
Spans in South Caucasian Agreement

Revisiting the Pieces of Inflection

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Abstract I argue that a range of morphological phenomena sensitive to features of multiple arguments in Georgian (South Caucasian) – including Anti-Superiority effects (Béjar 2003), and omnivorous number effects (Nevins 2011) – receive a unified account if spellout targets contiguous spans of maximally simple heads, in a fixed hierarchy. I introduce new data from a related language, Laz, and show that a close comparison of the two languages reveals that (i) number agreement is expressed omnivorously only if the prefix is not sensitive to number, and that (ii) this number expression covaries with Tense only if the subject is third person. I argue that both Anti-Superiority and the facts about number expression should be interpreted as functional morphology being limited to third person contexts, and that a principled explanation for such an asymmetry can be provided, if first and second person structurally contain third person, and the matching of exponents with syntactic structure is governed by Overspecification (Starke 2009), such that a lexicalized span is a candidate of spellout for its sub-spans.

Keywords Georgian · Laz · Agreement · Syntax-Morphology Interface · Spans · Person Hierarchy · Phi Features · Nanosyntax · Distributed Morphology

1 Introduction

Georgian verbal agreement has figured prominently in linguistic theory, and has been variously analyzed from a morphological perspective (e.g. Anderson 1992; Stump 2001; Foley 2017; Halle and Marantz 1993), or a syntactic one (e.g. Béjar 2003; Béjar and Rezac 2009; Lomashvili and Harley 2011; McGinnis 2008, 2013). The morphological approaches have generally focused on deriving the correct distribution of all affixes that co-vary with Tense/Aspect and/or phi-features. In contrast, the syntactic ones are concerned with the fact that the agreement paradigm exhibits a

person asymmetry: Local (i.e., first/second person) object agreement always has a dedicated exponent, as in (1), whereas third person object agreement does not (2). In (1) we see that first/second person objects are marked with the prefixes *m-* and *g-*, respectively, regardless of the properties of the subject.¹

- | | |
|---|---|
| (1) a. <i>g-xedav-di</i> 1>2
OBJ.2-see-IMPF.SBJ:LOCAL
‘I saw you_{sg} .’ | b. <i>m-xedav-di</i> 2>1
OBJ.1-see-IMPF.SBJ:LOCAL
‘ You_{sg} saw me .’ |
| c. <i>g-xedav-da</i> 3>2
OBJ.2-see-IMPF.SBJ:3
‘S/he saw you_{sg} .’ | d. <i>m-xedav-da</i> 3>1
OBJ.1-see-IMPF.SBJ:3
‘S/he saw me .’ GEORGIAN
Aronson (1990: 169ff) |

In contrast, the exponent we find in the same morphological position when the object is third person *does* depend on the subject person, i.e., we find *v-/Ø-* if the subject is local and the object is third person, as shown in (2).

- | | |
|---|---|
| (2) a. <i>v-xedav-di</i> 1>3
1>3-kill-IMPF.SBJ:LOCAL
‘I saw him/her .’ | b. <i>Ø-xedav-di</i> 2>3
2>3-kill-IMPF.SBJ:LOCAL
‘ You_{sg} saw him/her .’ GEORGIAN
Aronson (1990: 169ff) |
|---|---|

I propose a novel approach to such interactions of multiple arguments, arguing that *v-/Ø-* are portmanteau morphemes for 1>3 and 2>3 contexts, respectively, i.e., that they spell out subject agreement and object agreement simultaneously. From this perspective, a language like Georgian always agrees with both subject and object, and the person asymmetry is a PF-effect of the available vocabulary items that interpret the abstract syntactic structure. In particular, I argue that previous approaches are mistaken in assuming that a morphological position of exponence is immediately reflective of a syntactic head/probe. Instead, I argue that a position of exponence is an effect of PF interpreting syntactic structure in a cyclical, bottom-up, *spanwise* manner, and that *v-* and *Ø-* can spell out a span that includes the agreement of a third person object, as well as subject agreement. I show that under such a perspective we can interpret all agreement affixes as spelling out a contiguous span in a fixed Tense-Agreement hierarchy given in (3), where Tense and AGR stand in for spans, or “regions”, of maximally simple heads with no internal structure.

- (3) Tense > AGR_s > AGR_o

I argue that such a portmanteau approach, under which *v-/Ø-* spell out AGR_s and AGR_o simultaneously, allows for an account of the person-asymmetry in terms of *person containment*, the notion that first/second person structurally contain third person (Harley and Ritter 2002a; Béjar and Rezac 2009). I implement this containment hierarchy in terms of syntactic structure, and couple it with the Nanosyntactic assumption that vocabulary items are *overspecified* for the span of syntactic heads they can spell

¹ Throughout the paper I will use the notation X>Y for a transitive agreement context (such that X denotes the phi-features of the subject and Y denotes those of the object), as well as syntactic selection/sisterhood.

out, i.e., that they match spans that are sub-spans of the ones they lexicalize (Starke 2009). Since v -/ \emptyset - are portmanteau morphemes for $1>3$ and $2>3$ contexts, respectively, they are *underspecified* with respect to a context with local objects, given the person containment hypothesis. That is to say, they cannot match a span containing both subject agreement and local object agreement – and therefore the first/second person markers g - and m - for objects surface.

Two lines of evidence in favor of such a view will be provided: Data internal to Georgian that pertains to prefix/suffix interactions, as well as new data from a closely related South Caucasian language, the Pazar dialect of Laz which sheds further light on such interactions, in particular with respect to the expression of number agreement.

The Georgian-internal evidence for such a view comes from the fact that there are complex interactions between the prefixal and the suffixal marking that receive no adequate explanation under previous analyses, but that can receive a principled account if the internal structure of the AGR region in (3) has number agreement being represented by a null/PL contrast above person, as in (4).

(4) *The AGR region, partly decomposed*

(PL) > PERSON

Expanding on the local subject and object agreement data from (1), consider the 2-by-2 paradigm in (5), which provides all four possible number configurations for a $2>1$ agreement context: With a first person object, the object's plurality is marked at the prefix gv -, and subject plurality is marked suffixally by $-t$, with both markings being independent.

- | | |
|---|---|
| (5) a. <i>m-xedav-di</i> 2SG>1SG
1 SG.OBJ-see-IMPF.SBJ:LOCAL
'You _{sg} saw me.' | b. <i>gv-xedav-di</i> 2SG>1PL
1PL.OBJ-see-IMPF.SBJ:LOCAL
'You _{sg} saw us .' |
| c. <i>m-xedav-di-t</i> 2PL>1SG
1 SG.OBJ-see-IMPF.SBJ:LOCAL-PL
' You _{pl} saw me.' | d. <i>gv-xedav-di-t</i> 2PL>1PL
1PL.OBJ-see-IMPF.SBJ:LOCAL-PL
' You _{pl} saw us .' |
- GEORGIAN
Aronson (1990: 171)

In contrast, a second person object is unable to mark number prefixally (6b) – we find the same prefix g - with both singular and plural second person objects. In this context, *omnivorous number agreement* arises, i.e., the same suffix, here $-t$, occurs when the subject, or the object, or both arguments are plural.

- | | |
|--|---|
| (6) a. <i>g-xedav-di</i>
2.OBJ-see-IMPF.SBJ:LOCAL
'She/he saw you _{sg} .' | b. <i>g-xedav-di-t</i>
2.OBJ-kill-IMPF.SBJ:LOCAL-PL
i. 'I saw you _{pl} .'
ii. ' We saw you _{sg} .'
iii. ' We saw you _{pl} .' |
|--|---|
- GEORGIAN
Aronson (1990: 171)

That is to say, a *number-insensitive* object prefix correlates with omnivorous number agreement arising suffixally. This correlation is further corroborated by comparing

Georgian to Laz: Unlike Georgian, Laz does not have a number sensitive first person object prefix, and consequently, omnivorous number occurs with first person objects as well, as shown in (7).

- (7) a. *ce-m-ç-i*
 PV-1.OBJ-beat-PST.SBJ:LOCAL
 ‘You_{sg} beat me.’
 b. *ce-m-ç-i-t*
 PV-1.OBJ-beat-PST.SBJ:LOCAL-PL
 i. ‘You_{sg} beat **us**.’
 ii. ‘**You**_{pl} beat me.’
 iii. ‘**You**_{pl} beat **us**.’ LAZ

In an approach where spellout operates on spans, in a bottom-up fashion, this is easily captured. For first person agreement, Georgian simply has a vocabulary item *gv-* available that spells out PL together with the object person representation; the first person object agreement in (5c,d) can be represented as in (8). For both first person singular and plural object agreement, the suffix *-t* corresponds only to a later/higher cycle of spellout, and therefore indexes only subject plurality.

(8) *Georgian First Person Objects*

- a. Tense > $\overbrace{\text{PL}_s > \text{PERSON}_s:2}^{-t} > \overbrace{\text{PERSON}_o:1}^{m-}$ 2PL>1SG
 b. Tense > $\overbrace{\text{PL}_s > \text{PERSON}_s:2}^{-t} > \overbrace{\text{PL}_o > \text{PERSON}_o:1}^{gv-}$ 2PL>1PL

In contrast, in the second person, no such portmanteau vocabulary item that could span object person and object number is available, and therefore only the person structure, but not the number structure of the object receives spellout in the first cycle, given that a cycle is determined by what the largest span is that a vocabulary item is available for. Consequently, PL_o is left for a later cycle of spellout.

(9) *Georgian Second Person Objects*

- a. Tense > $\overbrace{\text{PL}_s > \text{PERSON}_s:1 > \text{PL}_o}^{-t} > \overbrace{\text{PERSON}_o:2}^{g-}$ 1PL>2PL
 b. Tense > $\overbrace{\text{PL}_s > \text{PERSON}_s:1}^{-t} > \overbrace{\text{PERSON}_o:2}^{g-}$ 1PL>2SG
 c. Tense > $\overbrace{\text{PERSON}_s:1 > \text{PL}_o}^{-t} > \overbrace{\text{PERSON}_o:2}^{g-}$ 1SG>2PL

The suffix *-t* is omnivorous, because it is overspecified for both PL nodes, but the bottom-up nature of spellout blocks it from realizing that potential in (8). In contrast, with second person objects (and in a parallel fashion with first person objects in Laz), the lower PL_o is never spelled out in the first cycle, and consequently omnivorous number effects arise, as in (9): The vocabulary item *-t* is overspecified for both PL nodes, and can thus match a structure with one of them, or both of them. For the relevant variation between Laz and Georgian it thus suffices to assume that Laz lacks a vocabulary item that corresponds to *gv-* – thus Laz first person objects pattern with Georgian second person objects (and the relevant variation reduces to interpretation at the interface).

Note that the spanning account of omnivorous number in (9) suggests that *-t* spans not only both plural nodes, but also the subject person agreement (being overspecified for the relevant difference between first/second person). Indeed, Laz provides evidence for such a view: While it is the local object (prefix) that is relevant for determining *whether* omnivorous number agreement occurs, it is the subject person that determines *what form* this omnivorous number expression takes. As indicated in Table 1, there are two different omnivorous number patterns in Laz (shaded), and the occurrence of one or the other is determined by the person of the subject. Note fur-

Table 1 Laz – Omnivorous Number

a. Local Subject				
Object	Subject			
	PST		PRS	
	2Sg	2Pl	2Sg	2Pl
1Sg	m- -i	m- -i-t	m- -Ø	m- -Ø-t
1Pl	m- -i-t	m- -i-t	m- -Ø-t	m- -Ø-t

b. Third Person Subject				
Object	Subject			
	PST		PRS	
	3Sg	3Pl	3Sg	3Pl
1Sg	m- -u	m- -es	m- -s	m- -an
1Pl	m- -es	m- -es	m- -an	m- -an

ther, that – as with the prefixes – we find a person-conditioned asymmetry between those two patterns: Only with third person subjects does the omnivorous expression of number co-vary with Tense, as evident from the contrast *-es/-an*. If the subject is local, however, it is independent of Tense, i.e., we find *-t* across Tenses. Crucially, for both these person asymmetries, the data can be described as exhibiting fusional morphology with third person, but not local arguments: For third person objects, the spellout depends on the subject, but local object spellout does not, and the spellout of omnivorous number with third person subjects depends on Tense, but omnivorous number with local subjects does not.

Again, the same kind of explanation will be advanced: Since first/second person subject agreement is structurally larger than third person agreement, this blocks the relevant items *-es/-an* from spanning the whole structure with Tense – it is not overspecified for the structurally larger local subject agreement. Crucially, as I will show below, the opposite effect, where omnivorous number co-varies with Tense only if the subject is local, but not if the subject is third person, could not be implemented in the system I propose: Since such an omnivorous number, local subject affix would necessarily also be overspecified for third person, as per to the person containment hypothesis, it would therefore match all possible subject contexts, including contexts with third person subjects. Consequently, since spellout always targets the largest span it can find a vocabulary item for, it would always win out against a hypothetical

smaller third person subject omnivorous number affix that does not spell out tense. The split is therefore necessarily asymmetric.

Overall, this paper thus takes four facts as in need of explanation: Two person-asymmetries with respect to fusional morphology, the precise characterization of where we find omnivorous number, and finally, the variation between Laz and Georgian. It argues that all of these can be interpreted as the result of *spanning effects over a fixed hierarchy*, under the assumptions that post-syntactic spellout targets spans, in a bottom-up manner, spelling out the largest spans that a vocabulary item is available for.

In taking this particular perspective on the phenomenon, this paper therefore argues against the previously advanced perspectives on Georgian agreement, and their theoretical conclusions. I argue against the family of approaches that link the first person asymmetry to various complex forms of the operation *Agree* and the derivation of Person-Case Constraints (in particular, the *Cyclic Agree* approaches in Béjar 2003, Béjar and Rezac 2009, though the critique extends to *Multiple Agree* approaches such as Nevins 2011). In these approaches, the properties of one argument systematically determine whether the other one can be found by a syntactic probe. I show that these approaches do extend neither to the prefix-suffix interactions touched upon in this introduction, nor to the second person asymmetry. Since the former makes these approaches empirically inadequate, and the latter shows that their explanatory aspect does not generalize to other, parallel person asymmetries even within a single language, I argue that the *Agree* based family of approaches is an incorrect perspective on the properties of Georgian agreement. Against the competing morphological approach of Distributed Morphology (Halle and Marantz 1993), I will argue that it – while deriving the paradigms correctly – offers no account for any of the four explananda, but treats them as arbitrary results of post-syntactic structure modification and contextual deletion that fails to capture the systematic nature of the systems, treating the asymmetries as accidental in a way that a spanning approach does not. I argue that their larger theoretical insights into the structure of grammar, and post-syntactic, interpretative morphology are correct, but that a theory in which it is the vocabulary that drives the bundling of heads into exponents is more restrictive and provides clearer explanations. In DM parlance, what I propose here is that *Fusion* is the only mechanism that is needed to understand Georgian, and that *Fusion* itself reduces to *Matching*, i.e., it is driven by the way the vocabulary interprets abstract syntactic structure, not by dedicated rules distinct from the vocabulary items.

With respect to the larger picture, I therefore take this paper to be part of a research program that proposes that complex heads do not exist as pre-syntactic objects (cf. e.g., Bobaljik 2012 who makes a similar claim for comparative/superlative morphology). Instead, all composition of multiple features is the result of Merge, i.e., all feature structures are of the syntactic, binary branching kind, down to the individual feature level. I furthermore take it to provide an argument in favor of abandoning the notion of a template, as it is retained in the subset-based matching approach of DM, where one head provides one position of exponence. Since the templatic stance requires extensive structure manipulation by means such as Fusion or Fission, I argue that we are better off abandoning it in favor of a theory where a position of exponence is an effect of simply matching vocabulary items to contexts, rather than a combi-

nation of given syntactic representations and post-syntactic structure manipulation. I hope to convince the reader that this is not only a laudable goal from a Minimalist perspective, since it reduces the toolkit needed to account for the data, but that this also allows for new and interesting explanations.

The paper is organized as follows: Section 2 introduces the precise technology for the interpretation of syntactic structure at the PF interface that I adopt.

Section 3 introduces the Laz/Georgian agreement paradigms in detail, focusing on the four facts in need of explanation. I begin this exploration by focusing on Laz first, and then show that Georgian can be seen as a system that is largely parallel, but exhibiting a few extra “quirks” that can be modeled in precisely the terms I lay out in section 2.

Section 4 introduces the structure that spellout targets, and lays out the concrete analysis. It shows how the span-based account derives the different aspects of the data, in particular the prefixal person-asymmetry, the way omnivorous number expression can arise or be blocked, and how the relevant differences between the two languages come about during PF interpretation. After accounting for the distributional properties of all agreement sensitive affixes, Section 5 will offer a further interpretation of these results, which derives their linear distribution in terms of phrasal movement, span-based pied-piping, and Antisymmetry (Kayne 1994, 2017; Caha 2009; Starke 2009; Koopman 2018), providing some preliminary evidence in favor of such an analysis from the linear positions of various markers of morphologically complex Tenses.

Section 6 offers a comparison with previous accounts of the Georgian data, focusing on the Cyclic Agree account of the prefixal facts, Béjar (2003), Béjar and Rezac (2009), as well as a subset based approach to matching, Halle and Marantz (1993). Finally, Section 7 concludes.

2 Theoretical Background: Nanosyntax

Nanosyntax, like DM, assumes that morphology is at its heart syntactic, and that the object of study is the mechanism of post-syntactic interpretation of abstract syntactic structure. In the process of PF-interpretation – a process likely to be cyclically intertwined with syntax proper (a notion I briefly touch upon in Section 5, but largely leave aside) – syntactic structure is therefore translated into (morpho-)phonological structure. To this end, both theories assume that there are items in the post-syntactic vocabulary that match certain syntactic structures which they can translate. However, the notion of PF-interpretation in DM is *isemplatic*, insofar as it is internally complex heads that are the targets of vocabulary insertion, and that matching is subject to a subset principle: A vocabulary item in DM matches all contexts that it is a subset of. In contrast, Nanosyntax is *atemplatic*, and argues against the notion of internally complex heads that constitute the pre-syntactic list of formatives from which the syntax selects its building blocks. Instead, every head is conceived of as maximally simple, with no internal structure. *Merge* is the only combinatory device available in natural languages (Chomsky 1995), and any structure that is interpreted at PF is a structure of binary branching, simple, privative heads. To derive the effects

of bundling as well as the fact that we do, of course, find positions of exponence, vocabulary items (usually termed *lexicalized tree structures* (LTS) in Nanosyntax) are hypothesized to interpret contiguous pieces of syntactic structure, i.e., positions of exponence are effects of interpretation. Syncretisms are derived as the result of overspecification, i.e., matching is subject to a *Superset Principle*, such that an item matches certain substructures. This section introduces a formalization of such a system that is based on Starke (2009), Caha (2009), Pantcheva (2011), Taraldsen (2018), as well as Pantcheva and Caha (2012).²

2.1 PF Interpretation

The *Superset Principle* (SP) governs the matching of exponents and a syntactic structure, i.e., it relates any item in the post-syntactic vocabulary to the set of syntactic structures that it can potentially spell out. The targets of spellout are contiguous spans of heads, as per (10). Two heads form a span, if the phrase headed by the lower head is the complement of the higher head, and the notion applies transitively.

(10) *Span*

An n -tuple of heads $\langle X_n, \dots, X_1 \rangle$ is a span in a syntactic structure S , if and only if $X_{n-1}P$ is the complement of X_n in S .

Adapted from Taraldsen (2018: 90)

A vocabulary item itself *lexicalizes* such a span of heads, and such a lexicalized span of length n , $\langle X_n, \dots, X_1 \rangle$, characterizes a matching set of spans, namely the set of its subspans, as per (11). Matching is constrained by an *Anchoring* requirement (11a) that demands that the bottommost element of the vocabulary item, X_1 , and the syntactic span subject to spellout be identical, as well as a *Contiguity* requirement (11b), requiring the sequence of heads to be identical between the VI and the syntactic structure.

(11) *Superset Principle* (Matching)

A Vocabulary Item that lexicalizes a span $\langle X_n, \dots, X_1 \rangle$ matches any syntactic span $\langle Y_m, \dots, Y_1 \rangle$, s.t.:

- (i) $X_1 = Y_1$, and *Anchoring*
- (ii) for any Y_p , s.t. $p < m$: $(X_p = Y_p) \rightarrow (X_{p+1} = Y_{p+1})$ *Contiguity*

Consequently, every vocabulary item lexicalizes a span, and a lexicalized span characterizes a set of syntactic spans that it matches, as in (12). A span $\langle X_3, X_2, X_1 \rangle$ thus characterizes the set of matching contexts $\{\langle X_3, X_2, X_1 \rangle, \langle X_2, X_1 \rangle, \langle X_1 \rangle\}$ (i.e., if we think of a span as an ordered list, it matches the set of its tails), but, say $\langle X_3, X_2 \rangle$ would not be matched because it is not properly anchored, and $\langle X_3, X_1 \rangle$ would fail the contiguity requirement.

² See also the collection of papers in Baunaz et al. (2018) for more recent work in this framework, as well as Williams (2003) for a precursor that introduced a related notion of spanning.

(12) *Subspan*

Any vocabulary item $\langle X_m, \dots, X_1 \rangle$ characterizes a set of contiguous spans $\{\langle X_m, \dots, X_1 \rangle \mid m \leq n\}$ that it matches.

A primary goal of this notion is to derive classes of possible syncretisms, and argue that such syncretisms are not mere morphological curiosities, but are in fact informative with respect the internal syntactic structures whose PF interpretations we observe: If two forms are syncretic, i.e., if two different structures receive the same phonological interpretation, then a containment relationship should hold between them.³

For illustrative purposes, let us consider a toy grammar of the English copula. This example is provided to acquaint the readers with the relevant technology in a familiar context, and is not intended to provide an actual analysis of the English tense/agreement system. We begin with the first and third person singular, as in Table 2. In the past tense singular, first and third person are marked surface identically by *was*. Keeping in mind the Superset Principle, we might suspect there to be a con-

Table 2 English Copula: Past Tense, Singular

SG	
3	was
1	was
2	were

tainment relation between the first and third person agreement. For our illustrative purposes, let us abstract away from most of the material in the structure, as well as plausible further segmentation, and focus on the agreement features. Let us assume for the moment that person in English follows a containment hierarchy as in (13), a point based on Harley and Ritter (2002a) and Béjar and Rezac (2009) that I will return to in more detail below:

$$(13) \quad [2 [1 [3]]]$$

For the 1=3 syncretism of *was*, it now suffices to postulate a vocabulary entry such as (14), which lexicalizes first person agreement, which in turn properly contains the agreement structure of third person. (As a notational device, I will use the usual bracketing structure for spans throughout this paper, avoiding the n-tuple notation, $\langle \dots \rangle$, despite the fact that a span is not usually/necessarily a constituent.)

$$(14) \quad \text{was} \Leftrightarrow '[1 [3]]'$$

The span that *was* lexicalizes characterizes both the first and the third person, i.e., $[1[3]]$ as well as $[3]$, deriving the syncretism from the Superset Principle, as in (15):

$$(15) \quad \begin{array}{ll} \text{a. } \overbrace{[3]}^{\text{was}} & \text{Superset Principle} \\ \text{b. } \overbrace{[1 [3]]}^{\text{was}} \end{array}$$

³ That is, modulo notions such as zero affixes, zero heads/operators, etc.

Both the third person structure [3] and first person structure [1[3]] have [3] as their bottommost element, thus fulfilling the Anchoring Requirement, and both are contiguous subspans of [1[3]], and therefore both can be matched by the toy entry for *was* in (14).

While the Superset Principle determines a set of syntactic contexts that a VI matches, a second principle, *Cyclic Overwrite* (CO), determines, *which* syntactic spans actually receive spellout. The simple idea behind this notion is that the spellout algorithm targets the largest spans that it can find vocabulary items for. To accomplish this, spellout is implemented in a way that parallels Merge (16a), overwriting its own results at any step (16b), until no further overwriting is possible, due to the lack of an appropriate vocabulary item. When this happens, the previous cycle is said to be *effective*, and a new cycle begins, anchored at the head that could not be matched in the previous cycle.

(16) *Cyclic Overwrite*

- a. Spellout operates in a cyclic, bottom-up fashion, with each application of *Merge* being paralleled by a spellout operation on the resulting span.
- b. Any spellout operation that finds a matching VI in the lexicon overwrites the previous cycle that spelled out syntactic structure contained in the current node.
- c. A spellout operation is *effective*, if the next cycle of spellout fails to find a matching VI. A new cycle begins, anchored at the next node.

This conceptualization derives what has been dubbed the 'biggest wins theorem', namely that the size of the syntactic structure that receives an interpretation by a morphological object, depends solely on the size of a language's matching items. The spellout mechanism continues to overwrite its own results for increasingly larger parts, until no 'bigger' VI can be found.

To continue with our toy grammar for the English copula, we can now model the *was/were* contrast in terms of vocabulary item size, i.e., by arguing that *were* lexicalizes the second person structure [2[1[3]]], as in (17a), resulting in the spellout in (17b).

(17) a. $were \Leftrightarrow '[2[1[3]]]'$

b. $\overbrace{[2[1[3]]]}^{were}$
 $\underbrace{\hspace{1.5cm}}_{was}$

Cyclic Overwrite

Note, however, that within our toy grammar, we now run into a potential conflict that finds parallels in other modules: Both *was* and *were* are now matching candidates for the spellout of the first and third person singular in (15). To this end, the largely uncontroversial concept of an Elsewhere Principle (EP), famously ascribed to the ancient Sanskrit grammarian Pāṇini (Kiparsky 1973), is adopted, which states that if at any given point more than one rule of grammar has its conditions for application matched, the more specific one applies. In the spanning/superset terms developed so far, more specific simply equals fewer heads, as in (18).

(18) *Elsewhere Principle*

If multiple VIs match a given syntactic span, the VI with the fewest “unused” heads (i.e., heads that are part of the VI but not the matched syntactic span) wins.

Since *were* lexicalizes a head [2] that is not present in the agreement structure of first and third person, it will now lose out to *was* in these cases, but will still win out in case of the second person, thanks to cyclic overwrite.

Finally, a less widely adopted device will be used here, namely the notion of a *Pointer*, as developed by Pantcheva and Caha (2012).⁴ The basic idea of this notion (as adopted here) is to let vocabulary items lexicalize more than one (contiguous) span; the basic empirical aim is to account for certain classes of cross-categorical syncretisms, and the absence of other such syncretisms. As Pantcheva and Caha (2012); Caha and Pantcheva (2012) argue, certain classes of L-shaped syncretisms are highly prevalent across multi-dimensional paradigms, while others appear to be absent.⁵ In the discussion of Laz and Georgian, various empirical phenomena will be re-cast as such L-shaped syncretisms, and shown to be derivable under the Pointer approach. For illustration, consider one such L-shaped syncretism, once again from our English past tense copula example, as in Table 3. We can see that the plural forms of all three person configurations are syncretic with the second person singular, i.e., that the syncretism extends across the two paradigm “dimensions” of person and number. Contin-

Table 3 English Copula: Past Tense

	PST	
	SG	PL
3	was	were
1	was	were
2	were	were

uing with our toy example, let us assume, that the singular/plural contrast is encoded

⁴ The original purpose of Pointers is related to certain types of idioms (Michal Starke, p.c.), but the idea to employ it for the present purposes goes back to Pantcheva and Caha (2012).

⁵ Since their proposal has not been published, I will give an extremely short recapitulation here: Blansitt’s (1988) generalization states that if a dative can be used for locative purposes in a language, then it can also be used for allative purposes. Caha and Pantcheva (2012) propose, based a crosslinguistic study that these four cases correspond to the structures in (i).

(i) Case Structures

- | | | | |
|-------------|----------|-------------|---------------|
| a. Genitive | [GEN] | b. Dative | [DAT[GEN]] |
| c. Locative | [GEN[P]] | d. Allative | [DAT[GEN[P]]] |

Under the Pointer approach, the LOC=DAT=ALL syncretism arises when the case affix lexicalizes [DAT[GEN → [P]]]. Crucially, Blansitt’s generalization falls out from this, since matching both the dative structure and the locative structure is only possible if the VI also lexicalizes the allative structure without “unused” heads. Unattested syncretisms like LOC=GEN=DAT≠ALL, or LOC=DAT≠ALL, on the other hand, cannot be derived under this approach, i.e., in contrast to a subset based approach to syncretisms that allows for free cross-classification of two independent systems, the Pointer approach is restrictive in a predictive fashion.

simply by the presence/absence of a PL(ural) head above the person structure. To capture the fact that *were* can spell out the second person plural is now easy enough: We simply assume that the item *were* is to be reanalyzed as $were \Leftrightarrow '[PL[2[1[3]]]]'$, of which the second person singular, $[2[1[3]]]$, is still a matching sub-span. The issue arises, however, with the other two plural structures, since in the absence of $[2]$, PL and the lower person structure would no longer be contiguously matched. To account for this, we will allow a weaker matching requirement, with the person and number regions of the structure to be matched individually ($[1[3]]$ is a subspan of the lexicalized person span $[2[1[3]]]$), as we saw before, but with the additional caveat that the two matched spans, person and number, have to be contiguous with respect to each other (i.e., $[PL[1[3]]]$ still shows contiguity between the matched number span, and the matched person span). That is to say, the span in the syntactic structure that is matched is still a contiguous span in the structure. The contiguity requirement for matching, however, is relaxed, in case such a pointer is present: The Superset Principle in its core form gives rise to the possibility of the cross-number syncretism for the second person, and the Pointer gives rise to the possibility of cross-person syncretisms; in case we have both types of syncretism simultaneously (i.e., here, in case there is no smaller VI for second person singular, but there is one for first/third person singular), the syncretism will cross person and number, in an L-shape. A formal implementation of this idea is given in (19a). Note in passing that I will assume here, as per (19b), that Pointers have a syntactic correlate, in that they can occur only in places where heads select for a region – e.g., in our current example, PL selects for a person phrase of any size (first/second/third person), whereas $[1]$ always selects for $[3]$.

(19) *Pointers*

- a. A Vocabulary Item that lexicalizes two spans $X < X_n, \dots, X_1 >, Y < Y_m, \dots, Y_1 >$ by means of a pointer $X \rightarrow Y$ matches any syntactic span that is formed by contiguity between a subspan characterized by X and a subspan characterized by Y (including the empty ones):
 $\{ < X_q, \dots, X_1 >, < Y_r, \dots, Y_1 >, < X_q, \dots, X_1, Y_r, \dots, Y_1 > \mid q \leq n \wedge r \leq m \}$
- b. A Pointer may occur in a lexical item under a head X_1 only in case the syntactic head X_1 c-selects for a region, rather than a specific head.

Under such an proposal, we simply revise our toy *were* in (17a) as (20a), which now matches the plural agreement structure of all person configurations. As indicated in (20b-d), the PL head (i.e., the minimal/unitary span PL) is contiguous with the relevant subspans of $[2[1[3]]]$ in any case, and *were* thus matches all these structures. Note that it will cyclically overwrite *was* in the plural cases, as well as the second person singular, but not interfere with our analysis for the singular, as it still loses out to *was*, due to the elsewhere principle.

(20) a. $were \Leftrightarrow '[PL \rightarrow [2[1[3]]]]'$

- b. $\overbrace{[PL[2[1[3]]]]}^{were}$
- c. $\overbrace{[PL[1[3]]]}^{were}$

d. $\overbrace{[\text{PL}[3]]}^{\text{were}}$

Note that the Pointer approach is restrictive in the kinds of cross-categorical syncretisms it allows for, in particular in comparison to a subset approach that allows for the bundling of person and number into a single terminal: If there is a cross-person syncretism in the plural, that forms an L-shape with one of the singular forms, it has to be the largest one, since a hypothetical item $/\alpha/ \Leftrightarrow [\text{PL} \rightarrow [3]]$ could not apply in any person structure that is larger than the third person, i.e., it could not form a cross-person syncretism in the plural, s.t., the third person singular form is identical to the plural forms, but first/second singular are different. Such a syncretism is ruled out; the current system is more restrictive than a subset-based approach that allows independent cross-selection of the two systems, and where a much larger class of syncretisms could be derived.

In the remainder of the paper, I will apply these tools to the agreement paradigms of Laz and Georgian, showing that such approach allows for an interpretation in which a complex agreement system is derived by “cutting” an essentially one-dimensional structure (a span is a linear sequence of heads) into different pieces. Since the paradigms vary along five dimensions (object person, object number, subject person, subject number, tense), this is a highly restrictive interpretation of the system. I show that this interpretation allows for an account of two person asymmetries, the distribution of omnivorous number effects, as well as the differences between Laz and Georgian. The next section introduces the relevant paradigm, as well as a set of explananda related to these.

3 Laz & Georgian: The Data

This section first introduces two verbal agreement paradigms from Laz, and discusses the distribution of the individual affixes. In light of that description, I will lay out the properties of the Georgian paradigms as interesting deviations from some of the regularities we find in Laz. A set of descriptive generalizations about the exponence of person and number agreement will be introduced as a set of explananda. In section 4, I will then show that these generalizations can be derived under the restrictive notions provided above, and that the set of explananda can be understood in terms of contiguity: Person asymmetries arise when the smaller third person agreement can be spelled out with higher material, but the larger first and second person cannot; omnivorous number effects arise when both PL nodes are spelled out in a single effective cycle.

Before I turn to the distributional properties of the affixes, however, a general property of the two languages under discussion should be pointed out: Unlike third person subjects, third person plural objects do not trigger plural agreement in either language. While the spellout theory to be presented below could be adapted to derive these facts in terms of a set of syncretisms, I believe this would be not only stipulative but a mistake for the following reason: Both Laz and Georgian show additional restrictions on third person subjects triggering plural agreement. In Laz, inanimate third person subjects can never trigger plural agreement, and in Georgian they do so optionally. Silverstein Scale/Animacy Hierarchy effects of this kind are

cross-linguistically common in number marking, and often define a cut-off point below which number remains unmarked (Corbett 2000, Chap. 3, 4). The same scale has also been argued to show interaction with grammatical function in e.g., Aissen (1999, 2003), Keine (2010), Kiparsky (2008). That is to say, the inability to mark number appears to be correlated with being low on the Silverstein Hierarchy and/or being low on a scale related to grammatical function, and the Laz/Georgian case appears to be an instantiation of that general phenomenon. This raises many interesting questions on the theoretical status of the scales, which are a research topic of their own, far outside the scope of this paper. Therefore, I will not take any stance on those questions here, and will treat the inability of third person objects to trigger plural agreement as a fact in need of independent explanation, rather than a morphological phenomenon of the same type as the ones discussed here. Consequently all tables will be presented with a single row for third person object agreement, without distinguishing the third person object number.

It is also worth noting that this paper discusses transitive agreement as its primary focus. Intransitives agree with their sole argument as subjects, and are morphologically identical to transitives with third person objects. I will assume that this is a default, and that they thus fall under the same morphological analysis.

3.1 Pazar Laz

Laz is a South Caucasian language spoken mostly in the Black Sea region of Turkey. The data described in this section have been gathered in fieldwork with a speaker of the Pazar dialect of Laz, but identical facts have been described for the Arhavi dialect (Lacroix 2009, chap. 9; Lacroix 2011, p. 80).⁶ Since third person objects do not trigger plural agreement, as discussed above, I present all data with a single row for third person objects.

Table 4 Laz Verbal Agreement, Past Tense

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

A number of interesting generalizations can be stated over the paradigms in Tables 4 and 5, and I will describe the distributional properties of the affixes in the remainder

⁶ On the Pazar dialect in particular, see also Öztürk and Pöchtrager (2011); Demirok (2013). Öztürk and Pöchtrager (2011) contains a small number of errors with respect to the agreement accessibility of arguments, which are corrected in Demirok (2013).

Table 5 Laz Verbal Agreement, Present Tense

OBJECT	SUBJECT					
	1SG	1PL	2SG	2PL	3SG	3PL
1SG	—	—	m- -Ø	m- -Ø-t	m- -s	m- -an
1PL	—	—	m- -Ø-t	m- -Ø-t	m- -an	m- -an
2SG	g- -Ø	g- -Ø-t	—	—	g- -s	g- -an
2PL	g- -Ø-t	g- -Ø-t	—	—	g- -an	g- -an
3	v- -Ø	v- -Ø-t	-Ø	-Ø-t	-s	-an

^a 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.

of this subsection. The discussion here will then serve as a background against which to describe the more complicated Georgian paradigms in the next subsection.^{7,8}

Let me first discuss the affixes that we find across both paradigms, i.e., the Tense-invariant ones. These fall into two descriptive categories, the prefixes, and one suffix – I start with the agreement prefixes that were briefly discussed in the introduction, and then discuss the suffix *-t*.

The local object prefixes *m-* and *g-* are biuniquely related to a first and second person object, respectively: Whenever the object is first person, there is a prefix *m-*, and whenever there is a prefix *m-* the object is first person; the same relation holds for *g-* and second person objects. Neither prefix co-varies with Tense or number, and both are sensitive only to the object's respective person features.

The third overt prefix, *v-* (phonologically conditioned variants: *p-*, *p'-*, *b-*) and a null counterpart *Ø-* show a related kind of distribution. They are also invariant with respect to Tense and number, and can also be characterized as having a biunique relation to their contexts: The prefix *v-* occurs in all and only those cases where the subject is first person with a *concurrent* third person object, and in the same 2>3 contexts we find *Ø-*. This asymmetry between the local object prefixes on the one hand, and the subject-sensitive third person object prefixes constitutes our *first explanandum*, i.e., the prefixal alternation. We can characterize this as follows: If the object is local, it is sufficient to know the properties of the object to determine the prefix, but if the object is third person, determining what prefix is used requires taking into account properties of both the subject, and the object.

⁷ The paradigms lack the cells that would correspond to first and second person reflexive forms. There are two ways to express reflexivity in Laz, either with reflexive pronouns, which uniformly trigger third person agreement, or with valency changing verbal morphology that makes the verb intransitive. First and second person can therefore never simultaneously trigger subject agreement and object agreement within a single verb form, i.e. the lacking cells are not a part of the language.

⁸ Note that the present stem is derived with a thematic suffix that is sensitive to argument structure, thematic roles, and lexical aspect (cf. Öztürk and Pöchtrager 2011; Öztürk and Taylan Erguvanli 2017, p. 69). The corresponding set of suffixes in Georgian have been dubbed *present/future stem formants* (cf. Aronson 1990, p. 40 and Harris 1982). Given that these suffixes are sensitive to argument structure, I assume that these spell out of Voice heads, contextually conditioned by linearly adjacent Tense in the spirit of Embick (2015) Kastner (2018), but due to their invariance with respect to agreement, I abstract away from them here.

The final affix that does not vary across Tenses is *-t*. This suffix marks plurality whenever the subject is local. Note that it is insensitive to the source of plurality, occurring whenever at least one agreeing argument is plural.⁹ Number marking is therefore *omnivoracious* in the sense of Nevins (2011).

When the subject is local, Tense is uniformly marked by *-i* (PST) and *-Ø* (PRS) respectively. When the subject is third person, however, the expression of Tense interacts with number: In SG > SG contexts, *-u* (PST) and *-s* (PRS) are used, but if at least one argument is plural, we find *-es* (PRS) and *-an* (PST), respectively. As with *-t*, number marking is omnivoracious. Note that this can descriptively be characterized as recurrent L-shaped syncretism, as indicated in Table 6. This will play crucially into my account of these data, and become of particular relevance when introducing the Georgian system as a contrast to Laz.

Table 6 Laz – Omnivoracious Number

Local Subject		Subject			
		PST		PRS	
		2Sg	2Pl	2Sg	2Pl
1Sg		m- -i	m- -i-t	m- -Ø	m- -Ø-t
1Pl		m- -i-t	m- -i-t	m- -Ø-t	m- -Ø-t

Third Person Subject		Subject			
		PST		PRS	
		3Sg	3Pl	3Sg	3Pl
1Sg		m- -u	m- -es	m- -s	m- -an
1Pl		m- -es	m- -es	m- -an	m- -an

In the form that omnivoracious number takes, we find another person asymmetry, and thus a *second explanandum*: With local subjects, the expression of omnivoracious number is independent of Tense, but with third person subjects, its expression depends on Tense. Note that these explananda are parallel insofar as in both cases the exponence of third person is dependent on additional features (the subject in the first explanandum, tense in the second one) when compared to the expression of local arguments.

⁹ Conversely, if an argument does not agree for person, it is also excluded from agreeing for number, as discussed by Demirok (2013, p. 79): In ditransitive constructions, it is the indirect object that triggers object agreement, and the direct object can mark neither number nor person:

- (i) *nana-k ma t'k'va m-ots'ir-u/-*es*
 mother-ERG 1SG.DAT 2PL.NOM 1.OBJ-show-3SG.PST/*3PL.PST
 'Mother showed you_{pl} to me'

Demirok (2013)

3.2 Georgian

In comparison to Laz, the Georgian agreement paradigms in Tables 7 and 8 are more complex. While Laz exhibits omnivorous number effect uniformly, the Georgian paradigm parallels this fully only in the 1>2 corner, as indicated by the shaded L-shaped syncretism. Tables 5 (Laz) and 7 (Georgian), show the two language's paradigms to be different in 5 out of 22 paradigm cells, indicated in bold.¹⁰

Table 7 Georgian Verbal Agreement, Present/Future Tense (based on Aronson (1990, p. 169ff))

OBJECT	SUBJECT					
	1SG	1PL	2SG	2PL	3SG	3PL
1SG	—	—	m- -Ø	m- -Ø-t	m- -s	m- -en
1PL	—	—	gv- -Ø	gv- -Ø-t	gv- -s	gv- -en
2SG	g- -Ø	g- -Ø-t	—	—	g- -s	g- -en
2PL	g- -Ø-t	g- -Ø-t	—	—	g- -t	g- -en
3	v- -Ø	v- -Ø-t	-Ø	-Ø-t	-s	-en

The most obvious difference between the two paradigms of Laz and Georgian is the presence of an additional prefix *gv-* that occurs whenever the object is first person plural. As was discussed in Section 1, this is accompanied by a disappearance of omnivorous number effects, when compared to Laz – with Georgian first person objects, object plurality is marked at the prefix only, and it is exclusively the subject's plurality that gets marked in suffixal position. The plural agreement of each argument is expounded independently and distinctly. While there are differences with respect to the prefixal exponence of number, however, the prefixal exponence of person is identical to the one we find in Laz, i.e., we find first/second person object prefixes that are

¹⁰ It should be noted that both languages show a second type of transitive agreement paradigm called *Inversion*. In these paradigms a dative subject triggers the kind of prefixal agreement usually found with objects.

In Laz the nominative object does not trigger any agreement, instead the subject agreement appears to be a third person singular default (see also Öztürk and Pöchtrager 2011, p. 60ff). Unlike objects, however, dative subjects can trigger plural agreement even if they are third person.

In Georgian a suffixed copula with a second “prefixal” slot occurs when the dative subject is local, and third person plural dative subjects result in *-t* plural marking if and only if the nominative object is third person (Aronson 1990, Chap. 10.1, 12.1). I follow various other approaches to the agreement morphology in excluding these paradigms from the discussion: The differences between the two languages in this area are much larger than the ones discussed here, and are therefore not a priori useful objects of a unified analysis as proposed for the transitive agreement here. While the Laz Inverse Agreement is basically in line with the standard agreement, and captured by the current system without modification, the Georgian Inverse deviates significantly from the transitive agreement system that characterizes Georgian otherwise. Given its morphological and syntactic complexity, it deserves an analysis of its own. It is worth noting here that Laz does not show PCC effects, but Georgian does, as discussed by Harris (1981) under the term *Object Camouflage*. The fact that the copula and the additional agreement morphology occurs only in Georgian, and only when the nominative object is local, i.e. that it appears under the same conditions as a PCC violation, suggests that these two facts ought to receive a uniform explanation, but given the scope of that question, and the variety on proposals that attempt to account for the PCC effect(s), I leave this to future research.

bi-uniquely related to their object context, but with third person objects, we find an v/\emptyset -contrast that depends on the subject.

The second difference concerns the 3SG>2PL cell. There, the plural suffix *-t* occurs, whose distribution is limited to contexts with local subjects in Laz (which has *-an* in this cell) – that is to say, we see another instance of Georgian “breaking” the symmetry of the omnivorous plural marking that we see in Laz. Note further that the suffix *-s* that occurs in all other cells with a third person singular subject is absent in this context.

Omnivorous number effects do not completely disappear in 3PL>2 contexts, however: A second person plural object triggers *-t* if the subject is third person singular. A third person plural subject triggers *-en* in 3PL>2SG, but if both arguments are plural, the object’s plurality can no longer be marked with *-t*. Instead, we find a syncretism between the 3PL>2SG and 3PL>2PL cells. That is to say, in the total absence of omnivorous number effects we would expect the 3PL>2PL form in Table 7 to be **g- -en-t*, or **g- -t-en*, with each suffix marking one argument’s plurality. Instead, we find what can be characterized as a *conditional omnivorous number effect* with third person subjects and second person objects: Only if both the subject and the object are plural, can *-en* mark number omnivorously. In contrast, no similar effect appears in the 1>2 corner – here, the suffix *-t* has the same omnivorous distribution as in Laz, i.e., it is “simply” occurring if one or both of the arguments are plural. We thus have a *third explanandum*: The paradigmatic distribution of omnivorous number effects within Georgian, and its comparative distribution, i.e., its absence in certain parts of the Georgian paradigm, and its presence in the same parts of the Laz counterparts.

Interestingly, the distributional facts about the spellout of third person subject agreement are not fully identical in the imperfect, in Table 8. While the conditional omnivorous number effect for 3PL>2 can be found in both paradigms, the imperfect counterpart of *-s*, *-da*, co-occurs with the plural marker *-t* (bolded). That is to say, the absence of third person singular subject marking in the 3SG>2PL of the Present Tense does not have a counterpart in this paradigm. All other distributional facts, however, are parallel to the ones in Table 7.

Table 8 Georgian Verbal Agreement, Imperfect (based on Aronson (1990, p. 171))

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

Viewed through the lens provided by Laz, Georgian appears as characterized by a breakdown of plural symmetry, related to a more complex interaction of the prefixal and suffixal markings. This is linked to the presence of an additional, number sensi-

tive first person *plural* object prefix *gv-* that has no counterpart in Laz, as well as a conditional omnivorous number effect in $3 > 2$ contexts, where *-en* occurs if the subject, or the subject and the object are plural, but – unlike the Laz case – not when only the object is plural. Otherwise, however, the two languages are remarkably similar. In particular, they show the same kind of asymmetry with respect to dedicated markers for local objects, but not third person objects, and they both show Tense dependency of *omnivorous* plural spellout only if the subject is third person. We thus arrive at a *fourth explanandum*: How do we model the variation between the two agreement systems?

In (21), I provide a list of these explananda, interrelated facts that a theory attempting to derive the agreement patterns of these languages should account for.

(21) *Explananda*

- a. Dedicated local object exponents, but subject-dependent third person object exponents (Prefixal Alternation)
- b. Omnivorous plural exponents co-vary with Tense, if the subject is third person, but are independent of Tense with local subjects
- c. Distribution of omnivorous number effects
- d. Laz/Georgian variation

In the next section I will employ the machinery introduced above to derive these properties.

4 Deriving the Paradigms

In this section, I offer an analysis of the paradigmatic distribution of the agreement affixes introduced above. Initially, I abstract away from linear order, to which I return to in Section 5. I first motivate the structure that I assume spellout to be operating on. I then offer an in-depth analysis of Laz, focusing on the explananda introduced above, and how a span-based approach can account for them. I then move on to Georgian, showing that the differences between Laz and Georgian can be modeled simply in terms of slight variations in the vocabulary.

4.1 The Structure

Given the adopted perspective on spanning, it is informative to consider a few structures that certain affixes appear to spell out, since being spelled out by a single vocabulary item requires contiguity. From the bi-unique relation that the first/second person object affixes *m-* and *g-* have to their contexts, we can safely conclude that the object's person structure is, by itself, a contiguous span. Through that lens, consider the Georgian differences between first and second person objects in Table 9.

From the distribution of *gv-*, bi-uniquely related to first person plural objects, we can now conclude that, perhaps unsurprisingly, the object's person and number agreement structures likewise form a contiguous span, as in (22), where “–” denotes contiguity.

Table 9 Georgian – First/Second Person Objects

Object	Subject		Object	Subject	
	1Sg	1Pl		2Sg	2Pl
2Sg	g- -Ø	g- -Ø-t	1Sg	m- -Ø	m- -Ø-t
2Pl	g- -Ø-t	g- -Ø-t	1Pl	gv- -Ø	gv- -Ø-t

(22) *Contiguity (1)*PL₀ – PERSON₀

The more curious case is obviously the omnivorous number effect exemplified by *-t* in the 1>2 sub-paradigm in Table 9. Recall that Laz shows exactly that omnivorous distribution of *-t* throughout all local subject sub-paradigms.

Table 10 Laz – Tense (in)dependent Omnivorous Number (SBJ = local)**a. Tense Independent (SBJ = local)**

Object	Subject			
	PST		PRS	
	1Sg	1Pl	1Sg	1Pl
2Sg	g- -i	g- -i-t	g- -Ø	g- -Ø-t
2Pl	g- -i-t	g- -i-t	g- -Ø-t	g- -Ø-t

b. Tense Dependent (SBJ = 3)

Object	Subject			
	PST		PRS	
	3Sg	3Pl	3Sg	3Pl
2Sg	g- -u	g- -es	g- -s	g- -an
2Pl	g- -es	g- -es	g- -an	g- -an

As Table 10 occurs across Tenses, the same omnivorous number effect is also found with *-es/-an*, where the subject is third person, i.e., the contrast depends on subject person. I will interpret omnivorous number effects as the ability of a VI to span a structure that includes the subject's and/or the object's number agreement structure in addition to the subject's person features. The largest structure that *-t* can spell out is thus at least as big as (23).

(23) *Contiguity (2)*PL_S – PERSON_S – PL₀

Building on that, the *-an/-es* contrast in Table 10 is informative as well: Since both affixes show the same omnivorous number effect as *t*, they too must lexicalize the contiguous span in (23). Since the contrast between *-an* and *-es* itself, however, depends on Tense, they must also lexicalize this part of the structure, thus extending (23) to (24). Note that PL_{obj} is contiguous with PERSON_{obj}, as per (22), as well as PERSON_{sbj}, and that Tense cannot break the contiguity of (23). The restrictive notion

of contiguous matching thus forces us to conclude that Tense is at the PL_s edge, and that it cannot be at the edge where we find PL_{obj} (since we know $PERSON_o$ to be found there, from (22)).

(24) *Contiguity (3)*

$$\text{Tense} - PL_s - PERSON_s - PL_o$$

We can now combine (22) with (24) to provide at a full characterization of contiguity in the structure under discussion, and we arrive at a complete characterization of the contiguity involved with all five aspects, Tense, Number of Subject, Person of Subject, Number of Object, and Person of object, as in (25).

(25) *Contiguity (Final)*

$$\text{TENSE} - PL_s - PERSON_s - PL_o - PERSON_o$$

Finally, I assume that the well-established perspectives on subject/object asymmetries with respect to height hold, and that they are – as usually assumed – paralleled by different heights of subject and object agreement, i.e., that (26) holds.

(26) $AGR_s > AGR_o$

This gives us a complete ordering of the individual regions that are involved in the agreement morphology of Laz and Georgian, (25) becomes the hierarchy in (27).

(27) *The Structure*

$$\text{TENSE} > PL_s > PERSON_s > PL_o > PERSON_o$$

Next, let us consider the internal structure of the regions Tense/Number/Person that are involved in the agreement system's morphology. The fact that first/second person objects have dedicated exponents, while third person objects do not, provides us with a relevant question about person. The aim here is to show that by assuming that the form of vocabulary items that spell out syntactic structure is a span, we can derive the possibility for such an asymmetry. To this end, I adopt the notion that first and second person are structurally more complex than third person, in that the former structurally contain the latter (cf. e.g., Harley and Ritter 2002a,b; Béjar 2003; Béjar and Rezac 2009), and therefore an asymmetry arises: A vocabulary item that can spell out the agreement structure of a local argument also matches the agreement structure of a third person argument (due to the superset principle), but the inverse is not true. I will argue in detail below, that a third person object is spelled out in a span with other material, but first/second person objects are “too large”, i.e., they break the relevant contiguity with the higher material. Concretely, I will assume that languages vary parametrically in which local person is more marked, and that the structural containment re-interpretation of the (partial) feature geometry of Harley and Ritter (2002a) that is given in Table 11 holds.

With respect to Laz and Georgian I do not currently have any highly informative data on the question, and the system I will propose below can be implemented in either variant. However, since the AUTH selecting implementation requires an additional zero affix, when compared to the ADD selecting one, I will assume that Laz and Georgian are ADD selecting throughout the remainder of the paper. Here, nothing crucial hinges on that, the relevant notions are that there is a containment relation between participants, and that participant agreement properly contains the structure

Table 11 Person Specifications

Person	AUTH(or) selecting	ADD(ressee) selecting
3 rd	[REF]	[REF]
2 nd	[PART[REF]]	[ADD[PART[REF]]]
1 ^{sg}	[AUTH[PART[REF]]]	[PART[REF]]

of third person agreement, but since both $1=3 \neq 2$ syncretisms and $2=3 \neq 1$ ones exist crosslinguistically (Cysouw 2003), this is one way for the present system to accommodate these facts.

For Number, I simply assume a minimal privative alternation: A PL(ural) head is optionally merged on top of the person structure, and the absence of such a node results in default singular interpretation. In this sense, I adopt a version of Nevins' (2011) argument that number contrasts are encoded via presence/absence of material, but person is always specified. Here, that translates into assuming that a minimal person structure, REF, is always present, but the singular simply corresponds to the absence of PL.

Lastly, a brief note on Tense as the last part of the structure is in order. Insofar as I do not intend to undertake an analysis of the Tense system here, I will refrain from making claims about its internal structure, limiting myself to placeholders such as PRS and PST for what is likely to be an internally complex structure for the remainder of this section.

An example of a complete structure is given in (28), which illustrates the contrast between omnivorous number marking and independent number marking internal to Georgian: Whether omnivorous number effects arise does now depend on the way the structure is “cut up” by the vocabulary items in the course of spellout – if the two PL nodes are spelled out in two independent cycles, the result is independent number marking, if they are spelled out in a single cycle, i.e., by the same VI, omnivorous number may arise.

- (28) a. $\overbrace{[\text{IMPF}[\text{PL}_s[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PL}_o[\text{PART}_o[\text{REF}_o]]]]]]]]]}^{-di} \overbrace{]}^{-t} \overbrace{]}^{gv-}$ Georgian: 2PL > 1PL
- b. $\overbrace{[\text{IMPF}[\text{PL}_s[\text{PART}_s[\text{REF}_s[\text{PL}_o[\text{ADD}_o[\text{PART}_o[\text{REF}_o]]]]]]]]]}^{-di} \overbrace{]}^{-t} \overbrace{]}^{g-}$ Georgian: 1PL > 2PL

In what follows, I show that we can characterize all affixes as spanning a contiguous part of this type of structure.¹¹

¹¹ The structure raises obvious questions as to its nature and the way it is constructed. One might interpret this structure either as the result of successive cyclic head movement of a set of person/number agreement heads (along the lines of Preminger 2011), or possibly Multiple Agree (Hiraiwa 2005) with the resulting structure reflecting relative heights. Under such a view, the target of spellout would be spans within a complex head, formed by the syntax, and a probe would be an instruction to the syntax to build such a structure under a matching requirement that pertains to a specific syntactic configuration, such as c-command. Alternatively, the agreement structure might in fact be part of the extended projection of the verb, possibly heads that provide phi values to initially unvalued pronominal elements, along the lines of Kratzer (2009), or Stegovec (2019), which might imply that agreement is somewhat reminiscent of Sportiche (2005, 2006) style determiners in the extended projection of the verb. The subpart of the analysis

4.2 Laz

For ease of reference, I repeat the past Tense paradigm of Laz as Table 12 here; affixes that do not covary with Tense are italicized.

Table 12 Laz Verbal Agreement, Past Tense (repeated)

OBJECT	SUBJECT					
	1SG	1PL	2SG	2PL	3SG	3PL
1SG	—	—	<i>m- -i</i>	<i>m- -i-t</i>	<i>m- -u</i>	<i>m- -es</i>
1PL	—	—	<i>m- -i-t</i>	<i>m- -i-t</i>	<i>m- -es</i>	<i>m- -es</i>
2SG	<i>g- -i</i>	<i>g- -i-t</i>	—	—	<i>g- -u</i>	<i>g- -es</i>
2PL	<i>g- -i-t</i>	<i>g- -i-t</i>	—	—	<i>g- -es</i>	<i>g- -es</i>
3	<i>v- -i</i>	<i>v- -i-t</i>	<i>-i</i>	<i>-i-t</i>	<i>-u</i>	<i>-es</i>

Tense-invariant affixes italicized.

4.2.1 Laz – Prefixal Alternation (First Explanandum)

In this subsection I account for the prefix alternation. To this end, I will introduce the way local object agreement is spelled out, and then argue that *v-* is a 1>3 portmanteau that is incompatible with local objects. I then contrast this with the way third person objects are spelled out, namely together with higher material. The possibility of such an asymmetry between the subject (in)dependent spellout of local/third person arises because objects are low, and local persons are structurally larger than third person; the vocabulary of Laz exploits this asymmetry, giving rise to the prefixal alternation.

First, let us consider the case of *m-* and *g-*, both of which have a bi-unique relation to their contexts, i.e., they occur in all and only those contexts where the object is first or second person, respectively. Let us assume that they lexicalize precisely the structure that is specific to these contexts, and that there are no relevant competitors that could overwrite them.

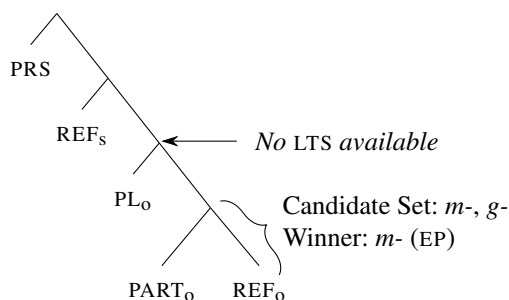
- (29) a. $m- \Leftrightarrow '[PART_0 [REF_0]]'$
 b. $g- \Leftrightarrow '[ADD_0 [PART_0 [REF_0]]]'$

This trivially accounts for their distribution: Whenever we have first/second person object agreement, said agreement structure will be spelled out by *m-/g-*. This is exemplified in (30): Cyclic Overwrite tells us to spell out the largest structure that can

in the current section is agnostic about this question, as long as the relevant structural containment relations hold, i.e., as long as a specific theory of agreement is compatible with the syntax building the kind of structure given in (27), either view is compatible with the results derived here. In Section 5, I provide some arguments in favor of the latter hypothesis, based on morpheme order; the dependency, however, is asymmetric: While the account of linear order will crucially rely on phrasal movement, and therefore on these heads being part of phrasal syntax, the account of their paradigmatic distribution is independent of such an interpretation. I will largely leave the larger questions that this raises for the nature of Agree or agreement untouched, for now, and hope that future research may shed more light on these questions.

be matched by a VI. The vocabulary does not contain any item that could spell out the structure headed by PL_o , but it does have two items that match the one headed by $PART_o$, namely $m-$ and $g-$. The elsewhere principle decides between the two candidates: Since $g-$ contains an unused feature, ADD_o , but $m-$ does not, the latter wins. The syntactic structure is marked as interpreted, and a second cycle of spellout can begin, with PL_o as its bottommost element/anchor, as we will see in a moment. Note that this structure will provide a crucial point of comparison between Laz and Georgian, as I will argue that the latter does in fact have an affix that can lexicalize a first person plural object, $gv-$, thus starting the second cycle of spellout with a different bottom element.

(30) Laz: 3SG>1PL



Next, recall that $v-$, too, has a bi-unique relation to a specific context, and occurs in all and only 1>3 contexts. We may thus regard $v-$ as a portmanteau morpheme, as encoded in (31a): It lexicalizes the person structure of both a third person object, and a first person subject. I follow previous analyses (Béjar 2003; Béjar and Rezac 2009; Halle and Marantz 1993) in assuming that in addition to $v-$, there is a corresponding zero affix for second person subjects. Note that $\emptyset-$, unlike $v-$, contains a pointer, thus allowing it to be anchored at REF_s .¹²

(31) a. $v- \Leftrightarrow '[PART_s [REF_s [REF_o]]]'$

b. $\emptyset- \Leftrightarrow '[ADD_s [PART_s [REF_s \rightarrow [REF_o]]]]'$

Consider a derivation in which the subject is first person plural, and the object third person, as in (32), i.e the structure in which the portmanteau $v-$ is found in the paradigm. We find that this time the biggest structure for which there is an item lexicalizing it is the one headed by $PART_s$. Once more, two items lexicalize this structure,

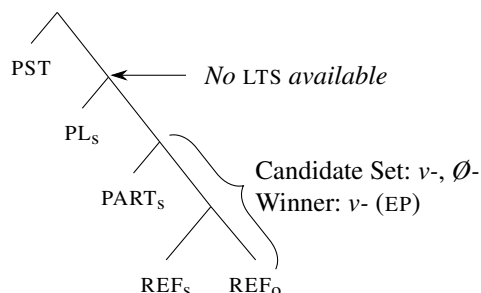
¹² Phonologically null affixes are obviously motivated primarily on theory internal grounds, and the current statement is no exception. However, Georgian shows the same zero-agreement for second person subjects as Laz, and has an overt counterpart to $\emptyset-$ in the copula's present Tense paradigm (Aronson 1990, p. 66), thus providing independent evidence for such an affix.

(i) a. $v-ar$ b. $x-ar$
1.SUBJ-COP 2.SUBJ-COP

Note also that there is a rather curious prediction of this theory: This affix is able to spread into the 1SG>2SG cell, spelling out the subject features, although this could easily be avoided by postulating a second zero affix. It is my hope, however, that these kinds of unexpected distributions will turn out to be useful in analyzing other complex agreement systems, but as it stands this is an unusual possibility predicted by the system.

\emptyset - and v -, and the EP decides in favor of the smaller one of these, namely v -. Subject and object person are spelled out in tandem, since REF_s and REF_o are contiguous.

(32) Laz: 1PL>3



This derives the basic pattern of the prefix alternation: If the object is third person, material of the subject and the object are spelled out together; if the object is local, however, PART_o disrupts the relevant contiguity, and m -/g- instead spell out the object's person agreement as we saw above.

After seeing examples of the object-prefixes, as well as the portmanteau 1/2>3 ones, let us consider another simple case, 3SG>3, which shows only one affix, $-u$ ($-s$ in the present tense). Under the assumptions laid out in the previous section, the fact that there is a single affix, may be interpreted as $-u$ /- s spelling out the whole Tense/Agreement structure, as in (33) – that is to say, these affixes, too, are potential portmanteaus.

- (33) a. $\overbrace{[\text{PST}[\text{REF}_s[\text{REF}_o]]]}^{-u}$ PST: 3SG>3
 b. $\overbrace{[\text{PRS}[\text{REF}_s[\text{REF}_o]]]}^{-s}$ PRS: 3SG>3

However, $-u$ /- s also occur with first/second person objects, in which case the resulting morphological spellout is bimorphemic. Given the VIS in (29), coupled with the fact that $-u$ /- s occur in all 3SG>XSG contexts, we may further interpret this as $-u$ spelling out either $[\text{PST}[\text{REF}_s[\text{REF}_o]]]$, as in (33) or $[\text{PST}[\text{REF}_s]]$, as in (34):

- (34) a. $\overbrace{[\text{PST}[\text{REF}_s[\text{ADD}[\text{PART}[\text{REF}_o]]]]]}^{-u}$ $\overbrace{[\text{ADD}[\text{PART}[\text{REF}_o]]]}^{g-}$ PST: 3SG>2SG
 b. $\overbrace{[\text{PST}[\text{REF}_s[\text{PART}[\text{REF}_o]]]]}^{-u}$ $\overbrace{[\text{PART}[\text{REF}_o]]}^{m-}$ PST: 3SG>2SG

That is to say, under the assumptions about spellout that I have laid out, the data leads us to a simple conclusion about $-u$ /- s , namely that they lexicalize REF_o under a pointer, and that they are therefore able to match the two structures in (33) and (34), respectively:

- (35) a. $-u \Leftrightarrow '[\text{PST}[\text{REF}_s \rightarrow [\text{REF}_o]]]'$
 b. $-s \Leftrightarrow '[\text{PRS}[\text{REF}_s \rightarrow [\text{REF}_o]]]'$

Again, we see the same alternation: A local object is structurally big, and this triggers an additional cycle of spellout. The third person object, in contrast, can be spelled out together with subject material.

The account of the first explanandum – the fact that first/second person object agreement has dedicated exponents, while third person object exponence depends on the subject – is now complete, consisting of three parts. First, objects are low in the agreement structure, and thus subject to the first relevant cycle of spellout. Secondly, local objects correspond to a larger structure that properly contains the agreement structure of a third person object. Thirdly, given the structure I argued for, affixes may lexicalize REF_0 under a pointer, together with higher material, i.e., within a portmanteau. It is only when the object is local, that these specific portmanteau VIs are blocked from effectively spelling out REF_0 by cyclic overwrite – in the presence of an item that can spell out the larger object structure, they will be overwritten by these, i.e., neither *v-*, nor *-u/-s* are competitors for such a span. In the present system, the existence of portmanteau morphemes in the vocabulary blocks a potential dedicated third person object marker from participating in the system: Even if a hypothetical VI existed that spelled out only REF_0 , it would always be overwritten, and thus never surface. The same, however, does not apply to local objects, which block the relevant contiguity between REF_0 and the subject agreement, and thus the VIs *m-* and *g-* always surface if the object is local. The explanatory load is thus divided: On the one hand, the syntactic structures that I argued for encode subject/object asymmetries in terms of height, and person asymmetries in terms of size, but it is the set of vocabulary items, i.e., the language specific PF-interpretation, that give rise to a system that exploits these asymmetries.

4.2.2 Laz – The Suffixes and Omnivorous Number

As we saw earlier, Laz exhibits omnivorous number effects throughout its agreement paradigm. This omnivorous expression of number is furthermore dependent on the subject person: If the subject is local, plural is spelled out by *-t*, regardless of Tense. If the subject is third person, another split comes about: In the past Tense, plural is spelled out by *-es*, and in the present Tense it is spelled out as *-an*. This subsection will provide a unified account of these facts.

Under the current approach, omnivorous number agreement can arise if a suffix is able to interpret a span that includes the subject's number and person, as well as the object's number – I now turn to the lexical entry of *-t* that will allow for such cycles of spellout. The lexical entry of *-t* must include local subject features. Given that we know it to occur with both first and second person features, i.e., given that *-t* can spell out both both the contexts in (36a) and (36b), we know that it can spell out PL_s even if it does not spell out ADD_s – that is to say, we see evidence for region-specific application of the superset principle. Therefore, the person structure must be under a pointer, for *-t* to be able to match both first and second person subject agreement. Similarly, (36c) shows that the low PL_0 must be under a pointer, as *-t* can spell out PL_s even when only the subject is plural, and *-t* is anchored at REF_s . I return to the spellout of PST by *-i* shortly, but indicate it here for completeness.

- (36) a. $\overbrace{[\text{PST}[\text{PL}_s[\text{PART}_s[\text{REF}_s[\text{PL}_o[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]]]]]}^{-i} \overbrace{[\text{REF}_s[\text{PL}_o[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]]]}^{-t} \overbrace{[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]}^{g-}$ Laz: 1PL>2PL
- b. $\overbrace{[\text{PST}[\text{PL}_s[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PL}_o[\text{PART}_o[\text{REF}_o]]]]]]]}^{-i} \overbrace{[\text{REF}_s[\text{PL}_o[\text{PART}_o[\text{REF}_o]]]}^{-t} \overbrace{[\text{PART}_o[\text{REF}_o]]}^{m-}$ Laz: 2PL>1PL
- c. $\overbrace{[\text{PST}[\text{PL}_s[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PART}_o[\text{REF}_o]]]]]]]}^{-i} \overbrace{[\text{REF}_s[\text{PART}_o[\text{REF}_o]]]}^{-t} \overbrace{[\text{PART}_o[\text{REF}_o]]}^{m-}$ Laz: 2PL>1SG

The distributional facts about $-t$ thus lead us to the structure in (37), allowing it to spell out a structure with either the subject, or the object, or both being plural.

$$(37) \quad -t \Leftrightarrow '[\text{PL}_s \rightarrow [\text{ADD}_s [\text{PART}_s [\text{REF}_s \rightarrow [\text{PL}_o]]]]]'$$

Note that, crucially, the L-shaped syncretism only arises if we have a smaller competing affix, that occurs when neither argument is plural, and that \emptyset -, as defined above, fulfills this role, as exemplified in (38): In three out of four cases, i.e., the ones with a PL head, $-t$ spells out the person structure. In (38a,b), \emptyset - cannot be anchored at PL_o , and thus does not compete. In (38c), $-t$ overwrites \emptyset -, which cannot spell out PL_s , but in (38d), \emptyset - and $-t$ are both candidates for the spellout of the subject person structure, and \emptyset -, the smaller affix, wins due to the elsewhere principle.

(38) *The L-shaped Syncretism with -t*

- a. $\overbrace{[\text{PST}[\text{PL}_s[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PL}_o[\text{PART}_o[\text{REF}_o]]]]]]]}^{-i} \overbrace{[\text{REF}_s[\text{PL}_o[\text{PART}_o[\text{REF}_o]]]}^{-t} \overbrace{[\text{PART}_o[\text{REF}_o]]}^{m-}$ Laz: 2PL>1PL
- b. $\overbrace{[\text{PST}[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PL}_o[\text{PART}_o[\text{REF}_o]]]]]]]}^{-i} \overbrace{[\text{REF}_s[\text{PL}_o[\text{PART}_o[\text{REF}_o]]]}^{-t} \overbrace{[\text{PART}_o[\text{REF}_o]]}^{m-}$ Laz: 2SG>1PL
- c. $\overbrace{[\text{PST}[\text{PL}_s[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PART}_o[\text{REF}_o]]]]]]]}^{-i} \overbrace{[\text{REF}_s[\text{PART}_o[\text{REF}_o]]]}^{-t} \overbrace{[\text{PART}_o[\text{REF}_o]]}^{m-}$ Laz: 2PL>1SG
- d. $\overbrace{[\text{PST}[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PART}_o[\text{REF}_o]]]]]}^{-i} \overbrace{[\text{REF}_s[\text{PART}_o[\text{REF}_o]]]}^{\emptyset-} \overbrace{[\text{PART}_o[\text{REF}_o]]}^{m-}$ Laz: 2SG>1SG

The Tense-dependent third person subject suffixes $-es$ and $-an$, are omnivorous as well, and thus a parallel argument holds with respect to number: Given that we know the affixes to be able to occur with either or both of the arguments being plural, both PL_s and PL_o must have a pointer above them, in the former case under the respective Tense structures, given that we know these affixes to express Tense. Furthermore, paralleling the argument for $-ul$ -, $-es$ /- an must be able to spell out REF_o , given a) that they are the only affix in the 3PL>3 context, and b) that we would otherwise expect v - to spread into these cells, since that is, so far, the smallest marker that is able to spell out $[\text{REF}_s[\text{REF}_o]]$. We therefore arrive at (39):¹³

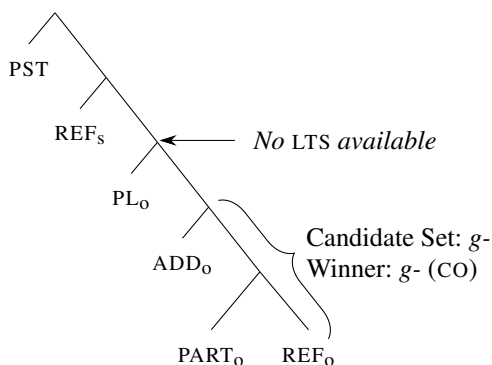
- (39) a. $-es \Leftrightarrow '[\text{PST} \rightarrow [\text{PL}_s [\text{REF}_s \rightarrow [\text{PL}_o \rightarrow [\text{REF}_o]]]]]'$
 b. $-an \Leftrightarrow '[\text{PRS} \rightarrow [\text{PL}_s [\text{REF}_s \rightarrow [\text{PL}_o \rightarrow [\text{REF}_o]]]]]'$

¹³ Note that these affixes embed a structure $[\text{PL}_o \rightarrow [\text{REF}_o]]$, despite my claim that a configuration $[\text{PL}_o [\text{REF}_o]]$ does not arise in transitive agreement. In the Laz inverse paradigms (discussed briefly in fn. 10), however, third person dative subjects do trigger plural object agreement. Whatever their precise syntax, their agreement morphology can therefore be captured in this system.

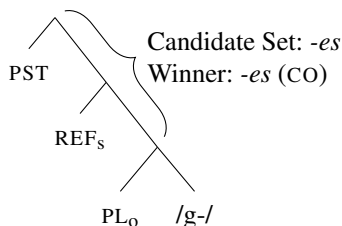
To see *-es* at play in spelling out a low plural feature, consider (40). The first effective cycle of spellout in (40a) operates as we have seen above, with *g-* spelling out the object's person structure. In (40b) we see that the second cycle of spellout becomes effective at the Tense node. There is no competing item that could lexicalize the same span: No other element that lexicalizes PST can also be anchored at PL_o , and we therefore successfully derive the surface form *g- -es*.

(40) Laz 3SG>2PL: *g- -es*

a. *First Effective Cycle*



b. *Second Effective Cycle*



As was the case for *-t* and \emptyset -, it is the competition with the smaller affixes, *-u/-s* that creates the L-shaped syncretism, and the remaining three cells from the 3>2 corner are given in (41). In the same fashion as above, *-u* only wins out when both affixes compete for the same structure, i.e., when both affixes can be anchored, and neither can overwrite the other. Only in this case does the Elsewhere Principle decide the competition, with *-u* becoming the effective spellout.

(40') *The L-shaped Syncretism with -es* (continued)

- | | | |
|----|--|--------------|
| a. | $\overbrace{[PST[PL_s[REF_s[PL_o[ADD_o[PART_o[REF_o]]]]]]}^{-es} \overbrace{[PART_o[REF_o]]}^{g-}$ | Laz: 3PL>2PL |
| b. | $\overbrace{[PST[PL_s[REF_s[ADD_o[PART_o[REF_o]]]]]}^{-es} \overbrace{[PART_o[REF_o]]}^{g-}$ | Laz: 3PL>2SG |
| c. | $\overbrace{[PST[REF_s[ADD_o[PART_o[REF_o]]]]}^{-u} \overbrace{[PART_o[REF_o]]}^{g-}$ | Laz: 3SG>2SG |

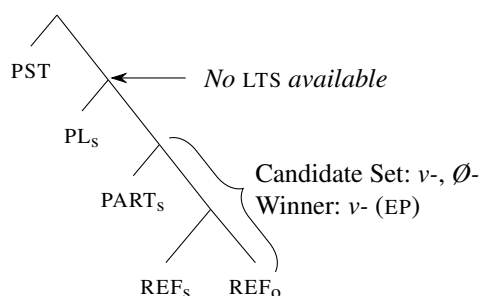
Recall that with local subjects, omnivorous number is not dependent on Tense, and that unlike the cases in (41) (which are bi-morphemic) with local subjects, we find a tri-morphemic agreement structure instead: Tense is spelled out in its own cycle, following the spellout of the phi-structure. The contrast in Tense is simply encoded by the affixes in (41):¹⁴

- (41) a. $-i \Leftrightarrow \text{'[PST]}'$
 b. $-\emptyset \Leftrightarrow \text{'[PRS]}'$

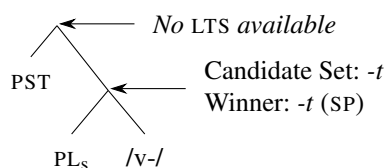
As a final illustration, now that all pieces are in place, consider the structure in (42), with a third person object and a first person plural subject. The structure headed by PART_s is the largest one that any item can spell out. As we saw in (32), we have two candidates, \emptyset - and v -, the winner of which is determined by the elsewhere principle. The second effective cycle of spellout targets only PL_s . While $-es$ does contain a span $[\text{PST}[\text{PL}_s]]$, it is not a candidate due to the anchoring condition, and therefore no element is capable of spelling out a larger span. We therefore need three cycles of spellout, and since $-i$ matches PST without any superfluous heads, the elsewhere principle decides in its favor, over $-es$, giving rise to the tri-morphemic result v - $-i$ - t .

- (42) Laz 1PL>3: v - $-i$ - t

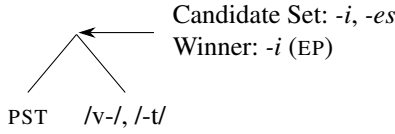
a. *First Effective Cycle*



b. *Second Effective Cycle*



¹⁴ An interesting alternative to the zero affix would be to argue that the past tense properly contains the present tense, and to specify the relevant affixes for the local subjects for PRS, but not PST, but the ones for third person for both. Under this perspective, $-i$ would spell out only [PST], and we would not need another zero affix. I abstract away from questions of the internal nature of Tense here, however, since they are not the topic of this paper.

c. *Third Effective Cycle*

This analysis does two things for us. First, it lays the groundwork for an understanding of the more complex Georgian system, which I will introduce shortly. Secondly, it gives an account of explanandum number two, i.e., the fact that omnivorous number co-varies with Tense with third person subjects, but not with local subjects. With the latter, instead, Tense is spelled out by itself. Crucially, this is, once again, partly an effect of the lexical specifications of the VIs, but as was the case with the absence of dedicated third person markers, the structural claims restrict the space of possibilities. In fact, the hypothetical inverse of the current system, where omnivorous number co-varies with Tense only if the subject is local, but not if the subject is third person, is impossible to derive under the current assumptions.

To make this argument clear, consider the following: Firstly, we accounted for the fact that *-t* occurs with both first and second person, as well as omnivorously, by arguing that both subject person, and PL_o occur under a pointer. Since local persons contain the third person, it is thus compatible with all three subject persons, but since *-es/-an* spell out a larger span that includes Tense, this never comes to have effect if the subject is third person. The opposite split, however, would necessarily mean that the third person omnivorous number affixes were “tenseless”, and the local subject ones were tensed. Consider three such hypothetical affixes, *t'*, *t''*, and *es'*.

(43) *Hypothetical Affixes*

- a. $t' \Leftrightarrow '[PST \rightarrow [PL_s \rightarrow [ADD_s [PART_s [REF_s \rightarrow [PL_o]]]]]]'$
- b. $t'' \Leftrightarrow '[PRS \rightarrow [PL_s \rightarrow [ADD_s [PART_s [REF_s \rightarrow [PL_o]]]]]]'$
- c. $es' \Leftrightarrow '[PL_s [REF_s \rightarrow [PL_o]]]'$

Now, crucially, the fact that the third person is properly contained in first/second person, means that the Tense-sensitive *t'/t''* could *always* overwrite *es'* at the Tense level. Any structure that *es'* would match would be properly contained in a larger structure that *t'/t''* could also match, and therefore, no split would arise whatsoever. The person asymmetry in omnivorous number marking is thus tied to the same person hierarchy that gives rise to the asymmetric spellout of object person agreement.

This, then, completes the account of the Laz agreement paradigms. The affixes proposed derive all relevant forms, “carving up” an agreement structure into pieces of varying sizes that are translated into morpho-phonological units. This is by itself an interesting result: In arguing that all the relevant material is PF-interpreted in contiguous spans, I showed that a complex, five-dimensional system can be interpreted as underlyingly one-dimensional, structured only by the order of merge; a significant reduction in complexity that I have shown to make interesting and subtle predictions about possible systems. In doing so, I have accounted for two person-based splits, one pertaining to the presence of dedicated local object markers, and absence of dedicated third person object markers, and one pertaining to the co-variance of

omnivorous number with tense. In the next subsection, I show that the analysis does not only carry over to Georgian, but that it offers an account of the remaining two explananda, namely the Laz/Georgian variation, and the distribution of omnivorous number effects within Georgian, and between the two languages. All that is needed is a slight variation in the vocabulary of the two languages.

4.3 Georgian

Table 13 repeats the agreement paradigm. As before, the affixes that do not co-vary with Tense are italicized, and the cells that differ from their Laz counterparts are in bold.

Table 13 Georgian Verbal Agreement, Present/Future Tense (repeated)

OBJECT	SUBJECT					
	1SG	1PL	2SG	2PL	3SG	3PL
1SG	—	—	<i>m-</i> -Ø	<i>m-</i> -Ø- <i>t</i>	<i>m-</i> -s	<i>m-</i> -en
1PL	—	—	gv- -Ø	gv- -Ø- t	gv- -s	gv- -en
2SG	<i>g-</i> -Ø	<i>g-</i> -Ø- <i>t</i>	—	—	<i>g-</i> -s	<i>g-</i> -en
2PL	<i>g-</i> -Ø- <i>t</i>	<i>g-</i> -Ø- <i>t</i>	—	—	g- - t	<i>g-</i> -en
3	<i>v-</i> -Ø	<i>v-</i> -Ø- <i>t</i>	-Ø	-Ø- <i>t</i>	-s	-en

Tense-invariant affixes italicized.

4.3.1 The Prefix Alternation & The Breakdown of Omnivorous Number

Recall that out of the five paradigm cells that show differences between the two languages, four concerned those with first person plural objects. Table 14 repeats a relevant part of the two language for an easy comparison. In Georgian, the subject/object symmetry in the spellout of number that we saw in Laz is broken down, when the object is first person: Subject and object mark their plurality independently, and no omnivorous number effects arise. Crucially, *gv-* has the same one-to-one correspondence with a context that we saw with the other prefixes: It occurs in all contexts with first person plural objects, and only in these.

Table 14 First Person Objects

Laz			Georgian		
Object	Subject		Object	Subject	
	2Sg	2Pl		2Sg	2Pl
1Sg	<i>m-</i> -Ø	<i>m-</i> -Ø- <i>t</i>	1Sg	<i>m-</i> -Ø	<i>m-</i> -Ø- <i>t</i>
1Pl	<i>m-</i> -Ø- <i>t</i>	<i>m-</i> -Ø- <i>t</i>	1Pl	gv- -Ø	gv- -Ø- <i>t</i>

As before, I take this bi-unique relation to be indicative of the span *gv-* spells out, and thus arrive at the conclusion that Georgian *gv-* lexicalizes the structure of a first person plural object, as in (44a). Note that the prefixes in Georgian do otherwise work the same way, and are thus analyzed the same way as in Laz (44b-e).

(44) *Prefixes (Georgian)*

- a. $gv- \Leftrightarrow '[PL_o [PART_o [REF_o]]]'$
- b. $m- \Leftrightarrow '[PART_o [REF_o]]'$
- c. $g- \Leftrightarrow '[ADD_o [PART_o [REF_o]]]'$
- d. $v- \Leftrightarrow '[PART_s [REF_s [REF_o]]]'$
- e. $\emptyset- \Leftrightarrow '[ADD_s [PART_s [REF_s \rightarrow [REF_o]]]]'$

Consequently, we get the same alternation effect across all objects, with respect to *person*. With a first person object, however, *gv-* now breaks the omnivorous *number* effect – but not the person alternation. In Georgian, but not in Laz, a first person object's PL_o can be spelled out in the *first* cycle, as shown for the $2>1$ cases in (45). Since PL_s is not interpreted in the same cycle as PL_o , there is now no omnivorous number effect. When the object is first person plural (45a,b), *gv-* overwrites *m-*. If the first person object is singular, however, as in (45c,d), *m-* wins, due to the elsewhere principle. Crucially, the subject plurality (45a,c) remains uninterpreted, regardless of the prefix, and thus, we get the potential for a four-way (2 by 2) number contrast with first person objects in Georgian, but not in Laz. We have thus made a first step in accounting for the third and fourth explanandum, in accounting for the (variation in) distribution of omnivorous number effects.

(45) *Object-only Number Marking with gv- (First Cycle)*

- a. $[PRS[PL_s[ADD_s[PART_s[REF_s[\overbrace{[PL_o[PART_o[REF_o]]}]^{gv-}}]]]]]$ Georgian: 2PL>1PL
- b. $[PRS[ADD_s[PART_s[REF_s[\overbrace{[PL_o[PART_o[REF_o]]}]^{gv-}}]]]]]$ Georgian: 2SG>1PL
- c. $[PRS[PL_s[ADD_s[PART_s[REF_s[\overbrace{[PART_o[REF_o]]}^{m-}}]]]]]$ Georgian: 2PL>1SG
- d. $[PRS[ADD_s[PART_s[REF_s[\overbrace{[PART_o[REF_o]]}^{m-}}]]]]]$ Georgian: 2SG>1SG

We derive the prefixes in a manner parallel to Laz. Since I haven't introduced all of the relevant suffixes yet, let us consider the contrast between $1>3$, where we find *v-* as the sole prefix, and $1>2$, where we find *g-* instead. In (46a), the first cycle spans the object structure and the subject structure, thus spelling them out as a portmanteau, *v-*. In contrast, *v-* cannot span the relevant structure, because $PART_o$ blocks contiguity between REF_s and REF_o . Instead, the first cycle is spelled out by *g-*, and a second cycle is anchored at REF_s . Since *v-* cannot be anchored at REF_s , this results in a prefix alternation, as we saw before.

- (46) a. $\left[\text{PRS} \left[\overbrace{\text{PART}_s [\text{REF}_s [\text{REF}_o]]}^{v-} \right] \right]$ Georgian: 1SG>3
- b. $\left[\text{PRS} \left[\text{PART}_s \left[\text{REF}_s \left[\overbrace{\text{ADD}_o [\text{PART}_o [\text{REF}_o]]}^{g-} \right] \right] \right] \right]$ Georgian: 1SG>2SG

With respect to the prefix-suffix interactions, and the influence the suffixes have on the prefix alternation, the analysis of Georgian will largely recapitulate what was said about Laz as well, though with a few interesting caveats. I now turn to the analysis and discussion of these.

4.3.2 The Suffixes – Plural Spellout in Georgian Continued

Against the background of the analysis of Laz given above, an analysis of the Georgian suffixal system faces multiple empirical points of difference that need to be accounted for: First, we need to show that the inclusion of *gv-* into the system does indeed give rise to the empirical differences, and accounts for the suffixal differences that accompany the prefixal ones. Secondly, the variation in the distribution of *-t* needs to be accounted for, since it is – unlike its Laz counterpart – not strictly limited to local subjects, but occurs in 3SG>2PL contexts. Finally, we need to account for the fact that the third person singular suffix *-s* does not occur in the present tense of 3SG>2PL *g-(*-s)-t*, but its imperfect counterpart *-da* does so in the same context, *g- -da-t*. Since the primary focus of this paper is the spellout of number, and its interaction with the spellout of person, I begin with the plural suffixes. In particular, I will argue that Georgian *-t* is in fact identical to its Laz counterpart, but that the third person subject suffixes *-s* and *-en* are not, giving rise to the variation.

Like Laz, Georgian has an omnivorous suffix *-t*. Unlike its Laz counterpart, however, we do not see its omnivorous distribution across the local subject corners of the paradigm. Instead, we find the omnivorous pattern of *-t* only in the 1>2 corner of the paradigm, as in Table 15.

Table 15 Georgian – Omnivorous *-t*

Object	Subject	
	1Sg	1Pl
2Sg	<i>g- -Ø</i>	<i>g- -Ø-t</i>
2Pl	<i>g- -Ø-t</i>	<i>g- -Ø-t</i>

As was the case for Laz, this shows us that *-t* can spell out PL_s and/or PL_o. As before, we conclude that PL_o is thus lexicalized under a pointer. In Laz, we furthermore concluded that it must also lexicalize a pointer between PL_s and the subject person structure, [ADD_s[PART_s[REF_s]]], since it occurs with both first and second person subjects. The same argument applies in Georgian, as we can see from the 1>2 corner in Table 15 on the one hand, and the fact that it marks subject plurality in *m- -Ø-t* (2PL>1SG) and *gv- -Ø-t* (2PL>1PL) on the other. That is to say, like its Laz counterpart, it is able to spell out a first or second person subject structure, as well as the

subject's and/or the object's person agreement structure – it is the same as its Laz counterpart.

$$(47) -t \Leftrightarrow '[PL_s \rightarrow [ADD_s [PART_s [REF_s \rightarrow [PL_o]]]]']$$

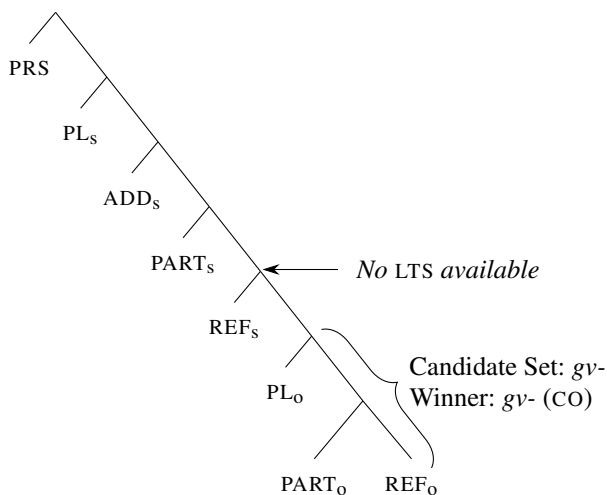
Before moving on to third person subjects, let me illustrate that this does indeed derive the correct results for the 2>1 corner of the paradigm. Note that among cells with local subjects, only 2SG>1PL and 2PL>1PL are different from their Laz counterparts, and that we can now show how this follows purely from the presence of *gv-* in the vocabulary. To demonstrate the full paradigms, I will also assume that, like Laz, Georgian has a zero affix for PRS, i.e., that (48) is part of the Georgian vocabulary, paralleling the Laz vocabulary item I introduced in (41b).

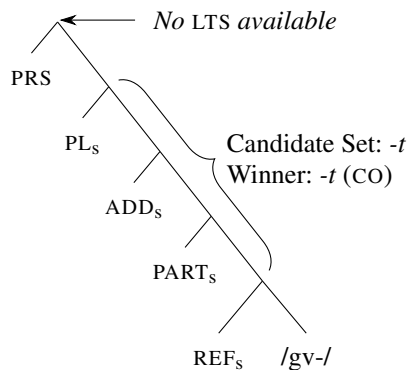
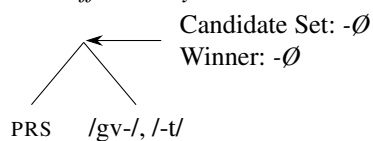
$$(48) -\emptyset \Leftrightarrow '[PRS']$$

A structure in which both arguments mark their plurality independently, 2PL>1PL, is illustrated in example (49). In a first cycle, *gv-* spells out the structure headed by PL_o , since it is the biggest structure for which a corresponding VI can be found. The remaining structure to undergo spellout is the same as the one we would find with a first person singular object in Laz, and spellout proceeds accordingly, i.e., the subject structure is spelled out by *-t*. This immediately derives the fact that there is a suffixal syncretism for all $X>1$ forms, relative to any given subject X , i.e., that the number of a first person object does not bear on the suffixes: Given that both first person singular, and first person plural object agreement is spelled out in the first cycle, the second cycle is sensitive only to the subject's features and Tense, and therefore a first person object does not influence the suffixal agreement morphology (quite unlike Laz).

(49) Georgian: 2PL>1PL

a. *First Effective Cycle*



b. *Second Effective Cycle*c. *Third Effective Cycle*

The second cycle spells out the subject's person and number structure with the suffix *-t*, identical in specification to the one found in Laz. Completing the presentation in (45), the remainder of the 2>1 corner of Georgian is shown in (50):

(50) *Number Marking with gv- (continued)*

- | | | |
|----|---|-------------------|
| a. | $\left[\overset{-\emptyset}{\text{PRS}} \left[\overset{\emptyset-}{\text{ADD}_s} \left[\overset{gv-}{\text{PART}_s} \left[\text{REF}_s \left[\text{PL}_o \left[\text{PART}_o \left[\text{REF}_o \right] \right] \right] \right] \right] \right] \right] \right]$ | Georgian: 2SG>1PL |
| b. | $\left[\overset{\emptyset}{\text{PRS}} \left[\overset{-t}{\text{PL}_s} \left[\overset{m-}{\text{ADD}_s} \left[\text{PART}_s \left[\text{REF}_s \left[\text{PART}_o \left[\text{REF}_o \right] \right] \right] \right] \right] \right] \right] \right]$ | Georgian: 2PL>1SG |
| c. | $\left[\overset{-\emptyset}{\text{PRS}} \left[\overset{\emptyset-}{\text{ADD}_s} \left[\overset{m-}{\text{PART}_s} \left[\text{REF}_s \left[\text{PART}_o \left[\text{REF}_o \right] \right] \right] \right] \right] \right] \right]$ | Georgian: 2SG>1SG |

Note again the dual work that the second person subject marker \emptyset - performs within the current system. It is important both in the first explanandum, i.e. the account of the prefixal alternation, as well as here, in the competition with *-t*, which is in principle compatible with spelling out the person structure of the subject, but loses to \emptyset -, due to the elsewhere principle.

Insofar as all other cells of Georgian that have local subjects are identical to the Laz paradigm, this largely concludes my discussion of these. We can therefore turn to the second difference between the two paradigms, i.e., the fact that *-t* occurs in the 3SG>2PL cell in Georgian, as shown again in Table 16, which offers Laz for comparison. Note that this is in fact a predicted target of spellout for *-t*: Once again, it is the person containment that gives rise to this possibility – since *-t* lexicalizes a second person subject structure, and both first and third person are proper subsets of the second person, *-t* was always a candidate for the spellout of $[\text{REF}_s[\text{PL}_o]]$. In Laz, however, it is overwritten by *-an/-es* in all cases where the subject was third person.

Table 16 First Person Objects

Laz			Georgian		
Object	Subject		Object	Subject	
	3Sg	3Pl		3Sg	3Pl
2Sg	g- -s	g- -an	2Sg	g- -s	g- -en
2Pl	g- -an	g- -an	2Pl	g- -t	g- -en

Contrasting the two systems under the current perspective, we can infer that while *-an* in Laz is able to spell out the head PL_o in this structure, Georgian spells it out using *-t*. It is not the case, however, that Georgian *-en* simply cannot spell out such a head, as we see from the fact that there is a total syncretism between $3PL > 2PL$ and $3PL > 2SG$, i.e., from the fact that there is no form **g- -en-t*, in which both arguments would mark their plurality independently, with *-t* marking the object's plurality, as in $3SG > 2PL$, and *-en* marking the subject's plurality, as it does in $3PL > 2SG$. What we find, then, can be characterized in the current system as a *conditional omnivorous number effect*: Georgian *-en* can spell out a low plural feature only in case it *also* spells out a high one. Such a contiguity effect is in fact precisely the kind we expect under the approach with Pointers. In my analysis, the contrast between the two languages arises, because Laz *-an* requires a weak contiguity, i.e., it contains a pointer under the Tense structure, whereas Georgian *-en* requires strict contiguity, i.e., it does not contain a pointer, cf. (51) and (52a). That is to say, the contrast is exactly of the kind we expect, given that VIs may or may not have a pointer – a language specific property of their vocabulary.

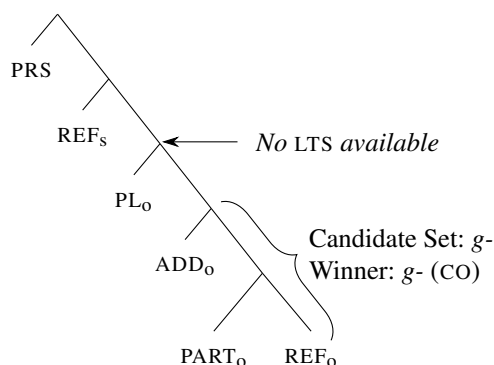
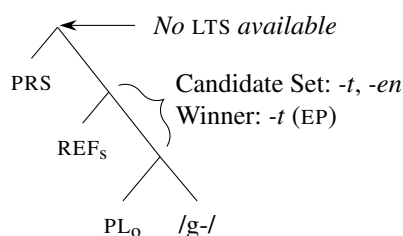
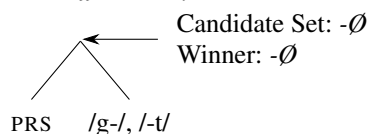
(51) *Laz -an (repeated)*
-an \Leftrightarrow '[PRS \rightarrow [PL_s[REF_s \rightarrow [PL_o \rightarrow [REF_o]]]]]'

(52) *Georgian*
 a. *-en* \Leftrightarrow '[PRS [PL_s[REF_s \rightarrow [PL_o \rightarrow [REF_o]]]]]'
 b. *-dnen* \Leftrightarrow '[IMPF [PL_s[REF_s \rightarrow [PL_o \rightarrow [REF_o]]]]]'

Note that precisely the system that we used to account for the way omnivorous plural spellout is Tense dependent now gives us a handle on the way the omnivorous number we find in Laz is partly broken in Georgian: The omnivorous number effect we found with Laz *-an* is the result of a pointer above the high plural feature, which allows the affix to spell out Tense with either one or both of the arguments being plural. Absent such a pointer, we find a system as the Georgian one, which can spell out the span containing the low plural head and Tense, only if there is strict contiguity between the Tense structure and the subject's phi structure, i.e., if the subject is plural. The fact that we can model this contrast using only the presence/absence of a device that is needed independently to model cross-categorial syncretisms in a theory under which spellout targets spans, thus provides an interesting argument in favor of such an approach.

To see how this contrast between Laz and Georgian plays out, compare (53) and (54), or the more extended version back in (40).

(53) Georgian 3SG>2PL

a. *First Effective Cycle*b. *Second Effective Cycle*c. *Third Effective Cycle*

$$(54) \quad \overbrace{[\text{PRS}[\text{REF}_s[\text{PL}_o[\text{ADD}_o[\text{PART}_o[\text{REF}_o]]]]]]}^{-an} \quad \overbrace{]}^{g-}$$

Laz: 3SG>2PL

Both languages spell out the object person span in the first effective cycle, since *g-* is identical in the two languages, and neither one has a competing or larger vocabulary item. In the second effective cycle, however, the two languages diverge. While Laz *-an* can spell out the complete remaining span, including the Tense node, and therefore overwrite a previous cycle in which *-t* was in the candidate set, Georgian *-en* cannot do so, as it requires contiguity between PRS and PL_s in order to be able to spell out PRS. It is therefore only a candidate for the structure [REF_s [PL_o]]. At this point it competes with *-t*, and loses out to it due to the elsewhere principle.¹⁵ Unlike

¹⁵ Note that in order for *-en* to lose out to *-t* due to the EP, we need to assume that *-t* is less specific than *-en*. In fact the affixes for third person plural subjects and Tense are actually sensitive to Tense and Aspect, suggesting that the structure simply termed PRS here is not a simplex head. I therefore treat this assumption as unproblematic, but leave the details aside, as the internal structure of Tense/aspect is not the issue under discussion here.

Laz, then, Georgian requires a third effective cycle of spellout to interpret the PRS structure. At this point, the PRS affix $-\emptyset$ wins, completing the spellout.

Note that this immediately explains the absence of $-s$ in this cell, which occurs in all other cells with third person singular subjects: As we will see shortly, $-s$, like its Laz counterpart, does not lexicalize PL_o , and is thus never a candidate for the second cycle.¹⁶

Contrast this, however, with the spellout of 3PL>2SG/PL: Here, contiguity between PL_s and PRS is, in fact, given, and thus the spellout proceeds in the same way as it did in Laz, as indicated in (55a,b). Because $-en$ can spell out the whole remainder of the structure if the subject is plural, including the Tense node, it cyclically overwrites $-t$. We therefore derive the *conditional omnivorous number effect*, i.e., the fact that omnivorous spellout of the object's plurality may depend on the subject also being plural, and account for the relevant difference between Laz and Georgian simply in terms of the presence vs absence of a Pointer in the lexical specification of a VI – once again, the variation reduces to the interpretation at the interface.

- (55) a. $\overbrace{[PRS[PL_s[REF_s[PL_o[ADD_o[PART_o[REF_o]]]]]]]}^{-en} \overbrace{]}^{g-}$ Georgian: 3PL>2PL
 b. $\overbrace{[PRS[PL_s[REF_s[ADD_o[PART_o[REF_o]]]]]}^{-en} \overbrace{]}^{g-}$ Georgian: 3PL>2SG
 c. $\overbrace{[PRS[REF_s[PL_o[ADD_o[PART_o[REF_o]]]]]}^{-\emptyset} \overbrace{]}^{-t} \overbrace{]}^{g-}$ Georgian: 3SG>2PL
 n/a

The analysis also shows a further divergence between the two languages. Note that the Laz 3SG>2PL case in (54), and likewise the Georgian cases in (55a,b) receive a bi-morphemic spellout. In contrast, the Georgian spellout of 3SG>2PL in (53)/(55c)

¹⁶ An interesting point about the occurrence of $-t$ was brought to my attention by Thomas Wier (p.c.). Counter to what has generally been described in the literature, third person plural objects can exceptionally trigger plural agreement if they are focused and the subject is inanimate, as shown in (55). Note that a focused inanimate plural object appears to block a non-focused inanimate subject that would normally trigger plural agreement “optionally” from doing so (regardless of the object triggering plural agreement). In contrast, a human third person plural subject triggers $-en$, blocking $-t$ (Léa Nash, p.c.).

(i) *mesame seri-is nak'tv-eb-s saerto punkcia a-ertianeb-(*-s)-t.*
 third series-GEN form-PL-DAT common function.NOM PRV-unite-(*3.SG.PRS)-PL
 ‘A common function unites the forms of the third series.’ Thomas Wier, Léa Nash (p.c.)

As with second person plural objects, we see that $-s$ disappears, and $-t$ occurs, when there is exceptional plural agreement with third person objects. From the current perspective, it is expected that $[REF_s[PL_o]]$ receive spellout by $-t$, but it raises the question what spells out the object's person feature. They need to be spelled out independently, in order to block $-en$ from being anchored before $-t$ can be. At the present moment I can only give an ad-hoc stipulation, suggesting that the system can be made to work by suggesting that a zero affix spells out a structure along the lines $[FOC[REF_o]]$, and that the element FOC bleeds $-en$. While this is far from an explanatory account, it should be noted that there is nothing in other theories that I am aware of, such as Halle and Marantz (1993) (though see their fn. 6, which suggests that third person arguments can occasionally pattern with participants due to an additional feature, similar to the ad-hoc solution here) or Béjar (2003) that could account for this. The current account thus is far from perfect, but fares at least as well as others. In particular, it still offers an account of the “bleeding” of $-s$ by $-t$ as well as the fact that all contexts in which $-s$ occurs show a bi-morphemic suffixal structure that includes the Tense morpheme that is otherwise found with local subjects.

is tri-morphemic. That is to say, the zero-affix $-\emptyset \Leftrightarrow$ '[PRS]', which occurs only with local subjects in Laz (since there, PRS is spelled out with the subject structure if the subject is third person), "spreads" into the 3SG>2PL cell in Georgian, under the current analysis, giving rise to a total syncretism between 3SG>2PL and the omnivorous plural forms of 1>2, including the zero affix. I now turn to showing that this is indeed the correct analysis by looking at all overt counterparts to $-\emptyset$.

Consider, for instance, the optative, in which $-o$ marks the TAM structure with local objects. As can be seen in (56), this suffix does indeed occur in both forms – i.e., its distribution is parallel to the one argued to be correct for $-\emptyset$. I conclude that the analysis of the absence of $-s$ in the 3SG>2PL form as due to $-t$ spelling out the subject person structure is on the right track, since it correctly predicts the presence/distribution of overt affixes from the analysis of the distribution of a zero affix, i.e., an affix whose distribution was accounted for by the theory without prior evidence.

- | | | | |
|------|----|---|---------|
| (56) | a. | <i>g-nax-o-t</i>
2.OBJ-see-OPT-PL
'S/he intends to see you _{pl} .' | 3SG>2PL |
| | b. | <i>g-nax-o-t</i>
2.OBJ-see-OPT-PL
i. 'I intend to see you _{pl} .'
ii. 'We intend to see you _{pl} .'
iii. 'We intend to see you _{sg} .' | PL: 1>2 |

In fact, after developing the analysis of said zero affix, I went on to check whether this effect generalizes to all Georgian paradigms that include $-s$, and indeed it does – but with an interesting caveat: The zero affix and its overt counterparts do not only spread into the relevant 3SG>2PL cell, but occur with $-s$ as well, i.e., they occur in the remainder of the relevant cells with third person singular subjects. Consider the data in Table 17, which shows that the suffix $-s$ that is absent in the Georgian 3SG>2PL cases, does not – unlike its Laz counterparts – compete with the Tense marker, but instead, they systematically co-occur.¹⁷

This is easily accounted for under our theory by arguing that $-s$ simply does not lexicalize Tense, i.e., it is a smaller affix than its Laz counterpart.¹⁸

¹⁷ In fact, some of the third person plural subject affixes appear to contain the TAM marker as well, e.g. the optative affixes $-o$, $-os$ and $-on$. I will tentatively suggest that in these cases the $-n$ spreads minimally into the TAM domain, but does not spell out all of it. If the vocabulary item $-o$ contains a pointer to the same TAM structure $-n$ spells out, below the remainder of the TAM domain, we derive the desired result. As this is not an investigation into the Georgian TAM structure, I will leave the precise formulation of this to future research.

¹⁸ Note that this variation is closely linked to another point of variation, namely the Pointer in Laz $-an$, and its respective absence in Georgian $-en$: It is only because $-en$ cannot spell out the tense structure unless it also spells out PL_s that allows a tenseless $-s$ to surface. Were the Georgian $-en$ like the Laz $-an$, it would always overwrite a tenseless $-s$, even in the absence of any plurality. The tenseless $-s$, i.e., the $-s$ that always co-occurs with the kind of tense marker that is limited to local subjects in Laz, is only possible with the pointerless $-en$, and the resulting conditional omnivorous number effect. Under the current analysis, such details that may otherwise appear disjunct, do in fact turn out to be closely linked.

Table 17 Georgian Suffix Triplets with *-s*

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 <i>-am</i>)	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>-i</i>)	p. 142
-e	-e-s	-nen	Optative (Conj. 2 in <i>-d</i>)	p. 142
-a	-a-s	-an	Optative (irregular verb <i>tkma</i> 'say')	p. 210
-X	-X-s	-Y	Generalization	

Data from Aronson (1990)

$$(57) -s \Leftrightarrow '[\text{REF}_s \rightarrow [\text{REF}_0]]'$$

We therefore conclude our analysis of the Georgian 3>2 corner with the following, tri-morphemic analysis.

$$(58) \left[\overbrace{\text{PRS}}^{-\emptyset} \left[\overbrace{\text{REF}_s}^{-s} \left[\overbrace{\text{ADD}_0[\text{PART}_0[\text{REF}_0]]}^{g^-} \right] \right] \right] \quad \text{Georgian: 3SG>2SG}$$

This analysis, then, concludes the account of explanandum number three: We have seen how the paradigmatic distribution of omnivorous number effects in Georgian can be modeled in terms of cycles of spellout that are structured by the vocabulary items. I have given a precise characterization of the differences between Laz and Georgian with the identical abstract notions of PF-interpretation, but with a variation in the language specific vocabulary items: Georgian has an additional vocabulary item *gv-* that can spell out PL_0 in the first cycle, in case the object is first person, and it lacks a pointer in *-en* that blocks it from overwriting *-t*, unless the subject is third person plural. Both of these result in a breakdown of the omnivorous spellout of number, in the first case by causing PL_0 and PL_s to be spelled out in different cycles, in the second case by causing PL_0 to be spelled out in spans of different sizes, depending on the presence/absence of PL_s .

Before moving on to an account of the linear order of these tense and agreement morphemes, however, we have one more affix to deal with, in order to model the contrast between the Georgian present tense type paradigms, and the imperfect type ones. While the paradigmatic distribution of the third person plural suffix *-dnen* and the occurrence of *-t* is identical to the previously discussed data, the “bleeding” of *-s* by *-t* in 3SG>2PL has no counterpart in the imperfect, as indicated in the repeated Table 18.

Given the discussion so far, the current system runs into an issue: Considering the fact that we just captured the present tense syncretism between 1SG>2PL and 3SG>2PL by arguing that it arises from the fact that *-t* spells out REF_s in this case, this cannot be modeled in the precise terms developed so far. In the present tense, the system derived the fact that *-s* is present in all 3SG>X contexts, except for the 3SG>2PL case, and in doing so derived the syncretism with 1SG>2PL as in (59).

Table 18 Georgian Verbal Agreement, Imperfect (based on Aronson (1990, p. 171))

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

(59) *Present Tense*

a. $\overbrace{[\text{PRS}[\text{PART}_s[\text{REF}_s[\text{PL}_o[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]]]]]}^{-\emptyset} \overbrace{[\text{REF}_s[\text{PL}_o[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]]]}^{-t} \overbrace{[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]}^{g-}$ Georgian: 1SG>2PL

b. $\overbrace{[\text{PRS}[\text{REF}_s[\text{PL}_o[\text{ADD}_o[\text{PART}_o[\text{REF}_o]]]]]}^{-\emptyset} \overbrace{[\text{REF}_s[\text{PL}_o[\text{ADD}_o[\text{PART}_o[\text{REF}_o]]]]]}^{-t} \overbrace{[\text{ADD}_o[\text{PART}_o[\text{REF}_o]]]}^{g-}$ Georgian: 3SG>2PL

In the Imperfect, however, we do *not* find the same syncretism, instead we find *g- -di-t* in 1SG>2PL, and *g- -da-t* in 3SG>2PL, and *-da* across all cases with third person singular subject. Since we still find *g-* and *-t* in both cases, we may conclude that the first two effective cycles are identical between the present and the imperfective, as expected, given the bottom-up nature of spellout. However, as (60) indicates, this leaves the same structure for spellout in both cases, and yet we find different surface forms.

(60) *Imperfect*

a. $[\text{IMPF}[\text{PART}_s[\text{REF}_s[\text{PL}_o[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]]]] \overbrace{[\text{REF}_s[\text{PL}_o[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]]]}^{-t} \overbrace{[\text{ADD}_s[\text{PART}_o[\text{REF}_o]]]}^{g-}$ Georgian: 1SG>2PL

b. $[\text{IMPF}[\text{REF}_s[\text{PL}_o[\text{ADD}_o[\text{PART}_o[\text{REF}_o]]]]] \overbrace{[\text{REF}_s[\text{PL}_o[\text{ADD}_o[\text{PART}_o[\text{REF}_o]]]]]}^{-t} \overbrace{[\text{ADD}_o[\text{PART}_o[\text{REF}_o]]]}^{g-}$ Georgian: 3SG>2PL

I propose that this is an allomorphic variation, and that *-di* and *-da* are two contextually determined phonological forms of the same vocabulary item. In particular, I suggest here that a contextual allomorphy rule exists that makes reference to the sister of IMPF, as in (61).^{19,20} Under such a proposal, the resulting form will be *-di*

¹⁹ Presumably, *-di* itself is bimorphemic, with *-d* spelling out some higher structure. I abstracted away from this fact earlier, but a more thorough research of the higher TAM/argument structure domains might be fruitful in uncovering how many affixes precisely are subject to this allomorphy. From the current perspective it appears to affect two affixes, *-e* and *-i*, but the current proposal might lead one to suspect that there might in fact be two vocabulary items in one of these, with both vocabulary items being potentially phonologically subsegmental, i.e., with one of them being derived from the other. As stated before, I leave an investigation into these domains open to future research.

²⁰ Allomorphy described in terms of a sister's head is of course not uncommon. Embick (2012, p. 26), Embick (2015), relaxing the notion of sensitivity put forth by Bobaljik (2000), argues that a cyclically inside out operating spellout correctly generates the possibility of inward sensitivity for phonological and/or morphosyntactic features, but outwards sensitivity should only target the latter kind. Under the current approach, we would expect allomorphy to possibly give rise to multiple exponence, whereas spans should

whenever the subject is local, but *-da*, whenever it is third person singular, i.e., whenever the sister of IMPF is REF_s , i.e., exactly the distribution of *-dil-da* that we find in Table 18. Note that *-s* is thus analysed as a smaller affix than the Laz counterpart, but that *-dil-da* does include Tense.

- (61) $-di \Leftrightarrow [\text{IMPF} \rightarrow [\text{REF}_s \rightarrow [\text{REF}_o]]] \mid /i/ \rightarrow /a/$, if the sister of IMPF is headed by REF_s

Crucially, this analysis suggests that the spellout of third person subjects with objects other than second person plural will result in a tri/bi-morphemic spellout (depending on the person of the object) in the present tense type paradigms, but a bi/mono-morphemic spellout in imperfect-type paradigms. This is indicated in (62):

- (62) a. PRS-type, *bi-morphemic*

$\overbrace{[\text{PRS}[\text{REF}_s[\text{REF}_o]]]}^{-\emptyset} \overbrace{]}^{-s}$

Georgian: 3SG>3

- b. IMPF-type, *mono-morphemic*

$\overbrace{[\text{IMPF}[\text{REF}_s[\text{REF}_o]]]}^{-da}$

Georgian: 3SG>3

- (63) a. PRS-type, *tri-morphemic*

$\overbrace{[\text{PRS}[\text{REF}_s[\text{PART}_o[\text{REF}_o]]]]}^{-\emptyset} \overbrace{]}^{-s} \overbrace{]}^{m-}$

Georgian: 3SG>1SG

- b. IMPF-type, *bi-morphemic*

$\overbrace{[\text{IMPF}[\text{REF}_s[\text{PART}_o[\text{REF}_o]]]]}^{-da} \overbrace{]}^{m-}$

Georgian: 3SG>1SG

We saw earlier, from the data in Table 17 that in the PRS-type paradigms that include *-s*, the third person subject forms always include the same Tense marker as the cells with local subjects, and that the overt counterparts of $-\emptyset$ thus provided an argument in favor of the “small” analysis of *-s*. Looking at the complement set of those paradigms, we can see that this is never true in the other triplets/screeves, as shown in Table 19.

Table 19 Georgian Suffix Triplets without *-s*

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>-i</i>)	p. 113
-i	-a	-nen	Aorist (Conj. 2 ending in <i>-d</i>)	p. 115
-i	-a	-es	Aorist (irregular verb <i>tkma</i> ‘say’)	p. 210
-X-e/-i	X-a	X-Y	Generalization	

Data from Aronson (1990)

not. It is worth noting, however, that the strongest versions of Nanosyntax would exclude such possibilities, and that the current notion weakens its predictions.

In fact, we seem to always find the same alternation, in which /e/ or /i/ alternate with /a/. While no theory of the TAM system will be offered here, this suggests that it might be possible to capture all of these paradigms with a single allomorphic variation, in which a [-low] feature is changed to [+low] under the relevant sisterhood relation. Crucially, for the present purposes, this analysis binds two things together. First, the fact that all paradigms that include the third person subject affix *-s* show the complementary distribution of *-t* and *-s* that we analysed as a result of *-t* spelling out REF_s , and the structure *X-s* for these suffixes, where *X* is the same TAM suffix we find with local subjects. Second, the paradigms that do *not* show the complementary distribution effect with *-t* also never have this bi-morphemic spellout of Tense. Instead, the difference between the Tense-suffix we find with local subjects and third person singular subjects can be characterized by *i/e* alternating with *a*. Under the current analysis, these two facts about mono-morphemic vs bi-morphemic spellout, and the complementary distribution with *-t* in $3\text{SG} > 2\text{PL}$ are connected, and not two accidental and independent facts: It is precisely because of the fact that *-s* does not spell out Tense that it is bled by *-t*; in contrast the suffixes in Table 19 are allomorphic variants of the same vocabulary item, and always spell out Tense, and thus cannot be “bled” by *-t*.²¹

4.4 Summary & Interim Discussion

This concludes the discussion of the paradigmatic distribution of Laz and Georgian affixes. I have shown that the present system derives the paradigms of Laz and Georgian. In this process, I have shown that a five-dimensional system with complex distributional characteristics can be interpreted as a one-dimensional system, where Merge creates a sequence of heads that are interpreted spanwise. This in itself is an interesting result that is not at all a priori expected, a different system, where the elements of the five dimensions are interpreted in any combination is conceivable, and, as I will show below, has in fact been proposed. Thus, the fact that the current, much more restrictive hypothesis can be formulated in such a way as to be compatible with the data is in itself a surprising and welcome result. In devising such a system, I have furthermore offered an account of the four explananda that I introduced in the description of the data, and which I repeat in (64).

(64) *Explananda* (repeated)

- a. Dedicated local object exponents, but subject-dependent third person object exponents (Prefixal Alternation)
- b. Omnivorous plural exponents co-vary with Tense, if the subject is third person, but are independent of Tense with local subjects
- c. Distribution of omnivorous number effects
- d. Laz/Georgian variation

²¹ Note that the selection of the set of suffixes appears to depend on conjugation class, the phonological form of the stem, or irregular verbs. This does not seem to lend itself to an analysis in terms of spans, as advanced here. Whether an extension of an allomorphy approach (a notion that most Nanosyntax eschews), is a plausible way of accounting for these further details remains to be seen.

I have shown that the “person-driven” subject/object alternation of the prefix is a possibility that arises because objects are low, and local persons structurally include the third person: An affix that can spell out a span of subject and object features may be blocked from doing so, if the object is “too large”. It is the object whose person determines this, since its agreement is low, i.e., subject to spellout early. Thus, a system where a local object may bi-uniquely determine a certain affix, while a third person does not is a structurally determined possibility that a language-specific PF-interpretation exploits.

I have provided an interpretation of omnivorous number effects as the effect of a VI spanning multiple arguments’ plural agreement structure. In doing so, I have given a principled account of the way omnivorous number spellout does or does not co-vary with Tense, depending on the subject’s person. I have shown that this person asymmetry follows from the same person hierarchy, and that the opposite system of the one we find in Laz would not be derivable: A system in which an omnivorous third person subject VI matches a structure that includes Tense, and in which an omnivorous marker for local subjects that does not do so, results in a directional split: Omnivorous number spellout co-varies with Tense only if the subject is third person. This is an asymmetry that the system can derive, but the opposite case the omnivorous spellout of number covaries with Tense only if the subject is local, but not when it is third person, cannot be derived. An omnivorous local subject marker that lexicalizes Tense would never fail to overwrite an omnivorous third person subject marker that does not, thus rendering such a system with the opposite split impossible.

The two person asymmetries were thus derived in a partly parallel way: Third person arguments are spelled out with higher material, i.e., subject agreement for third person objects, and Tense for third person subjects, but the larger size of first/second person agreement blocks the relevant contiguity, and necessitates an additional effective cycle of spellout. Under the current analysis, these two person-based splits thus receive a uniform explanation, and integrate the fact that the structurally smaller contexts like $3 > 3$ may receive mono-morphemic spellouts (e.g., Laz *-u*), while the largest ones, omnivorous $\text{LOCAL} > \text{LOCAL}$ cases, receive tri-morphemic spellouts instead (e.g., Laz *g- -i-t*).

I then went on to show that the same interpretation can be used to account not only for the *presence* of omnivorous number effects in Laz, but also for their *partial absence* in Georgian. By arguing that Georgian, but not Laz, has a VI *gv-* that can spell out PL_0 in the first cycle, if the object is plural, I showed how the set of VIs can give rise to omnivorous number (Laz), or a system in which both arguments’ plurality is marked independently. I have shown that the system still accounts for the presence of such effects in the $1 > 2$ corner of the Georgian paradigm, and that the Pointer approach can model the *conditional omnivorous number effect*: While the $3 > 2$ corner of Laz is symmetrical/omnivorous, the Georgian $3 > 2$ corner shows a complex pattern where the subject/object asymmetry is partially relevant, such that *object only* plurality is marked differently from the syncretic *subject only* and *subject & object* plurality cases. In showing how a minimal variation in the vocabulary can account for the “partial breakdown” of omnivorous number in Georgian, when compared to Laz, I have given an account of Georgian in which the insights of the account for

Laz carried over, while the variation could be modeled in the terms provided by the theory.

Having thus accounted for the *paradigmatic* distribution of the agreement affixes, and the various explananda about person asymmetries, and number spellout that arose, I now turn to the question how this system might derive the *linear order* of these affixes, showing that a single statement can characterize the linear distribution of the agreement affixes I have discussed.

5 Morpheme Order

I now turn from paradigmatic distribution to linear order. Prefixal placement can be characterized as an effect of phrasal movement and antisymmetry (Kayne 1994), eschewing affix-by-affix stipulation. Taking the structure in Section 4 as part of the functional sequence dominating VoiceP delivers not only the correct linear order, but also several other positions where additional higher material occurs.

Of particular interest, for the obvious reason that they are non-trivial, are cases with two suffixes, and the prefixes. As a first step, let us consider the set of prefixes in (65). Two observations characterize these: They all spell PART, whenever they occur (otherwise they lose the competition to other affixes), and they all can spell out REF₀. In fact, the only one of these that can be anchored at something other than REF₀ is \emptyset -, that is to say (65a-d) are necessarily spelling out the first effective cycle, whenever they occur.

(65) Prefixes

- | | | |
|-----------------|---|-----|
| a. $gv-$ | \Leftrightarrow '[PL ₀ [PART ₀ [REF ₀]]]' | G |
| b. $m-$ | \Leftrightarrow '[PART ₀ [REF ₀]]' | L/G |
| c. $g-$ | \Leftrightarrow '[ADD ₀ [PART ₀ [REF ₀]]]' | L/G |
| d. $v-$ | \Leftrightarrow '[PART _s [REF _s [REF ₀]]]' | L/G |
| e. $\emptyset-$ | \Leftrightarrow '[ADD _s [PART _s [REF _s → [REF ₀]]]]' | L/G |

The only other affix that can ever spell out a PART head is $-t$, repeated in (66). Note, however, that t cannot be a first effective cycle spellout, since it does not lexicalize REF₀ which is uniformly the first anchor in all contexts.

(66) $-t \Leftrightarrow$ '[PL_s → [ADD_s [PART_s [REF_s → [PL₀]]]]]'

L/G

Note further that t spells out PART_s only in cases where PART₀ has already been spelled out by $m-$ or $g-$ (i.e., with local objects), and does not spell out PART_s with third person objects either, since \emptyset or v do so in these cases. That is to say, t never spells out the lowest PART head, since it never is a first effective cycle spellout – and any cycle that contains at least one PART head will have one spelled out in the first cycle.

That is to say, we can characterize the prefixal position for both Laz and Georgian with a simple generalization, as in (67):

- (67) The (if any) affix that spells out REF₀ and a PART head in the structure is a prefix.

To see that this does indeed characterize the prefix, consider a few relevant examples. The spellouts in (68) exemplify that structures without a PART head do not have a prefix. The examples in (69) show spellouts with a prefix. In particular, (69a-c) show the spellout of PART₀ being prefixal, whereas the examples in (69d,e) show the spellout of PART_s being prefixal in case there is no PART₀.

- (68) *Mono-Morphemic without Prefix*

- a. $\overbrace{[\text{PST}[\text{REF}_s[\text{REF}_0]]]}^{-da}$ Georgian: 3SG>3
- b. $\overbrace{[\text{PST}[\text{PL}_s[\text{REF}_s[\text{REF}_0]]]]}^{-dnen}$ Georgian: 3PL>3

- (69) *Bi-Morphemic with Prefix*

- a. $\overbrace{[\text{PST}[\text{REF}_s[\text{ADD}_0[\text{PART}_0[\text{REF}_0]]]]]}^{-da}$ $\overbrace{[\text{PART}_0[\text{REF}_0]]]}^{g-}$ Georgian: 3SG>2SG
- b. $\overbrace{[\text{PST}[\text{REF}_s[\text{PL}_0[\text{PART}_0[\text{REF}_0]]]]]}^{-da}$ $\overbrace{[\text{PART}_0[\text{REF}_0]]]}^{gv-}$ Georgian: 3SG>1PL
- c. $\overbrace{[\text{PST}[\text{REF}_s[\text{PART}_0[\text{REF}_0]]]]}^{-da}$ $\overbrace{[\text{PART}_0[\text{REF}_0]]]}^{m-}$ Georgian: 3SG>1SG
- d. $\overbrace{[\text{PST}[\text{PART}_s[\text{REF}_s[\text{REF}_0]]]]}^{-di}$ $\overbrace{[\text{REF}_s[\text{REF}_0]]]}^{v-}$ Georgian: 1SG>3
- e. $\overbrace{[\text{PST}[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{REF}_0]]]]]}^{-di}$ $\overbrace{[\text{PART}_s[\text{REF}_s[\text{REF}_0]]]}^{\emptyset-}$ Georgian: 2SG>3

Next, let us consider the order of suffixes in tri-morphemic spellouts, in (70). We see that it is the spellout of the structurally higher span that precedes the spellout of the lower one, i.e., we find *-di-t*, not **-t-di*.

- (70) *Tri-Morphemic with Prefix*

- a. *m- -di-t*
 $\overbrace{[\text{PST}[\text{PL}_s[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PART}_0[\text{REF}_0]]]]]]}^{-di}$ $\overbrace{[\text{PART}_0[\text{REF}_0]]}^{-t}$ $\overbrace{[\text{REF}_0]}^{m-}$ Georgian: 2PL>1SG
- b. *gv- -di-t*
 $\overbrace{[\text{PST}[\text{PL}_s[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PL}_0[\text{PART}_0[\text{REF}_0]]]]]]]}^{-di}$ $\overbrace{[\text{PART}_0[\text{REF}_0]]}^{-t}$ $\overbrace{[\text{REF}_0]}^{gv-}$ Georgian: 2PL>1PL
- c. *g- -da-t*
 $\overbrace{[\text{PST}[\text{REF}_s[\text{PL}_0[\text{ADD}_0[\text{PART}_0[\text{REF}_0]]]]]}^{-da}$ $\overbrace{[\text{PART}_0[\text{REF}_0]]}^{-t}$ $\overbrace{[\text{REF}_0]}^{g-}$ Georgian: 3SG>2PL

That is to say, we can see that the lowest span can become a prefix, if it contains a PART head, while the suffixal order is correlated with height: The higher of the two spans is to the left of the lower one, with both of them suffixal. I would like to propose an interpretation in terms of Antisymmetry, such that affix order is determined by phrasal movement of the lower structure: A prefix becomes a prefix by virtue of having been pied-piped to a higher position, while the suffix order reflects structural height of stranded material. The structure discussed above is thus originally built on top of VoiceP, along the lines of (71).

(71) TENSE > PL_s > PERSON_s > PL_o > PERSON_o > VoiceP

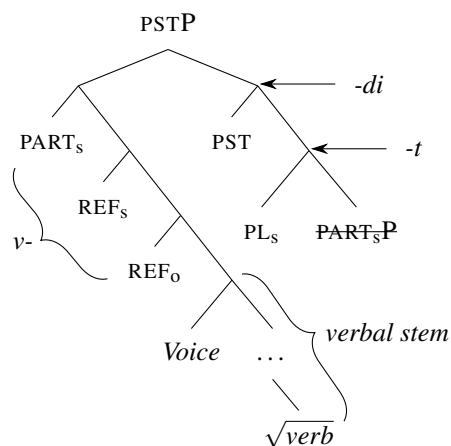
From this perspective, we can now re-characterize the generalization in (67) as a requirement of the voice head to pied-pipe a PART head, if possible, as in (72a), and assume that this structure moves to the specifier of Tense (72b). Admittedly, (72a) is itself in need of an explanation, but the fact that we can capture the linear distribution within the rather complex paradigms discussed above with a single statement is itself rather interesting.

(72) a. Voice pied-pipes the span that contains the structurally closest PART head, if such a span exists.

b. Tense attracts VoiceP

That is to say, we derive suffixation of Tense by movement of the VoiceP to a specifier of Tense, and the lowest span is pied-piped by the VoiceP, if it contains a PART head (recall that if there is at least one PART head, the lowest one is always spelled out in the first cycle). Consider one such derivation in (73). When PST attracts the VoiceP, the VoiceP pied-pipes its adjacent span [PART_s[REF_s [REF_o]]], because it contains a PART head. Antisymmetry now gives us the correct characterization of the linear order: *v-* immediately precedes the verbal stem, since all heads it spells out c-command the VoiceP. The whole PART_s phrase itself is a specifier, and thus precedes the head and complement of PSTP. The spellout of PST, *di*, precedes the spellout of the stranded PL_s head, *t*, and therefore, we correctly arrive at the form *v-√stem-di-t*.

(73) Georgian (1PL>3, Past Tense): *v-stem-di-t*



Such a proposal makes a set of predictions in case we merge material on top of the tense structures we have considered. If we apply the same decompositional logic to Tense as we did for person, we might expect certain Tense structures to structurally contain others, say, the future being derived from the present tense, along the lines of [FUT [PRS [...]]]. In case we have morphological evidence for such a containment relationship, we would thus expect a form that contains another to also show a certain affixation pattern. In particular, if we follow Cinque (2005); Koopman (2018); Starke (2018) i.a., in allowing for three types of movement (i.e., all movement must contain the root, and movement out of a moved constituent is blocked, due to Freezing), we would expect the following three types of correlating affixation for a structure that merges a head X on top of one of the structures we have discussed:

(74) *Affixation of a higher head/structure X*

- a. No movement
→ Prefixation before the agreement prefixes
- b. Successive Cyclic Movement: Move VoiceP (and pied-piped span, where applicable) to Spec,XP
→ Suffixation immediately after the verbal root, preceding the other suffixes
- c. Snowball Movement: Move complement of X to Spec,XP
→ Suffixation to the right, following the other suffixes

Indeed, we find preliminary evidence for all three strategies being used in Laz and/or Georgian; there are however, some caveats which show that, while this might be a promising first step, more in-depth research on this is necessary before drawing firmer conclusions about the antisymmetry interpretation of the spanning account.²²

As an example for the *no movement* condition, consider the Georgian future tense. It is built from the present tense forms, by means of a set of so called *preverbs*, as we can observe in (75).

(75) *Georgian Future Tense*

- | | | |
|--|---|-----------------------|
| a. <i>v-çer-Ø-t</i>
1.SU-write-PRS-PL
'We are writing it.' | b. <i>da-v-çer-Ø-t</i>
PV-1.SU-write-PRS-PL
'We will write it.' | Aronson (1990, p. 44) |
|--|---|-----------------------|

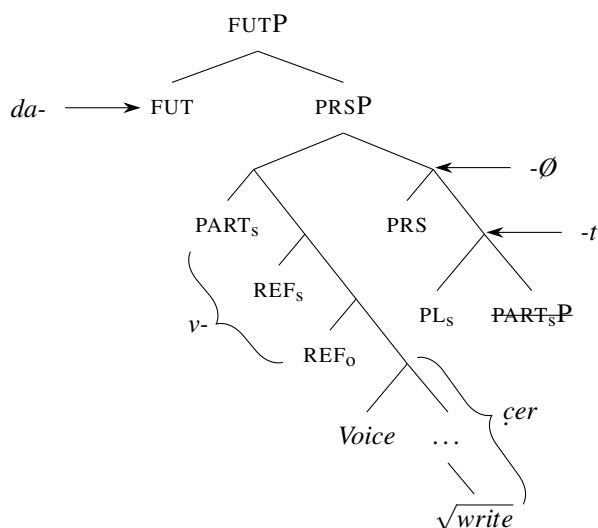
The crucial point for the current analysis is that there is a morphological containment relation between the future tense and the present tense, that shows a predicted linear order, the caveat being that the preverb appears to be partly lexically determined; a

²² As an anonymous reviewer pointed out, the argument extends to material that is lower than the agreement structure, i.e., VoiceP-internal material: Given the claim in (72) that movement of VoiceP is the relevant operation, stranding of VoiceP-internal material via successive cyclic movement of a smaller phrase is ruled out. We thus predict two positions for VoiceP-internal material, in between the prefix and the stem (no movement/pied-piping), and after the stem but before the suffixes (snowball movement). As the reviewer points out, both positions are attested in, a.o., Laz causative morphology (their example):

- (i) *Ma bere-s mektubi do-v-o-ñç'ar-ap-i*
I.ERG child-DAT letter.NOM PV-1.SU-CAUS-write-CAUS_{trans}-PST
'I made the child write the letter.'

fact that the current analysis does not yet offer a perspective on, given that the relevant head appears to be both structurally and linearly distant from the root.²³ If we assume that this morphological containment reflects a structural one, i.e., that the future tense does indeed structurally contain the present tense, the linear position is exactly the one we expect under the *no movement* condition. Since FUT is structurally higher than PRS, and does not trigger movement, it will be prefixed before the agreement prefix, as indicated in (76). Movement proceeds as it did before, and the higher head, FUT, c-commanding the remainder of the heads, precedes the whole structure.

(76) Georgian: *da-v-çer-Ø-t* ‘We will write it’



Now contrast this with a structure in Laz that is comparable insofar as it, too, is built from the present Tense, namely the subjunctive, before we turn to Laz's future Tense. Descriptively speaking, the subjunctive is built by using the present Tense morphology, but affixing the subjunctive marker *-a*.²⁴ Note that while the zero affix in

²³ The preverbs serve a variety of functions beyond the future marking, such as spatial relations, or perfectivity. They are also present in the past Tense (aorist). Insofar as their function of future marking is concerned, they are “usually unpredictable” (Hewitt 1995, p. 153), i.e., specific to the verb, but selected from a small class. See *ibid.*, pp. 148-169 for details. Note also that certain verbs do always come with their respective preverb, and do not distinguish the present from the future, i.e., they exhibit a syncretism (Aronson 1990, p. 44).

Aronson also notes that these preverbs serve similar functions as verbal prefixes in German or Slavic languages, e.g. *da-v-çer-Ø-t* PV-1.SU-write-PRS-PL ‘we will write it’, and with the same root *ağ-çer-Ø-s* PV-write-PRS-3SG.SU ‘He describes/will describe it’. Note the parallelism between English, which uses two roots *write* and *scribe* with closely related meanings in this context, or German, which uses an prefix that is similarly ambiguous between a spatial and a non-spatial meaning in *be-schreiben* PF-write ‘write on sth./describe’, though neither of them appears to use them for future related means.

See Aronson 1990, pp. 42ff, 61f as well as Hewitt 1995, pp. 148-169 for details.

²⁴ A second caveat: Laz shows a set of thematic suffixes in certain configurations that denote properties of the event and argument structure. These are obligatory in the present tense Öztürk and Pöchtrager (2011, p. 69), but absent in the subjunctive forms, and again it is not a priori clear what the right analysis of this is under the present account. See Öztürk and Taylan Erguvanli (2017) for a detailed analysis of the argument structure, event type and aspectual functions of the thematic suffixes.

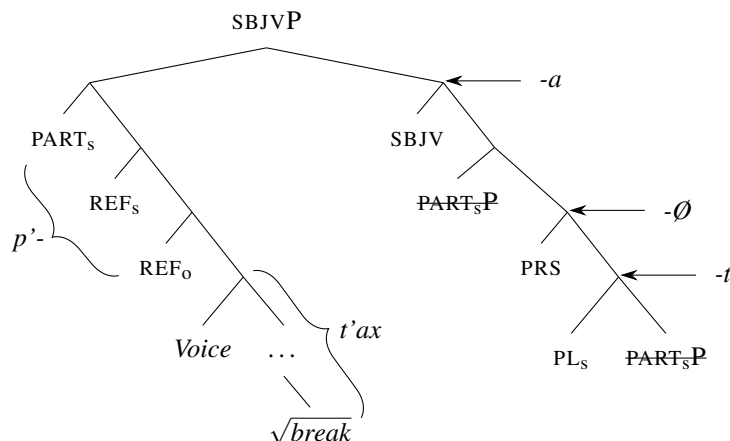
(77a) is uninformative with respect to the linear order of the suffixes, we can see that the present/non-past plus agreement morphology in (77b) is to the right of this higher head, i.e., the order we find is prefix-stem-SBJV-PRS. That is to say, this is the linear order we would expect under successive cyclic movement: The verbal structure, once again pied-pipes the lowest PART containing span, and moving through the specifier of PRS, it successive cyclically moves to the specifier of SBJV.

(77) *Subjunctive*

- | | | |
|---|---|---|
| a. <i>p'-t'ax-a-Ø-t</i>
1.SU-break-SBJV-PRS-PL
'Let us break it.' | b. <i>t'ax-a-s</i>
break-SBJV-3SG.PRS
'Let her/him break it.' | LAZ
Öztürk and Pöchtrager (2011: 76) |
|---|---|---|

Such a successive cyclic derivation is exemplified in (78). We find that the additional suffix *-a* that spells out the SBJV head (or structure) is suffixed immediately after the verbal structure, since the $PART_sP$ moved successive cyclically through the PRS head's specifier. Since it is now the specifier of SBJV, it precedes its spellout, which in turn precedes the lower cycles of spellout that were stranded when the VoiceP pied-piped the structure spelled out by *p'* (the phonologically conditioned variant of *v-*).

(78) Laz: *p'-t'ax-a-Ø-t* 'We will break it'



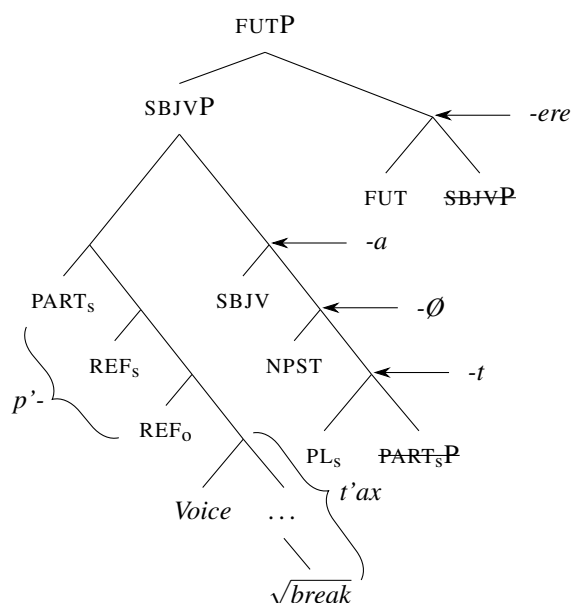
Finally, consider the Future tense of Laz, which morphologically contains the subjunctive form. As evident from a comparison of (77) and (79), a suffix *-(e)re*, (where the occurrence of /e/ is morpho-phonologically conditioned) is suffixed to the subjunctive form to derive the future tense. Crucially, this containment relation shows the additional affix in the final position, following the agreement affixes.

(79) *Future Tense*

- | | | |
|--|--|---|
| a. <i>p'-t'ax-a-Ø-re</i>
1.SU-break-SBJV-NPST-FUT
'I will break it.' | b. <i>t'ax-a-s-ere</i>
break-SBJV-3SG.NPST-FUT
'She/he will break it.' | LAZ
Öztürk and Pöchtrager (2011: 70) |
|--|--|---|

Under a Cinque-style derivation of affixal order, this is indeed the final locus of higher material that we expect, namely the locus we expect if the higher head induces snowball movement, i.e., phrasal movement of the subjunctive phrase into the specifier of the future head. The order is thus derived as in (80). As every element spelled out by p' (the phonologically conditioned allomorph of v -) c-commands the verbal root, it must precede it. Specifiers precede heads and complements, therefore p' - t' ax precedes a - \emptyset - t , and the whole structure in the specifier of FUT precedes $-ere$.

(80) Laz: p' - t' ax- a - \emptyset - t - ere 'We will break it'



We thus find preliminary evidence for all three affixation types that are expected under a phrasal movement account of the affix order. The primary reason for pursuing such an approach, of course, was that the spanning account itself offered a simple characterization of affix order in these terms, providing simple description of the linear order facts in terms of pied-piping. I take the additional data presented in this section to be preliminary evidence in favor of such a view of affixation, but of course such a proposal faces a number of theoretical and empirical challenges if it is to be integrated with the general syntax: The respective structure that receives spell-out needs to be evacuated, i.e., all arguments must leave the TP.²⁵ The integration of adjuncts into such a structure is not a priori clear, and it raises interesting questions on the derivational timing of e.g., Late Merger (Lebeaux 1991; Stepanov 2001). Heads might have to allow for two specifiers, to allow for said evacuation.²⁶ Spellout must

²⁵ See Svenonius (2016) for an alternative to evacuation that relies on specifier-complement asymmetries for the definition of a span, which might provide an alternative to evacuation analyses, and might offer a direction of research, under which the derivational timing as well as the construction of phonological words from syntactic structure might be understood in terms of PF-instructions relativized to heads.

²⁶ See for example Pesetsky (2000) and Kotek (2018) for recent \bar{A} -syntactic arguments in favor of multiple specifiers.

be able to feed back into syntax (see also Starke's (2018) notion of *spellout driven movement*), given that it is the vocabulary that determines the size of the pied-piped structure. The individual movements are in need of an explanation, and so is the pied-piping description in (72a). Possibly last but definitely not least, the complex remainder of the verbal structure would have to be shown to be derivable under such assumptions. As this is far outside the scope of a single paper, I will leave it at these speculative remarks, suggesting that the current research might open the door for a *radically atemplatic* account not just of the paradigmatic distribution of the relevant affixes discussed above, but also of their linear order, as well as verbal structure beyond these. What I have shown, then, is that a phrasal interpretation of affix order is both possible and simple under the spanning approach that I developed for the *paradigmatic* distribution of affixes, i.e., that the spanning approach carries over to the *linear* distribution with minimal additional assumptions.

6 Discussion

Any theory of the Georgian system of verbal agreement will have to justify its existence, given the number of theories already in existence. I will offer a brief comparison with two competing analyses from the literature, namely the subset based Distributed Morphology account from Halle and Marantz (1993), as well as the Cyclic Agree account in Béjar (2003), Béjar and Rezac (2009). In many ways the current system builds on insights from those previous analyses, and thus a comparison is of particular interest. Concretely, the current approach takes the idea that the person asymmetries between participant arguments and third person ones should be accounted for in terms of cyclicity and complex person from Béjar (2003), Béjar and Rezac (2009), yet crucially retains the idea that this is ultimately a morpho-syntactic *effect* of the spellout mechanism that exploits structural asymmetries, rather than a property of the syntactic operation Agree as in their approach. In this sense it also takes up crucial insights from Distributed Morphology (Halle and Marantz 1993) about the way that the morphological component *interprets* syntactic structure. By combining these two insights and applying them to a bottom-up, span based notion of interpretative spellout, it offers several improvements over both.

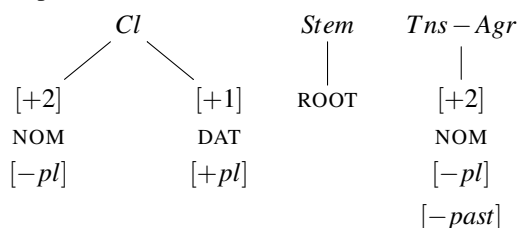
6.1 The Subset Approach – Distributed Morphology

Like the current model, DM assumes morphology to interpret the syntactic structure at PF. For DM, however, the input is a syntactic structure in which heads have sets of features as their internal, often lexically determined internal structure. The structural input to the morphological module and subsequently processed stages are 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*, i.e., rule-based manipulation of a phonological string 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.²⁷

In their analysis of Georgian, Halle and 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-Haran (1992) in assuming that the prefixes of Georgian are in fact the result of a clitic cluster that collects the features of up to two participant arguments. In addition, there is a Tense-Agreement node, which represents the features of the subject, as well as Tense, i.e., they assume the structure that is subject to spellout to be like the one exemplified in (81), with the subject's features represented twice, if the subject is local.

(81) DM representation: 2SG>1PL



Halle and Marantz (1993: 119)

Such an input representation is subject to some rule based manipulation, for example, a [+plural] feature is fissioned off the clitic cluster, unless the plural feature is part of a first person object (to account for *gv-*, which occurs only with 1PL objects), as in (82).

(82) *Fission*

Cl + Stem → [+pl] + Cl + Stem (linear order irrelevant)

|

[+pl]

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

Halle and Marantz (1993: 118)

This modified clitic cluster node is fused, and then subject to vocabulary insertion, with the vocabulary item that matches the largest set of features being inserted; the items that compete for the clitic cluster are shown in (83). Similarly, three vocabulary items compete for the Tns-Agr node (I have taken the liberty to offer possible specifications), and *-t* spells out the fissioned plural feature.

(83) *Clitic Cluster*

- a. [+1], DAT, [+pl] ↔ /gv-/
- b. [+1], DAT ↔ /m-/
- c. [+2], DAT ↔ /g-/
- d. [+1] ↔ /v-/
- e. [+2] ↔ Ø

(84) *Suffixes*

- a. [+3], [-pl], [-past] ↔ /-s/
- b. [+3], [+pl], [-past] ↔ /-en/
- c. [-past] ↔ -Ø

²⁷ For a general overview of DM see Harley and Noyer (1999), Embick and Noyer (2007).

Since this does not derive what I dubbed the *conditional omnivorous number effect*, i.e., the fact that we get *g- -en(*-t)* in the 3PL>2PL context, an impoverishment rule is postulated that deletes the fissioned plural terminal in this context. Presumably, a second impoverishment rule would apply in the omnivorous number context 1PL>2PL, to avoid two independent exponents of plurality. Similarly a readjustment rule deletes the suffix *-s* again, in the 3SG>2PL context, where we find *g- (*-s)-t*. Note also that despite the fact that local subjects are represented twice, they only ever trigger one number marking, presumably due to the underspecified suffix in (84).

The DM account is thus descriptively adequate, it does in fact derive the Georgian paradigm in its entirety. What I intend to argue here, is thus not that the current approach is descriptively more adequate, but that the structural assumptions that the DM account makes, and that are partly necessitated by the notion of a subset based insertion into terminals do not carry appropriate explanatory load, but instead require post-syntactic manipulation that make the system so powerful that it does not provide adequate explanations for the phenomena that this paper discussed at length.

In the current approach, two asymmetries between participants and third person arguments have been linked to size: Both the absence of dedicated third person object exponents, and the fact that omnivorous number is Tense dependent only with third person subjects, receive explanations in the same terms. The agreement structure of third person arguments is spelled out in a span with higher material, but with participant arguments, PART blocks the relevant affixes from spanning a structure that includes the higher material (subject agreement, or tense, respectively). Crucially, this results in an additional cycle of spellout, i.e., the number of affixes we find for a particular agreement context is linked to these asymmetries, and consequently we find only one agreement affix, *-u* in 3SG>3 contexts, but three affixes in, say, 1PL>2SG *g- -i-t*.

In a system where spellout is restricted to terminals, we do a priori expect to find the same number of terminals, regardless of the person specifications that such terminals bear, and thus we expect to find a uniform number of morphological positions of exponence across a paradigm, i.e., DM remains fundamentally a *templatic* approach to morphology. Since this is not in fact uniformly the case, these deviations from a uniform template have to be implemented by postulating additional mechanisms of structure manipulation, such as Fusion or Fission that are intertwined with vocabulary insertion, or by stipulating that the information of local subjects is represented twice. This creates redundancy and fails to capture both the person asymmetries, and the relation between person asymmetries and the number of surface morphemes we find. It is redundant, on the one hand because the same features are sometimes represented twice, and on the other hand, because the rules that are necessary to derive the correct results create precisely the kind of contexts that vocabulary items are sensitive to: Consider the exception in the Fission rule in (82), and the vocabulary item *gv-* that is sensitive to precisely the context this exception includes. For Fission, this has in fact been noted early on, by Trommer (1999), who proposes that the Fissioning of [+pl] in the non-*gv-* contexts is an effect of the other VIs not spelling out plural, i.e., leftover material that has not been matched may be fissioned automatically. However, even such a system fails to capture the fusional effects, and their corresponding person asymmetries. Consider the second third/participant asymmetry, i.e., the fact that

we find omnivorous number being spelled out with Tense only if the subject is third person. In the Laz paradigms, we need to make reference to the number of the object, the number of the subject, and the person of the subject to describe the distribution of *-s*, *-an*, and *-t*. We thus find the kind of effects that Fusion is supposed to capture, but we find them only with third person. As I have shown, it is impossible to encode the opposite effect in the current system, but there is nothing in the notion of Fusion that stops us from postulating that a fissioned object [+pl] feature is fused with the Tns-Agr node only in case the subject is a participant, and there is nothing stopping us from fissioning Tense from said node only in case the subject is third person, i.e., the person asymmetry is purely accidental under the DM account, as is the parallelism between the two asymmetries.²⁸

In contrast to DM, the current system is radically *atemplatic*, and dispenses with notions such as Fusion and Fission. Morphological positions of exponence are merely an effect of the cyclic nature of spellout, which targets contiguous spans, thus linking the number of positions of exponence to the person asymmetries – we find dedicated exponents for local objects, and the absence of fusion with Tense with local subjects, because in both cases, the presence of a PART head blocks the relevant contiguity, thus leading to additional effective cycles of spellout, i.e., positions of exponence. Similarly, the fact that PL₀ may receive a prefixal spellout (*gv-*), or a suffixal one (e.g., *-t*) follows naturally from the way the vocabulary interprets the structure. In contrast, Fusion and Fission (or their alternative implementations in Trommer's sense) are attempts to repair such divergences of the surface facts from templatic predictions, and fail to capture their relation to the person asymmetries. Neither does the DM system capture the relation these cycles have to omnivorous number, which is merely an effect of deleting (or leaving uninterpreted) up to two [+pl] features, in the DM account. The current system is thus more explanatory, precisely because it is more restrained: The effects of spanning can be derived by Fusion rules, but they cannot be linked to the specifications of vocabulary items in a systematic way; and in fact, they fail to capture generalizations over the data. Because they are such powerful notions, they would allow for the transfer of any feature to any head, by successive applications of Fission and Fusion, a possibility that is ruled out in the current system that can only spell out contiguous pieces of a structure that does not undergo manipulation beyond the syntax.

I thus conclude that the current system is an improvement over the subset based analysis. It captures person asymmetries and the distribution of omnivorous number as simply effects of matching vocabulary items to syntactic structure, without additional structure manipulation – by not being subject to manipulation, but only interpretation, the structure is given more explanatory power. My proposal dispenses with

²⁸ Trommer's approach is thus quite similar in spirit to the current one, insofar as it is an attempt at reduction to vocabulary insertion. For Trommer, Impoverishment reduces to insertion of a zero VI, and Fusion itself should also be eliminated from the system, and replaced with mutually conditioned contextual allomorphy. That is to say, rather than fusing two nodes, say the object's [+pl] feature, and the Tns-Agr node, we would postulate two contextual allomorphy rules: [+pl] is spelled out as zero in the context of a third person subject, and a third person subject Tns-Agr is spelled out as *-an* in the context of a [+pl] node. Since we find ourselves in a system with omnivorous number, this might necessitate two rules for *-an*, one for [+pl] originating in the Tns-Agr node, and one for the contextual allomorphy, thus creating even more redundancy. It still fails to account for the person asymmetry.

the notion of a template, capturing the relation of person asymmetries to the number of surface morphemes we find. Unlike the DM system, which has local subjects represented twice, despite no clear evidence of such multiple exponence, the current system manages to model the five-dimensional paradigms (person and number of subject and object, as well as tense) as fundamentally a one-dimensional structure, i.e., spans are computationally speaking merely ordered lists, and matching reduces to sets of tails (and, given pointers, linked lists of sets of tails), a computationally simple mechanism. At the same time, the contiguity approach is a much stronger hypothesis than a Fusion & Fission based one. By making the system less powerful, we have increased its explanatory power. Note, however, that the crucial insights of DM remain intact: We are still dealing with a system in which there is a post-syntactic, interpretative vocabulary. In fact, one might argue that in getting rid of the idea that heads are pre-syntactic bundles of features that create morphological positions of exponence, the current approach takes the DM notion of *syntactic structure all the way down* radically serious. The current approach is therefore in no any way “anti-DM”, but rather an attempt at taking DM’s proposals extremely seriously, and showing that doing so may lead to better explanations. By elaborating on the structure, and removing operations from the system, the current approach opens a perspective in which the only PF-interface mechanism is Matching, in a form that subsumes the effects of Fusion as a Matching effect, rather than a dedicated rule.

6.2 Cyclic Agree

The Cyclic Agree approach to Georgian (Béjar 2003; Béjar and Rezac 2009) focuses largely on the prefixal alternation, arguing that the DM-style accounts do not capture the subject/object, third/local asymmetries. They argue that the language can be characterized as “having a single core agreement slot, for the control of which multiple arguments compete” Béjar and Rezac (2009: 35). They take this morphological slot (here: the prefix) to be a direct correlate of a syntactic probe, i.e., like the DM approach, their perspective is templatic. 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 (85).

(85) Local Object > Local Subject > Third Person

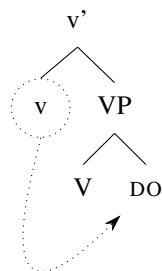
They interpret this as evidence for a markedness structure on a probe, and adopt the same person structures from Harley and Ritter (2002a) that this paper argued for, with either first or second person as the more marked one.

These features occur as interpretable features on arguments, and uninterpretable ones on probes. Crucially, they 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 $[u\pi]$ will result in the behavior familiar from e.g. Romance or Germanic languages, namely agreement with the first argument in the domain.²⁹ If a probe is specified for a more complex structure, and the

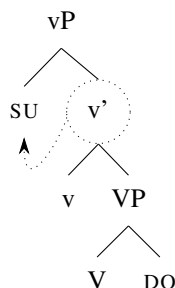
²⁹ As they note on page 45 this means divorcing the feature valuation from the resulting morphological expression, as a probe specified for only $[u\pi]$ (German, Romance etc) can clearly result in morphological expression of the full feature structure.

first goal it encounters matches only a proper subset of its uninterpretable features, however, the probe remains active, and upon merge of a specifier projects to the bar level. Since it now c-commands the specifier, it engages in a second cycle of probing. For example, a probe specified for $[\mu\pi, \mu\text{Participant}]$ will agree with the first argument it c-commands as well, as in (86). If, however, this argument matches only $[\mu\pi]$, $[\mu\text{Participant}]$ will remain active, and engage in a second-cycle probing, as in (87).

(86) First Probing



(87) Second Probing



This derives the prefixal alternation: A local object will always value both features on the probe, and therefore no second cycle ensues. A third person object, however, will result in a projected $[\mu\text{Participant}]$, and thus a second cycle may agree with the subject. This first/second cycle distinction between *m*- (first person, first cycle) and *v*- (first person, second cycle) is then accounted for by a contextual allomorphy rule: If the spellout targets the bar level, we get second cycle morphology, conditioned by the first cycle, otherwise we get first cycle morphology.³⁰ Recall, however, that Georgian always shows agreement with both arguments, even if the object is local. As (88) shows once again, varying either argument's person features results in co-varying morphology, i.e., there is agreement with the subject, even if the object is local, counter the Cyclic Agree predictions.

- | | | | | | |
|---------|-----------------------------|-----|----|-------------------------------|----------|
| (88) a. | <i>m-xedav-Ø</i> | 2>1 | b. | <i>m-xedav-s</i> | 3>1 |
| | 1.OBJ-see-L.SBJ | | | 1.OBJ-see-3.SBJ | |
| | 'You _{sg} see me.' | | | 'He sees me.' | |
| c. | <i>g-xedav-Ø</i> | 1>2 | d. | <i>g-xedav-s</i> | 3>2 |
| | 2.OBJ-see-L.SBJ | | | 1.OBJ-see-3.SBJ | |
| | 'I see you _{sg} .' | | | 'He sees you _{sg} .' | GEORGIAN |

While this might potentially be saved by arguing that in addition to the probe on little *v*, Georgian has another probe on T that always agrees with the subject (thus essentially recapitulating the local subject doubling approach of Halle and Marantz 1993), the case is more dire with number agreement. While Béjar and Rezac (2009)

³⁰ Note that their approach thus breaks with the DM notion of spellout targeting terminals as well, while building a similar notion into the system as I did: *v*- is essentially the spellout of first person in the context of a third person probing.

do not actually treat this, Béjar (2003) – again, like the current proposal – suggests that singular is total underspecification, and plural is not. The number probe is high, and finds the closest plural argument, since singular subjects cannot intervene. This offers a potential account of omnivorous number (in fact, such a system would quite elegantly derive Laz, though it offers no account of the person-asymmetry of omnivorous number spellout), but fails to account for its breakdown, as in Table 20. If *gv*- is involved, first person plural objects have their number marked independently of the subject, even if the subject is plural.³¹

Table 20 Georgian First Person Objects

Object	Subject			
	2Sg	2Pl	3Sg	3Pl
1Sg	m- -Ø	m- -Ø-t	m- -s	m- -en
1Pl	gv- -Ø	gv- -Ø-t	gv- -s	gv- -en

The cyclic agree perspective therefore simply does not seem to offer an empirically correct account of the Georgian agreement data that it purports to explain. It wrongly predicts certain observable agreement facts – the co-occurrence of subject agreement with local objects, and of object number agreement with plural subjects – to be impossible.³² It misses crucial parts of the interaction between the prefixal and suffixal spellout of number, and only accounts for what appears to be an arbitrary subset of

³¹ The same point applies to Nevins (2011), which derives omnivorous number from Multiple Agree. For Nevins' approach, the prefixes are clitic arguments that can be the targets of Multiple Agree; it is unclear why Multiple Agree would be blocked exactly in case the clitic itself has vocabulary items that make reference to the number distinction. Under said approach we would expect the Georgian first person objects to trigger omnivorous number the same way as second person subjects/objects and first person subjects do, and the proposal does not seem to offer a clear way of distinguishing these two cases. In addition, Nevins (2011: 962) also seems to suggest that Omnivorous Number and co-variance with Tense are in complementary distribution, but Laz clearly provides a counterexample to such a generalization.

³² It seems to me that, beyond that, Cyclic Agree also fails to capture some crosslinguistically attested interactions of multiple agreeing arguments. A crucial point of the *agreement displacement* approach of Cyclic Agree is that only structurally larger elements can displace structurally smaller ones with respect to agreement. Unless further auxiliary assumptions are involved, the general prediction of the Cyclic Agree model of such interactions is that there should not be a language where there is a dedicated third person object marker, but a first or second marker shows variation depending on the subject. In contrast, the current system would potentially allow for some systems along those lines. Consider a hypothetical affix *X* that lexicalizes $X \Leftrightarrow '[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{REF}_0]]]]'$, abstracting away from number. Such an affix would be able to spell out any $X > 3$ context. If we had further affixes $Y \Leftrightarrow '[\text{REF}_s[\text{PART}_0[\text{REF}_0]]]'$ and $Z \Leftrightarrow '[\text{ADD}_s[\text{PART}_s[\text{REF}_s[\text{PART}_0[\text{REF}_0]]]]]$, we would expect "agreement displacement" to happen for first person (i.e., we would find *Z* in $2 > 1$ contexts, and *Y* in $3 > 1$ contexts).

Consider the partial Table I from Ojibwe (number does not play a role in this agreement beyond clusivity, which may be encoded by person only, according to Harley and Ritter (2002a)), where we see that while first and third person objects are marked uniformly (i.e., without reference to the subject), second person objects are not. Instead, second person object marking varies with a first person exclusive subject marking *i-goo* versus first/third person subject marking *i-no*. If *-i* spells out first person objects in the context of any subject (i.e., lexicalizes a second person subject above the first person object), then we would expect it to spell out $[\text{PART}_0[\text{REF}_p]]$ even for second person objects, absent a better competitor. We could then interpret *-no* and *-goo* to spell out ADD_0 and the remaining subject structure, with *-no* creating a first/third syncretism, and *-goo* being larger and spelling out whatever constitutes a first person exclusive in addition,

the data. While it offers an account of the person asymmetry of the prefix, it offers no potential insights into the fact the same person asymmetry appears to be at play in the spellout of number: Both the prefixal position and the suffixal position exhibit local/third asymmetries, and the fact that portmanteau morphology for Tense/Number seems to be subject to similar generalizations is not captured in the cyclic agree account. In contrast, under the current system they are interpreted as arising the same way: A third person object may be spelled out together with subject material, and a third person subject may be spelled out with Tense, i.e., both times the small third person agreement structure is spelled out in a span with higher material, but for local arguments the relevant contiguity is blocked, because participants are too large, and thus we find additional morphemes/effective cycles of spellout. Like the Cyclic Agree account, then, the current account takes person asymmetries seriously, and in fact, it works with very similar phi-specifications, which both accounts adopt from Harley and Ritter (2002a). Unlike the Cyclic agree account, however, it maintains that these facts arise in the morphological interpretation of syntactic structure, not in the probing mechanism itself, and in doing so are able to provide a complete picture of agreement in Laz and Georgian.

7 Conclusion

In this paper, I have argued in favor of a novel perspective on the Georgian agreement system, and provided new data from Laz that shed light on the distribution of omnivorous number effects within Georgian. In this analysis, a variety of phenomena have been interpreted as the effects of a generalized portmanteauhood, *spanning*, which is driven by the available vocabulary. I have shown that the five-dimensional system can be interpreted as strictly ordered (by the order of Merge), and that the distribution of all morphemes can be linked to them spelling out a contiguous subpart of a fixed hierarchy. In doing so, I provided an analysis of the prefixal alternation, as well as prefix-suffix interactions, which did not find appropriate explanations in previous

i.e., overwriting *-no* if the subject is first person exclusive, but losing to it due to the Elsewhere Principle otherwise.

Table I: Ojibwe – Embedded Clause Theme Signs

OBJ	SBJ				
	1	2	3	1 EXCL	1 INCL
1		i	i		
2	i-no		i-no	i-goo	
3	aa	aa	aa	aa	aa

Source: Bhatia et al. (2018)

It remains to be seen whether this is a viable analysis, once more data is taken into account – after all, the current perspective cautions us against focusing on a single position of exponence –, but the fact that this appears to be a paradigm with “agreement displacement” only for second person objects, but not first or third person objects seems to me to be a further possible counterexample to the cyclic agree approach of dealing with these types of complex agreement paradigms, where subject and object agreement show complex interactions with respect to exponence.

accounts. In particular, I have shown that two person-based splits can receive parallel explanations in terms of third person agreement being spelled out with higher material, and local agreement blocking the relevant contiguity due to their larger size. I have also shown that the same perspective offers an account of the distribution of omnivorous number effects in Georgian.

In many ways, this approach builds on previous analyses. The first one is the Cyclic Agree approach of Béjar (2003), Béjar and Rezac (2009), with which it shares the notion that the prefixal facts should be accounted for in terms of derivational timing (objects are low), and size asymmetries of person (participants contain third person). The current approach differs sharply from theirs in arguing that these person asymmetries are not genuine syntactic effects of a relativized probing mechanism, but PF-effects that arise since the language's vocabulary inventory exploits these structural asymmetries. In doing so, the current approach achieved an empirically accurate picture of all agreement facts, rather than just the singular prefixes.

The second approach is the Distributed Morphology account of Halle and Marantz (1993), from which it takes the general perspective that PF interprets abstract syntactic structure composed of minimal units. It differs from the original DM account not in general architectural questions, but in a highly specific ones, namely the nature of the matching algorithm/the vocabulary, and correspondingly whether terminals provide templatic slots, as well as the question of how minimal the minimal syntactic units are. In dispensing with head-internal feature structures, and the corresponding templatic notion of insertion into terminals only, I have shown that it may be possible to reduce these operations to a form of Fusion that is itself subsumed under the notion of Matching. In doing so, I hope to have shown that taking the DM notion of *hierarchical syntactic structure all the way down* more serious than even the original DM paper did, we may be able to provide new and interesting explanations for morpho-syntactic phenomena. In arguing that spanning is what matches abstract syntactic structure with phonological material, I have shown that – for the case of Laz and Georgian, at least – we may dispense with a variety of post-syntactic operations that this approach necessitated for what appeared to be syntax-morphology mismatches under the terminal insertion perspective. The current system contrasts with theirs in being radically atemplatic, deriving all effects from a simple restriction, contiguity, but otherwise it remains committed to its larger architectural notions.

Of course, there is a great variety of morphological phenomena that have not been touched upon, and unlike research in core syntax, research on inflectional morphology in particular is limited by the finitude of forms that one can find in any given language, so in these senses this paper's proposals must be taken with (at least) a grain of salt. Despite that, however, I hope to have demonstrated that a Minimalist attempt that reduces all structure building to the narrow syntax and having the interpretative component of PF drive the bundling of heads into exponents may indeed lead to new and interesting insights.

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