is possible that their analysis is based on a different dialect of Georgian – it does, however, not naturally extend to those described elsewhere, but predicts those to be impossible.

3.4 McGinnis (2008, 2013)

In this section I will briefly outline McGinnis's (2008, 2013) treatment of Georgian agreement. The first paper treats person agreement, whereas the second one treats number agreement.

McGinnis (2008) argues that the data discussed in Béjar (2003) should be split into two categories; proposing that the syntactic view proposed for Georgian is essentially correct, but that Algonquian languages (of which Béjar analyzes Nishnaabemwin, and Halle & Marantz analyze Potawatomi) should be treated as effects of morphological competition in the sense of Halle & Marantz (1993)

¹²In fact the suggestion seems to imply that affixes are bundled somewhat arbitrarily into lists, with competition occurring only list-internally, each morphological slot having its corresponding list of candidates. While not identical, this is reminiscent of the rule blocks in approaches such as A-Morphous Morphology (Anderson, 1992) or Paradigm-Function Morphology (Stump, 2001).

¹³See Aronson (1990, p. 272ff), cited after Carmack (1997) for the relevant data; also Halle & Marantz (1993), footnote 6, which mentions the occurrence of '-t' in this context.

rather than syntactic, position based competition.¹⁴ McGinnis does not depart significantly from Bejar's work, but extends it to Dative Subject structures.¹⁵ I will therefore not discuss it at any length here. She does, however, correctly point out that Halle & Marantz (1993) implicitly state that the difference between first person object marking and first person subject marking is merely an accident of morphological specification: Because 'm-' and 'g-' are specified both for case and person, whereas 'v-' is specified for person only, 'g-' is more specific in the relevant contexts (1>2), thus winning due to the DM version of the elsewhere principle. The specifications could just as well be reversed, however, which would result in the opposite effect.

McGinnis (2013) attempts to capture the absence of '-t' in 3PL>2PL contexts, i.e. the syncretism between 3PL>2PL and 3PL>2SG forms, observed in (12b), the inability of third person objects to trigger plural marking (see section 6.1 for a brief discussion), and the distribution of '-s'. She does so by effectively combining both Béjar (2003) and Halle & Marantz (1993).

- | | |
|---|---|
| <p>(12) a. <i>g-nax-a-t</i>
 2.DAT-SEE-AOR-PL
 'He/she saw you (PL)'.</p> | <p>b. <i>g-nax-es(*-t)</i>
 2.DAT-SEE-AOR.3PL-(*-PL)
 'They saw you (SG/PL)'.</p> |
|---|---|
- McGinnis (2013, p. 40)

¹⁴Note in passing that I will later argue that Georgian should not be treated as involving the kind of syntactic competition proposed by Bejar (2003). In fact, her treatment of Nishnaabemwin also suffers from her only properly treating prefixes, but glossing over differences between suffixes; on page 104, for example, the sub-paradigm shows four different suffixes, but she glosses two of them as direct theme, and two of them as inverse theme, then treating them as the same.

¹⁵Dative Subject structures show a fairly complex morphology. They show a suffixed copula – apparently competing with the suffixes and offering a second prefix position – with certain argument combinations as well as bleeding relations for plurality. To my knowledge there is no good account of these; Lomashvili & Harley (2011) try to account for these, but do not discuss all the relevant paradigm cells, nor are they able to correctly predict the (non-)occurrence of the copula. I will leave these aside, as their syntax seems insufficiently understood to me. They might, however, produce relevant counter-arguments to all approaches discussed, including my own.

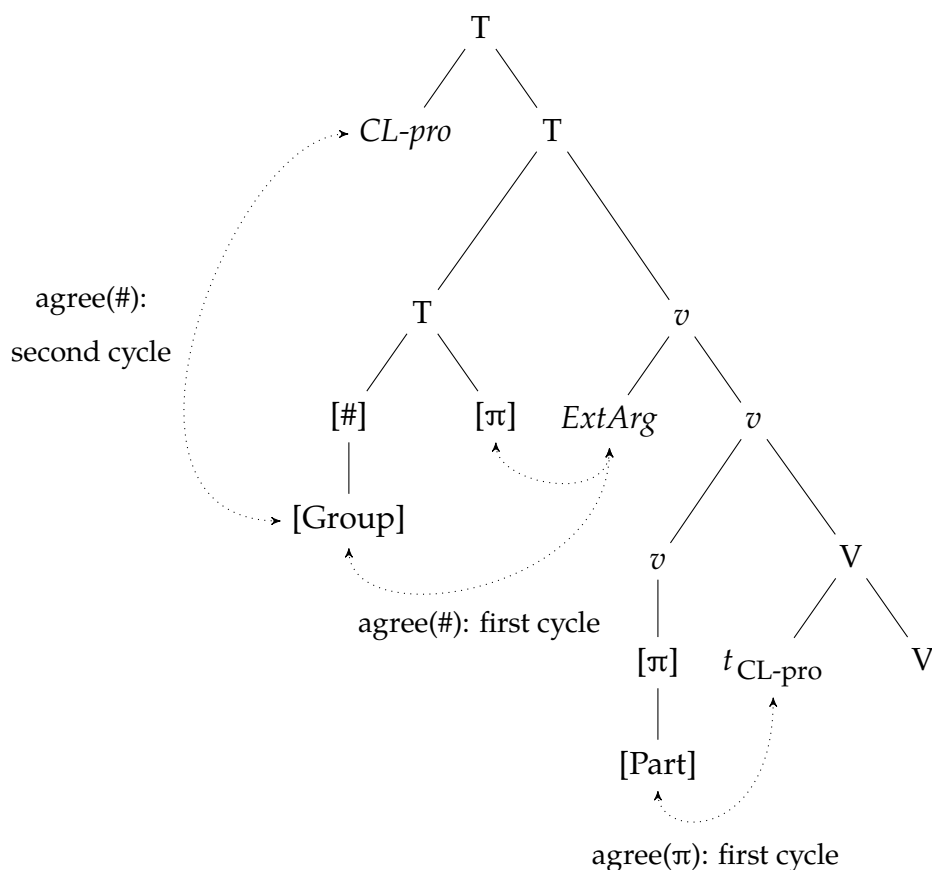
The basic idea in her analysis is displayed in the structure in (13). Like Halle & Marantz (1993) she suggests that local arguments cliticize to T; because she does, as noted above, want to preserve Bejar's insight about subject/object asymmetries, she assumes these clitics to be silent, and not identical to the prefixes.¹⁶ She proposes that T carries two (independent) probes: A "flat" one for person features that always agrees with the external argument, irrespective of the argument's person,¹⁷ and a number probe that is – analogous to cyclic person agreement – not flat: It looks for a plural structure, $[\#[\text{Group}]]$ in a first, downwards probing cycle. If it cannot find that, it extends its search space upwards, where it potentially finds the local clitics.¹⁸ Since third person arguments do not cliticize to T, this derives the fact that only third person subjects can trigger plural agreement: Third person objects are never present above T, thus no potential target in a second cycle search space.

¹⁶It seems to me that this means that she does reject the primary evidence for the clitics, but still takes up the analysis, now without independent evidence.

¹⁷Note that at first sight this might seem like it could solve Bejar's problems with Unaccusatives: We might simply employ Burzio's generalization to suggest that the lower person probe is absent in Unaccusatives, thus only the higher, flat probe is present. The occurrence of the first person subject marker 'v-', however, is considered a second cycle effect of the lower probe that is supposed to correspond to the prefixal slot; the higher probe in contrast corresponds to the suffixal slot that is fused with T.

¹⁸Since the second cycle is supposed to be "flat", it seems to me that this proposal potentially runs into problems with 1SG>2PL: The first cycle finds a first person singular external argument, resulting in no agreement and a second cycle. In the second cycle it will, however, find both arguments represented: Recall that all local arguments are claimed to cliticize to T. That results in both a singular and a plural structure being present there, and no independent mechanism is proposed for deriving the fact that this results indeed in plural agreement.

(13)



McGinnis (2013, p. 44)

From this starting point she needs to make considerable alternations to standard analyses: To capture the fact that first person plural objects do not trigger ‘-t’, but express plurality by means of the prefix ‘gv-’, she resorts to an impoverishment rule that operates within syntax: First person plural arguments carry not only the feature [group], but additionally bear a person feature [multispeaker]. At the *vP* phase spell-out the first person plural object clitic gets impoverished, i.e. the plural feature deletes. It does, however, remain accessible to computation in impoverished form. This is a violation of the standard Y-model, as impoverishment is supposed to be a MS/PF rule, i.e. it ought not be able to affect core syntactic computation. It should also make any reader suspicious that this

feature seems to get expressed only if the respective plural feature does not: First person subjects can trigger ‘*v-*’, even in the singular, thus ‘*v-*’ cannot express [multispeaker]. They can also trigger ‘*-t-*’, thus triggering plural agreement. Thus [multispeaker] and [plural] seem to be in complementary distribution with respect to their effects on spellout. Taking into account the data from Laz makes matters worse: Laz lacks precisely the supposed [multispeaker] expressing prefix ‘*gv-*’, but instead uses the singular ‘*m-*’ and the same plural suffix ‘*-t-*’ used with second person plural, i.e. it shows clear evidence of first person plurality, but none of the mysterious feature [multispeaker].

The idea McGinnis puts forward for the expression of plural, namely automatic fission whenever the suffix that spells out the features in T does not contain [group], is in principle attractive, but requires her to assume that third person arguments carry a feature not found with local arguments: In order to account for the difference between 3PL>2PL (‘*-es-*’) and 3SG>2PL (‘*-t-*’), both of which have T- π agreement with a third person argument, and both of which have agreement with a plural argument, she assumes that third person arguments additionally contain a feature [Class]. Agreement for this feature presumably depends on the number probe, not the person probe, i.e. it is only present on the T structure in 3PL>2PL. ‘*-es-*’ is then specified for this feature, i.e. not a candidate for insertion in 3SG>2PL contexts, thus [group] is fissioned and gets expressed by ‘*-t-*’, which is a plural suffix only. [group] is also fissioned whenever the subject is local, as the [TAM+part] affixes never contain [group].

3.5 Summary

The challenges posed by the Georgian data have been met variably by suggesting that the distribution of affixes is basically a morphological phenomenon (Halle & Marantz, 1993), or by claiming that this misses a deeper point which should be accounted for in syntax proper. These syntactic approaches correctly point out

that the DM account does not give a principled account of the crucial fact that there is a preference for spelling out local object features over others.

Béjar & Rezac (2009) suggest that this should be taken as evidence for a cyclically expanding version of Agree, combined with a markedness restriction on it; in doing so, however, they fail to account for the suffixal structures, the interaction between pre- and suffixes, the agreement pattern of unaccusatives, and divorce syntactic valuation from morphological expression.

Lomashvili & Harley (2011) attempt to derive the same phenomenon from a phasal spellout, with the same markedness restriction that allows only local arguments to agree. In linking this to a template based morphology, they implicitly propose a doubly structured level of morphology, constrained both by the standard DM proposal that terminal nodes are the locus of realization, and the older, structuralist idea that there are positions of exponence. Like Béjar & Rezac (2009) they do not treat suffixes other than ‘-t’, thus missing the generalizations about their interaction. Instead, they have to rely on an arbitrarily proposed impoverishment rule.

McGinnis (2013, 2008) follows Béjar (2003), but additionally treats number agreement. In doing so, she is forced to assume silent clitics with no independent motivation, an additional feature [multispeaker], expression of which is in complementary distribution with the normal [plural] feature, and, most problematically, violate the Y-model by suggesting Impoverishment to take place within syntax.

We see then that the three approaches that attempt to explain the preference of the prefix to express a local object’s features are all forced to deviate significantly from standard syntactic assumptions while still failing to fully account for all relevant data. In section 6 I will argue that Halle & Marantz (1993) are essentially correct in treating it as a morphological phenomenon, but that a spellout operating in a cyclical, bottom-up fashion on spans, is equipped to not only capture the prefixal preferences and the interaction of different affixes, but that it also

naturally extends to the differences between Laz and Georgian.

Chapter 4

Theoretical Background – Nanosyntax

Nanosyntax (Starke (2009, 2011); Caha (2009); Pantcheva (2011), a.o.) is a perspective within the enterprise of generative syntax that takes as its starting point the idea that the ever more finely grained analyses of syntax are best understood if syntactic structures are actually composed of units (heads/features) that are *submorphemic*. Morphemes in turn – being bigger than a single syntactic head/feature – are interpreted as spelling out spans of heads, with the spans defined in terms of constituency. In this perspective therefore, syntax operates entirely on heads,¹ and the lexicon, instead of feeding the syntax as in more traditional approaches, interprets it.

Nanosyntax, then, is a perspective on syntax (or, if you will, a research *program*, much like the Minimalist Program) that necessarily contains a specific kind of theory of the syntax-morphology interface (namely one where morphology is reduced to lexical access), but is much broader than that. This thesis, however, will be limited to that contained theory, being in its analysis indifferent to the claim that there is no difference between features and heads, and the vast set

¹And, plausibly, category-neutral roots, an idea that has also been entertained in other approaches such as Distributed Morphology, e.g. Marantz (1997), Embick (2000).

of possible implications this view might imply for core syntax. Instead I will merely assert that features, just like heads, are best thought of as being organized into binary branching syntactic structure, and that spellout operates in a cyclical, bottom-up manner and is based on a superset principle. The rest of this section will first detail those aspects, followed by a brief look at the way they are applied in Caha (2009) in order to account for generalizations over possible syncretisms of case.

4.1 Spanning – The Superset Principle

In contrast to many other theories of the syntax-morphology interface, such as DM or Paradigm Function Morphology (PFM), Nanosyntax does not operate on feature bundles with no internal structure, but instead assumes that feature structures are organized along syntactic principles, i.e. that they are combined into binary branching structures. These are characterized by the usual relationships such as c-command and headedness that together ensure an asymmetry between all features.² Crucially, Nanosyntax holds that these relationships, holding in the syntactic structure to be spelled out, must not be lost during spellout: The *Lexicalized Tree Structure (LTS)* – the morpheme – that spells out a certain structure, must not miss any of the respective headedness/c-command relations in the syntax. From this condition we can derive a theorem along the lines of (14).³

²This, of course, holds only as long as we do not consider merge of bar-level (and possibly phrasal level, if not excluded on independent grounds) structures with another phrasal level structure, i.e. specifiers. Since specifiers play no role in the present study I remain indifferent to their possible effects on/interaction with spellout. The way I am trying to derive the superset principle here, however, might be open to an extension that naturally forbids spellouts that span a head and its specifier; whether that is an extension that is wanted for, empirically speaking, is a question outside the scope of this work.

³I am not aware of any previous approaches to derive the Superset Principle in this way. Deriving it as a theorem might provide a more general perspective into why something like the superset should operate in the first place; it also needs clarification with respect to Pointers (see below). Whether it has any empirical merits to attempt treating it as a theorem rather than a principle remains to be seen.

(14) *Superset Principle*

- a. A Lexicalized Tree Structure is a candidate for spellout of a given syntactic structure iff the LTS contains the syntactic structure.
- b. An LTS contains a syntactic structure iff
 - i. All heads of the syntactic structure are heads of the LTS.
 - ii. Contiguity holds.
 - iii. Anchoring holds.

The conditions in (14b) are to be understood as follows:

The first one is rather obvious: If the LTS did not contain all features of the syntactic structure, it could not represent all headedness/c-command relations between them.

The second, contiguity is the condition that all features in the syntactic structure be in the same order/hierarchy, with no additional, intervening features, as those would remove a relation of headedness. To exemplify: A structure $[a[b]]$ cannot be spelled out by an LTS $'[a[c[b]]]'$,⁴ because it fails to represent the headedness relationship between $[a]$ and $[b]$.

The last one, anchoring, is the condition that the lowest feature of the syntactic structure and the LTS be the same. To again exemplify: An LTS $'[a[b[c]]]'$ is not a candidate for spellout of a structure $[a[b]]$, because it fails to represent the fact a and b c-command each other symmetrically.⁵

Unlike these possible violations of the superset's conditions, an LTS that differs from the syntactic structure only by having additional heads higher up in the tree, does not violate the principle. The structure $[a[b]]$ can thus potentially be

⁴As a convention I will put lexicalized structures in single quotes, to distinguish them from syntactic structures.

⁵This might be the weakest point of trying to derive the superset principle from this type of information matching: The fact that the lowest two heads c-command each other is an effect sometimes produced by a previous spellout, namely in a situation where $[a[b]]$ is the resulting structure after a structure $[d]$ has been spelled out from $[a[b[d]]]$. See below for the details of the cyclic operation of spellout.

Either way – the more immediately important question, namely whether a superset approach makes “better” predictions than its alternatives, is an empirical one.

spelled out by any LTS $'[...[x[a[b]]]]'$.

4.2 Elsewhere Principle

The Elsewhere Principle (EP), sometimes informally known as the “minimize junk principle” is the Nanosyntax interpretation of Panini’s Principle. It is an economy principle employed across different theories of grammar that has its application in deciding between two different rules, suggesting that whenever the conditions for two different rules are met simultaneously, the more specific one applies. While specificity is not always trivial to define,⁶ the general insight usually points in the same direction. As this thesis has nothing substantial to add to the precise understanding of the EP, I will merely quote the version from Starke (2009, p. 4):

(15) *Elsewhere Principle*

At each cycle, if several lexical items match the root node, the candidate with least unused nodes wins.

To exemplify: In a context $[c[d]]$, if two LTS are available that are supersets of the tree, e.g. $A \Leftrightarrow '[a[b[c[d]]]]'$ and $B \Leftrightarrow '[b[c[d]]]'$, the more specific one wins, i.e. the one with less unused features, namely B.

4.3 Cyclic Spellout – Biggest Wins

In addition to those cases that the EP applies to, LTS in Nanosyntax also compete with each other with respect to timing/size: Spellout is cyclically bottom up, and any cycle of Spellout overwrites an earlier one, up to a point where no tree structure is available in the lexicon to spell out the whole structure, i.e. the

⁶In Distributed Morphology, for example, formulations have been based on the cardinality of features, sub-/superset relations of the vocabulary items, and/or feature hierarchies.

mechanism will always result in spellout of a structure that is as big as possible.⁷ To exemplify the mechanism as laid out so far, let me exemplify with an example from English irregular plurals. Let us assume, for the sake of the argument, that the structure of a noun in English is something like $[(\text{PL})[n[\sqrt{\text{root}}]]]$, with the plural head being absent in the singular. Let us further assume the lexicon to consist of the following elements:

(16) List of LTS

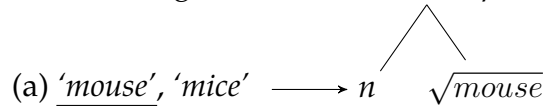
- a. $-s \Leftrightarrow '[\text{PL}]'$
- b. $\text{mouse} \Leftrightarrow '[n[\sqrt{\text{mouse}}]]'$
- c. $\text{mice} \Leftrightarrow '[\text{PL}[n[\sqrt{\text{mouse}}]]]'$
- d. $\text{elephant} \Leftrightarrow '[n[\sqrt{\text{elephant}}]]'$
- e. $\text{sheep} \Leftrightarrow '[\text{PL}[n[\sqrt{\text{sheep}}]]]'$

The six singular and plural forms are derived as in (17). In (17a), both '*mouse*' and '*mice*' are possible candidates, but '*mice*' includes an unused feature PL , thus loses to '*mouse*' due to the EP, indicated by the underscoring of the winning candidate. In (17b), in the other hand, '*mouse*' also wins in the first cycle, but is overwritten at the next cycle by '*mice*', now the only candidate. In contrast, the plural of elephant, in (17d), results in bi-morphemicity, because at point (b) there is no LTS available that could spell out the bigger structure, i.e. the lack of a bigger structure that could be spelled out determines (a) as the *point of effective spellout*. The tree structure is replaced by phonological material, and the process repeats; now '-s' is the only suffix that is a possible candidate for $[\text{PL}]$, as in (17e).

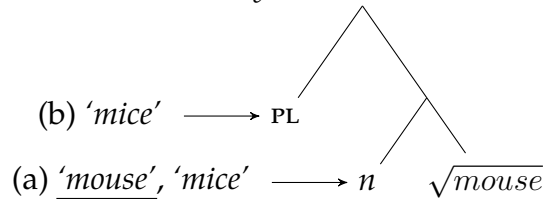
⁷It seems to me that the assumption of Spellout after any given application of Merge has many possible implications for the nature of Agree. As exploring those is outside the scope of this thesis, I remain, as stated above, agnostic about the non-interface aspects of Nanosyntax and therefore to the question of its timing; while I assume that Nanosyntax operates cyclically and bottom up, in a manner that parallels that of syntactic derivation, I am here indifferent to the exact moment(s) at which lexical access happens. So-called "spellout driven movement" plays no significant role for my analysis, but is crucial to aspects of the theory explored elsewhere. In contrast all aspects employed here are compatible with a purely post-syntactic morphology.

Finally, in (17f,g) we see the superset principle at work: Although ‘*sheep*’ contains unused material in (17f) (namely [PL]), it is the only candidate, thus spells out the structure. In (17g), it is so at both points, (a) and (b), and therefore overwrites itself.

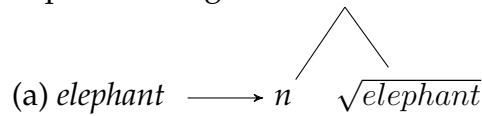
- (17) a. Mouse – Singular: *Elsewhere Principle*⁸



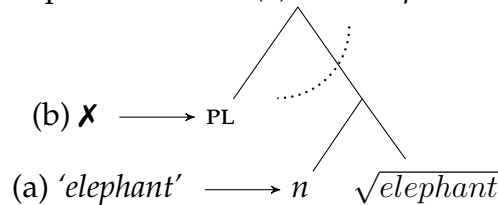
- b. Mouse – Plural: *Cyclic Overwrite*



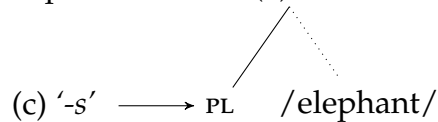
- c. Elephant – Singular



- d. Elephant – Plural (1): *Bi-Morphemicity*

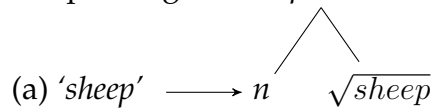


- e. Elephant – Plural (2)

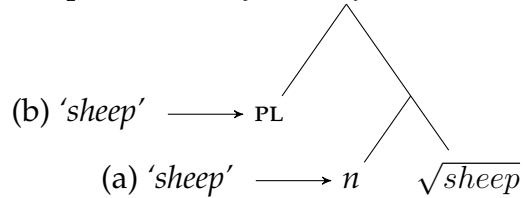


⁸Whenever I use this annotation, the pointing arrow, of course, is about the respective point in the cyclic spellout, i.e. the head as well as its sister, not the terminal only.

f. Sheep – Singular: *Superset Principle*



g. Sheep – Plural: *Cyclic (Self-)Overwrite*



4.4 Syncretisms – One Dimension

Empirically, the ideas described above can be deployed to account for syncretism effects such as those described by the universal case contiguity from Caha (2009):

(18) Universal (Case) Contiguity

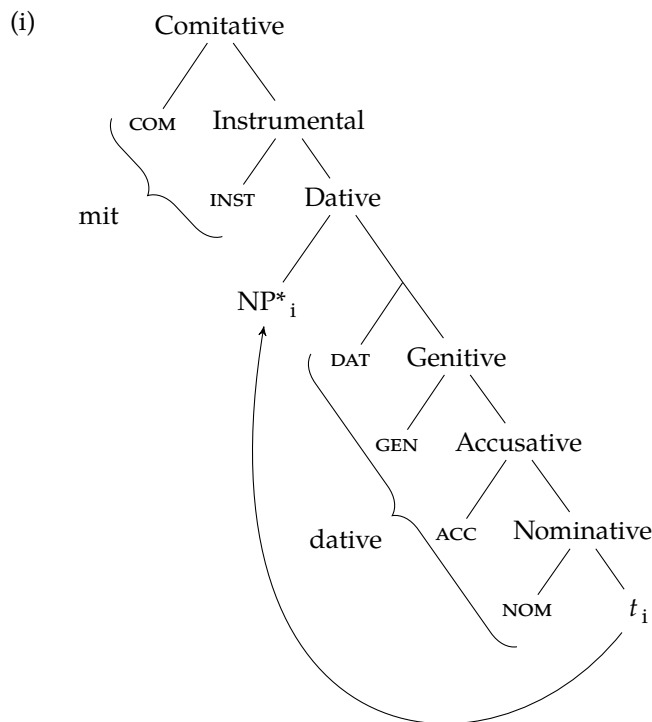
- a. Non-accidental case syncretism targets contiguous regions in a sequence invariant across languages.
- b. The Case sequence: NOM – ACC – GEN – DAT – INS – COM

Caha (2009, p. 49, his (72))

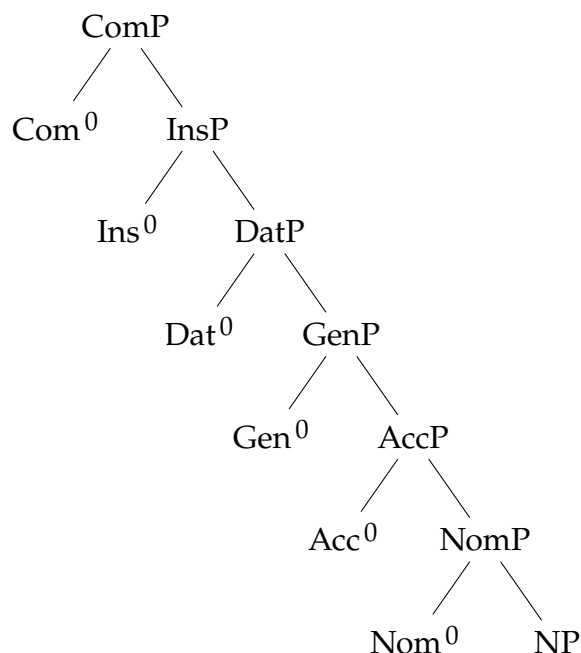
Caha interprets this empirical generalization to mean that case is a functional

sequence, with any case on the sequence containing the one to its left, as in (19).⁹ The difference between cases is thus not one of quality, but rather one of syntactic size.

⁹ The picture is more complex and more interesting than this alone, involving more case structures and also a way to derive prepositional vs suffixal case spellout by means of NP-movement into a case head's specifier: The DP's sister will be spelled out as a suffix, whereas the higher heads will be spelled out as a preposition; the generalizations derived from the case structure above hold over these movement derived spellouts in general. German '*mit*' (with), for example, which can spell out Comitative and Instrumental and co-occurs with Dative marking on the DP. The fact that Instrumental is spelled out by the same item as the Comitative is due to the superset and the absence of a smaller item in German; the fact that the case on the DP is Dative is because [Spec, Dat⁰] is the highest position German DPs move to, cf. (i). Note that the case features having specifier positions is an argument strongly supporting a syntactic analysis of them as heads, disposing of the difference between a feature and a head.



(19) Case Structure



Any non-accidental syncretism¹⁰ in this system can be derived only by means of the superset principle and the EP: A given form (say Dative) can spread into a smaller case (say Genitive) only if no more specific competitor exists. So called *A-B-A syncretisms, violating the generalization in (18), cannot be generated by the system. Take a hypothetical paradigm that would not confirm to the generalization, as in table 4.1:

Case	Exponent
NOM	A
ACC	B
GEN	A

Table 4.1: Hypothetical A-B-A syncretism

By the way spellout operates, laid out above, the paradigm (assuming (19)

¹⁰An accidental syncretism being one with two homophonous items that lexicalize different structures.

to be indeed the correct analysis of the underlying structure) tells us, that the minimal size of A must be $A \Leftrightarrow '[gen[acc[nom]]]'$; otherwise it would not be a candidate for insertion when we need to spell out a genitive structure. By the same logic, we can conclude that B is minimally $B \Leftrightarrow '[acc[nom]]'$. By the Superset Principle they are therefore both candidates for insertion into the nominative. B , however has only one extra feature, whereas A has two, i.e. B is more specific, thus wins, in accordance with the EP.¹¹

4.5 Pointers – Multidimensional Syncretisms

Caha & Pantcheva (2012), following a 2011 proposal from a research seminar taught by Michal Starke, introduce *Pointers*, a tool to “preserve contiguity in a non-linear paradigm” (Slide 174), i.e. to derive certain L-shaped syncretisms in bi-dimensional paradigms. They follow Starke’s proposal that “Lexical entries can contain a pointer to an existing lexical entry” (S. 161).

In this section I will briefly recap (parts of) their argument. I will then slightly re-interpret their conception of a Pointer in a way that is in line with their application, but considers Pointers to potentially hold between domains (e.g. Case and P, see below) rather than between two LTSs.

¹¹Contrast this with the generative power of a Distributed Morphology approach that decomposes cases into binary features, e.g. Müller (2004, p. 201) – whose conceptualization of case structure is used by Lomashvili & Harley (2011, p. 242), see section 3.3 –, for whom the Russian cases are derived from three binary features, e.g. allowing for a natural class [+subj] to potentially create a NOM-GEN-INST syncretism to the exclusion of ACC, DAT, LOC.

Case	Features
Nominative	+subj, –gov, –obl
Accusative	–subj, +gov, –obl
Dative	–subj, +gov, +obl
Genitive	+subj, +gov, +obl
Instrumental	+subj, –gov, +obl
Locative	–subj, –gov, +obl

4.5.1 Case Structure & Blansitt's Generalization

Caha & Pantcheva (2012) aim to understand a typological generalization due to Blansitt (1988), given in (20):

(20) *Blansitt's Generalization*

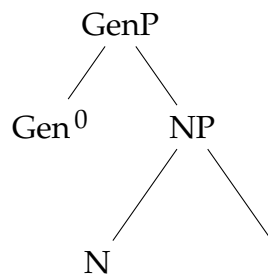
If Locative = Dative, then so must Allative.

Blansitt (1988), cited after Caha & Pantcheva (2012), Slide 137

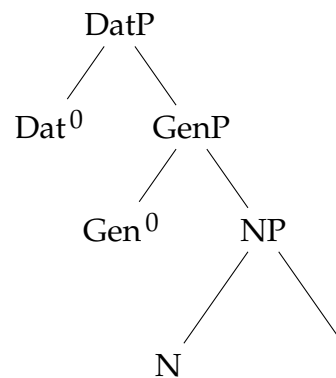
They begin their argument with a cross-linguistic analysis of the relevant cases and their internal structure, proposing that Locative and Allative are related to Genitive and Dative, respectively, in being composed of the latter ones plus an embedded PP. Their results are based on a study of morpheme order, multi- vs monomorphemic spellouts of the cases, noun-type effects and AdjP intervention effects. Since the details of case are not under discussion here I refer the reader to the original publication for the intriguing details, and merely give the results of the first step of their argument in (21):¹²

(21)

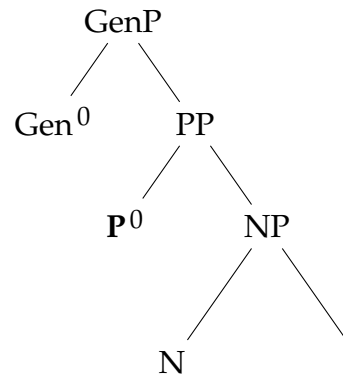
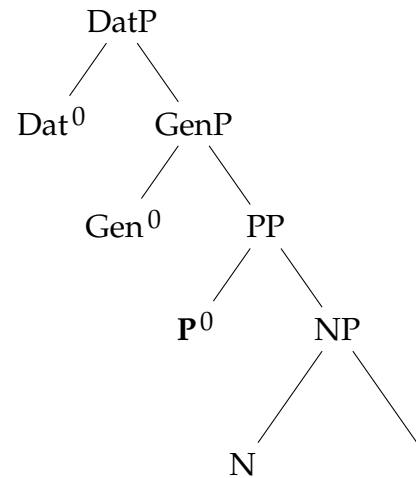
a. *Genitive*



b. *Dative*



¹²In line with Caha (2009) I assume that GEN should be taken to be a shorthand for a structure [GEN[ACC[NOM]]].

c. *Locative*

d. *Allative*


Having established that the relation between these four cases is therefore a two-dimensional paradigm, with the dimensions case (\pm presence of Dat) and preposition (\pm presence of P), they explore the types of syncretisms attested; summarized in the tables 4.2–4.5 (cf. slide 133).

	PP	DP
STATE	Loc	Gen
CHANGE	All	Dat

Table 4.2: Vertical Syncretism (*Greek, Romanian*)

	PP	DP
STATE	Loc	Gen
CHANGE	All	Dat

Table 4.3: Horizontal Syncretism (*Basque, Sinhala, N. Saami, Malayalam*)

	PP	DP
STATE	Loc	Gen
CHANGE	All	Dat

Table 4.4: L-Syncretism (*Japanese*)

	PP	DP
STATE	Loc	Gen
CHANGE	All	Dat

Table 4.5: *Diagonal/Inverted L-Syncretism (*Unattested*)

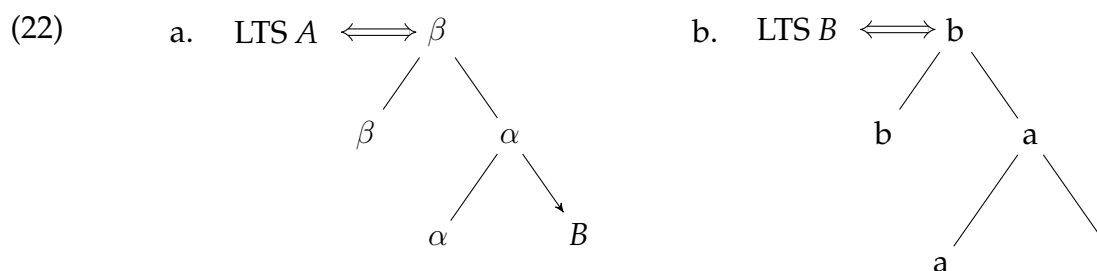
The two unattested syncretism types in table 4.5 (Loc=Dat, Loc=Gen=Dat) are, of course, precisely those missing according to Blasitt’s generalization.

4.5.2 Lexicalization – Deriving the Gap

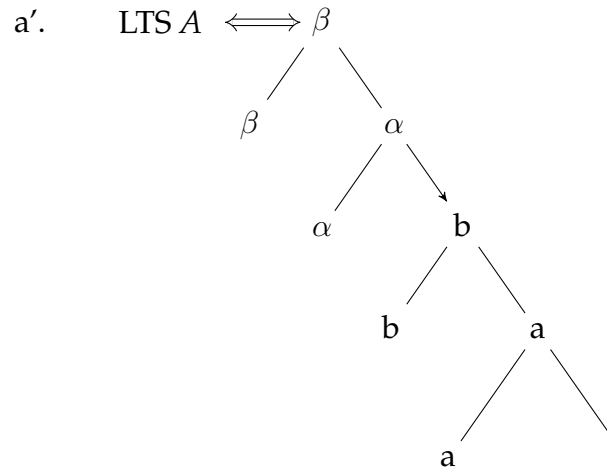
Any Nanosyntax analysis without pointers, as introduced above, faces a problem when assuming the Allative structure in (2d): Allative and Dative are not in a subset relation (in the sense of the subset principle), therefore the approach would wrongly predict a syncretism between the two to be impossible.

Their solution to this problem is based on an idea by Michal Starke, namely that an LTS can contain a pointer to another LTS; this solution to the basic problem (of how there can be an Allative-Dative syncretism in the first place) will also, without any additional tools, derive the necessity of Blansitt’s generalization.

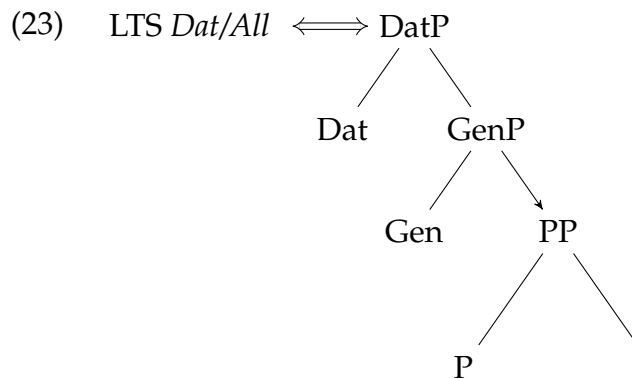
The effect of a pointer is, simply stated, to modify the effects of the Superset Principle in a way that allows for two possible points of application, such that contiguity is required to hold over the element containing pointer (including its relationship to the pointed to element) as well as the structure pointed to, but not over the complete structure: To exemplify — let there be an LTS $A \Leftrightarrow '[\alpha[\beta[\rightarrow B]]]'$, with B being a second LTS $B \Leftrightarrow '[a[b]]'$, as in (22). Then this LTS A is a candidate for spellout for the following structures: Firstly the possible spellouts for B and A themselves, namely $[a[b]]$, $[b]$ (with A shrunk to nothing)¹³ and $[\alpha[\beta]]$ (with B shrunk to nothing), $[\beta]$. Secondly, A is a candidate for the respective combinations: $[\beta[a[b]]]$, $[\alpha[\beta[a[b]]]]$, $[\beta[b]]$, $[\alpha[\beta[b]]]$.



¹³In an actual spellout of these two, B would obviously be the winning candidate due to the EP. Nonetheless A is a candidate.



Applying this to the problem of Dative-Allative Syncretisms, an LTS that can spell out both Dative and Allative, necessarily must be the structure in (23);¹⁴ without the pointer it could not spell out a Dative, with less material it could spell out neither Dative nor Allative.



This immediately explains Blansitt's generalization as well:

If a given language shows a Locative-Dative syncretism, this means it must be able to spell out at least a structure $[Gen[P]]$, as well as a structure $[Dat[Gen]]$, which translates into the same minimally required (23) structure, i.e. a possible candidate for spellout of Allative $[Dat[Gen[P]]]$. An alternative candidate for Allatives that might bleed insertion of this Dative-Locative marker would be one

¹⁴It could, of course, technically contain more material either on top of P or Dat.

without a pointer, $\text{ALL} \Leftrightarrow '[\text{Dat}[\text{Gen}[P]]]'$, winning due to being more specific. This candidate, however, would, for the same reason, win when the structure to be spelled out is a locative $[\text{Gen}[P]]$, resulting in a Locative-Allative syncretism to the exclusion of dative. The system therefore is incapable of generating the nonexistent type of syncretism.

4.5.3 A Minor Reinterpretation

Pointers are an instrument proposed to explain the possible structures of “multidimensional” syncretisms in a spellout theory based on phrasal spellout. According to Caha & Pantcheva (2012) (i.e. their interpretation of Starke’s idea) this is achieved by pointing to another LTS. The way it is actually used in Caha & Pantcheva (2012), however, is more in line with the given purpose: Pointers are a relationship within an LTS that can hold between different domains, such as Case and a spatial preposition, i.e. those apparent paradigm “dimensions” across which certain syncretic structures are possible. Pointers would be unexpected within a certain domain, e.g. $*'[\text{ACC} \rightarrow [\text{NOM}]]'$. I will therefore adopt as the more restrictive hypothesis the claim that pointers are only allowed between domains, not within them. I assume that the concept “domain” can be reduced to the question of subcategorization: Any head that has strict subcategorizational requirements, i.e. any head that can and must embed a specific other head, cannot embed a pointer in an LTS: Since ACC can only ever embed a phrase headed by NOM it cannot embed a pointer. By contrast, NOM can embed different types and sizes of phrases, such as a PP or a DP in Caha & Pantcheva (2012). The same will be true for the φ -structures to be introduced later on, such that PLURAL can embed person structures of different sizes, allowing for pointers, but within the person structure no pointer is allowed.

4.6 Summary

This Chapter introduced the Spellout mechanics as assumed by Nanosyntax and insofar I make use of them. These have been introduced as operating on spans, in a cyclically bottom-up fashion, subject to the Superset Principle as well as an appropriate implementation of the Elsewhere Principle. I have also introduced Pointers as an instrument that explains the structure of multi-dimensional paradigms.

In the next Chapter I will introduce a proposal for the kinds of structures that constitute the relevant phi-structures, suggesting that languages have certain universally fixed structures, but can select among different options for others.¹⁵ The proposed phi-structure and the mechanisms introduced here will then be shown to be capable of deriving the Laz and Georgian data without any additional machinery.

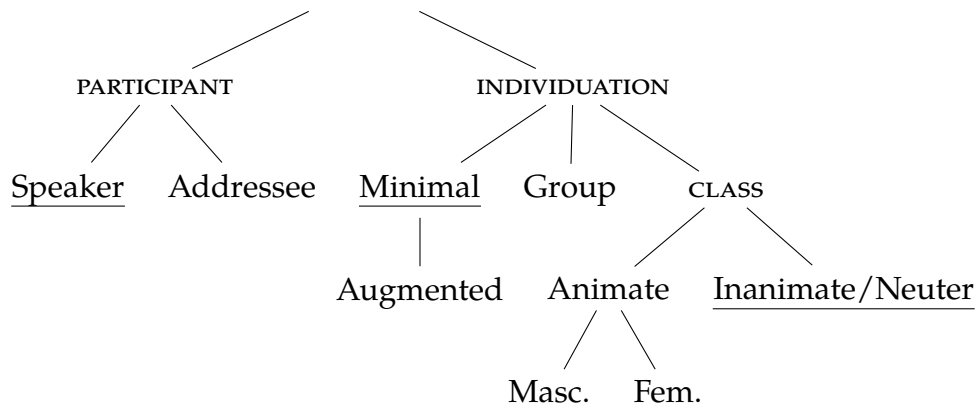
¹⁵Nanosyntax is usually taken as a form of cartography, i.e. with respect to the question of how much universal functional material there is, it falls strongly on one side. For the present proposal very few features (if any) do necessarily have to be taken as universal, instead the important part I employ is the mechanism for spellout of spans as introduced above.

Chapter 5

Towards a Nanosyntax of Phi

In an extensive study of pronoun systems, Harley & Ritter (2002b,a) develop a feature geometry for person features. Except for Halle & Marantz (1993), all of the previous approaches discussed above make use of this geometry and while I will reject their proposals for agreement, I will adopt an interpretation of the structure that is very similar to theirs.

(24) Referring Expression (=Agreement/Pronoun)



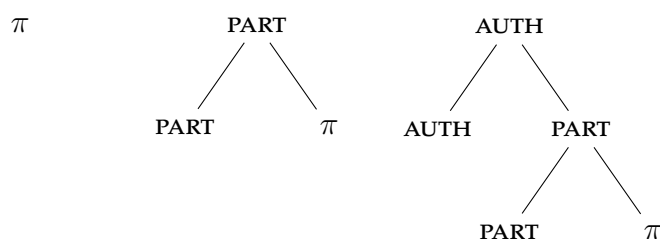
Harley & Ritter (2002b, p. 25, their (3))

A crucial feature of the structure in (24) lends itself well to a nanosyntactic reinterpretation: Underspecification. Harley & Ritter (2002b) claim, for example,

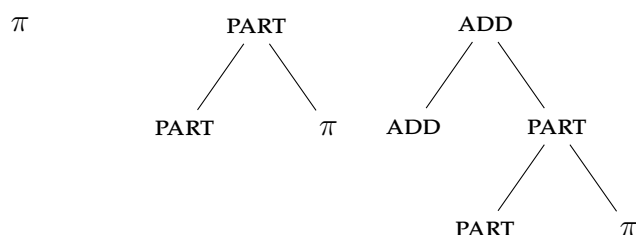
that third person is characterized simply by the absence of the PARTICIPANT node. The underlined nodes represent default interpretations of the higher up (small caps) node: “Minimal”, i.e. singular, is the default interpretation for number, if no Group feature is specified.

A language can presumably select either one of the features Speaker¹ / Addressee, or both (to derive first person inclusive).² A resulting interpretation of the above geometry in Nanosyntax could thus look like the feature geometry Béjar (2003) proposed, except genuinely syntactic, i.e. not a feature bundle, but binary branching structure. We therefore arrive at (25) or (26) for the structure of person:

(25) Third Person Second Person First Person



(26) Third Person First Person Second Person



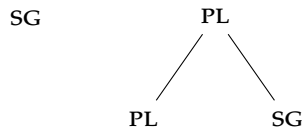
The same logic can be applied to number. There is evidence for plurality being a complex structure, plausibly at least $[pl[sg]]$ (see the section 5.1), but as

¹Both “author” and “speaker” have been used in the literature; I will generally use “author”.

²Cf. e.g. Chomsky (2000, p. 100f), suggesting that UG makes available a set F of features, a subset $[F]$ of which is picked in a one-time selection by a given language L .

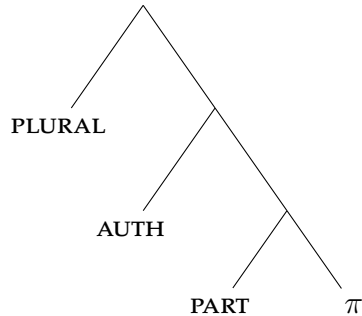
a general shorthand for Laz and Georgian, which make no crucial reference to singular, I will denote singular as fully underspecified, i.e. dropping the [sg] feature from the representations.³

(27) Singular Plural



There is some syntactic evidence that number is represented as a functional category above N (see e.g. Ritter, 1993; Bernstein, 2001, and references therein), and I take the corresponding meaning in the present approach to be that number is merged on top of person, such that a first person plural argument in an AUTH selecting language would thus be a structure such as (28) (using the above-mentioned shorthand):

(28) First Person Plural



In the remainder of this chapter I will exemplify the way this structure in combination with the spellout mechanism introduced previously can be used to derive syncretisms in simple cases of pronoun and agreement systems. I will also

³I will tacitly assume the plural to contain the singular, but make no reference to this outside of this section. I am also unconcerned with the semantics of “singular” here in the sense that some proposals e.g. suggest that bearing both a singular-like feature and a plural feature derives the dual. *Singular interpretation* might for example be the default interpretation of a feature better termed “countability”; it is the morpho-syntactic containment relationship rather than the semantics that is of interest here.

demonstrate that the mechanism captures insights about the paradigm structure in relation to spellout of a certain structure with one or two morphemes. In the next chapter, the combination of the proposals for spellout and structure will be combined in order to account for the bi-argumental agreement structures of Laz and Georgian.

5.1 Simple Cases

In this part I will give sample derivations of a few simple (i.e. one argument) pronominal and agreement paradigms to lay out the general applicability of the structure proposed.⁴

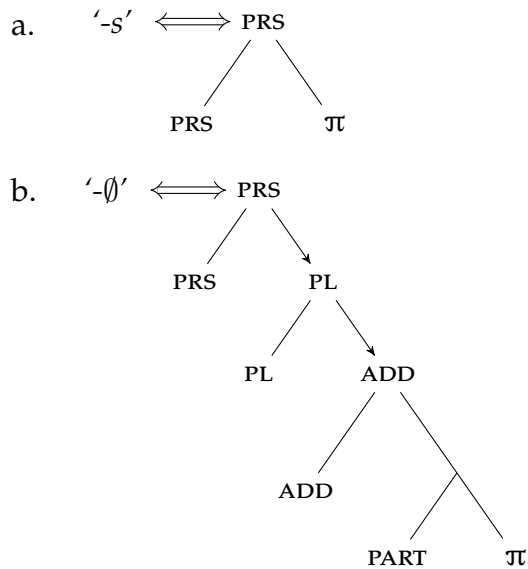
5.1.1 English

For the most part, English does not show much agreement morphology; its most curious aspect is probably the fact that it marks third person singular in the present tense, but no other person. While unusual in (phonological) form, the paradigm structure itself is a simple A/B/B pattern in the singular, with the plural being B/B/B. We can easily derive this the following way:

	SG	PL
3	-s	-∅
1	-∅	-∅
2	-∅	-∅

Table 5.1: English – Present Tense

⁴It has somewhat belatedly come to my attention that Vanden Wyngaerd (2014) similarly applies person/number decomposition and Nanosyntax and arrives at many of the same conclusions for pronouns. I refer the reader for a wider application of these ideas.

(29) *English Present Tense*

Nothing much needs to be said about the derivation of these forms: Due to the pointers, (29b) is simply compatible with all present forms, as it allows spellout of sub-structures of both the fully specified *ADD*, as well as singular and plural. The reason (29a) wins in 3.SG.PRS is simply the EP.

The English copula is a more interesting case. In the singular the paradigm has a structure *A/B/C*, in the plural *C/C/C*. Note that this is the reason I assume English to have selected second person as the marked local person; otherwise the paradigm would not be derivable.⁵ We can capture the English Present Tense paradigm of the copula by assuming the following structures:⁶

⁵If English had second person as the underspecified structure, we would be forced to assume that minimally *am* \iff $'[\text{AUTH}[\text{PART}[\pi]]]'$, and *are* \iff $'[\text{PL}[\text{AUTH}[\text{PART}[\pi]]]]'$, possibly with a pointer between the number and person features. Either way application of the EP would result in *'am'* spreading into the second person singular.

In a similar vein, assuming *AUTHOR* to be the specified structure would leave us with an open question about how to resolve the conflict between *I* \iff $'[\text{AUTH}[\text{PART}[\pi]]]'$ and *you* \iff $'[\text{PL}[\text{PART}[\pi]]]'$, as both would contain the same number of junk features when spelling out second person singular, a problem we do not run into if we assume English to have selected *ADD*, not *AUTH*.

⁶Note that I am not making any claims regarding the internal structure of the verb, tense, aspect etc. I therefore represent them in a neutral way.

	SG	PL
3	is	are
1	am	are
2	are	are

Table 5.2: English Copula – Present Tense

(30) *English Copula – Present Tense*

- a. $am \Leftrightarrow '[BE+PRS[PART[\pi]]]'$
 b. $is \Leftrightarrow '[BE+PRS[\pi]]'$
 c. $are \Leftrightarrow '[BE+PRS \rightarrow [PL \rightarrow [ADD[PART[\pi]]]]]'$

(30a,b) always win in their respective contexts due to the EP: They spell out all features and bear no superfluous ones. In the Plural forms, cyclic overwrite will always cause (30c) to be able to spell out a bigger structure, thus win, albeit carrying junk person features. Similarly a junk plural feature allows it to spell out a bigger constituent, overwriting a previous spellout of $[PART[\pi]]$ by (30a).

In the past tense the English copula shows an additional syncretism between 3.SG and 1.SG, again in line with English being an ADD selecting language.

	SG	PL
3	was	were
1	was	were
2	were	were

Table 5.3: English Copula – Past Tense

We can derive this by simply assuming that the past tense lacks an LTS corresponding to 'is' (30b) in the past and a pointer in the first person form, as in (31), allowing 'was' to spread into the smaller 3.SG by means of the superset principle.

(31) *English Copula – Past Tense*⁷

- a. *was* \Leftrightarrow $'[BE+PST \rightarrow [PART[\pi]]]'$
- b. *were* \Leftrightarrow $'[BE+PST \rightarrow [PL \rightarrow [ADD[PART[\pi]]]]]'$

5.1.2 Turkish

Turkish is a standard example of an agglutinative language, but its verbal and pronominal paradigms still show some syncretism effects. In the present approach these can be captured by suggesting that third person spellout spreads into the number domain in a way that local person does not.

	SG	PL
3	o	o-nlar
2	s-en	s-iz
1	b-en	b-iz

Table 5.4: Turkish – Personal Pronouns

	SG	PL
3	-∅	-lar
2	-sun	-sun-uz
1	-um	-uz

Table 5.5: Turkish – Person Agreement

I take the pronouns in table 5.4 to show evidence for a complex number phrase: While third person singular spells out $[sg[\pi]]$, the local arguments spell out person features (1: 'b-', 2: 's-') and number features (SG: '-en', PL: '-iz') individually. It is only the person agreement, however, that gives us evidence that Turkish is among the ADD selecting languages: There is a partial syncretism in that '-uz' is able to spell out first person plural, and spreads into second person plural. It does, however, not appear to spell out the person features of second person, as evidenced by the fact that the singular '-sun' also spreads into the plural form. We can analyze the Turkish pronouns as in (32), deriving the partial syncretisms as suggested above: While third person spells out the singular feature together

⁷It may technically be desirable to analyze these forms as bi-morphemic, i.e. '*w-as*' and '*w-ere*'. This again would require an analysis of the structure BE+T, not under discussion here.

with $[\pi]$, as evidenced by its monomorphemic form, resulting in ‘-nlar’ spelling out only the feature $[\text{PL}]$, but notably not the whole plural structure $[\text{PL}[\text{SG}]]$, the opposite is true in local arguments, where ‘-en’ spells out $[\text{SG}]$, and ‘-iz’ spells out the whole plural structure, resulting in the partial syncretisms of the local pronouns and bimorphemic structures in both singular and plural.

(32) *Turkish Pronouns*

- a. $o \Leftrightarrow '[\text{SG}[\pi]]'$
- b. $-nlar \Leftrightarrow '[\text{PL}]'$
- c. $b- \Leftrightarrow '[\text{PART}[\pi]]'$
- d. $s- \Leftrightarrow '[\text{ADD}[\text{PART}[\pi]]]'$
- e. $-en \Leftrightarrow '[\text{SG}]'$
- f. $-iz \Leftrightarrow '[\text{PL}[\text{SG}]]'$

The same pattern occurs in the Turkish agreement, table 5.5, with one notable exception: The same suffix ‘-uz’ that spells out plural in 2.PL spells out the whole person-number structure in 1.PL. We can account for this by suggesting that this structure spells out both the plural and the (underspecified) first person structure: Since no alternative candidate can spell out $[\text{PL}[\text{SG}]]$, it spells out number in second person, but ‘-sun’ is not overwritten, because ‘-uz’ cannot spell out a higher node. In contrast, we derive the difference between the agreement and the pronominal system by cyclic overwrite: Since ‘-uz’ can spell out a higher node that includes all features the 1.SG maker ‘-um’ spells out, it gets cyclically overwritten:⁸

⁸Note that in this system 2.SG ends up being ‘-sun- \emptyset ’, with the third person singular spreading into the second person singular as a partial syncretism to spell out $[\text{SG}]$; in the second person plural ‘-uz’ cyclically overwrites ‘- \emptyset ’.

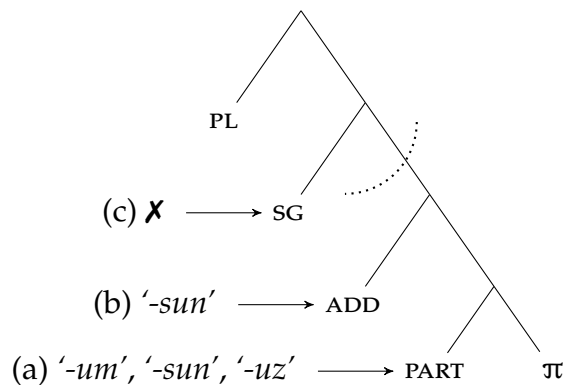
(33) *Turkish Agreement*

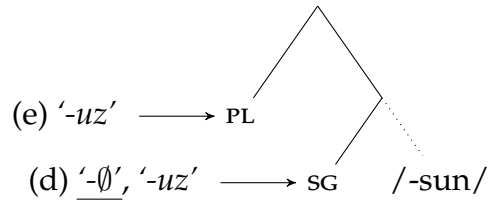
- a. $-\emptyset \Leftrightarrow '[SG \rightarrow [\pi]]'$
- b. $-lar \Leftrightarrow '[PL]'$
- c. $-um \Leftrightarrow '[SG[PART[\pi]]]'$
- d. $-sun \Leftrightarrow '[ADD[PART[\pi]]]'$
- e. $-uz \Leftrightarrow '[PL[SG \rightarrow [PART[\pi]]]]'$

A second person plural then is derived as in (34): The first point of effective spellout is determined by the absence of a superset at point (c), resulting in the candidate *'-sun'* being inserted at point (b), i.e. the biggest structure that can receive a spellout. In turn, this creates a new structure $[PL[SG]]$ for a second spellout, with *'-uz'* being the only candidate that can spell out the whole structure. Note that the system simultaneously allows us to explain syncretisms, splits between third and local person and (although this is partly obscured by zero-suffixes) mono- vs bi-morphemic spellout.

(34) *Second Person Plural*

a. *First Step*



b. *Second Step*

I now turn to the pronominal inventory of Seychelles Creole, a language with a 2=3 syncretism, and show how these, too, fit into the system proposed.

5.1.3 Seychelles Creole

The pronoun system of Seychelles Creole, table 5.6, exhibits three syncretisms in its pronominal paradigm. Second person singular is syncretic between the subject and the non-subject form⁹. First and third person singular are partly (*'i'*, *'m'*) syncretic between subject and non-subject form. The plural forms – like second person singular – are all syncretic between subject and non-subject forms. Lastly, there is a general syncretism between between 2.PL and 3.PL:

	Subject	Non-Subject
1.SG	mô	mua
2.SG	u	u
3.SG	i	li
1.PL	nu	nu
2.PL	zot	zot
3.PL	zot	zot

Table 5.6: Seychelles Creole – Pronouns

Corne (1977, p. 34)

From the fact that second person and third person are syncretic to the exclusion of first person, we can conclude that Seychelles Creole is a AUTH selecting

⁹I will here take these to correspond to nominative and accusative, though the whole story may be more complex than that.

language, i.e. second person is the underspecified one: The form ‘*zot*’ embeds ‘[PART[π]]’ under a plural structure with a pointer, explaining why it can spread into the third person plural form. The case features on top, however, do not embed a pointer, as can be deduced from the fact that third person singular is complex in the non-subject form (i.e. ‘*zot*’ can only spread along the topmost dimension, case, and the dimension under a pointer, person, but along number only if it does not spell out case at all), with ‘*l-*’ spelling out the accusative feature: ‘*zot*’ cannot spread into 3.SG.ACC because it is not a superset of the whole structure: At the level of case, the plural feature of ‘*zot*’ keeps it from being a contiguous superset. The difference between first person and third person singular can be captured similarly to the Turkish case: ‘*m-*’ does not contain all features, but lacks the case features, resulting in bi-morphemic structures for subject- and non-subject form. Third person singular, on the other hand, is monomorphemic in the subject, but bi-morphemic (containing the monomorphemic form) in the non-subject form, i.e. the second morpheme ‘*l-*’ spells out only [ACC], the other simplex form contains [NOM].¹⁰

(35) *Seychelles Creole Pronouns*

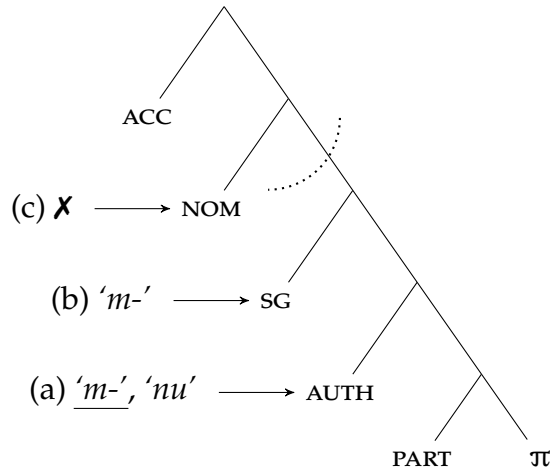
- a. *m-* \Leftrightarrow ‘[SG[AUTH[PART[π]]]]’
- b. *-ô* \Leftrightarrow ‘[NOM]’
- c. *-ua* \Leftrightarrow ‘[ACC[NOM]]’
- d. *i* \Leftrightarrow ‘[NOM[SG[π]]]’
- e. *l-* \Leftrightarrow ‘[ACC]’
- f. *u* \Leftrightarrow ‘[ACC[NOM[SG[PART[π]]]]]’
- g. *nu* \Leftrightarrow ‘[ACC[NOM[PL[SG[AUTH[PART[π]]]]]]]’
- h. *zot* \Leftrightarrow ‘[ACC[NOM[PL[SG \rightarrow [PART[π]]]]]]]’

¹⁰Note again that the inability of forms to spread into certain domains and the patterns of bi- vs mono-morphemicity are captured by a common mechanism.

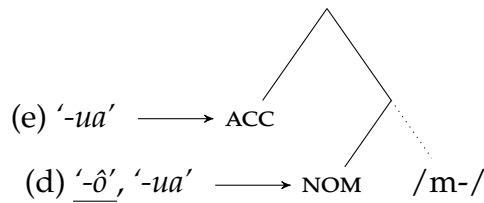
To go through a sample derivation of these forms: Take a first person singular non-subject, as in (36a).

(36) *First Person Singular Non-Subject*

a. *First Step*



b. *Second Step*



At point (a) there are two possible candidates, 'm-' and 'nu'; 'm-' wins due to the EP, indicated by the underlining. The next step in the cyclic spellout, the tree at step (b) only has one candidate left, namely 'm-'. The next step, (c), has no possible candidates. Therefore the previous point, (b) is the *point of effective spellout*, resulting in the winning candidate's insertion; the structure below the dotted arch is replaced by phonological material, resulting in (36b). As there is an LTS that lexicalizes exactly this structure, it wins out at point (e), overwriting an earlier cycle at point (d) where it lost to '-ô' by the EP, as opposed to the nominative, where '-ô' would win as the cycle (e) would be absent.

5.2 Summary

In this chapter I proposed a nanosyntactic adaptation of the relevant sub-parts of the feature geometry proposed by Harley & Ritter (2002b). I have shown its applicability to partial and full syncretisms in a small sample of paradigms and demonstrated the general mechanics of the system. In the next chapter I will extend the structure to accommodate the agreement paradigms from Laz and Georgian and demonstrate how their patterns can be derived analogously to the comparatively simple ones above.

Chapter 6

South Caucasian Spanning

In this chapter I will address the paradigms from Laz and Georgian. I will begin by sidestepping with an argument about third person non-subjects: Recall from Chapter 2 that in both Laz and Georgian the forms with third person objects were always fully syncretic between singular and plural objects. Section 6.1 will provide an argument against treating this as a spellout phenomenon; whatever the reasons for third person objects to not trigger plural agreement will then be set aside, and I will treat the relevant structures as not containing a plural feature throughout the remainder of this thesis. Following that point I will discuss the Laz paradigms in section 6.2, discussing the structure I assume it to spell out as well as the lexicalizations. We will see that by assuming the agreement structure to mirror the syntactic structure in that object features are lower than subject features, the morphological facts can be treated in the same fashion as those discussed above. I will then turn to Georgian in 6.3, beginning by comparing the present tense paradigms of both languages and deriving the differences by means of identical structure but slightly different lexicalizations. I will then turn to a problem in the Georgian imperfect, and show that there is an interesting generalization to be made about the structure of the third person singular subject marker and its behavior in combination with ‘-t’.

6.1 3rd Person Objects – Inability to trigger number agreement

In Pazar Laz¹ the ability of third person arguments to trigger plural agreement is restricted by two factors, animacy and grammatical function. This contrasts with local arguments which trigger number agreement whenever they trigger person agreement. In principle, both internal and external arguments can trigger plural agreement in Pazar Laz as long as they are subjects, as is shown by the following examples:²

(37) Unergative

bere-pe-k dits-es
child-PL-ERG laugh-3.PST.PL

‘The children laughed.’

(38) Unaccusative

bere-pe-∅ dʒ-ol-es
child-PL-NOM PV-fall-3.PST.PL

‘The children fell down.’

In contrast, however, inanimates are never able to trigger agreement for plural:

(39) Inanimate

tʃitab-epe-∅ dʒ-ol-u/-es*
book-PL-NOM PV-fall-3.PST/*-3.PST.PL

‘The books fell down.’

Plural agreement is also restricted for third person animate non-subjects, be they direct (41), or indirect objects (42).³

¹The argument applies to Georgian as well, but for the sake of consistency I will use data from Laz only.

²In both transitives and intransitives, Pazar Laz arguments are assigned ergative if they are external arguments and nominative if they are internal arguments.

³Note that dative subjects (occurring, e.g. with a modal structure conveying ability), which I do not treat in this thesis, can in fact trigger plural agreement, again suggesting that grammatical function is the relevant factor:

(40) *k'otʃ-epe-s si ko-∅-a-dzir-es*
man-PL-DAT 2SG PV-3P-APPL-find-3.PST.PL

‘The men could find you.’

(41) Direct Object

si taleb-epe-∅ ko-dzir-i(-t)*
 2SG student-PL-NOM PV-find-L.PST(*-PL)

‘You found the students.’

(42) Indirect Object

doxmeli kotʃi-k fakir-epe-s dʒentʃʼareri var u-ndʒyon-u/-es*
 rich man-ERG poor-PL-DAT money NEG APPL.3-send-3.PST/*-3.PST.PL

‘The rich man did not send money to the poor.’

I believe this calls for an independent account, not a treatment in the morphosyntactic terms I develop here. In fact, both number and grammatical function show a typological relation to what has variably been called the Silverstein Scale, D-Hierarchy, or Animacy Hierarchy:⁴

(43) *The D-Hierarchy*

1Pro > 2Pro > 3Pro > Proper Noun/Kin > Human > Animate >
 Inanimate

Kiparsky (2008)

Corbett (2000), Chapters 3 & 4, outlines that the expression of number distinctions must target a language specific upper part (possibly all or no parts) of the hierarchy:⁵

(44) “The singular–plural distinction in a given language must affect a top segment of the Animacy Hierarchy.”

Corbett (2000), p. 56

⁴See, e.g. Silverstein (1976) for Ergative splits; Kiparsky (2008) for an argument in favor of this hierarchy being part of Universal Grammar.

⁵See also Haspelmath (2011).

Aissen (1999), in an optimality theoretic approach, links the same hierarchy to grammatical function, deriving phenomena such as obligatory voice alternations or direction systems in this way.

Kallulli (2015) additionally relates the D-Hierarchy to differential object marking, clitic doubling (which we might consider to be akin to object agreement) and Person-Case Constraint (PCC) effects.

I believe this is sufficient evidence to suggest that the inability of third person non-subjects to trigger plural agreement is a phenomenon in its own right. Ultimately it ought to be derived from a unified account to the set of phenomena it ties into, the systematic ways number and grammatical function are intertwined with the D-Hierarchy, whatever its status in the theory of UG may turn out to be. In this thesis I will then take the third person non-subject's inability to trigger plural agreement as a fact in need of an explanation independent of my own analysis.

6.2 The Structure – Pazar Laz

In the previous chapters I have sketched an approach to constituency based spellout and the structure of φ -features. In this section I will re-examine the data introduced in section 2, repeated here in slightly modified form, taking into account the argument from section 6.1.

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- -i	m- -i-t	m- -u	m- -es
1Pl	—	—	m- -i-t	m- -i-t	m- -es	m- -es
2Sg	g- -i	g- -i-t	—	—	g- -u	g- -es
2Pl	g- -i-t	g- -i-t	—	—	g- -es	g- -es
3	v- -i	v- -i-t	-i	-i-t	-u	-es

Table 6.1: Laz Verbal Agreement, Past Tense (repeated)

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- \emptyset	m- \emptyset -t	m- -s	m- -an
1Pl	—	—	m- \emptyset -t	m- \emptyset -t	m- -an	m- -an
2Sg	g- \emptyset	g- \emptyset -t	—	—	g- -s	g- -an
2Pl	g- \emptyset -t	g- \emptyset -t	—	—	g- -an	g- -an
3	v- \emptyset	v- \emptyset -t	\emptyset	\emptyset -t	-s	-an

Table 6.2: Laz Verbal Agreement, Present Tense (repeated)

Object Prefixes The prefixes ‘*m-*’ and ‘*g-*’ are the markers with the distribution simplest to describe: Whenever the object is first or second person respectively, these occur, irrespective of the Tense. With respect to constituency they do not tell us much, as $\text{PERSON}_{\text{obj}}$ not forming a constituent would be incompatible with the ideas laid out above in the first place.

Subject Prefix The only prefix making reference to the subject’s features is ‘*v-*’. Like the other two prefixes it is constant across tenses. Describing its distribution, however, has to crucially make reference to a first person subject and a third person object, as ‘*v-*’ does only occur in $1>3$ contexts, but not $1>2$ – suggesting that $\text{PERSON}_{\text{subj}}$ and $\text{PERSON}_{\text{obj}}$ form a constituent, at least in the cases with no available PL feature. Like ‘*m-*’ and ‘*g-*’, this is to the exclusion of the tense domain, as ‘*v-*’ occurs across paradigms; as the contrast $1\text{SG}>3/1\text{PL}>3$ shows, the subject’s plural feature is also outside of this constituent.

Subject, Plurality & Tense In the past tense, Pazar Laz shows three different markers. ‘*-i-*’ occurs whenever the subject is local, ‘*-u-*’ whenever the subject is third person and neither subject nor object are plural, ‘*-es-*’ whenever the subject is third person and either subject or object are plural. ‘*-u-*’ and ‘*-es-*’ have overt counterparts, ‘*-s-*’ and ‘*-an-*’ in the present with the same distribution; ‘*-i-*’ presumably has a zero

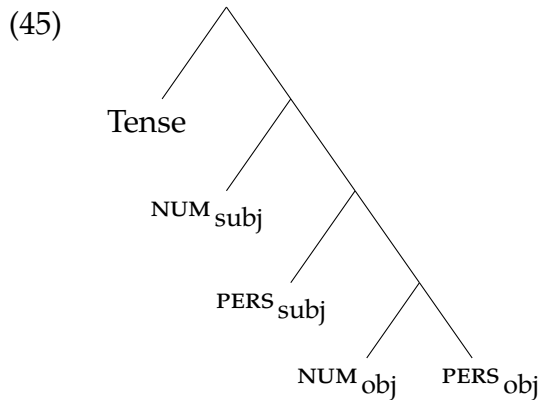
marker counterpart, the distribution of which is not a priori discernible.

The distribution of *'-es' / '-an'* shows that they are able to minimally spell out tense, as that is the only dimension distinguishing these two. The contrast with *'-i'* suggests they likely spell out person features of a third person subject as well. The contrast with *'-u' / '-s'* gives us in argument suggesting that they can spell out a plural feature of either a subject or an object or both, as the symmetry in e.g. 3PL>1SG, 3SG>1PL, 3PL>1PL shows. They are, however, insensitive to the person features of the object as evidenced by the fact that 3.PL>x receives *'-es' / '-an'* irrespective of the object's π -features:

The features/feature structures $\text{NUMBER}_{\text{obj}}$, $\text{NUMBER}_{\text{subj}}$, T and $\text{PERSON}_{\text{subj}}$ then seem to form a constituent to the exclusion of $\text{PERSON}_{\text{obj}}$.

Plural marker *'-t'* The distribution of *'-t'* parallels that of *'-es' / '-an'* in that it spells out plural of subject and/or object when the subject is local. Unlike *'-es' / '-an'*, however, it is invariant across Tense. Instead, Tense is spelled out by *'-i' / '-Ø'* with local subjects.

I argued independently for a constituency relationship of $[\text{NUMBER}[\text{PERSON}]]$ in Chapter 5. Since Tense seems to form a constituent with the subject, but not the object there is only one plausible structure to postulate, namely the one in (45).



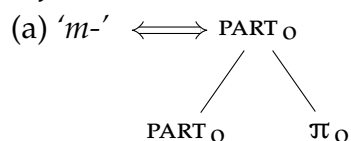
In some sense this structure parallels syntax, a welcome result. We can assume, as per standard analyses, that there is an object agreement probe in the *v* domain,

and a subject agreement probe in the T domain. Presumably the object agreement probe moves to T at PF, low adjoined to the subject probe, i.e. we have a complex head $[T[\# \varphi : \varphi_{\text{subj}}[\# \varphi : \varphi_{\text{obj}}]]$ formed by standard syntactic means.

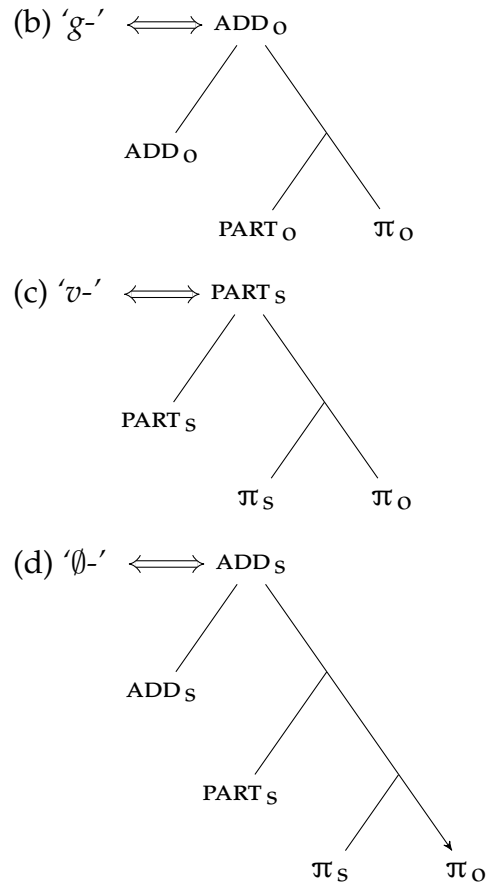
Recall that there is apparent competition between the tense-independent prefixes. We can account for the competition by simply proposing the person lexicalizations in (46), with ‘v-’ lexicalizing subject features on top of third person object features.⁶ Since the object’s person features are the lowest features in the structure, they will be spelled out first. The fact that the apparent first person marker ‘v-’ cannot co-occur with ‘g-’ is simply due to the fact that it is not a first person subject marker, but lexicalizes the whole 1>3 structure.

Note that the specification of ‘v-’ forces the postulation of a zero prefix: The structure $[\pi_S[\pi_O]]$ is present in 2>3 (and 3>3, which we will account for independently) as well, but ‘v-’ does obviously not occur despite being a superset. I therefore postulate (46d). I will later show in passing that this prefix has an overt counterpart in the Georgian copula paradigm. Note that due to the pointer this marker is potentially capable of spelling out the first person in 1>2SG as well (with the object features having been spelled out by ‘g-’).

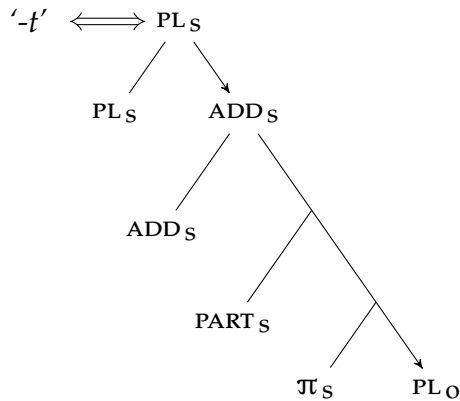
(46) *Prefixes (Laz)*



⁶Note that I include a diacritic on the φ -features to identify subject and object. These should correspond to further features on top of each φ -structure, plausibly case or (a feature of) the probe itself. Since, however, case does not trivially map to subject- or objecthood in either Laz or Georgian, and Case features are not under discussion here, I will use these shorthands. I will briefly discuss the issue in section 7.3.



Next I examine the distribution of '-t'. As for example the syncretism between 1SG>2PL, 1PL>2SG and 1PL>2PL shows, '-t' is able to spell out both the low and the high plural structure, individually or together. It also occurs in both first and second person subject cases, suggesting that it lexicalizes the whole span with pointers between the three domains: The higher pointer is evidenced by the fact that '-t' can spell out 1PL>2PL, i.e. a structure without the ADD feature that still spells out the higher PL. The lower one can be deduced from the fact that it can spell out 1PL>2SG, a structure without the lower PL.

(47) *The Plural Suffix ‘-t’ (Laz)*

At this point the apparatus is in place sufficiently to describe the spellout of the φ -features in structures with local subjects; we simply have to additionally assume that ‘-i’ and ‘-∅’ spell out past and present tense respectively. The affixes ‘∅-’, ‘v-’ and ‘-t’ spell out local subject features across all cases, leaving only the tense domain accessible to ‘-i’ and ‘-∅’. We therefore arrive at (48):

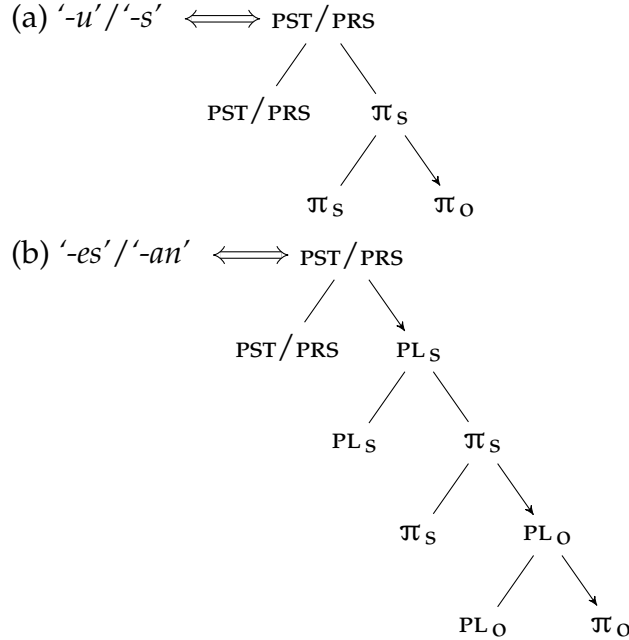
(48) *Simple Tense Markers (Laz)*

- a. $-i \Leftrightarrow \text{‘PST’}$
- b. $-\emptyset \Leftrightarrow \text{‘PRS’}$

We are now left with the task to describe the specification of the remaining four markers: The third person subject markers ‘-s’ (PRS) and ‘-u’ (PST) that spell out cases without any plural feature present and the third person subject markers that occur when the subject or the object do bear a plural feature, namely ‘-an’ (PRS) and ‘-es’ (PST). Recall that these are inserted independently of the object’s person features. With first and second person these are spelled out by ‘m-’ and ‘g-’ respectively, leaving either no structure or [PL] below the subject. With third person objects, however, the smallest candidate to spell out $[\pi_S[\pi_O]]$ so far is ‘v-’, insertion of which does not happen with third person subjects, leading to the conclusion that these markers all contain a pointer to $[\pi_O]$. Since, like ‘-t’, the plural sensitive third person subject markers show symmetry with respect

to subject and/or object being plural, we solve their specification for plural analogously.⁷

(49) *Third Person Subject Suffixes (Laz)*



This set of affixes, summarized in (50), successfully derives the Laz paradigms. I will detail this in a set of sample derivations in the following subsection.

(50) *Laz Affixes (Summary)*

- a. $m- \iff '[\text{PART}_o[\pi_o]]'$
- b. $g- \iff '[\text{ADD}_o[\text{PART}_o[\pi_o]]]'$
- c. $v- \iff '[\text{PART}_s[\pi_s[\pi_o]]]'$
- d. $\emptyset- \iff '[\text{ADD}_s[\text{PART}_s[\pi_s \rightarrow [\pi_o]]]]'$
- e. $-t \iff '[\text{PL}_s \rightarrow [\text{ADD}_s[\text{PART}_s[\pi_s \rightarrow [\text{PL}_o]]]]]'$

⁷Note that the plural markers embed a structure $[\text{PL}_o \rightarrow [\pi_o]]$ despite my claim that third person objects can never trigger plural agreement. Recall, however, that dative subjects, which trigger object agreement with default third person subject agreement, can in fact trigger plural agreement (footnote 3). Whatever the syntactic configuration of these structures is, and however it results in third person subject agreement, their agreement morphology can be captured by the present system.

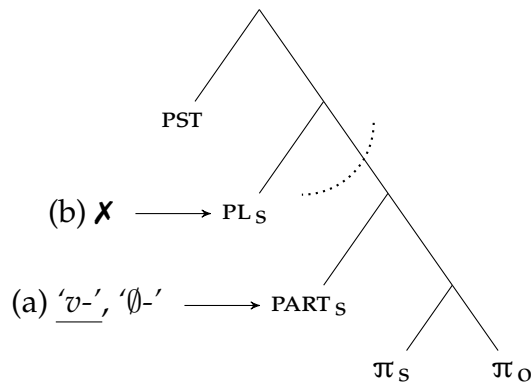
- f. $-i \Leftrightarrow '[\text{PST}]'$
- g. $-\emptyset \Leftrightarrow '[\text{PRS}]'$
- h. $-u \Leftrightarrow '[\text{PST}[\pi_s \rightarrow [\pi_o]]]'$
- i. $-s \Leftrightarrow '[\text{PRS}[\pi_s \rightarrow [\pi_o]]]'$
- j. $-es \Leftrightarrow '[\text{PST} \rightarrow [\text{PL}_s[\pi_s \rightarrow [\text{PL}_o \rightarrow [\pi_o]]]]]'$
- k. $-an \Leftrightarrow '[\text{PRS} \rightarrow [\text{PL}_s[\pi_s \rightarrow [\text{PL}_o \rightarrow [\pi_o]]]]]'$

6.2.1 Sample Derivations – Laz

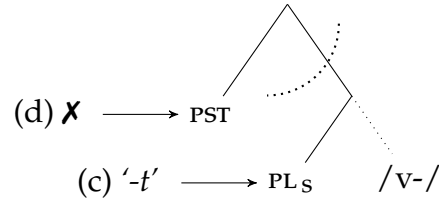
I begin with the part of the paradigm that has been considered the most puzzling, namely the distribution of apparent object- and subject-prefixes. To illustrate the way the analysis proposed captures the distributional facts, I will show the derivation of $1\text{PL}>3$ ('*v- -i-t'*') and $3\text{SG}>2\text{PL}$ ('*g- -es'*'). After that I will show how the structure of $1\text{SG}>2\text{PL}$, i.e. the context where we do not get both '*v-*' and '*g-*', is derived, and that there is simply no insertion context for '*v-*' in the first place.

(51) $1\text{PL}>3$ (Laz): '*v- -i-t'*'

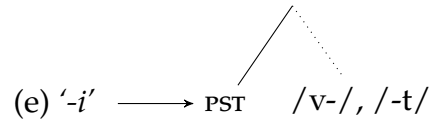
(i) First Step



(ii) Second Step



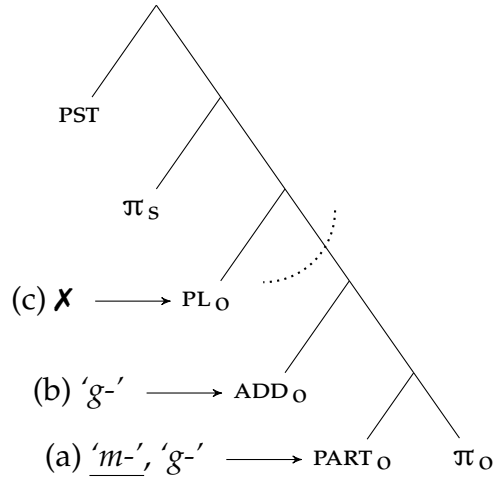
(iii) Third Step



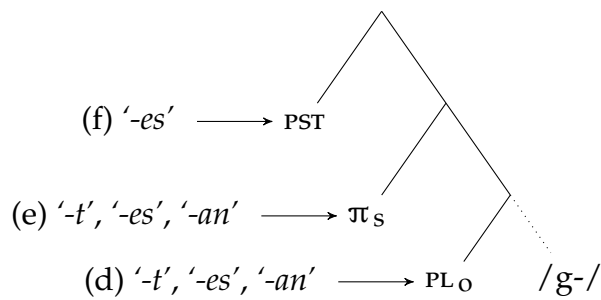
In (51) there are three points of effective spellout, each determined by the lack of an LTS that could spell out the next highest node in the structure. At point (a) 'v-' as well as '∅-' are the two items that spread far enough into the subject's person domain to be able to spell out $[PART_s[\pi_s[\pi_o]]]$, since 'v-' does not contain any junk features at this point, but '∅-' does (ADD_s), it wins due to the EP. At point (c) the only item that can lexicalize only a plural feature is '-t': The other items that contain PL_s, '-es' and '-an', do not have a pointer between the number and the person structure, that is to say they cannot spell out PL_s to the exclusion of π_s , as this would violate contiguity – this accounts for the fact that they are generally possible with third person subjects only.

(52) 3SG>2PL (Laz): 'g- -es'

(i) First Step



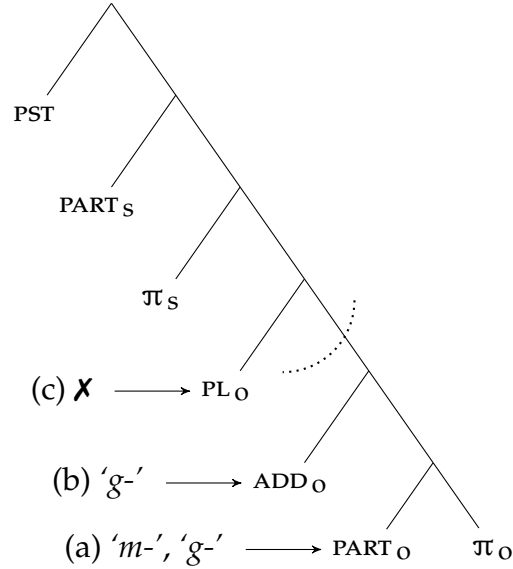
(ii) Second Step



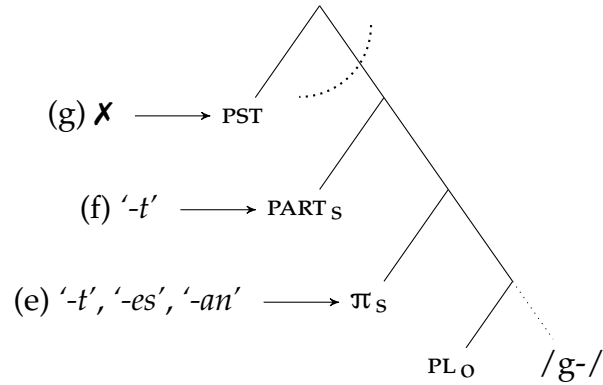
In contrast to (51), the example in (52) shows a bi-morphemic example, where a plural head does not receive individual spellout. Note that the derivational results would be identical with a third person plural subject, as '-es' could also spell out $[PST[PL_s[\pi_s[PL_o]]]]$. Similarly this also holds for 3PL>2SG. Crucially the pointer below the tense node allows '-es' to spell out the larger structure in the absence of one plural node, but without any plural node it loses to '-s' due to the EP. Crucially, it cannot spread into a structure bigger than π_s , however, if there are additional person features, i.e. when the subject is local.

(53) 1SG>2PL (Laz): 'g- -i-t'

(i) First Step



(ii) Second Step



(iii) Third Step

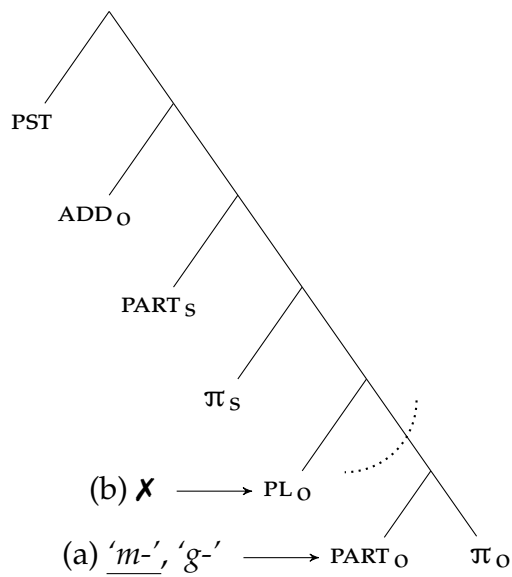


(53) shows that 'v-' is not a possible candidate in 1>2 cases: It cannot spell out the object features, and since its lowest feature, its anchor, is π_o , it is not a candidate for spellout later on either. Instead, the object's person features get

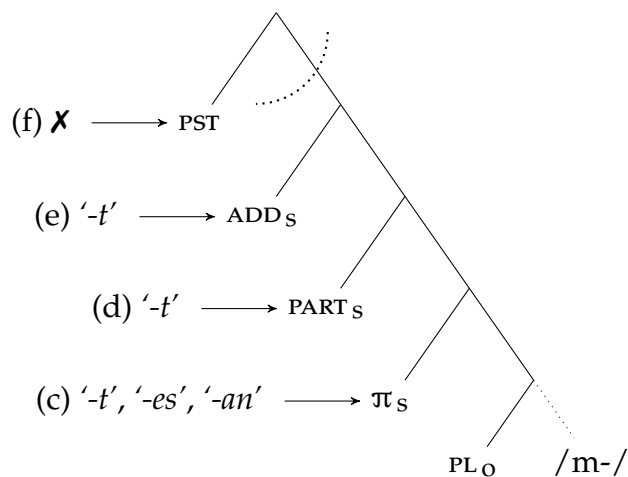
spelled out by 'g-'. This is early in the derivation and happens independently of a higher tense node, explaining why these are invariable across different tenses, paralleling (and resulting from) the fact that the low φ -probe merges and agrees before tense is present in the structure.

(54) 1SG>2PL (Laz): 'm- -i-t'

(i) First Step



(ii) Second Step



(iii) Third Step



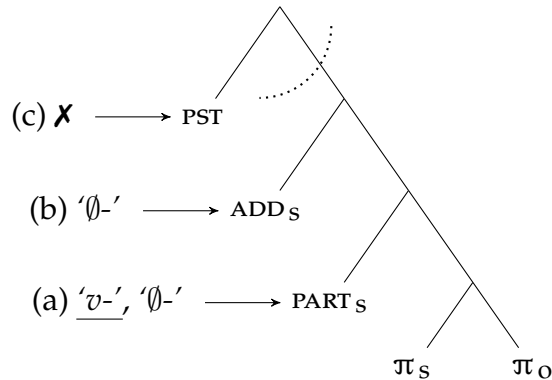
Now compare (53) to (54). The derivations are curiously parallel in their course: In both cases the object's person features are spelled out, leaving only the low plural feature. In both cases the high subject features can be spelled out only by the same elements, accounting for the fact that there is a general suffixal syncretism between the structures with local objects: These can depend on the low plural feature, and the subject's features, but crucially cannot make reference to the object's person features anymore.

As a last sample derivation consider (55), where the zero prefix wins out over 'v-' to spell out second person subject features in the absence of a plural node:⁸

⁸In fact this prefix has the most curious distribution in this analysis: It occurs in 2SG>3 contexts, but also in 1SG>2SG and 2SG>1SG to spell out local subject features (although this could in principle be restricted by suggesting that the "tense only" suffixes contain a pointer to singular local subject structures). Since the prefix is phonologically null, this is somewhat suspicious; whether this is a "bug" or a "feature" of the theory remains to be seen. It is my hope that these kinds of distributional effects of the interaction of the sizes that different affixes spell out can later be linked to the derivation of agreement systems such as morphological direct-inverse systems. As it stands now this zero prefix is – as are all zero affixes – clearly a theory internal tool in need of independent motivation from a broader application of the presented system. It is, however, worth noting that other approaches face the same problem with regards to the way second person subject features are spelled out and all of the reviewed ones also postulate a zero prefix.

(55) 2SG>3 (Laz): '∅- -i'

(i) First Step



(ii) Second Step



In summary then, the Laz paradigm has been shown to be derivable with the proposed mechanism of spellout. This mechanism allows the lexical items to determine the precise size of the spans spelled out (i.e. the splitting of the structure) without any need to additional rules of any type, and gives a systematic (non-accidental) account for the prefixes preference to track local objects. In the next section I will show that the same mechanism can also account for the Georgian data and that both common generalizations and differences can be modeled by the same suggestion that the spellout a structure receives is determined merely by the structure of the lexical elements, and not by two systems (rules and items).

6.3 Georgian

I now turn to the Georgian data. Comparing the tables 6.3 and 6.4, they show identical distributional properties in all but the five marked cells.

Four of these contain the additional prefix 'gv-', a first person plural object

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- -∅	m- -∅-t	m- -s	m- -an
1Pl	—	—	m- -∅-t	m- -∅-t	m- -an	m- -an
2Sg	g- -∅	g- -∅-t	—	—	g- -s	g- -an
2Pl	g- -∅-t	g- -∅-t	—	—	g- -an	g- -an
3	v- -∅	v- -∅-t	-∅	-∅-t	-s	-an

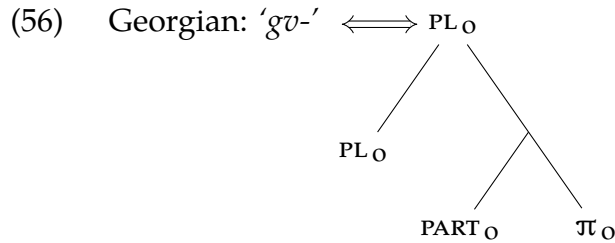
Table 6.3: Laz Verbal Agreement, Present Tense (repeated)

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- -∅	m- -∅-t	m- -s	m- -en
1Pl	—	—	gv- -∅	gv- -∅-t	gv- -s	gv- -en
2Sg	g- -∅	g- -∅-t	—	—	g- -s	g- -en
2Pl	g- -∅-t	g- -∅-t	—	—	g- -t	g- -en
3	v- -∅	v- -∅-t	-∅	-∅-t	-s	-en

Table 6.4: Georgian Verbal Agreement, Present/Future Tense (repeated)

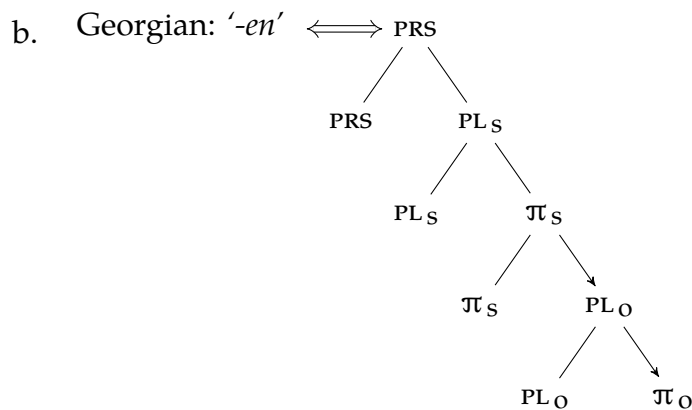
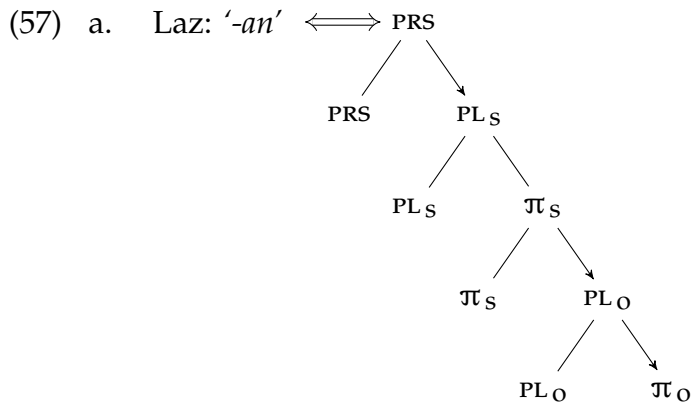
marker. As cells 2SG>1PL and 3SG>1PL show, insertion of this marker bleeds the insertion of the plural sensitive markers ‘-t’ and ‘-en’ respectively. The system proposed for Laz can easily be adapted to account for this by suggesting that Georgian has an additional LTS as in (56), lexicalizing not only first person object features, but also a plural feature. In the singular this competes with ‘m-’ but loses out due to the EP, but in the plural it lexicalizes a bigger structure. Correspondingly this bleeds the affixes that would compete for insertion in the second step of the respective Laz derivation, as no reference to the spelled out PL feature is possible anymore. Note that Laz shows full suffixal syncretism with respect to first and second person objects: For every possible specification of X, the suffix forms x>1SG are equal to x>2SG, and x>1PL to x>2PL. The fact that the same does not hold for Georgian local plural objects, is, in the present approach,

reducible to merely the presence of this additional lexical item.



The fifth cell shows that Georgian lacks the Laz symmetry in number spellout in another respect: A second person plural object with a third person singular subject does not result in the insertion of the third person plural subject marker *'-en'*. Unlike its Laz counterpart *'-an'*, this marker is blocked in this context, and *'-t'* is inserted instead.

As cell 3PL>2PL – and the absence of structures *'*-en-t' / '*-t-en'* – shows, this cannot be due to the fact that *'-en'* is incompatible with a low plural feature spelled out: 1SG>2PL in contrast with 1SG>2SG clearly shows that *'g-'* cannot be considered a second person plural object marker spreading into the singular either, showing that it must be the low plural feature that causes insertion of *'-t'*. We can account for the absence of *'-en'* in this context by assuming that the Georgian third person plural subject marker does not contain a pointer between Tense and Plural, and can thus not spell out a bigger structure than *'-t'*, unless the subject is 3.PL, i.e. the difference between Laz and Georgian is a result of difference in specification as in (57):

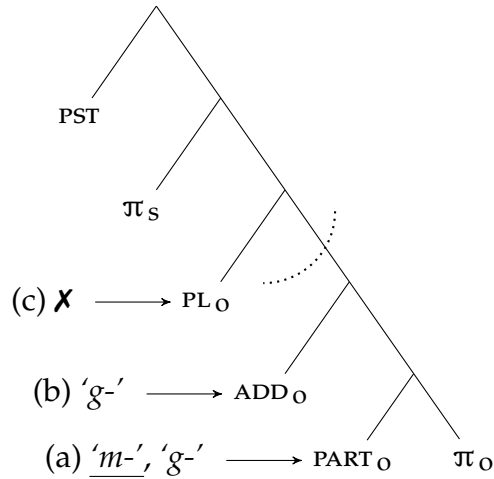


(58) shows how the derivation of 3SG>2PL with these assumptions in mind. At point (f) the Laz ‘-an’ would overwrite a previous spellout, but in Georgian ‘-en’ does not contain the relevant pointer, i.e. it cannot spellout the structure at (f) due to contiguity.⁹ In contrast all cases with 3PL subjects do in fact contain the relevant plural feature, allowing ‘-en’ to spell out a bigger structure than ‘-t’, namely T and its sister, thus overwriting it later on, as does its Laz counterpart.

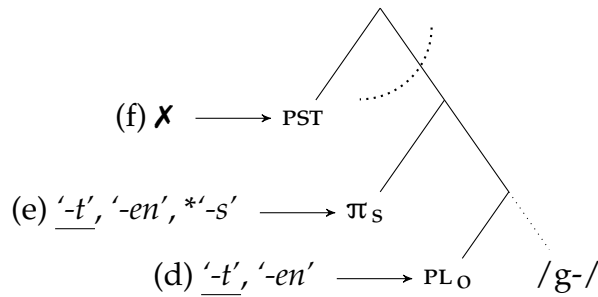
⁹Note that I assume ‘-t’ to be less specific than ‘-en’. This is due to the fact that these affixes are actually sensitive to conjugation class (i.e. argument structure), tense and aspect, suggesting that the structure simply termed PRS here is really quite a big structure. If this would turn out to be undesirable for independent reasons one would have to suggest that ‘-t’ spreads minimally into the domain above PL_S, spelling out a very low feature that is present across different TAM sets. Candidates for such a feature might be finiteness or case features. I will assume the specificity hypothesis here.

(58) 3_{SG}>2_{PL} (Georgian): 'g- -Ø-t'

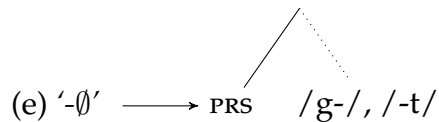
(i) First Step



(ii) Second Step



(iii) Third Step



The derivation in (58) actually makes a specific claim about the morphological structure of these, namely that they are in fact tri-morphemic, containing the suffix '-Ø'. This conclusion is forced by the system, as '-t' – occurring across tenses – cannot spell out the tense structure. There is reason to believe that this is in fact a correct prediction and that it holds for Georgian in general, another difference between its morphology and the one found in Laz. According to Anderson it is always only the '-s' that is bled in this situation:

- (59) “When a 3sg. subject marker **ending in s** occurs with a second person plural object (g-...-t) the -s is lost.” Aronson (1990, p.170, rule 4)

An examination of all the paradigms in which this bleeding occurs provides evidence that ‘-s’ is in fact a small marker, as in (60):¹⁰

$$(60) \quad 's' \Leftrightarrow '[\pi_s \rightarrow [\pi_o]]'$$

This marker always co-occurs with the same small tense marker that is used with local subjects due to their features having been spelled out earlier, which in turn suggests that treating ‘-i’/‘-∅’ as markers for the tense domain only, as forced by the spanning property of ‘-t’, was correct. Table 6.5 lists all paradigms with the ‘-s’ suffix with their respective contexts.

Local	3 rd sg	3 rd pl	Context	Source
-∅	-s	-en	Present/Future Tense	p. 42
-i	-i-s	-ian	Present/Future (Conj. 2 Verbs ending in ‘-am’)	p. 63
-de	-de-s	-dnen	Conjunctive (Conj. 1, 3)	p. 86
-ode	-ode-s	-odnen	Conjunctive (Conj. 2)	p. 86
-o	-o-s	-on	Optative (Conj. 1, Conj. 2 in ‘-i’)	p. 142
-e	-e-s	-nen	Optative (Conj. 2 in ‘-d’)	p. 142
-a	-a-s	-an	Optative (irregular verb <i>tkma</i> ‘say’)	p. 210
-X	-X-s	-Y	Generalization	

Table 6.5: Generalized Georgian Paradigm A

Data from Aronson (1990)

As can be seen in the table’s generalization it is indeed the case that the third person singular suffixes ending in ‘-s’ are bi-morphemic and contain the same tense marker used with local subjects, a fact that is obscured in the present tense, because the tense only marker is zero. This then accounts for the fact that ‘-s’ cannot occur with a low plural feature that is not spelled out, as is the case with

¹⁰Note that although I do not give an account of morpheme order here, both ‘-t’ and ‘-s’ are spelled out before the tense marker and flank to its right, hinting at a common source for the relative order.

second person plural objects (but not first person plural, where PL_O is spelled out by ‘gv-’). In this context its potential insertion context (π_s) gets spelled out by ‘-t’, as indicated in (58). This also accounts for the fact that it cannot co-occur with a high plural feature, as it gets overwritten by ‘-en’. As everything else runs essentially parallel to the derivations in Laz, we have successfully derived the bleeding pattern from nothing but an account of the structure and the basic assumptions of cyclic, bottom-up spellout of spans.

6.3.1 Contextual Allomorphy

In addition to the paradigm discussed above, Georgian also exhibits a second type of paradigm, exemplified by table 6.6, repeated here for ease of reference.

Object	Subject					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	—	—	m- -di	m- -di-t	m- -da	m- -dnen
1Pl	—	—	gv- -di	gv- -di-t	gv- -da	gv- -dnen
2Sg	g- -di	g- -di-t	—	—	g- -da	g- -dnen
2Pl	g- -di-t	g- -di-t	—	—	g- -da-t	g- -dnen
3	v- -di	v- -di-t	-di	-di-t	-da	-dnen

Table 6.6: Georgian Verbal Agreement, Imperfect (based on Aronson (1990, p. 171), repeated)

In the paradigms of this type the tense marker ends in a high/mid front vowel (i/e) with local subjects and a low mid vowel (a) with third person singular subjects as in table 6.7; Whatever the precise underlying feature structure, this is reason to believe that it is a single marker that is subject to this generalization.

Unlike ‘-s’ this suffix is not bled by ‘-t’ in 3SG>2PL contexts. The present theory cannot trivially capture this in the ways laid out above, as e.g. 1SG>2PL and 3SG>2PL both have only the tense structure left after ‘-t’ spelled out the span between PL_O and the person/number features of the subject, as shown in (61). At

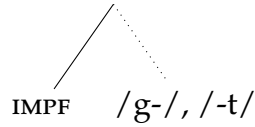
Local	3 rd SG	3 rd PL	Context	Source
-i	-a	-ian	Present/Future Tense (Conj. 2)	p. 61
-d-i	-d-a	-d-nen	Conditional/Imperfect	p. 45
-od-i	-od-a	-od-nen	Conditional/Imperfect (Conj. 2)	p. 65
-e	-a	-es	Aorist (Conj. 1)	p. 113
-e	-a	-nen	Aorist (Conj. 2 ending in '-i')	p. 113
-i	-a	-nen	Aorist (Conj. 2 ending in '-d')	p. 115
-i	-a	-es	Aorist (irregular verb <i>tkma</i> 'say')	p. 210
-X	-a	-Y	Generalization	

Table 6.7: Generalized Georgian Paradigm B

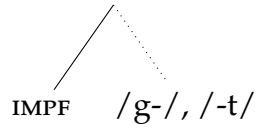
Data from Aronson (1990)

this point of the theory's development I take this to suggest that this asymmetry needs to be resolved in terms of contextual allomorphy.¹¹

(61) a. 1SG>2PL (Georgian), third step: '-di'



b. 3SG>2PL (Georgian), third step: '-da'



In (61a), the previous effective cycle of spellout spelled out a structure $[\text{PART}_S [\pi_S [\text{PL}_O]]]$, in (61b) it spelled out $[\pi_S [\text{PL}_O]]$, both times with '-t'. This difference lends itself to a broader characterization of the allomorphy: Whenever the sister

¹¹In fact Georgian exhibits a case split between local arguments and third person arguments. It is possible that future research into the nature of the way arguments are identified, i.e. the question of the nature of the diacritics S and O used so far, might shed light on this: If the items identifying the arguments can be analyzed as case structure on top of the arguments that replicate this split, they would allow an indirect reference to local vs third person arguments, thus possibly bring the data in line with the mechanism entertained so far, without recourse to allomorphic variation. On the other hand, a mechanism for allomorphy is needed independently, and one that makes reference to adjacent heads would constitute a highly constrained one.

of IMPF is headed by π_s , the suffix is ‘-da’; any other sister results in ‘-di’.

The fact that ‘-s’ cannot occur with the ‘-da’ type affixes in general is also in need of explanation here. The simplest way to do this is to suggest that the third person structures in the ‘-s’ type structures are always bi-morphemic, as shown above. In contrast, the ‘-da’ type structures are mono-morphemic¹², i.e. they contain a pointer to the same type of structure ‘-s’ spells out. We arrive at a specification as in (62):¹³

$$(62) \quad -di \Leftrightarrow '[\text{IMPF} \rightarrow [\pi_s \rightarrow [\pi_o]]]' \mid \\ /i/ \rightarrow /a/, \text{ if the sister of IMPF is headed by } \pi_s$$

At this point this is a somewhat speculative move, forced by the assumptions made at earlier points. Clearly, this way of describing allomorphic variation is in need of independent motivation. If correct, however, this result has two interesting properties: First, the conditioning context – expressed in terms of sisterhood, i.e. highly local – is also part of the lexical specification of the element itself, namely sisterhood of [IMPF] and $[\pi_s]$. Secondly, as the derivation in (61b) shows, the context may already have undergone spellout, yet it must still be accessible. The only thing, however, that is needed for this computation, is the highest head of the spelled out structure; in some sense this curiously resembles the notion of a phase, the edge of which remains accessible to computation after spellout.¹⁴

¹²The fact that ‘-d-a’ is bimorphemic is not of relevance here; presumably ‘-d’ spells out higher Tense/Aspect/*v* structure, i.e. structure not under discussion here.

¹³Pavel Caha (p.c.) suggested to me that allomorphy described in terms of a sister’s head is not uncommon, e.g. Bobaljik’s (2012) suggestion for suppletive comparative forms of the type “ Δ_j / $\underline{\text{CMPR}} \Leftrightarrow$ suppletive”, for alternations such as good/bett-er. See Caha (forthcoming) for a review of the work from a perspective similar to the one entertained here.

Embick (2012, p. 26) suggests that a cyclically inside out operating spellout (embedded in a broader DM framework) ought to produce inward sensitivity for phonological and/or morphosyntactic features, but outwards sensitivity should only target the latter kind.

The present proposal seem to deviate from standard assumptions only insofar as the context is also part of the specification itself then.

¹⁴Merchant (2015) suggests that an account of Greek verbal stem suppletion can only be given in terms of a span of Voice and Aspect heads conditioning the allomorphy. While this thesis

As a result then, the apparent third person singular subject markers fall into two distinct groups: A bi-morphemic one with a small ‘-s’ $\Leftrightarrow [\pi_s \rightarrow [\pi_o]]$ spelling out only agreement features, with Tense getting spelled out by the same marker as with local subjects; and a mono-morphemic one that spells out a bigger structure, spanning the T domain (whatever its internal structure) and the agreement structure – it is this mono-morphemic group that shows allomorphy. While the allomorphic variation itself requires a solution that is somewhat speculative at this point of the theoretical development (albeit not one that substantially deviates from proposals in other theories), the generalization that the presence of bleeding effects (‘-t’ bleeding ‘-s’) correlates with bi-morphemicity, is a welcome new result.

6.4 Intransitives and the Copula

Intransitives in Laz and Georgian are identical to transitives with third person objects, with respect to agreement morphology. As examples (63) to (66) show, the absence of a third person object does not bleed insertion of ‘v-’ in unergatives and unaccusatives. I simply assume that both structures result in default third person object agreement; presumably unergatives show default agreement because there is no argument in the search space of the object agreement probe on *v*;¹⁵ defective *v* in unaccusatives bears defective/default agreement lexically, paralleling its inability to assign accusative (Burzio’s generalization) in languages with a nominative-accusative pattern of case assignment.¹⁶

does not attempt to make a coherent argument in favor of a proposition like that, it would be an interesting result if outward sensitivity to spans were possible, but inward sensitivity were only to the highest spelled out head.

¹⁵Clearly the postulation of default agreement has wider ramifications with respect to the question of derivational convergence. This is outside of this thesis’s scope, however.

¹⁶This seems like a relatively uncontroversial claim to me; in contrast Béjar (2003) cannot trivially account for this in her theory of cyclic agree, as ‘v-’ is supposed to result from second cycle (i.e. upwards) agree of a probe on *v*. This works for unergatives, but remains a mystery for unaccusatives, where the first person argument is clearly in the search space of a first cycle: The internal argument cannot move to a position higher than the c-command domain of *v* before *v* is

	SG	PL
1	v-ar	v-ar-t
2	x-ar	x-ar-t
3	ar-i-s	ar-i-an

Table 6.8: Georgian Copula (Present Tense) (Aronson 1990, p. 66)

(63) Unergative (Laz)

*v-ukap'-i***1A**-run-PST

'I ran.'

(64) Unaccusative (Laz)

*dʒe-v-ol-i*PV-**1A**-fall-PST

'I fell.'

(65) Unergative (Georgian)¹⁷*v-qep-∅***1A**-bark-PRS

'I bark.'

(66) Unaccusative (Georgian)

*v-çitl-eb-i***1A**-blush-PFSF-PRS

'I blush.'

Aronson (1990, p. 204)

Aronson (1990, p. 62)

The copula in Laz inflects regularly across tenses, as does the Georgian copula in the future and the conditional (though stem alternations occur). Interestingly enough, the Georgian copula in the present tense, however, has an overt marker 'x-' in the second person, as shown in table 6.8. This provides evidence for the reality of the second person zero-prefix I postulated, as it seems to have an overt counterpart in at least this paradigm.¹⁸

merged for reasons of cyclicity.

¹⁷Georgian Conjugation 3 verbs (unergative) have ergative subjects in the aorist, and nominative subjects in the present, i.e. they behave like transitives with respect to the case the subject receives. In contrast, Conjugation 2 verbs (unaccusatives) have nominative subjects in all tenses.

¹⁸In fact, Svan – another South Caucasian language – appears to have 'x-' as a second person subject marker in general, according to Tuite (1998), p. 25. The short grammar does not give an account of the affix distributions that is sufficiently clear with respect to potential bleeding patterns though, so I could not include it in the present discussion. Clearly, a broader perspective on all four South Caucasian languages (Laz, Georgian, Svan, Mingrelian) ought to be taken in the future though.

6.5 Summary – Advantages

The presented approach combines the advantages of the syntactic and the morphological approaches to Georgian agreement: By suggesting that some form of earliness/cyclicity is indeed relevant for the preference for local objects over other arguments to be marked in the prefix, this important generalization is incorporated into the theory; the form it takes, however, does not require modification of the syntactic theory itself. Instead, earliness is incorporated in a morphological manner, paralleling that of syntactic computation: Because the object probe is low, and spellout operates cyclically bottom-up, spellout of the object's features takes place before spellout of the subject's features. In comparison with the accounts involving modifications of syntactic Agree, my account has the additional advantage of showing how the size of the structure spelled out first influences the next step of spellout, explaining for example why an object's plural feature not been spelled out in the first effective cycle is incompatible with third person singular suffixes ('-s' type). The theory proposed has also lead to a new generalization about the correlation between bi-morphemicity of this third person singular marker and it being bled.

The interaction of effective cycles is also what distinguishes it from the DM account in Halle & Marantz (1993):¹⁹ A number of things that have to be explicitly stated in arbitrary rules – such as fusion or fission – in a DM account, follow automatically from the lexical specifications in this account. Take, for example, the fact that the 1.PL.OBJ marker 'gv-' is absent in Laz, but present in Georgian, and the fact that correspondingly, a first person object's plural feature is expressed suffixal in Laz, but not in Georgian: In the DM account, the rule fissioning off local plural features has an exception built in, for precisely this context.²⁰ Not

¹⁹Though at least some aspects of the analysis suggested here could plausibly be incorporated in a DM formulation.

²⁰Note in passing that Halle & Marantz (1993) claim that the exception's results could equally well have been derived by a fusion rule that undoes the effect. This seems to be non-trivial though, since in this case, 2PL>1SG and 2SG>1PL would both create a context where a fissioned [+pl] node

only does my account not need any exception here, but it also can state the whole difference simply in terms of the absence of one lexical item. In contrast, the DM account would have to claim that Georgian has an exception in a fission rule that Laz does not and also an affix that does not exist in Laz: In their approach, one would expect to find a plausible language that has the exception, but not the affix (resulting in a $x > 1SG = x < 1PL$ syncretism). Similarly, Halle & Marantz (1993) have to postulate extra rules for Georgian $3 > 2PL$ cases: With a singular subject, the ‘-s’ is deleted by a re-adjustment rule (to account for *‘-s-t’); with a plural subject, the fissioned [+pl] feature gets impoverished: The fact that Laz does not exhibit *‘-en-t’ in $3PL > 1PL$ would have to be interpreted as the impoverishment rule extending to this case, with no ad-hoc way to make reference to the absence of ‘gv-’ in Laz. In contrast, the span I propose, namely that the subject’s person features are located between the object’s and the subject’s plural feature, captures in one go the constraint on *‘-s-t’ and *‘-en-t’ and the degree to which plural is expressed symmetrically between subject and/or object bearing plural (fully in Laz, with local subjects in Georgian). In that sense, the work done by the operation Fusion in DM, is simply a property of the lexical item: Because an item contains ‘ $[\pi_s[PL_o]]$ ’, it spreads into the subject structure (as in Laz $3SG > 1PL$), if there is a low plural feature; no rule of the kind “fuse pl and 3 if they are adjacent” is needed in addition to the fact that there is a lexical item expressing these two features.

The approach I proposed relies heavily on structure, but alternative attempts such as Béjar & Rezac (2009) employ the same amount of structure – within probes. Instead I argue that the structure that gets spelled out by agreement should be

is next to a [+1, +DAT] node. No feature in either the fissioned [+pl] node nor the clitic cluster could identify the difference: The subject’s [-pl] feature cannot be used to restrict the rule, as it would be absent in $2PL > 2PL$; the re-fusing rule could only be formulated if one accepts that reference to features is possible in a three-way distinction: A feature’s absence in addition to its positive and negative value, i.e. “re-fuse a [+pl] node if next to a [+1, DAT] node that does not contain [-pl]”; reference to the absence of features, however, strikes me as an overly powerful tool that ought to be avoided.

the purely syntactic type that is needed independently: Binary branching. In contrast to approaches such as Halle & Marantz (1993), the structure I propose is more complex, but does not require post-syntactic manipulation; instead the effects captured by fission/fusion in DM are purely the result of cyclicity and constituency in the present approach, capturing the interaction of different affixes naturally. Both constituency and cyclicity are again independently motivated parts of syntax. The superset, too, has its counterpart needed in other theories, such as the subset in DM; the simple fact that syncretisms exist as a widespread phenomenon of natural languages shows that one such mechanism is needed.

Chapter 7

Open Questions, Speculative Remarks, Outlook

In this section I will very briefly discuss some open issues of the current research, and speculate about possible directions that future investigation might take.

7.1 Assembly of the Structure

I have argued in favor of a structure in which the agreement features of a subject and an object form a span with the structure $[Number_s[Person_s[Number_o[Person_o]]]]$. The argument I made, however, was based solely on the morphological facts. On the one hand, my proposal has the welcome result that the theory of Agree can be kept intact, with probes residing in standard fashion on v^0 and T^0 . On the other hand this proposal has an odd implication for the assembly of the structure: It requires low-adjoining the lower probe (presumably via head movement) to the higher one: The whole structure $[Number_o[Person_o]]$ is taken to be the sister of the *lowest* feature of the subject probe, namely $[\pi_s]$. If the probe is indeed on v^0 , this is especially questionable, given that there is no evidence that this head ends up in the same position. In fact there is evidence to the contrary, i.e. it must be higher in the structure, as the tense dependent affixes occasionally

depend on conjugation class as well: In Georgian the present tense 3.PL suffix, for example, usually takes the form ‘-en’, but ‘-ian’ with certain conjugation 2 verbs (Aronson, 1990, p. 63). As Harris (1982) has argued, conjugation class 2 verbs are in fact unaccusatives. That is to say – recasting that discovery in Minimalist terms – that what has traditionally been described as conjugation class is actually related to the type of v^0 head that is present in the structure. The morphological evidence then suggests that v^0 is higher than the object, as it forms a span with the structure in T to the exclusion of the object’s features. At the same time, one basic concept of Nanosyntax appears to be incompatible with the idea of a probe residing *on* a head in the first place, namely the claim that there are no heads composed of a feature matrix, but that every feature is a head. As a speculative remark, I would like to suggest that a solution to this problem might lie in a combination with the proposal put forth in Preminger (2011). He attempts to capture a hierarchy of aptitude for defectiveness with respect to agreement, as given in (67): Long distance agreement for person implies long distance agreement for number, but not the other way around; it may be defective for person but successful for number.

(67) Relative Aptitude for Failed Agreement

person at-a-distance \gg number at-a-distance (\gg any agreement at close range)

Preminger (2011, p. 922, his (7))

Preminger (2011) solves this puzzle by suggesting that the probes $\#^0$ and π^0 are independent heads in a functional spine, with π^0 potentially removing an intervener e.g. via clitic doubling it into its specifier. This splitting is of course very much in line with a Nanosyntactic approach, and splitting of all probes (possibly into an even more extended f-seq, resembling the phi-structure pro-

posed here^{1,2)} would allow for the construction of the structure I propose: By successive cyclic head movement of the lower probing heads into the next higher one, we could avoid low-adjunction: [*Person*_o] simply moves into [*Number*_o], resulting in [*Number*_o[*Person*_o]]. In a next step, this complex head would move into [*Person*_s], yielding [*Person*_s[*Number*_o[*Person*_o]]], which in turn would move into [*Number*_s], the result of which would be the phi-structure of agreement I proposed.

At this point I leave further exploration of this possibility, the question of the internal structures of these probes and the question of the derivation of the span with v^0 and T^0 to future research.

7.2 Pre- and Suffixes

In the current proposal I have specified all items individually as pre- or suffixes and have not independently accounted for their order. In contrast, the proposal in Caha (2009) is linked not just to the morphological structure of case, its f-seq, but derives from it – via means of movement into specifiers of case heads – the expression of case as prepositions and suffixes. The present approach, as of now, lacks any counterpart, and is instead forced to simply stipulate pre- and suffixal nature for each suffix: Caha accounts for suffixes in terms of phrasal movement into specifiers, but the present approach has no obvious counterpart to the DP/NP in his approach. Instead the facts about agreement seem to be dealing exclusively with heads.

In some sense, the listing of pre- and suffixal character is similar to the grouping of individual rules in approaches such as Paradigm Function Morphology,

¹If the Rich Agreement Hypothesis is indeed to be revived, as proposed by Koenenman & Zeijlstra (2014), an extended functional sequence of agreement might provide insights into why such a generalization would hold in the first place and be related to the nature of defectiveness in agreement in general.

²Such an extended f-seq for agreement might also point towards a way to explain the fact that third person non-subjects cannot trigger plural agreement, by relating it to height and the distance of agreement.

and might in that sense be considered a step backwards from a theory such as Distributed Morphology where the groupings are derived from the structure itself – albeit with the help of additional somewhat arbitrary rules modifying that structure (and in this case the ability to move a fissioned feature past the verbal root); as is the case for the DM account, however, the competition itself is structurally derived, not a property of the list. An alternative to specifying each *LTs* as a pre- or suffix lexically might build on a more general way of describing the linear distribution of the verbal affixes: The first effective cycle moves to the left (unless it is the only effective cycle, i.e. unless it includes *T*), the second to the right, and a potential third stays in-situ; a generalization that should be derived from some deeper reasons, possibly related to the assembly of the structure as discussed above. An analysis of the linear distribution should also be linked to a little understood phenomenon of flanking in general: Trommer (2002) discusses an asymmetry in subject agreement affixes expressing person and number, showing that there is a very strong tendency for person to linearly precede number. Harbour (2008) suggests that this is true in cases with two arguments agreeing as well, in an even stronger form. Both Laz and Georgian clearly fall under that generalization, and it is worth noting that the DM approach cannot account for this either (it is an accidental property of the fission rule).

Whatever the ultimate explanation of the affix linearization in Laz and Georgian then, I believe that it should be tied to a general explanation of these facts. I leave it to future undertakings to attempt the development of such an account.

7.3 Indices: Subject & Object

Another aspect that awaits future research is the nature of the indices I have used: All agreement features are marked as belonging to either a subject or an object by means of an index *s/o*. The nature of these indices deserves its own research; they might be properties of the probes reflected on the features, or be related

to case in some sense (given that, for example, dative subjects in Laz trigger object agreement). Adopting the former seems to yield few if any interesting results; the latter would have to be related to a more general understanding of the South Caucasian case systems. Being a Split-S language, Laz's case system is not trivially explained in either an agreement based approach to case (as Burzio's generalization does not apply), or in a system of dependent case as in Marantz (1991) (which, being a GB account, makes reference to an empty object position). The Georgian system is even more complicated, being Split-S in certain aspect configurations, and showing Nominative-Accusative alignment in others – a fact that does not have any corresponding effects in the agreement morphology. This case/agreement asymmetry might provide arguments against an approach to these markers in terms of (morphological) case. It remains to be seen what the best approach to this question is.

Chapter 8

Conclusions

In this thesis I have laid out a spellout mechanism of agreement that derives the complex agreement paradigms of two South Caucasian languages, Laz and Georgian. The approach I developed here has a number of advantages over previous attempts to account for the Georgian data: Unlike the spellout mechanism proposed in Halle & Marantz (1993), it necessitates no set of arbitrary rules that modify structure, features, and vocabulary items. Instead the systematic, bottom-up nature of spellout relates the size of lexical items to the way the span is divided in a systematic fashion that not only captures the bleeding effects, but also explains the differences between Laz and Georgian. By doing so, my analysis also captures the important insight of previous syntactic approaches that the prefix preferentially tracks a local object – it does so, however, without deviating from standard syntactic assumptions, instead relating it to the simple fact that the object probe is syntactically lower than the subject probe. In contrast to the syntactic approaches I account for the systematic interaction that the prefixal spellout shows with the suffixal spellout, such as the fact that an object's plural feature not being spelled out by a prefix bleeds insertion of '-s' in both languages; again the present approach differs from all other ones by naturally explaining not just the bleeding patterns but also the different range these have in Laz and

Georgian, by simply linking this difference to the absence of a specific LRS ‘gv-’ in the former. The cyclical approach to spellout has also lead to a new generalization about the relation of bleeding to mono- and bi-morphemicity in Georgian that had (to my knowledge) not been previously discussed.

I have also demonstrated the potential for broader application of the presented approach to other systems (though research on other systems with multi-argument-agreement is necessary), where I also suggested that the way a structure’s spellout is split up (mono- vs bi-morphemicity) relates to patterns of syncretisms systematically.

Finally I have made some speculative remarks about the way the structure I proposed might be related to the syntactic structure of probes, suggesting that both syntactic insights and morphological ones point to an extended functional sequence of probes. It is my hope that this constitutes a basis for future research combining morphological and syntactic insights in novel and systematic ways.

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Zusammenfassung

In dieser Masterarbeit untersuche ich die zugrundeliegende Struktur von Kongruenzaffixen in zwei süd-kaukasischen Sprachen: Georgisch und Lazisch. Die Sprachen weisen große Ähnlichkeiten auf – so scheint das Präfix in beiden Sprachen eine Präferenz für Kongruenz mit lokalen Objekten aufzuweisen, und in beiden Sprachen ist ein dritte Person Singular Tempus ausdrückendes Suffix inkompatibel mit einem vom Objekt kontrollierten Plural-Affix. Ich schlage vor, dass die gefundenen Muster sich am besten mit einer post-syntaktischen Flexionsmorphologie ableiten lassen, die zyklisch und bottom-up über Konstituenten (Spannen) operiert und einem Übermengenprinzip unterliegt, und zeige, welche Vorteile dieses System gegenüber anderen morphologischen und syntaktischen Ansätzen hat.