Abstract. This paper proposes a new analysis of person and number agreement in Georgian, which combines the locality-based syntactic account of Béjar (2000) with the discontinuous bleeding mechanism proposed by Noyer (1997). Following Béjar (2000, 2003); Béjar and Rezac (2003), we argue that phi-feature checking and realization is sensitive both to locality and to markedness of features. Contra these previous approaches, however, we propose that the morphological realization of these checking relations is constrained by a morphological template which restricts the number of positions-of-exponence available in the Georgian verb, in the spirit of analyses proposed in Noyer (1997); Carmack (1997); and Hale (2001), and, in a way, by Harris (1981). Our central claim is that the cyclic, phase-dependent nature of Spell-Out interacts with the positions available in the template to produce the complex patterns of blocking observed, without recourse to extrinsic rule-ordering or a presyntactic level of paradigmatic structure (see, e.g. Stewart 2001). This approach easily accounts for the number sensitivity of the first person prefixes, and naturally extends to predict the forms of the inverse paradigm, given certain syntactic assumptions about the location of arguments in the tree structure in the relevant constructions. We also treat the agreement patterns of complex verbs, containing both the verb stem and a dummy auxiliary. We claim that these forms are distinct from the simplex forms in lacking a phase boundary which is present in the simplex forms.

1. Introduction: Theoretical background

The problem of case and \( \phi \)-feature checking in Georgian has been repeatedly addressed by syntactically-oriented morphologists, in works such as Marantz (1991); Halle & Marantz (1993); King (1994); Béjar (2000, 2003); Béjar and Rezac (2004); McGinnis (1998); Nash (1994) and by others in various frameworks (see, e.g. Anderson 1986, 1992; Carmack 1997; Stump 2001; Stewart 2001 and Gurevich 2006). The central questions posed by the agreement patterns of Georgian are the following:

(1) a. How can the person and number features of multiple arguments compete with each other for realization within a single agreement pattern? What kind of relations do these arguments enter into with the agreeing head?

b. Is there a unified mechanism which can account for the two different patterns of agreement in Georgian (the ‘basic’ and the ‘inverse’ patterns)?

c. How can the distinct agreement patterns of bipartite complex verbs be incorporated into a unified account?
With respect to question (1a), the challenge for a syntactic model comes from the fact that in Georgian, phi-features apparently do not constitute a single ‘bundle’ in the agreeing functional heads. Below, we outline some of the theoretical background to the present study, describing the proposal for selective feature checking within the Minimalist framework outlined in Béjar (2003). We argue that selective feature checking is actually not necessary, if language-specific morphotactic templates are in principle available at the level of Morphological Structure, and as long as checking proceeds in a phase-bounded, bottom-up fashion.

1.1 Syntactic feature checking within the Minimalist program

According to the Minimalist model of grammar (Chomsky 1995, 1998, 1999), agreement and case are the morphological reflex of a single syntactic relation triggered by uninterpretable phi-features and case features on certain functional projections (\(T^\circ\), \(v^\circ\), Appl\(^\circ\), etc.). In particular, the Agree operation applies between a ‘Probe’ of uninterpretable phi-features on these functional heads and the interpretable phi-features on c-commanded target DPs. The Agree operation matches and deactivates these features in the computation of syntactic structure. They are then given phonological form at Spell-Out, the interface with the level of Morphological Structure, a post-syntactic component of the grammar whose properties are articulated in the Distributed Morphology (DM) framework. In the proposals of Chomsky (1998, 2001) and others, Agree applies to a complete uninterpretable feature bundle on a single functional head, and after their valuation all these features are deleted.

Béjar (2003); Rezac (2004) and others have departed from this mainstream view of agreement and adopted the notion that selective checking of person and number features is possible. On this view, when the person features of one argument trigger agreement on the verb, the number features of another may do the same (or vice versa). In short, while the Agree relation can apply in the manner indicated in Chomsky’s and others’ work (the ‘all-or-nothing’ condition, in Béjar’s terms), it may also be the case that the phi-feature complex agrees in two steps, each step involving just person or just number features.

In the analysis proposed here, we reject the notion of selective feature checking. Instead, we propose to exploit discontinuous bleeding, first proposed by Noyer (1992, 1997), proposing that a morphotactic template restricts the availability of positions-of-exponence in the Georgian verb. We will crucially also make use of the concept of phase-based Spell-Out, as proposed by Chomsky (1998, 1999), to account for the way agreement
The interaction of phase-based Spell-Out with Noyer’s notion of a morphotactic template will prove crucial in allowing us to account for the variation between simple and complex verbal agreement patterns, in section 3. The conclusions we draw based on the complex verbal agreement pattern will have ramifications for the technical implementation of Agree and checking theory, which we will discuss in section 4.

1.2 Markedness of person features

Although we do not adopt Béjar’s notion of selective feature checking, we do adopt many other crucial components of Béjar’s analysis. In particular, we follow her assumptions about markedness. To account for the variability in agreement activity observed between different DPs, we follow Béjar’s (2003) proposal that checking is conditioned by the markedness of certain feature values. Such markedness can be derived from the geometric representation of person and number features proposed in Harley and Ritter (1998, 2002); representations containing more specified nodes are more marked:

(2) Person: Third person second person first person

| RE | RE | RE |
| Participant | Participant | [Speaker] |

In Georgian, the phi features of external or internal arguments are active for checking iff they have a [+participant] value (i.e. if they are 1–2 person). Third person arguments may not enter into Agree relations. This view is summarized by Béjar (2003) in the following markedness theorem:

(3) “An unmarked feature cannot satisfy a Probe.” (Béjar 2003:35)

1 Stewart (2001) implements this preference within a PFM approach by treating transitive verbs as a distinct class, which provides a means to increase the specificity of object-indexing morphemes with respect to subject-indexing ones and trigger blocking of the latter by the former. However, the present approach’s appeal to actual hierarchical syntactic structure to implement this preference predicts the agreement behavior in the inverse patterns, which we see as an advantage.

2 In Harley and Ritter (2002), the 1st person is treated as more marked than 2nd person. However, the Georgian data does not provide evidence in support of a markedness distinction between 1st and 2nd person. Both 1st and 2nd person arguments bear the [+participant] feature, whether it is the argument with [+speaker] or the [+addressee] features, and arguments with either of these features in Georgian agree with verbs in person, but do not exhibit any privilege of [+speaker] over [+addressee]. Nonetheless, arguments with a [+participant] feature are always privileged with respect to 3rd person DPs in agreement, which are assumed to be featurally underspecified for person. The same reasoning applies to arguments with a [+group] feature – they always outperform those with [–group] feature, which never have overt agreement with verbs.

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The unmarked features here are the ones without a [+participant] value, i.e. [+3] ones. So, when an argument bears one of these features it may not value the uninterpretable phi-features of the functional head. We assume, with Béjar, that the 3rd-person number agreement suffixes of Georgian, which vary with series (see below for discussion), are realizations of Tense features secondarily conditioned by number; similarly, the number-sensitive 3rd person version-marking prefixes are not primary realizations of agreement features either.

1.3 Locality

Finally, and most importantly, Béjar’s (2003) proposal also invokes the notion of locality in feature-checking, according to which agreement operations must apply as soon as they can, i.e. as soon as the relevant functional head (with uninterpretable Probe) is introduced into the derivation. Rezac (2004) develops this analysis in terms of the Earliness Principle (Pesetsky 1989; Richards 1999; Pesetsky & Torrego 2001; Rezac 2003), which in this framework requires a probe to trigger an operation as early as possible. In consequence, probes which appear lower in the structure, e.g. on the v head, will enter into Agree relations before probes merged higher in the structure, e.g. in T. This insight is crucial in the analysis presented below.

1.4 Plan of discussion

The paper is organized as follows. In section 2, an overview of the case and agreement morphology of Georgian active transitive verbs is presented, followed by our analysis of this ‘basic’ agreement pattern. In section 3, we present the case and agreement patterns of Georgian dative-subject verbs, followed by our analysis of the associated ‘inverse’ agreement pattern, including an account of the complex predicate formation which appears in a subset of cases in these classes two classes of verbs (active transitive and psych), which fall into two distinct agreement patterns. Section 4 discusses further issues, and section 5 concludes.

2. Case and Agreement in Georgian active transitive verbs

2.1 Overview of system

In Georgian a split-ergative system of case marking is instantiated by variation between Nom, Erg and Dat on subjects and Dat and Acc/Nom on objects across three tense/mood/aspect paradigms (or series) of transitive and unergative classes of verbs. There are three such series in Georgian: the Present, the Aorist, and the Perfective. The three series consist of 11 scribes, each representing a distinct conjugation pattern for one specific combination of tense, mood, and aspect (Aronson 1989;
Harris 1981). For example, the Present Perfect screve differs from the Pluperfect screve in the combination of tense, aspect and mood features, though both are within the Perfective series. The three series supercategories are differentiated both by the tense/aspect/mood properties which they have in common and by the case marking which appears on subjects and objects in each series. Subjects of transitive and unergative verbs are assigned different cases in each of the three series: Nom in the Present series, Erg in the Aorist series, and Dat in the Perfective. The system is illustrated in (4):

(4) The structure of series forms in Georgian

| Series | Scerssees | | |
|--------|----------|--------|
| Present (S = Nom) | (Present) present | Imperfect present conjunctive |
| (Future) future | Conditional conjunctive future |
| Aorist (S = Erg) | aorist | conjunctive past |
| Perfective (S = Dat) | present perfect (evidential) | Pluperfect conjunctive perfect |

The case marking patterns which characterize the three series can thus be summarized independently of screeve as in (5) below. Each of these patterns is exemplified in (6). Note that the Accusative and Nominative have syncretic surface forms:

(5) Case marking of transitive verb arguments

<table>
<thead>
<tr>
<th>Present series</th>
<th>Aorist series</th>
<th>Perfective series</th>
</tr>
</thead>
<tbody>
<tr>
<td>External argument</td>
<td>Nom</td>
<td>Erg</td>
</tr>
<tr>
<td>Theme</td>
<td>Dat</td>
<td>Acc</td>
</tr>
<tr>
<td>Goal/Benefactee③</td>
<td>[Dat]</td>
<td>[Dat]</td>
</tr>
</tbody>
</table>

(6) a. Present series (active):

Nodar-i bavshv-s t’k bileul-s chuknis.
Nodar-NOM child-DAT candy-DAT presents.PRES
‘Nodar is presenting a candy to the child.’

b. Aorist Series (active):

Nodar-ma bavshv-s t’k bileu-i achuka.
Nodar-ERG child-DAT candy-ACC presented.AOR
‘Nodar presented a candy to the child.’

③ The square brackets indicate that this argument may or may not be projected in the structure, depending on the verb.

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c. Perfective Series (active, irrealis):

\[ \text{Nodar-}\text{s bavshv-}\text{is-tvis t'k'bileul-i uchukebia.} \]

\[ \text{Nodar-}\text{DAT child-}\text{GEN-for candy-}\text{NOM presented.PERF} \]

‘Nodar has (apparently) presented the candy to the child.’

We describe the case feature system which we need and its morphological realization in section 4.2 below. Notice that the Goal object of the perfective verb is assigned the oblique Genitive by the postposition \(-tvis,\) ‘for’. These optional Goal arguments with oblique cases and postpositions never trigger agreement on verbs and will not figure in our analysis.

The most noteworthy fact is that in the Perfective series the subject is marked with Dat case. There are two main agreement patterns in Georgian. The basic agreement pattern (Aronson 1989) appears with Nom and Erg subjects. In this agreement pattern, subject agreement is realized on the verb with the ‘v-set’ person markers, while object agreement, if present, is marked with ‘m-set’ affixes.\(^4\)

The inverse agreement pattern appears in sentences with Dative subjects, i.e. with the Perfective series conjugation of active verbs, and also with subject-experiencer psych-verbs and two-place passive verbs, all of which have Dative subjects and (when selected) Nominative objects.\(^5\) In the inverse pattern, subject agreement is marked with the so-called ‘m-set’ affixes while object agreement is marked with ‘v-set’ affixes. The m-set and v-set affixes are listed in (7):

(7) Georgian agreement morphology

<table>
<thead>
<tr>
<th>Per</th>
<th>Num</th>
<th>v-set markers</th>
<th>m-set markers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sg</td>
<td>v–</td>
<td>m–</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ø/x–</td>
<td>g–</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>–s, –a, –o</td>
<td>Ø–, h–, s–</td>
<td></td>
</tr>
<tr>
<td>1 pl</td>
<td>v–</td>
<td>t</td>
<td>gv–</td>
</tr>
<tr>
<td>2</td>
<td>Ø/x–</td>
<td>–t</td>
<td>g–</td>
</tr>
<tr>
<td>3</td>
<td>–en, –an, –nen, –n, –es</td>
<td>Ø–, h–, s–</td>
<td>–t</td>
</tr>
</tbody>
</table>

As is evident from (7), both the m-set and v-set paradigms have prefixal forms for first and second person arguments. As for third person arguments, the complex set of suffixes which are used to indicate agreement with them are sensitive to a host of features, including tense and aspect, which are not relevant for the first and second person agreement markers. The third person agreement markers will be, for the most part, left aside in the discussion that follows. As Béjar (2003) points out, because they vary with different tense and aspect features in a way the ‘pure’ agreement markers do not, they require a separate

\(^4\) The m-set and v-set affixes are named after their morphological realization in the 1\(st\) person singular.

\(^5\) In these classes, objects can occasionally also be marked with Dat case. We will not address these cases here, however.
analysis. We assume they do not compete for the same positionsof-exponence as the [+participant] agreement morphemes, but rather represent realizations of features present in the Tense node.

2.2 Illustration of the basic agreement pattern

We now turn to a detailed explanation of the behavior 1st and 2nd person agreement markers with transitive active verbs. We refer to [+participant] arguments as marked.

Here are the agreement patterns for transitive active verbs with first and second person arguments (omitting reflexive forms):

(8) Transitive verb agreement, [+participant] arguments

<table>
<thead>
<tr>
<th>1.subj</th>
<th>2.subj</th>
</tr>
</thead>
<tbody>
<tr>
<td>sg</td>
<td>pl</td>
</tr>
<tr>
<td>sg</td>
<td></td>
</tr>
<tr>
<td>1.obj</td>
<td></td>
</tr>
<tr>
<td>sg</td>
<td>pl</td>
</tr>
<tr>
<td>(a) g-xatav</td>
<td>(b) g-xatav-t</td>
</tr>
<tr>
<td>2-paint</td>
<td>2-paint-pl</td>
</tr>
<tr>
<td>‘I paint you.sg’</td>
<td>‘We paint you.sg’</td>
</tr>
<tr>
<td>pl</td>
<td></td>
</tr>
<tr>
<td>2.obj</td>
<td></td>
</tr>
<tr>
<td>sg</td>
<td>pl</td>
</tr>
<tr>
<td>(c) g-xatav-t</td>
<td>(d) g-xatav-t</td>
</tr>
<tr>
<td>2-paint-pl</td>
<td>2-paint-pl</td>
</tr>
<tr>
<td>‘I paint you.pl’</td>
<td>‘We paint you.pl’</td>
</tr>
<tr>
<td>pl</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In these examples, person agreement always indexes the object, as can be seen by, for example, inspecting the lower left quadrant of (8), cells (a–d), which show forms with 2nd person objects; there, the 2nd person m-set prefix g– appears in all four cells. Similarly, in the upper right quadrant, the 1st person prefixes m– and gv– appear in all four cells, indexing the 1st person objects.

Number agreement, however, is symmetric: it indexes either subject or object arguments with a marked value for number. In the cell labelled (b), for example, the plural –t suffix agrees with the subject, but in the cell labelled (c), it is the object which triggers the plural –t suffix, producing the identical surface form. In cell (d) we cannot be sure whether the plural –t owes its presence to the plurality of the subject or that of the object; either or both could be responsible. In (g) and (h), with 1st person plural objects, object plurality is marked in a distinct way: the object-agreeing prefix gv– encodes both 1st person and plural.

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We can therefore tell that in (h) the plural suffix \(-t\) is indicating subject plurality, by contrast with the form in (g) where the subject is singular and the \(-t\) is absent. It is clear, then, that the availability of number marking in the prefix position with 1st person objects interacts with the need for number marking in the suffix position; a plural first-person object as in (g) marks plurality in the prefix and hence does not trigger plural marking with the usual \(-t\) suffix. This effect will be crucial in motivating the analysis laid out below.

Next we present the agreement pattern which surfaces when the subject is marked [+participant], either 1st or 2nd person, and the object is unmarked, i.e. is the 3rd person:

(9) Transitive verb agreement with unmarked objects:

<table>
<thead>
<tr>
<th></th>
<th>1subj</th>
<th>2subj</th>
</tr>
</thead>
<tbody>
<tr>
<td>sg</td>
<td>v-xatav</td>
<td>xatav-t</td>
</tr>
<tr>
<td>sg</td>
<td>'I paint'</td>
<td>'You.sg paint'</td>
</tr>
<tr>
<td>pl</td>
<td>v-xatav-t</td>
<td>xatav-t</td>
</tr>
<tr>
<td>pl</td>
<td>'We paint'</td>
<td>'You.pl paint'</td>
</tr>
</tbody>
</table>

In (9) we can see that v-set agreement is triggered by the subject when the object is 3rd person. In contexts with one marked argument, such as this one, a 3rd person object cannot agree in number with the verb at all, as can be seen in the lack of contrast in cells (a) and (c), as well as in (e) and (g), whose forms are identical despite a change in the intended number of the 3rd person object. This is consistent with Béjar's Markedness Theorem, which requires that only marked feature bundles can satisfy a Probe; in Georgian only [+participant] feature bundles count as marked.

Given the contrast between examples such as (8a) versus (9a), it is apparent that there is a competition between the person agreement features of subjects and objects. It is evident from (8) that object person feature wins over the subject person feature when both are [+participant]; in order for the subject person feature to trigger any overt marking, the object must be unmarked, as in (9). In short, the internal argument is privileged in terms of person agreement when both arguments have a [+participant] feature. When the object lacks a participant feature, the subject triggers person agreement (marked with v-set prefixes). Number marking can be triggered by either the subject or object arguments, and there is no evidence for a privileged status in this regard for either, with one exception: The \(gv-\) ‘1pl’ prefix, part of the m-set paradigm, represents both person and number agreement of objects only.
Finally, we present the forms for cases with marked [+participant] objects and 3rd person subjects:

(10) Transitive verb agreement with unmarked subjects:

\[
\begin{array}{ll}
\text{3subj} & \text{pl} \\
\text{sg} & \text{pl} \\
(a) & (b) \\
m-xatav-s & m-xatav-en \\
\text{1obj} & \text{1pl} \text{-} \text{paint-3sg.pres} & \text{1pl} \text{-} \text{paint-3pl.pres} \\
(c) & (d) \\
gv-xatav-s & gv-xatav-en \\
pl & \text{1pl} \text{-} \text{paint-3sg.pres} & \text{1pl} \text{-} \text{paint-3pl.pres} \\
(e) & (f) \\
g-xatav-s & g-xatav-en \\
sg & \text{2} \text{-} \text{paint-3sg.pres} & \text{2} \text{-} \text{paint-3pl.pres} \\
\text{2obj} & \text{pl} \\
(g) & (h) \\
g-xatav-t & g-xatav-en \\
pl & \text{2} \text{-} \text{paint-pl} & \text{2} \text{-} \text{paint-3pl.pres} \\
‘He paints me’ & ‘They paint me’ & ‘They paint you.sg’ & ‘They paint you.pl’
\end{array}
\]

In these cases, the marked, [+participant] object triggers person prefixes, as usual, and in all cases except for (h), also controls number agreement. In the latter case, the expected –t, indicating the plurality of the second person object, does not appear (although it does appear in, e.g. (g), indicating that 2nd pl objects can trigger the –t with 3rd person subjects.) We will propose an Impoverishment-based account of this exceptional form below.

2.3 An analysis of the basic agreement pattern

We now turn to a unified morphosyntactic account of the basic agreement pattern. We first explore the syntactic mechanism of phi-feature and case checking in transitive verbs in which the agreement pattern is basic, i.e. when the subject and object arguments trigger agreement as presented in the paradigms above.

2.3.1 Syntactic assumptions

We assume that active transitive verbs in Georgian, as in other languages, project an external argument in the spec of vP. We will argue that in the basic pattern, the subject’s structural case is checked via Agree with T°, and the object’s is checked via Agree with v. This is illustrated schematically in the tree below. (Note that we are assuming that Georgian is a head-final language):
Each probe checks its c-command domain, and enters into an Agree relationship with the closest Case-active DP; $T^\circ$ with the subject in spec-$vP$, and $v^\circ$ with the object in Comp-$V$.

In our proposal, the case-checking relationship between the Subject and $T^\circ$ holds even in the Aorist series where a special Ergative case marker surfaces on the subject; we assume that Nominative and Ergative case feature bundles share a common subset of features. Following Halle (1994) and Müller (2004), we assume that Case categories actually are composed of bundle of Case features, in which certain surface Case categories share different subsets of these features. This allows Halle and Müller to account for Case syncretisms in Russian and other languages. Here, it allows us to identify a common checking relationship for the Nominative and Ergative subjects, as well as to characterize the common agreement patterns triggered by Dative and Accusative arguments. We assume that Nominative and Ergative case feature bundles share Muller’s $[-gov]$ feature (but are distinguished by other features), while Dative and Accusative share a $[+gov]$ feature. We propose that $v^\circ$ can check and value all $[+gov]$ cases, and $T^\circ$ can check and value all $[-gov]$ cases. The importance of this assumption will emerge especially in our analysis of the complex predicate agreement patterns later.

We follow Béjar (2003) in positing that phi-agreement is probed along with Case from both $T^\circ$ and $v^\circ$. Unlike Béjar, who proposes that $v^\circ$ only probes for person features and $T^\circ$ for number features, however, we claim that both probes have both person and number features. In this respect, our approach to Georgian more closely resembles the analysis for Basque proposed by Rezac (2004).
With Chomsky (1999, 2001), we assume that phi-features are uninterpretable on the functional heads which probe for them (v° and T°), but interpretable on the DPs which bear them. In contrast, Case features are interpretable on v° and T°, and uninterpretable on DPs. We assume a parameter such that in Georgian, only [+participant] arguments can value a phi-feature Probe. A 3rd person argument will be unable to enter into an Agree relationship with a full Case + phi-feature probe. In that situation, only a pure Case Probe, with no phi-features needing valuation, will produce a convergent derivation. A derivation which contains an unchecked uninterpretable feature will not converge.

Finally, we assume that the derivation proceeds phase-by-phase, following Chomsky (1999) et seq. The structure is built by combining lexical and phrasal elements via Merge operations, from the bottom up. At certain points – notably at vP and CP – we assume that the derivation ‘pauses’ to phonologically and semantically interpret the structure so far, sending a portion of the extant material off to Spell-Out. Then the derivation continues, adding further structure to the existing derivation via Merge. The pause for Spell-Out at the vP phase edge will be crucial to our account of blocking in Georgian agreement.

2.3.2 Morphological assumptions

When a convergent derivation reaches the end of a phase and is transferred to Spell-Out, the Distributed Morphology operation of Late Insertion applies. In this operation, Vocabulary Items (VI) compete to realize the available positions-of-exponence, based on the Subset Principle, according to which the VI which matches the most features present in the terminal node, but carries no inconsistent features, ‘wins’ the competition for insertion and realizes a position-of-exponence.

At Spell-Out, checked phi-features which were bundled with a [+gov] Case feature are realized with m-set agreement on the verb. Phi-features which were not bundled with a [+gov] case feature – i.e., which are [–gov] – trigger v-set agreement. The Vocabulary Items which are competing for insertion at nodes marked for Phi-feature agreement are listed in (12) below. Note that all the person-sensitive VIs are prefixes, while the only non-person-sensitive VI is a suffix.6

6 We do not propose any ‘deep’ reason why person should surface as prefixal and number suffixal, though this is not an uncommon pattern crosslinguistically, see e.g. Harbour (2008) for discussion. We could in principle apply Harbour’s phi-structure-based account to this phenomenon, eliminating the need to specify that particular VIs are prefixes or suffixes, but would still need the templatic restriction proposed here to stop double-prefixing of the verb, whereby subject person-agreement would appear outside of and adjacent to object person-agreement.
The crucial aspect of our analysis which will enable us to capture the blocking effect seen in the case of first plural objects (bearing the feature bundle \([+1, +pl, +gov]\)) is adoption of the innovative notion of *discontinuous bleeding*, proposed by Noyer (1997), which he associates with languages where the morphophonological positions of exponence available for agreement realization are arbitrarily restricted (in Noyer’s analysis, Classical Arabic is such a language). \(^8\) We propose that Georgian is subject to a morphologically imposed Verb Agreement Template, which will be crucial in accounting for the interacting blocking effects seen above. In this template, a verb stem is associated with two Agreement-related positions-of-exponence: a single prefix position and a single suffix position, for realizing agreement morphology:

\[
(13) \quad \begin{array}{c}
\text{One position of exponence for an agreement prefix} \\
\text{One position of exponence for an agreement suffix}
\end{array}
\]

The Verb Agreement Template of Georgian expresses the intuition that any single verb stem is restricted to only one prefixal position of exponence for phi-features, and one suffixal position. In this way, it is very much like other polysynthetic languages in having strict morpho-

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\(^7\) The \(x\)-prefix appears only with two irregular verbs in modern Georgian; elsewhere this prefix has become \(\emptyset\).

\(^8\) A similar restriction is assumed by Carmack (1997), in a paradigm-based theory; here, however, we are treating each affixal element as an independent competitor, rather than the competition between whole forms proposed by Carmack.

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phonological constraints on the structure of verbs which limit the number of positions of exponence available. For similar proposals, see Hale (2001) et seq. on Navajo; also McGinnis (1997) on unaccusatives in Georgian and Noyer (1992, 1997) on Arabic among others. This represents a departure from the standard approach to exponence within Distributed Morphology, where each syntactic terminal node is associated with a position of exponence; the positions in this Georgian morphotactic verb template are not associated with a particular verbal terminal node, but rather are made available at the first Spell-Out cycle of any verbal stem. In this sense, we are treating the appearance and realization of Agreement positions-of-exponence as a post-syntactic phenomenon, although syntactic operations determine which features are available to be expressed on any given Spell-Out cycle.

We now turn to illustrate the interaction of all these assumptions with several derivations which illustrate the implementation of the basic agreement pattern.

2.3.3 Derivation of the basic agreement pattern

As was shown in (8a), repeated here as (14a), an internal ([+gov]) argument carrying a [+participant] feature triggers m-set agreement with the verb. (14c) illustrates the syntactic structure which corresponds to this agreement pattern:

(14) a. g-xatav
   2-paint
   ‘I paint you.’

b. 

\[
\begin{array}{c}
\text{g-xatav} \\
\text{2-paint} \\
\text{‘I paint you.’} \\
\end{array}
\]

\[
\text{TP} \\
\text{T'} \\
\text{vP} \\
\text{v'} \\
\text{DP} \\
\text{[+1]} \\
\text{[+sg]} \\
\text{[−gov]} \\
\text{VP} \\
\text{v'} \\
\text{DP} \\
\text{[+2]} \\
\text{[+sg]} \\
\text{[+gov]} \\
\end{array}
\]

\[
\begin{array}{c}
\text{T'}_{[\alpha\text{Pers}, \alpha\text{Num}, \text{Case}]} \\
\text{(v−)} \\
\text{v'} \\
\text{v'}_{[\alpha\text{Pers}, \alpha\text{Num}, \text{Case}]} \\
\text{g−} \\
\end{array}
\]

\[
\begin{array}{c}
\text{v°} \\
\text{xatav} \\
\end{array}
\]
The checking and realization of the transitive verb agreement features in the structure in (14) proceeds through the following steps:

Upon Merge of the transitive v\textsuperscript{o} with an active Case and phi-feature Probe, Agree is triggered (in accordance with the Earliness Principle, as discussed in Rezac 2004). The v\textsuperscript{o} Probe searches its c-command domain for an appropriate Case and phi-marked DP with which to Agree, and finds them on the object. Agree matches (or values) the uninterpretable phi-features on v\textsuperscript{o}, and the uninterpretable Case features on DP. Both end up with the full Case/phi feature bundle of \([+2, +sg, +gov]\).

The vP is the first phase of the derivation which is subject to Spell-Out. The V\textsuperscript{o} has head-moved to attach to v\textsuperscript{o}, creating the verb stem, with its two associated positions-of-exponence. At this first Spell-Out, the 2\textsuperscript{nd} person m-set prefix \textit{g–} wins the competition among the Vocabulary Items in (12) above, since it is compatible with \([+2nd, +gov]\) feature bundles. The \textit{g–} prefix is inserted into the prefix slot of the verb template. As in Béjar's analysis, because only the object is within the search domain of v\textsuperscript{o}, only objects may trigger m-set agreement in the basic pattern.

The derivation proceeds until T\textsuperscript{o} is merged, with its active Case and phi-feature probe. This triggers the Agree operation again. Again, the T\textsuperscript{o} searches its domain for an appropriate DP to check against, and finds the subject in spec-vP. Agree matches the Case and phi-features on the DP with those on T\textsuperscript{o}, giving T\textsuperscript{o} the feature bundle \([+1, +sg]\). 9

At the second phase Spell-Out (after the matrix CP is constructed), the single prefix position of the template is already occupied by the m-set prefix inserted after the first phase Spell-Out. Hence, although the 1\textsuperscript{st} person v-set prefix is featurally eligible to appear, since it is compatible with \([+1]\) feature bundles, it is blocked by the previously inserted m-set prefix: Because of the templatic restriction, the m-set prefix bleeds the v-set prefix. Hence, the v-set prefix may not be inserted. Nothing is inserted in the suffix slot because no number agreement has occurred with either subject or object, and so the plural -t suffix is not featurally eligible to appear.

In short, the higher external argument, which is also marked for person and merges in spec-vP, undergoes Agree for Case and phi-features like any argument, but these features are not spelled out by any Vocabulary Item because of the templatic restriction. This captures the fact that the internal argument is privileged with respect to person agreement, due to locality in combination with cyclic Spell-Out, phase-by-phase. The earlier merger of objects in derivation and the cyclic nature of spell-out at the end of each derivational cycle, defined by the v*P and CP (Chomsky 1999, 2001), privileges objects of transitive verbs for person agreement. Since the prefix slot for person agreement is already filled at the v*P level,

---

9 We only explicitly include marked features which condition VI insertion, here, though others are assumed to be present, as they are required for interpretation.

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the person feature of the external argument, which merges in spec-vP above \( v^\circ \), cannot be spelled out in the verb. As a result, m-set agreement (triggered by Agreement with \( v^\circ \)) always blocks v-set agreement (in \( T^\circ \)). As we will see, this basic mechanism will also account for the checking of agreement features in the subsequent examples.

Let us now consider the 2plobj-1sgs form in (8c) repeated here as (15c), and with the structure represented in the tree diagram in (15b):

\[
(15) \quad \text{a. } g\text{-xatav-t} \\
\quad \text{2-paint-pl} \\
\quad \text{‘I paint you.pl’}
\]

\[
\text{b. }
\]

\[
\begin{array}{c}
\text{TP} \\
\text{v'} \\
\text{DP} \\
|\ +1 \\
\ |\ +sg \\
\ -gov \\
\text{VP} \\
\text{v^\circ} \\
\text{DP} \\
|\ +2 \\
\ |\ +pl \\
\ |\ +gov \\
\text{g-xatav}
\end{array}
\]

\[
T^\circ [\alpha Pers, \alpha Num, \text{Case}] \\
(v->)
\]

In (15a-b), the checking and Spell-Out of phi-features goes through the following steps:

First, the \([+2pl, +gov]\) internal argument Agrees with the Case and phi-feature Probe of \( v^\circ \). At the end of the first phase, at Spell-Out, the \([+2, +pl, +gov]\) feature bundle on \( v^\circ \) triggers the insertion of \( g- \) from the m-set, which occupies the prefix slot in the template. (Note that the \( g- \) Vocabulary Item in (12c) above is underspecified for number.)

At this phase of Spell-Out, the \([+2, +pl, +gov]\) feature bundle on \( v^\circ \) also triggers the insertion of the \(-t\) suffix, which is compatible with the \([pl]\) feature, and which can occupy the suffixal slot in the template.

Then, after merge of \( T^\circ \) and its Probe, the \([+1]\) external argument checks the Case and phi-features of \( T^\circ \) but, as in the previous example, these features cannot be realized by any Vocabulary Item because of the template; the prefix position is already occupied with \( g- \).
What if the subject, rather than the object, is plural, as in example (8b), repeated below as (16a), with the structure in (16b):

(16) a. 2-paint-PL
2-xatav-t

‘We paint you (SG.)’

b. [ +1 ]
[ +pl ]
[ −gov ]

As in the earlier example in (14), the lower [ +2 ] internal argument checks the Case and phi-features of $v^\circ$. At the end of the first phase, these features trigger the insertion of the m-set prefix $g$, occupying the prefix position in the template.

On the second phase, the higher external argument which is merged in spec-vP checks the Case and phi-features of $T^\circ$, resulting in $T^\circ$ bearing the [ +1 , +pl ] feature bundle. This feature bundle cannot trigger insertion of a prefix due to the templatic restriction; as above, this is because the prefix slot is already filled.

However, the feature bundle on $T^\circ$ can trigger the insertion of the $t$- suffix. Because the suffix slot is still available, since it remained unfilled at the first phase of Spell-Out, the subject’s [ +pl ] feature can now trigger the appearance of $−t$ in the second phase of Spell-Out. (Note that although the distinct prefix sets – $m$-set and $v$-set – are sensitive to Case, the single $−t$ suffix is underspecified for the [ ±gov ] Case distinction and may realize the number features of any DP).

The most interesting cases in the basic pattern, which distinguish the present approach from Béjar’s, and underscore the need for a templatic approach to the Georgian verb, are represented by the forms in (8g) and (8h), in which the object is first person plural. Consider first (8g), repeated below as (17a) where the object is 1pl and the subject is 2sg:
(17) a. gv-xatav-t
   1PL-paint
   ‘You(SG) paint us.’

b. 

In this derivation, the lower internal argument checks the Case and phi-features of \(v^\circ\). The checked \([+1, +pl, +gov]\) features on \(v^\circ\) trigger the insertion of the 1PL Vocabulary Item \(gv–\) at the first phase of Spell-Out; it is inserted into the prefixal position. Importantly, no \(-t\) suffix appears since the number feature has been realized by the prefix – the insertion of the prefix blocks the insertion of the suffix. We propose that this unusual situation is an example of what Noyer (1997) calls \textit{discontinuous bleeding}, possible only in analyses like this one where a mixed set of affixes (prefixes and suffixes) are competing to realize a single group of phi-features; in such a situation, a more highly specified prefix may block the appearance of a compatible suffix (or vice versa), despite the fact that they could not appear in the same position-of-exponence.

Subsequently, as in the other derivations above, the Case and phi-feature Probe on \(T^\circ\) is checked by the \([+2]\) external argument, but the appropriate \(v\)-set prefix may not appear (in this case, a zero prefix, but with certain verbs, a \(x\)-prefix), since the prefix slot is already occupied. Since no additional \([+pl]\) feature is checked, the \(-t\) suffix is still not eligible for insertion on this cycle, and the form surfaces with no suffix.

Next, let us consider the derivation of the surface form when the object is [1pl] and the subject is [2pl], as in (8h), repeated below as (18a), with the argument structure in (18b).
The lower internal argument checks the Case and phi-features of $v^\circ$ with its [+1, +pl, +gov] feature bundle. Again, this is spelled out as the portmanteau morpheme $gv–$, as in (17) above; no $–t$ suffix appears at this cycle of Spell-Out since the plural number has been realized by the appearance of the prefix, which blocks the appearance of $–t$ (discontinuous bleeding again).

The higher Nom argument checks both the Case and phi-features of $T^\circ$ in the second phase, giving it the feature bundle [+2, +pl]. The newly checked plural feature can trigger the insertion of $–t$ here because the suffix position is still available. However, as usual, the person feature of $T^\circ$ is not spelled out because the prefix slot was filled in the previous cycle.

Finally, we consider an example with a ditransitive verb, which in Georgian is associated with an applicative morpheme. We follow Pylkkanen (2002), and many others in assuming that the dative Goal argument is merged in the specifier of an Applicative head, between $V^\circ$ and $v^\circ$, and hence is base-generated higher than the Theme argument. As in Béjar’s analysis, the relative positions of Goal and Theme, interacting with the Minimal Link condition on Agree, will ensure that the Goal, rather than the Theme, triggers agreement on $v^\circ$. Here is the structure showing the position of the Dat argument merging just below $v^\circ$; crucially, we assume, with Muller (2004) that Dative, like Accusative,
bears a [+gov] feature, reflecting the internal-argument status of these arguments:

(19) a. g-i-xatav
    2-APPL-paint
    ‘I paint you something.’

The checking goes through the following steps. First, the Case and phi-feature Probe in v° searches its c-command domain for a target. The second person Benefactee argument, which merges below the v° but above the object, in spec-ApplP (Marantz 1989; McGinnis 1998; Pylkkänen 2002; a.o.), is the first DP encountered by the probe. It therefore checks the Case and phi-features of this head and its features are realized as the m-set prefix g– at the end of the first phase, filling the prefix slot of the verb. Because the Dat Goal/Benefactee argument c-commands the Theme and is more local to the v° probe than the Theme
argument, a marked Dative Benefactee will always outperform the Theme in agreement.\footnote{The Appl head, we assume, can Probe with a Case-only Probe and check the Case on the [+gov] object below it; this is the crucial property which allows Appl to license double-object constructions. Ditransitives with a marked Theme argument are not permitted; for example, the equivalent of I painted John you, with a 3rd person Benefactee and a 2nd person Theme, surfaces as follows:}

Then, of course, the higher external argument also checks the Case and phi-feature Probe of $T^\circ$ but does not trigger insertion of a prefix because the prefix slot of the template is already filled by $m$–.

The only cases in which the checking of the external argument’s phi-features will be able to trigger insertion of a prefix is in contexts in which the object is [-participant], as in (9a) repeated here as (20):

\begin{enumerate}
\item[(20)] a. v-xatav
  \begin{quote}
  1-paint
  ‘I paint him.’
  \end{quote}

\begin{verbatim}
  vP T°[αPers, αNum, Case] v–

  DP [+1]
  [+sg] [–gov]

  VP v°[Case]

  DP [+3]
  [+sg]
  [+gov]

  xatav
\end{verbatim}
\end{enumerate}

The derivation of this form proceeds as follows. When the lower argument is not marked for person, it cannot value the phi-feature Probe of $v^\circ$. We assume that in this case, in order for the derivation to converge,

\begin{verbatim}
(i) me da-v-u-xat’e sheni tav-i John-s 1sg.erg prev-1sg-appl-paint-aor 2sg.gen self-acc John-dat
\end{verbatim}

In this structure, the equivalent of the English 2nd person Theme argument surfaces as a possessed 3rd person DP, headed by the noun self, where the 2nd person content is contained within the genitive Possessor. Consequently this DP is formally [-participant]; no true 2nd person pronoun can surface in this position. We take this to indicate that the Appl head can only bear a Case-only Probe, and may not carry a full Case and Phi-feature Probe. For a complete discussion of our assumptions about how Case-only Probes work, see section 4.1.

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\(v^o\) bears a Case-only Probe, which can value the Case feature of the 3\(^{rd}\) person argument, but which does not have any uninterpretable phi-features which need valuation. (If the derivation contained a phi-active \(v^o\) head, it would not converge because the unmarked 3\(^{rd}\) person argument could not value it.)\(^{11}\) Consequently, at the end of the first phase, no agreement prefixes or suffixes are spelled out. In the second phase, the marked external argument Agree\(s\) in Case and phi-features with the probe in \(T^o\). At the second phase Spell-Out, the \([+1, +sg]\) features trigger the insertion of the 1sg \(v\)-set prefix \(-v-\). In this example, the subject is not marked for number, so no suffix is inserted. If the first person external argument were marked for number, then the suffix \(-t\) would be inserted into the suffix slot at end of the second phase, producing the form in (9b) – \(v\-xatav\-t\).

Thus locality, markedness, and the Georgian verb agreement template, coupled with the notion that Spell-Out of agreement features proceeds cyclically phase by phase, can explain the basic agreement patterns of transitive verbs. Importantly, \(v^o\) must contain not just a person probe, as in Béjar’s analysis, but a full person and number agreement probe, since the m-set prefixes are conditioned by number in the first person plural. The model is strikingly similar to that proposed for Basque in Rezac (2004). Further, and perhaps most unusually, the prefixes and suffixes are in competition with each other to realize the phi-features which are active at each phase of Spell-Out, since the first person plural m-set prefix \(gv-\) blocks the insertion of the plural \(-t\) suffix – a discontinuous bleeding effect.

The only form whose affixation pattern is not predicted by the system outlined above is the form illustrated in (10h), above, with a 3pl subject and a 2pl object, \(g\-xatav\-en\), ‘they paint you.pl’. Here, we predict that a Case and phi-active probe on \(v^o\) should be able to enter into an Agree relationship with the \([+\text{participant}]\) object, triggering insertion of both the \(g-\) prefix and the \(-t\) suffix into the two available templatic positions (as indeed occurs with a 3sg subject and a 2pl object, producing \(g\-xatav-t\), ‘He paints you’, in (10g)). The absence of the \(-t\) suffix here is a puzzle. We propose that this reflects a postsyntactic Impoverishment rule which

\(^{11}\) No look-ahead problem arises here as long as the notion of ‘crash’ is understood as the application of a filter on unchecked uninterpretable features at the ends of phases: A derivation of (20a) with a Case-only probe on \(v^o\) will pass through, while a derivation of (20a) which started with a phi and Case probe on \(v^o\) will crash at Spell-Out due to the unchecked phi-features. The numeration need not ‘look ahead’ to verify that \(v^o\)’s Probe will be able to be satisfied before starting; rather, the filter mechanism will simply rule out any failed derivations and such forms will not surface. However, see section 4.1 for discussion of a genuine look-ahead problem that arises due to other assumptions needed in a related context.
applies to the 2pl object in exactly this context, deleting its [+Group] feature, and rendering it effectively singular for Vocabulary Insertion. The rule is schematized below:

\[(21) \quad [+\text{participant}, -\text{spkr}] \rightarrow [+\text{part}, -\text{spkr}] / [-\text{part}] \\
\quad [+\text{group}] \quad [+\text{gov}] \quad [-\text{gov}] \\
\quad [+\text{gov}] \quad [+\text{group}]\] 

With this addendum, the complete set of forms in the basic pattern have been accounted for.

In summary it should be noted that the answers to the questions in (7a–b) have been provided in this section: it has been shown that the person and number features of each argument are probed from one functional head, $v^o$ for objects and $T^o$ for subjects. With the account of the basic pattern of agreement in place, let us now turn to the inverse agreement pattern.

3. Inverse agreement and case with Dative Subject verbs

3.1 Data

Stative psychological predicates have dative subjects in all series:

\[(22) \quad \text{a. The present series} \\
\quad \text{Dato-s } dzuls \quad \text{Vano-∅.} \\
\quad \text{Dato-DAT } \text{hates.pres } \text{Vano-nom} \\
\quad \text{‘Dato hates Vano.’} \\
\text{b. The aorist series} \\
\quad \text{Dato-s } she-dzulda \quad \text{Vano-∅.} \\
\quad \text{Dato-DAT } \text{Prev-hated.aor } \text{Vano-nom} \\
\quad \text{‘Dato hated Vano.’} \\
\text{c. The perfective series} \\
\quad \text{Dato-s } she-dzulebia \quad \text{Vano-∅.} \\
\quad \text{Dato-DAT } \text{prev-hate.perf } \text{Vano-nom} \\
\quad \text{‘Dato (apparently) hated Vano.’} \] 

With these verbs, the agreement pattern in contexts including a [+participant] argument is significantly different from that of the basic pattern illustrated and analyzed in section 2 above. They show the so-called inverse agreement pattern. The pattern of inverse agreement with the arguments of psych verbs in contexts where both the subject and object are [+participant] are given in the table in (23):
Comparing (23) and (8), it should be clear that the inverse pattern of agreement in these contexts is different from the parallel forms of the basic pattern in that they involve a complex verbal unit consisting of two roots – both the main verb root and an auxiliary verb root \(-ar\), ‘to be’. Person agreement with the Dat subject is marked on the main verb root with m-set agreement, as noted above. Interestingly, the Nom object also agrees overtly on the auxiliary verb root \(-ar\), showing v-set agreement.

Number agreement with these forms is again symmetric: both marked subjects and objects may trigger the plural suffix \(-t\) at the end of the entire complex form (compare (23c) and (23f), for example).

In contexts in which only the subject is marked with the [+participant] feature, the inverse agreement pattern is very different:

(24) Subject marked, object 3rd person:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>1.dat.subj</th>
<th></th>
<th>2.dat.subj</th>
</tr>
</thead>
<tbody>
<tr>
<td>sg</td>
<td>sg</td>
<td>1 Objects</td>
<td>sg</td>
<td>pl</td>
</tr>
<tr>
<td>(a) m-ik’var-x-ar</td>
<td>(b) gv-ik’var-x-ar-t</td>
<td>1-love-2-BE</td>
<td>ipl-love-2-BE-pl</td>
<td>‘I love you.sg’</td>
</tr>
<tr>
<td>pl</td>
<td>(c) m-ik’var-x-ar-t</td>
<td>(d) gv-ik’var-x-ar-t</td>
<td>1-love-2-BE-pl</td>
<td>ipl-love-2-BE-pl</td>
</tr>
</tbody>
</table>

When the internal argument is unmarked and the subject marked, the complex structure does not appear. The verb root supports agreement by itself, and only the subject person markers show up. Note that as in the basic series, third person arguments may not trigger the plural \(-t\) suffix.

Finally, when the subject is third person (unmarked) and the object is marked for [+participant], the complex forms re-emerge, with a puzzling difference: The [+participant] object triggers agreement twice, on both the verb root and the auxiliary verb, and in both cases, the agreement markers are chosen from the \(r\)-set – those which in our analysis above are
characteristic of T° agreement with [–gov] arguments. This is illustrated by the forms in (25):

(25) a. v-uk’var-v-ar  
    1-love-1-be  
    ‘He/she loves me.’  

b. v-uk’var-v-ar-t  
    1-love-1-be-pl  
    ‘He loves us.’

c. v-uk’var-v-ar-t  
    1-love-1-be-pl  
    ‘They love us.’

d. v-uk’var-v-ar  
    1-love-1-be  
    ‘They love me.’

Notice again that the third person arguments may not trigger agreement for number; only the marked first person object may do so; contrast the presence of plural –t in (25c) with its absence in (25d).

Transitive and unergative verbs in the Perfective series also show the inverse agreement pattern. Recall again that in the Perfective series, subjects are marked with Dat case, and subjects, rather than objects, trigger person agreement. Here are some examples of transitive verb agreement in marked contexts in the Perfective series, which the reader can verify are identical, agreement-wise, with the psych-verb cases illustrated above:

(26) Inverse agreement with transitive verbs in marked contexts

a. da-m-ixati-x-ar  
    PREV-1-paint-2-be  
    ‘I have painted you.sg’

b. da-m-ixati-x-ar-t  
    PREV-1-paint-2-be-pl  
    ‘I have painted you.pl’

c. da-g-ixati-v-ar-t  
    PREV-2-paint-1-be-pl  
    ‘You.pl have painted me.’

d. da-g-ixati-v-ar  
    PREV-2-paint-1-be  
    ‘You.sg have painted me.’

e. da-g-ixati-v-ar-t  
    PREV-2-paint-1-be-pl  
    ‘You.sg have painted us.’

f. da-g-ixati-v-ar-t  
    PREV-2-paint-1-be-pl  
    ‘You.pl have painted us.’

12 Psych verbs like love also have active alternants, which in the Present and the Aorist series project Nom/Erg external arguments and lower Nom/Dat Theme objects. These alternants use the basic agreement pattern and can undergo passivization, like other active transitive verbs. The meaning of these active psych verbs is very different from the meanings they have with Dat subjects. They can be interpreted as the human subject voluntarily or intentionally ‘experiencing’ a particular feeling toward the object, rather resembling the coerced activity readings of stative English verbs when they appear in the progressive, as in John was loving Sue, Mary was being happy, etc. These active readings of psych verbs are illustrated below:

(i) she-g-ik’vare  
    PREV-2-love  
    ‘I fell in love with you.sg.’

(ii) she-g-ik’vare-t  
    PREV-2-love-pl  
    ‘I fell in love with you.pl.’

(iii) she-g-ik’vare-t  
    PREV-2-love-pl  
    ‘We fell in love with you.sg.’

(iv) she-g-ik’vare-t  
    PREV-2-love-pl  
    ‘We fell in love with you.pl.’
Again, the inverse pattern of transitive verbs in marked contexts involves complex verbal units consisting of two roots. Person agreement with the Dat subjects is marked on the main verb root with m-set agreement, as noted above, and the Nom object agrees with the auxiliary verb root ‘to be’, showing v-set agreement. Number agreement with these forms is again symmetric.

When only the subject argument is marked for [+participant], and the object is unmarked, again the complex forms do not appear, as in (27a, b); when only the object argument is so marked, the complex forms re-appear, exhibiting double agreement with the v-set markers on both the verb stem and the auxiliary, as in (27c, d).

(27) Inverse agreement with transitive verbs in unmarked contexts:

a. da-m-ixatia  
   PREV-1-paint  
   ‘I have painted him/them’

b. da-gv-ixatia  
   PREV-IPL-paint  
   ‘We have painted them.’

c. da-v-uxati-v-ar  
   PREV-1-paint-1-be  
   ‘He has painted me.’

d. da-v-uxati-v-ar-t  
   PREV-1-paint-1-be-PL  
   ‘He has painted us.’

In the analysis below, we will illustrate our proposal with the psych-verbs alone, but the account will extend naturally to the Perfective series with no modification, as it is identical in all crucial respects. In the literature on Georgian, the Perfective and Psych verbs are generally treated alike as instances of so-called ‘inversion’ verbs, see, for example, Harris (1981), among many others.

3.2 Analysis of the inverse agreement of psych verbs

As noted by McGinnis (1997) and Béjar (2003), stative psych verbs in Georgian projecting Dat and Nom arguments very much resemble the *piacere* ‘please’ class of psych-verbs in Italian analyzed by Belletti & Rizzi (1998) (henceforth, BR 1988) which also have Dat Experiencer and Nom Theme arguments. As BR argue, *piacere* verbs underlingly are like double-object verbs with a non-thematic subject position; the underlying structure they propose is represented in (28), in which the dative subject, base-generated internally to the VP, c-commands the nominative Theme object:
The Dat subjects of *piacere* verbs (like *a Gianni* in (28)) are NP-moved to the subject position. Belletti and Rizzi argue that the projection of \( \theta \)-roles onto D-structures must comply with strict principles constraining the direct mapping of the former onto the latter, along the lines of Baker’s UTAH. These psych verbs are much like malefactive unaccusatives and two-place passives of ditransitive verbs in Georgian (see McGinnis 1997 or Harris 1981). The latter have derived subjects which are the higher Goal objects of the corresponding transitive verbs. After moving to higher non-thematic A-positions they become derived subjects (Marantz 1991; McGinnis 1997). The same derivation can be suggested for psych verbs with Dat subjects in Georgian. On this view, the Theme and Experiencer arguments of these verbs are both VP-internal, with the Experiencer in the higher position receiving an inherent Dat case from V.

An important factor in our analysis of these forms will be the claim that the \( v^\circ \) head in clauses like these, with derived subjects, is not a phase boundary – not a \( v^* \), in the terms of Chomsky (1999), since it does not project an external argument. We will assume that \( v^\circ \) still has an active Probe, but that there is no Spell-Out cycle between the point at which the \( v^\circ \) Probe and the \( T^\circ \) Probe apply. This will have important consequences for the derivation of the complex forms containing both the verb stem and the auxiliary verb stem –ar–, ‘be’.

First, as the simplest case, let us consider the situation in which the Dative subject is [+participant] and the Nominative object is [–participant], corresponding to the examples in (24) above. The base structure is illustrated below, for the verb *mik’vars*, ‘I love him/her’ in (24a) repeated here as (29):
Following Béjar (2003) again, we exploit this syntactic reflection of thematic structure in our analysis of Georgian psych verbs with inverse agreement. First, recall that, as illustrated for ditransitives in (19) above, marked Dat arguments can enter into Agree relationship with $v^\circ$, by virtue of their [+gov] case feature.\footnote{This is impossible in other Indo-European languages such as Icelandic and Russian in which inherently case-marked Dat arguments do not normally agree with the verbs in number (see, e.g., Sigurðsson 2002). The possibility of full number agreement with Dat arguments in Georgian is thus a parametric property, resulting from the fact that $v^\circ$ has an active phi-feature probe, i.e. from the fact that Georgian has agreement with internal arguments.} Since the dative argument is base-generated below $v^\circ$ but above the Theme argument, the $v^\circ$ probe, looking down into its domain, will encounter the Dat experiencer argument first, before the Theme argument. The $v^\circ$ Probe will check the Case feature of the DP, rendering it ineligible for further Agree relations, and value its own phi-features with those of the DP. Thus, as in Béjar's analysis, the dative subject argument will necessarily trigger the insertion of m-set agreement, since it is [+gov]. The system thus predicts the appearance of m-set agreement with the Experiencer argument.

Now, recall that there is no Spell-Out phase at the level of the $v^\circ$ in these constructions, as there is no external argument selected by this $v^\circ$. The derivation continues Merge operations until $T^\circ$ is Merged. $T^\circ$ has an active Probe, as usual, and Probes its c-command domain to enter into an
Agree relation with a Case-active DP. The Dative subject is ineligible for an Agree relation because its Case features have been valued by \( v^o \). \( T^o \)’s Probe then reaches the unmarked 3rd person argument and checks its Case feature. However, the unmarked 3rd person argument can not value any phi-features on \( T^o \); hence the \( T^o \) Probe must be of the Case-active variety only, with no phi-features to value. The verb simply surfaces with the single agreement prefix.

Now we turn to the derivation of the inverse pattern with complex bipartite structure involving an auxiliary verb stem –ar–, ‘be’, as was illustrated in (23) and (25). Recall that this pattern appears whenever the object bears a marked, [+participant], person feature.

First let us consider the situation in which both the subject and the object bear a [+participant] feature. In these cases, as above, the Dat subject, with its [+gov] feature, triggers m-set agreement on the main verb root and fills the prefix slot of the psych verb stem. Here is one form from (23) repeated here as (30):

(30) a. m-ik’var-x-ar
   1-love-2-be
   ‘I love you.’

b. 

In this derivation, the \( v^o \) head Probes down to check its phi-features against the closest appropriate Case-active DP, and finds the 1sg dative subject. There is no Spell-Out phase at this point. Then \( T^o \) is merged, and its Probe looks down the tree to check its case and phi-feature Probe against the closest eligible DP, which in this case will turn out to be the Case-active object, the dative subject’s Case feature already having been checked by \( v^o \). The Agree operation, then, produces nested paths in this
situation, in accordance with the expectations of the Minimal Link Condition. $T^\circ$ will value its phi-features with the [+2, +sg] object.

When the derivation reaches the CP above TP, a Spell-Out phase applies, which includes both $T^\circ$ and $v^\circ$ in its domain. At this point, the morphological component is faced with a situation where two prefixes are competing for insertion simultaneously, i.e. *within the same phase*: the $m$-set prefix in $v^\circ$ and the $v$-set prefix in $T^\circ$. A Last-Resort mechanism of $ar$– (‘be’) support is therefore able to apply in the morphological component, realizing the $T^\circ$ head with the overt dummy verb $ar$–, ‘be’, and thus providing an extra templatic prefix position. (See Nash 1994 for arguments that the auxiliary $ar$– is a dummy verb appearing as the default realization of $T^\circ$, rather than projecting its own VP structure; in this way, it is entirely analogous to *do*-support in English.) The Dative subject’s features, checked by $v^\circ$, are thus realized as a prefix on the main stem template with $m$-set agreement, while the object’s features are realized on the $T^\circ$ dummy verb templatic prefix slot with $v$-set agreement. (There is still only a single suffix slot available, since the dummy verb is suffixed to the verb stem.)

Crucially, in the basic pattern analyzed in section 2 above, the morphological component never ‘sees’ the need for two prefixes at the same time, since in that case, with two phases, it spells out the $v^*P$ domain first, and then the domain containing the $T^\circ$ head. This Last-Resort dummy $ar$-support operation cannot therefore be triggered with any active transitive verbs, because in that case, Spell-Out applies in two phases, and at no point in the derivation is the morphological component able to recognize that two prefix slots are required at once.

Finally, let us consider the derivation of verb forms with 3rd person subject arguments and marked 1st person object arguments, as illustrated in (31) below (= (25) above):

(31) a. v-uk’var-v-ar       b. v-uk’var-v-ar-t
    1-love-1-be                   1-love-1-be-pl
    ‘He/she loves me.’    ‘He loves us.’

c. v-uk’var-v-ar-t       d. v-uk’var-v-ar
    1-love-1-be-pl            1-love-1-be
    ‘They love us.’   ‘They love me.’

In this puzzling pattern, $ar$– support occurs, even though only the single [+participant] object argument agrees. Instead of a simple form, as with a marked subject and an unmarked object, a complex form with double agreement is produced.

Since double agreement is present, it must be the case that both $v^\circ$ and $T^\circ$ are valuing phi-features against the 1st person object. The structure for (31a) is illustrated in (32) below:
In this derivation, the $v^\circ$ head probes downward to value its Case and phi-feature Probe. It is able to check the Case features of the unmarked, 3rd person Dat subject, but it cannot value its phi-features with this argument. With remaining unvalued phi-features, then, $v^\circ$ continues to Probe downwards. The [+1, + sg] object is still Case-active, since its case features have not yet been checked, and hence $v^\circ$ must value its phi features by Agree with the case-active object. This Agree relation does not check the Case of the object, however, since $v^\circ$ has already valued its Case feature on the 3rd person subject.

Then, within the same phase, the $T^\circ$ probe similarly searches downward and enters into an Agree relationship with the Case-active object, both checking the object’s Case and valuing its own uninterpretable phi-features.

In consequence, both $T^\circ$ and $v^\circ$ have agreed with the same nominative, [+gov] 1st person object. Since the $v$-series prefixes realize the phi-features associated with [+gov] arguments, at Spell-Out both heads will be subject to $v$-set insertion; no $m$-set agreement prefixes can be inserted because no [+ gov] arguments have triggered phi-feature Agree in this phase (the 3rd person dative subject did not do so, as it is unmarked for phi-features).

Still, the need to insert two prefixes within the same phase will trigger the last-resort mechanism of ar-support, to provide a second prefixal templatic slot, and the final form will thus be complex, as expected, with two $v$- prefixes appearing redundantly in the same complex verb form.

A derivation in which the $v^\circ$ head does not Agree in phi-features with the nominative object must be impossible to construct (the form *$v$-$ukvar$, 1sg-love, for ‘He loves me’, for example, is impossible). To rule the existence of this form out, it is important that the $v^\circ$ head may not in principle bear a
Case-only Probe when the object is [+participant]. If it could do so, it would be able to check the [+gov] case of the 3rd person dative subject without entering into a phi-Agree relationship with the 1st person nominative object, and hence no additional v-set prefix would be eligible for insertion and ar-support would not be triggered. The generalization seems to be that a functional head which contains a Case-active [+participant] argument within its domain cannot bear a Case-only Probe. See section 4.1 below for discussion of how to implement this restriction.

We will not go through the derivation of the Perfective series transitive verbs, as their Dat-Nom pattern, with the Dative subject base-generated internal to the vP (perhaps in the specifier of an Applicative head, as proposed by McGinnis 1997), will produce exactly the same sequence of events as for the psych verbs, and result in the parallel complex and simplex forms in the parallel cases.

4. Problems, extensions and theoretical implications

4.1 Case-only Probes and marked DPs

In the above, we have assumed the possibility of Case-only Probes on v\* and T\* in situations where the only active argument in the domain of the Probe is a 3rd person argument, which cannot enter into phi-Agree but does need Case-checking. This type of Probe cannot appear on v\* or T\* when it can enter into an Agree relation with a [+participant] argument. When there is an active [+participant] argument in the domain of v\* or T\*, the Probe on v\* or T\* must have a phi-feature component.

This seems like an intuitively plausible restriction in the case when v\* or T\* actually checks the case of a [+participant] argument: marked phi-features cannot be ignored when the DP which they are associated with enters into an Agree relationship with a Probing head – they must value a corresponding uninterpretable feature on the head. It is somewhat less intuitive in the final case that we considered above, where v\* checks the Case of an unmarked 3rd person argument but still must have active phi-features which force it to search for valuation on the marked 1st person object argument also contained within its domain (see footnote 11).

The facts of the situation seem to suggest that certain properties of the Probe are determined by the active features available within its Domain at the point when the Probe is merged. If there are Case-active, marked DPs within the Probe’s domain, the Probe acquires an uninterpretable phi-feature bundle which must enter into an Agree relation or crash. Implementing this does require a species of look-ahead, but it is a sharply constrained variety: Only active features present in the domain of a Probe at Merge can trigger the addition of such a phi-feature bundle. DPs whose case features have already been checked when the potential Probe is merged do not trigger the addition of such a phi-feature bundle (as in
the case of [+participant] dative subjects of psych verbs, (29b) above, which do not agree with T°, presumably because at the point when T° is merged their case and phi-features have already been checked against v°).

We formulate this operation as the following Principle of Phi-activation:

(33) **Principle of Phi-Activation:** A Probe acquires an active phi-feature bundle when it is merged into a domain which contains a Case-active DP with marked phi-features.

We recognize that this principle lacks generality, but it at least captures the apparent requirement in Georgian that all Probes must enter into an Agree relationship with a marked argument if they possibly can.

4.2 *Spell-out of Case on DPs*

In the above discussion we have assumed that Dative and Accusative arguments share a [+gov] Case feature, while Nominative and Ergative arguments share a [–gov] Case feature. This feature is responsible for conditioning the Spell-Out of the m-set vs v-set agreement prefixes in the verb complex.

On nominals, however, there are distinct case suffixes for Ergative and Nominative DPs, and similarly a distinct case suffix for Dative DP. Nominative and Accusative, however, are syncretized, and realized by the same case suffix. The case feature bundles, therefore, must therefore contain more than a simple [±gov] distinction in order to condition the Spell-Out of the different case suffixes.

We assume that the full range of Georgian case distinctions can be captured by the inclusion of a second binary feature in the case bundles, again following Halle (1997). We will call this feature [±inherent]. Nominative and Accusative will bear a [–inher] feature, while Dative and Ergative will bear a [+inher] feature, presumably assigned to the DP by the particular functional head in whose specifier it appears (e.g. the Aorist v° head or the Appl° head). The full cross-classification of Georgian case features can therefore be summarized as in (34) below:

(34)  

<table>
<thead>
<tr>
<th>Case Feature</th>
<th>Nom</th>
<th>Acc</th>
<th>Erg</th>
<th>Dat</th>
</tr>
</thead>
<tbody>
<tr>
<td>[–inher]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[+inher]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Although the agreement prefixes are only sensitive to the [±gov] feature, the Case suffixes are also sensitive to the [±inherent] feature. We assume that the following Vocabulary Items are competing for insertion into the position-of-exponence associated with case on the noun:

(35)  
a. –s  ↔ [+inher, +gov] (Dative)
b. –m(a)  ↔ [+inher] (Erg)
c. –i  ↔ Elsewhere (Nom, Acc)
Note that in our analysis Georgian is a syntactically Accusative language. The aspectually conditioned split-ergative pattern that emerges in the Aorist series is really a surface epiphenomenon that results from the interaction of the assignment of the [+ inherent] feature by certain syntactic heads with the particular Vocabulary Items competing to realize Case on Georgian nouns. Although a Nominative/Accusative distinction does not surface in the morphology attached to subject and object DPs, it is clearly present in the syntactic component, as indicated both by the verb agreement prefixes and also by the passivization properties and other structural reflexes of transitivity such as applicativization in the language (see, e.g. McGinnis 1998).

5. Conclusions

The paper has explored Georgian agreement patterns and proposed a unified syntactic mechanism accounting for two seemingly opposite agreement patterns – the basic and the inverse. Both agreement patterns are instantiated with the same set of markers, and are checked via an Agree relation between the Case and phi-probes of functional heads (T and v) and the target DPs. It was proposed that although Agree always occurs with both the subject and object DPs, a Georgian morphological template forces competition to occur for spell-out between subject and object markers. Because object markers get spelled-out earlier than subject markers, due to the phase boundary at v*P, they are privileged with respect to the subject markers in terms of realizing agreement, blocking insertion of the subject-agreement affixes.

We also proposed an analysis of the complex agreement that appears with inverse pattern verbs, with Dative subjects. These verbs do not have a v* head in their argument structure, and consequently there is no Spell-Out phase between the realization of object agreement and that of subject agreement. Consequently, the morphological component can identify the presence of two competing agreement prefixes and apply a Last-Resort mechanism of ar-support to provide an extra templatic slot for the extra agreement marker. The proposal thus provides a unified analysis of both the basic and inverse patterns, and crucially suggests a principled motivation for the appearance of the complex verbs in the inverse pattern.

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