ABSTRACT

Title of Dissertation: PHASEHOOD AND PHI-INTERVENTION

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This dissertation investigates the notion of phases in syntactic theory, and offers a reanalysis of certain phases as instances of phi(φ)-intervention. Under the standard view, phases are syntactic structures that, according to the Phase Impenetrability Condition, are opaque to operations originating outside of the phase (Chomsky, 2000; 2001). Phasehood was linked to certain heads such as C^0 and (transitive) v^0, but several issues arise once the empirical domain is broadened beyond English.

As more work has turned to unrelated languages, a less stipulative alternative has presented itself: phases are intervention effects, and are reducible to a more general locality issue. In Rackowski and Richards' (2005) account of Tagalog *wh*-movement, for example, CPs act as phases because they constitute the closest goal. In Halpert's (2019) account of Zulu hyper-raising, CPs do not act as phases due to the cyclic nature of Agree. In Keine's (2017) account of Hindi long-distance agreement, *v*Ps do not act as phases, which I argue is because v^0 is not a φ-goal. In Georgian, *v*Ps act as phases because v^0, in contrast, *is* a φ-goal (as I will argue in this thesis). These languages show that XPs act as

phases only when they are potential goals for a syntactic operation. These languages also illustrate two ways of diagnosing phasehood as φ-intervention: via movement *out* of the domain, and via agreement *into* the domain. These results suggest that phasehood is an epiphenomenon, and that the interior of the 'phase' is accessible even after the phase is complete.

In this dissertation, I argue that certain instances of phasehood derive from the 'phase' head bearing a φ-probe: the φ-features on the probe intervene for φ-agreement, which results in phase-like effects. The empirical data in favour this claim comes from the Georgian agreement system. I show that subjects in Georgian are base-generated in different positions, depending on whether they fall under the *basic agreement paradigm* or the *inverse agreement paradigm*. In the basic, subjects are introduced above v^0 and are the closest goal for Agree operations that originate outside the vP domain. In the inverse, subjects are introduced below v^0; in this case, the φ-features that are associated with the φ-probe on v^0 constitute the closest goal for Agree.

PHASEHOOD AND PHI-INTERVENTION

by

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Preface

Dedication

To all my relations, and F-A-V.

Acknowledgments

Not long after I completed my BA program in Linguistics, and just as I was set to begin my MA, I confided to one of my advisors, Charles Reiss, that I had been feeling a bit anxious about this next step in my education. In true form, Charles laughed and replied that I should always be feeling a little nervous; that's how I would know that I was moving out of my comfort zone and into something bigger and better. That advice followed me through to the completion of my MA program, and it's what prompted me to continue on to my PhD studies. Even now, at the end of it all and the beginning of something new, that advice is still my constant companion.

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Table of Contents

List of Abbreviations

1	1st person
2	2nd person
3	3rd person
ABS	absolutive
ACC	accusative
AOR	aorist
APPL	applicative
AUG	augment vowel
AUTH	author
CAUS	causative
C	complementizer
DAT	dative
ERG	ergative
F	feminine
FUT	future
GEN	genitive
INCH	inchoative
INF	infinitive
IPFV	imperfective
M	masculine
NOM	nominative
NMLZ	nominalizer
O	object
PART	participant
PERF	perfect
PL	plural
PRES	present
PRV	preverb
S	subject
SF	stem formant
SG	singular
SM	stem marker
RECI	reciprocal
TAM	tense/aspect/mood
TS	thematic suffix
TAM	tense/aspect/mood
VER	versionizer

Chapter 1: Introduction

1.1 Overview

This dissertation proposes a reanalysis of certain phases as instances of intervention under locality, particularly with respect to φ-intervention. While the theoretical notion of bounding domains extends far back into pre-Minimalist Program linguistic theory (Chomsky, 1965, 1973, 1981, 1986), modern phasehood is generally thought to be static throughout its syntactic environment (*pace* Dikken, 2007; Gallego, 2006, 2010), with its nature arising from complete propositional content and theta-role assignment (Chomsky, 2000). Under these assumptions, the standard phasal categories were CP and transitive vP, as well as DP. The motivations for these phasal categories were both conceptual and empirical. The *conceptual* advantage was immediate under the Minimalist Program, where the syntactic derivation is built in cyclic, incremental chunks. Some of those chunks, i.e. *phases*, reduce the computational complexity required for the derivation since the system could manipulate only a subset of the syntactic material needed. As each phase was assembled, the lexical items required for that step of the derivation were exhausted and the sub-structure was shipped to the interfaces via the operation Transfer. For example, given the lexical items in the Numeration (N) in (1a), the nominal argument [many dogs] will

satisfy the EPP feature of the embedded T, and the expletive *there* will satisfy the EPP

feature of the matrix T. This derivation results in the acceptable sentence in (1b).

(1)   a.   N = { {**there**, is, a, strong, likelihood}, {that, will, be, **many**, **dogs**, at, the,

park, right, now} }

b.   [$_{CP}$ There is a strong likelihood [$_{CP}$ that many dogs will be at the park right

now]]

c.   *There$_i$ is a strong likelihood that t_i will be [many dogs] at the park right now.

(based on Chomsky, 2000)

Without phases, i.e. subset structures in the Numeration, the derivation would result in

the unacceptable string in (1c). In that particular derivation, the expletive *there* and the

nominal [many dogs] would both be available to potentially satisfy the EPP feature of

the embedded T. Given the principle of *Merge over Move* (Chomsky, 1995), which states

that *merging* syntactic material is more computationally efficient than *moving* syntactic

material, we would expect the expletive subject to satisfy the embedded EPP feature.

That same expletive subject would then satisfy the EPP feature of the matrix T, since it

is the closest nominal and there is no other expletive subject in the Numeration. Thus,

structuring the Numeration into subset relations derived the acceptable sentence in (1b)

and the unacceptable string in (1c).

The *empirical* motivation for phases derived from long-distance successive cyclic

movement, where embedded *wh*-phrases move through the edge of intermediate CPs en

route to the matrix Spec,CP position (Chomsky, 1986, 2000, 2001, 2008; McCloskey,

2002). This is shown below for West Ulster English, where a quantifier associated with an embedded *wh*-pronoun can be stranded in intermediate CP positions. The phase lent itself to a straightforward explanation of this phenomena: if CPs are phases, and phases are syntactic substructures that are cyclically sent to the LF and PF interfaces, then *wh*-phrases must vacate the phase domain before it is transferred and rendered inaccessible.

(2)   a.   [CP *What* did he say [CP *all* (that) he wanted]]?

        b.   [CP *What* did he say [CP (that) he wanted *all*]]?

        c.   [CP *What all* did he say [CP (that) he wanted]]?

        (McCloskey 2000:61)

However, subsequent developments in theoretical syntax exposed a number of issues with the definition of phases. As originally formulated, phases are 'convergent objects' that are both 'independent at the interfaces' and minimally complete in their 'propositional content' (Chomsky, 2000). These properties may have some intuitive underpinnings, but they proved to be difficult to formalize in linguistic theory. Defining phases in terms of *convergence* results in a look-ahead problem, for example, since the derivation—which is built in incremental steps—has no access to its endgame form. That is, at any given point of the syntactic derivation, the derivation cannot know whether the final product will (or will not) result in an acceptable sentence. *Interface independency* was also found to be too vague and arbitrary, particularly since phasehood diagnostics could not be formulated in terms strictly concerning the interface in question. For example, diagnostics that were meant to demonstrate a phase's independence at the LF interface also demonstrated syn-

tactic behaviour. Finally, categorizing phases in terms of *propositional content* turned out to be arbitrary. Transitive *v*Ps, for example, were assumed to be phasal since the transitive verb assigns a theta role to both the subject and object (minimally), while unaccusative and passive *v*Ps were assumed to *not* be phasal since these verbs lack subjects. However, it is not clear how theta role assignment for transitive *v*Ps is more complete than unaccusative and passive *v*Ps (Citko, 2014; see also Legate, 2003). In all cases, all the available theta roles are assigned within the confines of the verb phrase. If that is the criterion for phasehood, the unaccusative/passive verb phrases should be phases just like their transitive counterparts.

Alongside these concerns about phasehood formalization, discussion surrounding the Phase Impenetrability Condition (PIC) suggested that the interior of phases was not as impenetrable as previously thought. Under the original formulation of the PIC, the phase interior is opaque as soon as the construction of the phasal projection is complete.

(3) *Phase Impenetrability Condition*

In phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations.

(Chomsky, 2000:108)

This formulation was eventually reworked given that the model overgenerated unacceptable strings. For example, the Icelandic agreement system allows nominative direct objects to control agreement morphology on the matrix verb, as shown below. This relation

is not possible under the original definition of the PIC since T^0 cannot target a vP-internal argument.

(4)　Henni　　höfu　leiðst　þeir.　　ICELANDIC
　　　3SG.FEM.DAT had.3PL bored.at 3PL.NOM
　　　'She had found them boring.'　　　　　　　(Sigurðsson, 2002)

Given this development, the two versions of the PIC became known as *Strong* and *Weak*. The Strong PIC (PIC_1) directly corresponds to the original formulation of the PIC in Chomsky (2000), while the implementation of the Weak PIC (PIC_2; Chomsky, 2001) allowed for the derivation of the Icelandic example above to be convergent. While both definitions concern the phase head H and the phase domain HP, the Weak PIC further considers the next-higher phase domain, i.e. ZP.

(5)　a.　The domain of H is not accessible to operations outside HP; only H and its
　　　　　edge are accessible to such operations.

　　　　　(Strong PIC/PIC_1)

　　b.　The domain of H is not accessible to operations at ZP; only H and its edge
　　　　　are accessible to such operations.

　　　　　(Weak PIC/PIC_2)

　　　　　(Chomsky, 2001:13–14)

In recent years, the notions of phases and the PIC have come under more scrutiny. As a result, the literature features several alternative models that derive the *effects* of phases while avoiding some of the bigger issues with standard phase theory (e.g. Epstein et al.

1998; Uriagereka 1999, 2003; Grohmann 2003, 2007; Epstein and, Seely 2006; Rackowski and Richards, 2005, Halpert, 2019). Some immediate questions concern the theoretical need for both versions of the PIC, and whether Transfer is needed as a separate syntactic mechanism. Halpert (2019), for example, argues that phases are purely intervention effects where the 'phase' is merely the closest goal for the operation at hand. Under this view, the PIC is entirely epiphenomenal since syntactic material lower than the 'phase' head is inaccessible due to standard locality considerations, namely, minimality. Furthermore, Halpert shows that the interior of phases *can* be accessed provided that the higher goal is made transparent, e.g. under Cyclic Agree operations (Béjar, 2003; Béjar and Rezac, 2009; Clem, 2018; Keine and Dash, 2018). Under this view, Transfer is no longer a tenable idea, since the syntactic material in question can be accessed by operations originating outside the 'phase' domain.

This dissertation contributes to this body of reanalyses of phasehood and the PIC. I argue that some apparent instances of phasehood are merely intervention effects, and that the PIC and Transfer are unnecessary components of syntactic theory. I show that, at least in some languages, 'phasehood' correlates with φ-agreement. That is, if a language has a φ-probe on a head H, then H is a potential goal for φ-agreement. The crux of the evidence comes from exceptional number agreement and person licensing patterns in Georgian, as will be shown below.

First, plural number agreement on verbs in Georgian can appear as the suffix '-*t*'. The examples below illustrate a part of its distribution in one of two agreement paradigms in Georgian: the *basic* agreement paradigm. In this paradigm, '-*t*' can mark 1st and 2nd

person person plural subjects, as in (6), but it cannot mark 3rd person plural subjects, as in (7).

(6) a. čven   is   da-v-p'at'iž-e-**t**
         1PL.ERG 3SG.NOM PRV-1-invite-1/2.AOR-PL
         '**We** invited him/her.'

     b. tkven   is   da-p'at'iž-e-**t**
         2PL.ERG 3SG.NOM PRV-invite-1/2.AOR-PL
         '**You (pl)** invited him/her.'

(7) isini   mas   p'at'iž-eb-en(-***t**)
     3PL.NOM 3SG.DAT invite-TS-3PL.PRES(-PL)
     'They invite him/her.'

The number agreement restriction with respect to 3rd person plural subjects in the basic agreement paradigm is not found in *inverse* agreement, Georgian's second agreement paradigm. As shown below in (8), '-*t*' can mark 3rd person plural subjects just in case they appear in the inverse agreement paradigm, and only if the object is also 3rd person. If the object is 1st or 2nd person, as in (9), '-*t*' cannot mark the 3rd person plural subject. Exceptional person agreement is also required for 1st and 2nd person objects in the inverse agreement paradigm, where they are marked by additional agreement affixes on an auxiliary verb form '*ar*' "be". These agreement patterns for such objects do not appear in the corresponding configurations in the basic agreement paradigm.

(8) mat   is   u-q'var-**t**
     3PL.DAT 3SG.NOM VER-love-PL
     '**They** love him/her.'

(9) a. mat   me   v-u-q'var-v-ar-(*t)
         3PL.DAT 1SG.NOM 1-VER-love-1-be.PRES-PL
         '***They** love me.'

     b. mat   šen   u-q'var-x-ar-(*t)
         3PL.DAT 2SG.NOM VER-love-2-be.PRES-PL
         '***They** love you (sg)'.

I propose a *position-based* account of these agreement patterns and restrictions. As will be shown below, the subject positions bear on the Agree relations that originate from two φ-probes in the structure: a person-probe on v that searches for [PARTICIPANT] (i.e. 1st and 2nd person arguments) and a person- and number-probe on T that search for, respectively, [PARTICIPANT] and [PLURAL] (see chapter 5 for more discussion on these points). In the basic paradigm structure in (10a), subjects are introduced as external arguments in the specifier of v, and do not intervene for (object) agreement between v^0 and the theme argument. In contrast, in the inverse paradigm structure in (10b), subjects are introduced as experiencer arguments in Spec,ApplP. They are the closest goal to the probe on v^0 and trigger object agreement morphology, and also intervene for agreement between v^0 and the theme argument (see also Béjar 2003).

(10) a. $[_{TP}\ T^0_{[\ ]_{PART}[\ ]_{PL}}\ [_{vP}\ \textbf{DP}\ v^0_{[\ ]_{PART}}\ [_{VP}\ V^0\ DP\ ]\ ]\ ]$

      b. $[_{TP}\ T^0_{[\ ]_{PART}[\ ]_{PL}}\ [_{vP}\ v^0_{[\ ]_{PART}}\ [_{ApplP}\ \textbf{DP}\ Appl^0\ [_{VP}\ V^0\ DP]\ ]\ ]\ ]$

Furthermore, the position-based account manifests particular licensing requirements in Georgian for 1st and 2nd person arguments, i.e., arguments that bear a [PARTICIPANT] feature. As will be further discussed in chapter 4, 1st and 2nd person arguments must enter into an Agree relation with a φ-probe in their domain (Béjar and Rezac, 2003). Li-

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censing requirements are observed crosslinguistically, and are often linked to Person Case Constraint (PCC) effects (Béjar and Rezac, 2003; Coon and Keine, 2020; Preminger, 2014, 2019; Rezac, 2008). The PCC itself is a restriction on possible combinations of internal arguments, and manifests as *Weak, Me-First, Total, Strong, Super-Strong*, and *Ultra-Strong* varieties (Albizu, 1997; Anagnostopoulou, 2005; Bonet, 1991, 1994; Doliana, 2014; Graf, 2012; Haspelmath, 2004; Nevins, 2007). In Georgian, the PCC comes in the *Strong* variety, which restricts the direct object of a ditransitive verb to 3rd person arguments. Given that we independently observe splits in behaviour with respect to 1st/2nd persons vs. 3rd person arguments in Georgian, we thus have reason to think that [PARTICIPANT]-bearing arguments are subject to additional constraints concerning φ-probes and Agree.

Returning to the examples sentences in (10), the positions and licensing requirements of the subject and object yield intervention effects in (10b), but not in (10a). In (10a), the 1st and 2nd person ([PARTICIPANT] bearers) themes can be licensed in situ via long-distance Agree by *v*. In the configuration in (10b), however, [PARTICIPANT]-bearing themes cannot be licensed in their base-generated positions, due to the presence of the intervening subject DP in Spec,ApplP. Participant themes must instead move through the *v*P edge for higher licensing, which is morphologically marked by *x-/v-* prefixed to '*ar*', as in (11) below.

(11) $[_{TP} \text{ T}^0_{[PART]} [_{vP} \textbf{DP}_{[PART]} v^0 [_{ApplP} \text{DP Appl}^0 [_{VP} \text{V}^0 \textbf{D\text{P}}_{[PART]}]]]]$

In contrast, no person licensing requirement applies in the case of 3rd person themes, so they remain in their base-generated position. Since Spec,vP is empty, the person probe on T^0 first encounters v^0, shown in (12). Since v^0 bears a φ-probe, it bears φ-features and so it must count as a target by the higher agreement probe on T^0. As an intervener, v^0 cannot immediately be ignored in favour of a lower φ-bearing goal. Although the vP does not carry the valued feature that the person probe on T^0 is seeking, this initial agreement relation renders v^0 transparent (Rackowski and Richards, 2005; Preminger, 2011; Van Urk and Richards, 2015). Under Cyclic Agree, where the Agree operation can apply more than once under certain conditions, (Béjar and Rezac, 2009; Keine and Dash, 2018; Clem, 2018) syntactic material that is lower than the now-transparent v^0 is visible to Agree (Halpert, 2019). With the intervener neutralized in this fashion, 3rd person plural inverse subjects in Spec,ApplP are targeted by the number probe on T^0 and marked by *-t*.

(12)   [$_{TP}$ $T^0_{[PL]}$ [$_{vP}$ v^0 [$_{ApplP}$ DP$_{[\varphi, PL]}$ Appl^0 [$_{VP}$ V^0 DP$_\varphi$]]]]

One prediction that arises from this analysis revolves around trapping a participant theme in its base-generated position. Under the proposed analysis, a derivation in which the theme argument is trapped in such a low position should result in the loss of *var/xar* agreement morphology. This prediction is borne out in causativized inverse verbs. Causativizing an inverse verb introduces a causer external argument in Spec,vP, which blocks movement of participant themes through the vP edge. Their only option to escape the resulting licensing problem is via an *object camouflage* strategy (Harris, 1981; Rezac, 2011), shown in (13), which encases the unlicensed participant argument in a PP-like structure. Since

the participant theme arguments remain in their base-generated position in this case, the auxiliary *var/xar* verb form is not required.

(13)   a.   Nino   šen   čemstavs   g-a-q'var-eb-s
               Nino.NOM 2SG.DAT 1SG.REFL 2-CAUS-love-TH-3SG.PRES
               'Nino makes you love me.'

       b.   Nino   me   šenstavs   m-a-q'var-eb-s
               Nino.NOM 1SG.DAT 2SG.REFL 1-CAUS-love-TH-3SG.PRES
               'Nino makes me love you.'

Further, derivations with empty Spec,*v*P positions should allow the number probe on T^0 to target arguments inside the *v*P domain, provided the person probe on T^0 first encounters— and agrees with—*v* itself. As will be discussed in chapter 4, adversity causatives—which lack external causers—provide such a test case (Lomashvili 2011). As shown in (14), 3rd person plural causees indeed trigger *-t*.

(14)   mat   kaghald-i   e-glej-in-eb-a-**t**
         3PL.DAT paper-NOM APPL-tear-CAUS-TH-3.AOR-PL
         '**They** are caused to tear paper.'

This dissertation results in two innovations. First, the proposed analysis of the Georgian agreement system is a comprehensive model that captures both the basic and inverse agreement paradigms, while only using independently-motivated components such as Cyclic Agree, intervention, and pronominal licensing. The Georgian agreement system is highly complex, and most analyses have focused on only the basic agreement paradigm. I argue that the position of the subjects with respect to the φ-probe on v^0 derives the agreement patterns found in the two paradigms. That is, *basic* agreement morphology arises

when the subject is base-generated *above* v^0, and *inverse* agreement morphology arises when the subject is base-generated *below* v^0.

Second, the proposed analysis bears on the nature of phases and the PIC, as well as Transfer. I argue that, in Georgian, vP appears to act as a phase because v^0 bears a φ-probe. This property translates to v^0 bearing φ-features, which gives rise to φ-intervention. In certain configurations in the Georgian inverse agreement paradigm, we find that v^0 does indeed intervene for *person* agreement, but independent Cyclic Agree mechanisms in the language allow *number* agreement to target a vP-internal argument. This suggests that phasehood, in some if not all cases, can be reanalyzed as φ-intervention. Furthermore, the proposal necessitates a view where 'phases' do not undergo Transfer to the interfaces given that syntactic material inside the 'phase' domain is a viable target for φ-agreement. Taken together, these points indicate that the PIC should be dispensed with as a primitive of syntactic theory.

1.2   Roadmap of the dissertation

In Chapter 2, I present the empirical and theoretical motivations for *phases* as *computation domains*. I discuss the ways in which phases were proposed to solve a problem arising from the *Merge over Move Principle*, which led to the development of the Phase Impenetrability Condition where the interior of the phase was deemed inaccessible because that part of the syntactic structure had already been Transferred to the interfaces. Although some properties of this intermittent Transfer could be detected by long-distance successive cyclic movement, those diagnostics—and the formalization of

phases in general—were not without their own set of issues and concerns. I conclude that these concerns are worrying enough to investigate alternative ways that phases might derive from other independent aspects of the syntax.

In Chapter 3, I discuss several recent theoretical proposals that derive phasal boundaries as intervention effects. Under this view, the so-called phase is the closer goal for Agree; 'phasehood' and the PIC thus fall under the rubric of general locality constraints and, specifically, the effects of minimality. I compare and contrast two broad families of approaches, one where the PIC is a syntactic primitive and another where the PIC is derived as an epiphenomenon from A-over-A configurations. Specifically, A-over-A configurations that are a subtype of minimality. I also discuss some predictions that tease the two families of approaches apart. Namely, the latter approach rules out Transfer as an additional component of the grammar, and so we should be looking for cases where syntactic operations access an element that is still below the 'phasal boundary'. I argue that Georgian number agreement provides such a test case.

In Chapter 4, I provide an overview of the morpho-syntactic properties of Georgian (South Caucasian). I also discuss the clause structure of Georgian with respect to the position of the *subject* in two agreement paradigms: (i) in the *basic* agreement paradigm, the subject is introduced as an external argument in Spec,vP, and (ii) in the *inverse* agreement paradigm, the subject is introduced as a vP-internal applicative argument in Spec,ApplP. I also describe the agreement patterns found in both paradigms, focusing on the distribution of the verbal plural marker between the two.

In Chapter 5, I present a comprehensive analysis of the Georgian agreement system. I argue that the position of the *subject* with respect to v derives the similarities and

differences between the basic and inverse agreement paradigms. I show that, in the inverse agreement paradigm, the vP layer is the first accessible goal for *person* agreement. Once this relation is established, *number* agreement is then possible with a vP-internal argument. Given the evidence that Agree crosses a so-called phasal boundary into its interior, I conclude that phases and the PIC are purely A-over-A effects, and that Transfer is unnecessary as an additional component of the grammar.

In Chapter 6, I extend the proposed analysis to Hindi-Urdu. Given that at least some instances of phasehood are φ-intervention, we expect phasal boundaries to correlate with φ-features, which we would hopefully be able to independently detect, e.g. through the relevant head acting as its own φ-probe. I argue that the lack of vP phase effects in Hindi-Urdu (Keine, 2017) follows from the absence of a φ-probe on v^0. Since v^0 does not bear φ-features, it cannot intervene for Agree, and thus does not act as a phasal boundary. Note that argument is based on the *lack of evidence* for v bearing a φ-probe in Hindi-Urdu. While the lack-of-evidence argument may raise some concerns, it at least derives Keine's result in a more principled manner since crosslinguistic variation in phasehood does not have to be stipulated on a per-language basis. (For an argument that, in the domain of agreement, absence of evidence is indeed evidence of absence, see Preminger, 2019).

Chapter 7 concludes.

Chapter 2:   On phase theory

The notion of the 'bounding node' has long featured in a large part of generative linguistic theory, with its preconception as the 'cycle' going back to pre-Minimalist Program literature. For example, the notions of bounding nodes and barriers in, respectively, the Extended Standard Theory and Government and Binding Theory are direct correlates of modern phases. Many of the phasehood properties discussed today can be traced to Chomsky (1973), which served to formally model islandhood and successive cyclicity effects. With the advent of the Minimalist Program, idiosyncratic bounding nodes and barriers were redefined as the more conceptually broad *phase*, i.e. a pre-determined chunk of structure built in the narrow syntax, and which exhausted a distinct lexical subarray (Chomsky, 2000). In that work, phases were assumed to be constant in their properties regardless of language or syntactic environment (with the one possible caveat being the transitive vs. unaccusative/passive distinction). Phasal categories were (originally) tied to propositional content, i.e. vP, CP, and DP as stated in Chomsky (2000). Since then, the potential phasal categories have been extended to other parts of structure, e.g. PP (Drummond et al., 2010; Kayne, 1999, 2004) and ApplP (McGinnis, 2001). An immediate theoretical consequence of phase theory concerns the interior of the phase. That is, if phases constitute chunks of the syntactic derivation that are incrementally built *and*

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shipped to the LF and PF interfaces, then elements within the phase X may not be visible to syntactic operations originating in phase Y. Chomsky (2001) refers to this property as the Phase Impenetrability Condition (PIC), which stipulates that the complement of the phase head is inaccessible.

In recent years, however, phases and the PIC have been reanalyzed as deriving from other independent properties of the narrow syntax. In the strongest recharacterization of phases and the PIC, they constitute an ephiphenomenon based on the *A-over-A condition* (Chomsky, 2004), which is itself a general locality issue, arguably a particular subcase of minimality (Halpert, 2019; Rackowski and Richards, 2005). Under these recharacterizations, the so-called phase is merely the closer goal, and the PIC arises as an intervention effect. In other models, phases still exist as primitives of the narrow syntax, and the PIC can be alleviated when syntactic mechanisms—such as Agree—allow the interior be accessed under certain circumstances. In this sense, the phasal boundary can be *unlocked* given that the initial Agree relation satisfies the Principle of Minimal Compliance (Preminger, 2011b; Richards, 1998; van Urk and Richards, 2015). While I discuss these recharacterizations in more detail in chapter 2, I will first provide an overview for the empirical and conceptual motivations for phases leading up to and including the Minimalist Program (Chomsky, 2000). This overview will also include a discussion of the issues and problems with defining phases and the PIC, which will set the foundation for their recent reanalyses.

2.1 Motivating phases

In the Minimalist Program (MP), *language*, or the *language faculty*, is modelled as a system of syntactic structures and operations that are subject to two sets of constraints and interfaces: (i) conceptual-intensional (i.e. LF), and (ii) perceptual-sensorimotor (i.e. PF). The syntactic structure is built by the application of two major operations: *Merge*, which creates one syntactic object by combining two syntactic objects, and *Move*, which moves a syntactic object from one position in the structure to another. Operating alongside Merge and Move is *Agree*, which establishes a relation between a set of uninterpretable/unvalued features on a probe P with the corresponding interpretable/valued features on a goal G. The language faculty (i.e. the narrow syntax) interacts with the interfaces at specific points in the derivation, where a pre-determined chunk of the syntactic structure is shipped—or Transferred—to the interfaces. Once the content of the phase has been Transferred, that content cannot be accessed by the narrow syntax. This derives the *Phase Impenetrability Condition* (PIC), which has become a crucial component of phase theory and its recharacterization in recent years.

The main conceptual advantage for phases is a computational one. Given that the language faculty is designed around efficiency and minimal computations under MP, Chomsky argued that phases reduce the computational cost of derivations (Chomsky, 2000:110–112). When phases made their first appearance in the Minimalist Program, they were introduced as a solution to a problem concerning the acceptability contrasts below, provided the lexical items available for the derivation below in (2) (Chomsky, 2000; see also discussion in Citko, 2014). This collection of lexical items, i.e. the *Numeration*,

provided the building blocks for the derivation; no additional items could be used for that stage of the derivation, and all items in the Numeration must be exhausted. Note that, in each case in (1a,1b), the derivation is technically sound. In (1a), the EPP feature of the embedded T is checked by the Merge of the expletive *there* in Spec,TP. In comparison, the EPP feature is checked in (1b) via Move: the embedded [many dogs] moves to Spec,TP. In either derivation, all uninterpretable features are checked/value and all elements in the Numeration are used. Given that each derivation is convergent, the model needs some other principle to explain the acceptability of (1a), but not (1b).

(1)   a.   There$_i$ are likely t_i to be [many dogs] at the park right now.

        b.   *There are likely [many dogs]$_i$ to be t_i at the park right now.

(2)   a.   N = {there, T, are, likely, to, be, many, dogs, at, the, park, right, now}

        b.   [$_{TP}$ to$_{EPP}$ be many dogs at park]

The *Merge over Move* (MOM) principle was proposed in order to derive the acceptability contrasts above (Chomsky, 1995). This principle states that *merging* elements into the structure is more computationally efficient than *moving* an element from one syntactic position to another. Returning to the cases in (1a) and (1b) above, we see that, at the stage in the derivation where the EPP feature of the embedded T needs to be checked, MOM dictates that it is more computationally advantageous to Merge an expletive subject (=1a) than it is to Move a nominal argument into another position (=1b). But, although MOM derived the contrasts in (1), it could not derive the acceptability contrasts in the more complex strings in (3) below.

(3)   a.   There is a strong likelihood that there will be [many dogs] at the park right

              now.

       b.   *There$_i$ is a strong likelihood that t_i will be [many dogs] at the park right now.

The assumed Numeration for the strings above is provided in (4).

(4)   N = {there, is, a, strong, likelihood, that, many, dogs, will, be, at, the, park, right,

       now}

Given the Merge over Move principle, the expletive *there* enters in the derivation at the

stage of the embedded Spec,TP. Since the EPP and uninterpretable features are checked/valued

by the expletive subject, [many dogs] remains in its base-generated position. At the point

in the derivation concerning the matrix T, the embedded expletive subject is the appropri-

ate element to occupy the matrix Spec,TP given Merge over Move, and minimality. This

derivation, although technically sound, results in the unacceptable string in (3b). The

phase, i.e. a derivational cycle, was proposed as the solution to this problem. That is,

the Numeration was recharacterized as a *set of sets*, rather than simply a set of primitive

elements, as shown below.

(5)   a.   N = {a, b, c, d, e, f}

       b.   N = { {a, b}, {c, d}, {e, f} }

Given the additional structure to the Numeration, the problem described above is allevi-

ated by simply manipulating the content of each subset. If the expletive subject *there* is

not included in the subarray for the embedded clause, as shown below, then there is no derivation that will generate the string in (3b) above.

(6)   N = { {**there**, is, a, strong, likelihood}, {that, will, be, **many**, **dogs**, at, the, park, right, now} }

At the point of the derivation when the EPP and uninterpretable features on the embedded T needs to be checked, only [many dogs] is available since that is the only DP in the subarray. So, [many dogs] Moves to the embedded Spec,TP position. The expletive subject *there* then checks the relevant features of the matrix T, which results in a convergent derivation. Note that the importance of structuring the Numeration into subarrays is centred around having *multiple computational domains* in the derivation. That is, even if the subarray corresponding to the embedded clause contained an expletive subject, the derivation would still yield an acceptable sentence.

(7)   a.   N = { {**there**, is, a, strong, likelihood}, {that, there, will, be, **many**, **dogs**, at, the, park, right, now} }

        b.   There is a strong likelihood that there will be many dogs at the park right now.

At this point in the development of the theory, phases were thus essentially lexical subarrays (Chomsky, 2000), i.e. a subset of the overall lexical array specified for the entire derivation. However, defining phases in this manner is ad hoc: phases are essentially subarrays, but the subarrays are divvied up in whatever fashion delivers the desired empirical

result. While various solutions were proposed to address this issue—which will be discussed in the following section—the most prominent formal characterization of phases involved tying phasal status to *syntactic heads*. That is, certain syntactic heads are also phase heads. Since syntactic heads were also thought to be the loci of uninterpretable features, phasehood came to signal trigger points of syntactic operations such as Agree and Case assignment (Chomsky, 2000; Gallego, 2010; Legate, 2012; Miyagawa, 2011). Importantly, phase heads determine when the structure undergoes Transfer to the interfaces, which leads to the following questions: If phase heads determine when the structure is shipped to the interfaces, what happens to the syntactic material inside the phase? Answering this question led to the formulation of the Phase Impenetrability Condition (PIC), which I turn to in the next section.

2.2   The Phase Impenetrability Condition (PIC) and Agree

This section provides an overview of the empirical motivation and theoretical implementation of the Phase Impenetrability Condition (PIC), and discusses its major revisions throughout the development of linguistic theory. The two versions of the PIC (i.e. Strong and Weak) address different syntactic operations, such as Move and Agree, and they also cover different empirical phenomena. I discuss the details of these properties below.

Broadly construed, the PIC renders the syntactic material inside of a phase inaccessible to outside operations. This effect was tied to the phase head (i.e., the syntactic head of the phasal projection), which determined when the syntactic structure was to be

shipped to the interfaces. The PIC seemed intuitive, since, if the syntactic material below

a phase head had already undergone Transfer by the time a syntactic operation outside

the phase head occurs, then there is simply no syntactic material to access. Any element

outside of the phase head, though, is accessible, which meant that the specifier position

of the phase can be used as an 'escape hatch' for those elements needing to move out of

the phase domain. This is schematized below.

(8)   a. $[_{ZP}$ Z ... $[_{XP}$ X ... $[_{HP}$ α [H YP]]]]

        b. $[_{CP}$ C ... $[_{TP}$ T ... $[_{vP}$ DP [v VP]]]]

               (Chomsky, 2001:13)

Note that, in the abstract structure in (8a), there is an intervening non-phase head between

two phase head. This construction allows us to test the effects of the PIC. In practice, the

relevant phase heads are C and v, and the non-phase head is T, as in (8b). In the original

formulation of the PIC in Chomsky (2000), the interior of a phase is inaccessible as soon

as the construction of the phase is complete.

(9)   *Phase Impenetrability Condition*

        In phase α with head H, the domain of H is not accessible to operations outside

        α, only H and its edge are accessible to such operations.

        (Chomsky, 2000:108)

Under this definition, the complement of H is spelled out (i.e. shipped to the interfaces

via Transfer) as soon as H no longer projects and HP is built. There are two important

consequences for this definition. First, syntactic material being inaccessible means that any unvalued/unchecked features will remain unvalued/unchecked for the remainder of the derivation. Second, the specifier of H remains accessible to outside operations since only the complement of H undergoes Transfer.

(10)   *Phase edge and spell-out domain*

$$
\begin{array}{c}
\text{XP} \\
\diagup\diagdown \\
\text{X}\quad \text{HP} \\
\diagup\diagdown \\
\alpha\quad \text{H}' \\
\diagup\diagdown \\
\text{H}\quad \text{YP}
\end{array}
$$
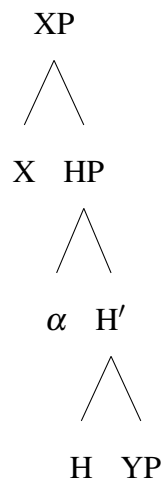
Under this formulation and configuration, then, the only way for elements inside of the phase (in the complement of the phase head) to be accessible to outside operations is to Move out of the Spell-Out domain, which must be done by first Moving to the edge of the phase. But, given the assumptions of the Minimalist Program, movement has to be triggered by some obligatory feature or design of the system (cf. Move α; Lasnik and Saito, 1994). As a locality constraint, the PIC was assumed to enforce this movement. An EPP feature was additionally presumed to be present on those phase heads that necessitated movement of an element within the phase to the edge. While this feature assignment may seem arbitrary at this point of the discussion, we will see some evidence

for its presence in the structure through the prism of evidence for successive-cyclicity in movement.

(11)   The head H of phase Ph may be assigned an EPP-feature.

(Chomsky 2000:109).

However, the original formulation of the PIC was found to be too strong. For example, the PIC did not allow for agreement with nominative objects, since that agreement relation would span the vP phasal boundary. However, agreement with nominative objects was found to be possible in Icelandic, which will be further discussed below. This empirical evidence led to a major revision of the PIC, resulting in Strong and Weak versions.

(12)   a.   The domain of H is not accessible to operations outside HP; only H and its edge are accessible to such operations.

(Strong PIC/PIC_1)

        b.   The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

(Weak PIC/PIC_2)

(Chomsky, 2001:13–14)

While the overall structural configuration is the same between the two versions, where they differ is on the timing of when the interior of the phase becomes inaccessible. Under the Strong PIC (PIC_1), the complement of H is spelled out as soon as HP is built. In contrast, under the Weak PIC (PIC_2), the complement of H is spelled out when the next

phase head Z is merged. Testing the predictions of the two different versions of the PIC thus centres on structures where there is a non-phase head X in between Z and H. Under the Strong PIC, X should not be able to probe below H, but under the Weak PIC, X *should* be able to probe below H. In natural language, Weak PIC effects should be observable, for example, in cases where a non-phase head T accesses a *v*P-internal DP (since the complement of *v* will only undergo Transfer when C is merged).

(13)   *Probe–goal relations under the Strong PIC*

ZP
Z
X
α
H
YP
WP
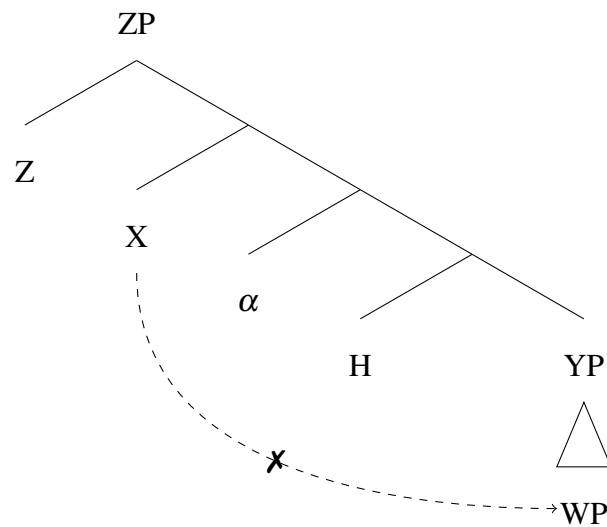
(14)   *Probe–goal relations under the Weak PIC*

```
                          ZP
                 _____/ _____
                /                   \
               Z                   
                        _____/ _____
                       X                   \
                       :      ____/ \____    
                       :     α           \   
                       :           __/ \___  
                       :          H        YP
                       :                   /\
                       :                  /  \
                       :                 /____\
                       :.............> WP
```
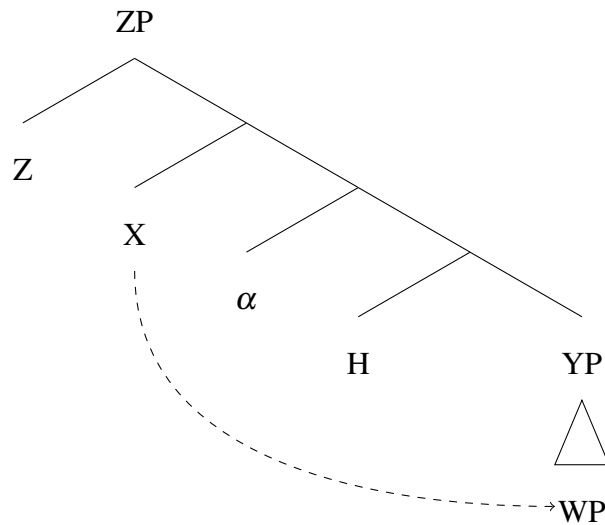
To reiterate: in order to see which version of the PIC makes the right predictions,
we need a language where Agree is possible between T and a nominative direct object.
Looking at Icelandic, we see that it is indeed possible to establish Agree between T and a
nominative direct object (a pattern that can also be found in other languages, e.g. Polish,
German, and Georgian). These languages have dative subjects that pass all subjecthood
diagnostics, and the verb shows agreement with the direct object that is marked with
nominative (Sigurðsson, 2002, 1996; Sigurðsson and Holmberg, 2008; Taraldsen, 1996,
1995).

(15)   Henni   höfu   leiðst   þeir.
        3SG.FEM.DAT had.3PL bored.at 3PL.NOM
        'She had found them boring.'   (Sigurðsson, 2002)

In the example sentences above, the VP cannot have been spelled out since T agrees with
the nominative direct object. This agreement relation is not possible under the Strong

PIC, since the VP spells out (and its contents are therefore inaccessible) as soon as the *v*P is complete.

However, this is not a knockdown argument in favour of the Weak PIC over the Strong. We can get the same effects by varying which subarray contains T: Richards (2011) argues that that there is no Weak or Strong PIC, *per se*, but rather we see the effects of there being two different versions. Under this analysis, the different PIC versions are epiphenomenal since the effects arise from which subarray T is part of, as demonstrated below. When T is part of the same subarray as C, we get Strong PIC effects; when C is part of the same subarray as *v*, however, we get Weak PIC effects instead.

(16) a. N = { {C, T}, {*v*, V} }   Strong PIC/PIC$_1$

  b. N = { {C}, {T, *v*}, {V} }   Weak PIC/PIC$_2$

There are two advantages to model proposed in Richards (2011). First, the model circumvents the Strong vs. Weak PIC issue by deriving the differences as epiphenomenal effects. Second, the model avoids the mismatch between (i) what a phase is, and (ii) what actually gets transferred to the interfaces. Under the conception of phases that we have been discussing so far, a phase is identified by the (syntactic) head, but it is the complement of that head that is spelled out and rendered inaccessible. By characterizing phases as subarrays, we avoid this mismatch issue since the subarray itself is the unit spelled out. Despite these advantages, however, characterizing phases as subarrays leads us back to the circular argument of phases being subarrays, which are are themselves phases. I

return to this issue in the next section, focusing now on the question of which syntactic mechanisms are constrained by the PIC.

While there remains a question of whether all syntactic mechanisms are subject to the PIC, a more specific question asks whether the Move/Internal Merge and Agree operations are constrained by the PIC. Conceptually, constraining the Move/Internal Merge and Agree operations by the PIC seems reasonable given that these operations are purely syntactic, and phases are syntactic entities. As with many aspects of phase theory, this question is still up for debate (Bhatt, 2005; Bošković, 2007; Bošković and Lasnik, 2003; Kratzer, 2009; Wurmbrand, 2017). In this thesis, I will assume that Agree *is* constrained by (something like) the PIC. The basis for this assumption draws from Polinsky and Potsdam's (2001) analysis of *long distance agreement* (LDA) in Tsez. Consider (17), where it seems that Agree into finite complement clauses is possible in Tsez.

(17) eni-r   [už-ā   **magalu**   **b**-āc'-ru-łi]   **b**-iy-xo
      mother-DAT boy-ERG bread.III.ABS III-eat-PST.PRT-NMZ III-know-PRES
      'The mother knows that as for the bread, the boy ate it.'

      (Polinsky and Potsdam, 2001)

However, Polinsky and Potsdam show that that the edge of the embedded domain must be available if LDA is to target an element originating in the embedded domain. As shown below, LDA is impossible when the embedded clause has something else, e.g. a *wh*-phrase, at its edge.

(18) eni-r   [**łu**   micxir   b-ok'āk'-ru-łi]   **r/*b**-iy-xo
      mother-DAT who.ERG money.III.ABS III-steal-PST.PRT-NMZ IV/III-know-PRES

'The mother knows who stole the money.'

(Polinsky and Potsdam, 2001)

In order to derive these patterns, Polinsky and Potsdam argue that LDA in Tsez is fed by covert movement of the downstairs absolutive target to the edge of its own CP. This, in turn, suggests that LDA is very much subject to (something like) the PIC, which allows us to use φ-agreement as a diagnostic of phasal status. I will revisit this discussion of φ-agreement with respect to phase theory in chapter 3, and turn now to an overview of phasehood diagnostics.

2.3   Diagnosing phases

This section discusses the most widely used phasehood diagnostics, and shows how they have been applied in specific languages. Assuming phases are syntactic chunks that are shipped to the interfaces, many diagnostics address the independence of that syntactic chunk at LF and PF. This is not without issue, however, since we do not really know what it means to be independent at the PF or LF interfaces. One potential way forward is to look at the properties that the standard phases—*v*P, CP, and DP—have in common. Those common properties could then be phasehood properties, which could be used to diagnose other phases. However, it is not clear why *v*P, CP, and DP should be considered standard phases in the first place, since it is logically possible that other phrases could be phases as well (see section 2.4 for more discussion on this point). Characterizing those properties common to 'standard' phases as phasal properties thus relies on us having an *a priori* categorization of phases vs. non-phases, which leads to circular reasoning. Given

these difficulties concerning interface independency and *a priori* phase comparison, most diagnostics focus on *syntactic* properties. Broadly, this family of diagnostics focus on whether movement out of XP has to proceed through the edge of XP, i.e. the edge property of phasal boundaries.

(19) a. $[_{ZP}$ Z ... $[_{HP}$ α [H YP]]]

b. The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

(Strong PIC/PIC$_1$)

(Chomsky 2001:14)

Syntactic diagnostics typically test whether the moved element can be (i) interpreted at the edge of XP, (ii) pronounced at the edge of XP, or (iii) strand anything at the edge of XP.[1] Note that islandhood does not factor into phasehood diagnostics, since the category of a phrase does not always determine whether it is an island. For example, interrogative CP complements of verbs are islands (*wh*-island; Chomsky, 1973) whereas declarative CP complements of verbs are not. Similarly, (some) definite DPs are islands (Matushansky, 2005), whereas indefinite ones, at least in languages like English, are not (for further discussion on islandhood, see Müller, 2011). Furthermore, attempting to block movement out of a domain by filling the specifier position of the island phrase is subject to language-specific properties, since languages vary in whether multiple specifiers are allowed (Boeckx and Grohmann, 2007; Richards, 1999, 2001, 1997). Given the many in-

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[1]In addition to the movement tests, other diagnostics test focus on whether XP is a domain for feature valuation, or whether X is a source of uninterpretable features. I will not discuss the ramifications of these diagnostics here, as they will form the basis for much discussion in section 3.

dependent properties that are specific to islands, phasehood diagnostics focus on whether movement out of phases has to proceed through the edge. In the remainder of this section, I will discuss the application of the relevant movement diagnostics with respect to the edge property as they manifest in the CP and vP domains, in three families of phenomena: (i) edge-filling effects, (ii) reconstruction effects, and (iii) *wh*-quantifier float.

Turning first to the edge-filling property of CP, we see that this property is active in successive cyclic long-distance *wh*-movement. Configurationally, this looks like (20a) below, with a natural language example in (20b).

(20)　　a.　[$_{CP}$ WH$_i$ [$_{C'}$ C [$_{TP}$ ... [$_{CP}$ ~~WH$_i$~~ [$_{C'}$ C [$_{TP}$ ... [$_{CP}$ ~~WH$_i$~~ [$_{C'}$ C [$_{TP}$ ... ~~WH$_i$~~ ...]]

　　　　　　]]]]]]]

　　　　b.　[$_{CP}$ Who did [$_{TP}$ Nino say [$_{CP}$ ~~who~~ that [$_{TP}$ Dato thought [$_{CP}$ ~~who~~ that [$_{TP}$

　　　　　　Gio saw ~~who~~]]]]]]?

Edge-filling effects are a useful diagnostic in this respect, since, under the PIC, elements have to move out of phases in order to be accessible to operations that stem from outside of the phase. Since the *wh*-element is pronounced at the front of the sentence, the only way for the embedded *wh*-phrase to reach the matrix Spec,CP position is to proceed through each intermediate phase edge. Furthermore, we know that *wh*-movement is indeed targeting the edge of the phase since filling that position results in an unacceptable string (that is, assuming that the language in question does not allow for multiple specifiers, as in English).

(21)　　a.　*What did you think [$_{CP}$ when Nino devoured ~~what when~~]?

b. *This is the book which Nino wondered [$_{CP}$ who wrote ~~which~~].

c. *How did you wonder [$_{CP}$ who fixed the sink ~~how~~]?

Before I turn to the discussions concerning *reconstruction effects* and *wh-quantifier float* as diagnostics of phasal status, I will provide a caveat that these diagnostics should be viewed with some skepticism. Although reconstruction effects and *wh*-quantifier float both occupy prominent roles in the literature on phases (and they are discussed here as such), these diagnostics are flawed as diagnostics for phasehood in particular. Reconstruction effects and *wh*-quantifier float only show where syntactic elements *can* stop, not where they *must* stop; but, phase theory must predict where syntactic elements *must* stop. These diagnostics thus provide, at best, circumstantial support for the phasehood of the relevant category. That is, there is a question of why intermediate Spec,CP positions consistently behave as *possible* stopping points for elements undergoing movement; and one possible answer is that these positions are possible stopping points because they are *obligatory* stopping points.

With this caveat in mind, i will now turn to a discussion of *reconstruction effects*. Under syntactic approaches of reconstruction, *wh*-phrases can only be interpreted in intermediate Spec,CP position if they have passed through that position. In this sense, reconstruction is just the interpretation of a lower copy: as an anaphor, that lower copy is bound by the most local binder. This is demonstrated below.

(22)   Nino$_i$ asked [$_{CP}$ [which picture of herself$_i$] Mariam$_j$ thought [$_{CP}$ ~~[which picture of herself$_j$]~~ that Tamar$_k$ liked ~~[which picture of herself$_k$]~~]].

Similarly, Fox (1999) shows that reconstruction feeds Principle C effects. In (23a), the wh-phrase can be interpreted in the intermediate Spec,CP position. This is not possible in (23b), since the R-expression *Ms. Brown$_2$* is c-commanded by *she$_2$*. Note that these readings can be derived whether or not the wh-phrase can or must stop in the intermediate Spec,CP positions.

(23)   a.   [Which (of the) paper(s) that *he$_1$* gave to *Ms. Brown$_2$*] did *every student$_1$*

            hope *t'* that *she$_2$* will read *t*?

        b.   [Which (of the) paper(s) that *he$_1$* gave to *Ms. Brown$_2$*] did *she$_2$* hope *t'* that

            every student$_1$ will revise *t*?

            (Fox 1999:173, from Lebeaux, 1990)

Finally, we also see instances of *wh-quantifier float* where a quantifier associated with a *wh*-pronoun can be stranded at the edge of intermediate CPs. Again, we cannot use this phenomenon as a diagnostic of phasehood, though it has been proposed as such in the relevant literature. As already mentioned in chapter 1, McCloskey (2000) reports this property in West Ulster English, shown below.

(24)   a.   *What all* did you get for Christmas?

        b.   *What* did you get *all* for Christmas?

            (McCloskey 2000:58)

Crucially, quantifier float is not limited to just the base-generated or matrix positions. As demonstrated below in (25), the quantifier can appear in intermediate Spec,CP positions

as well. This suggests that the *wh*-quantifier is indeed moving through the edge of each CP.

(25) a. *What* did he say *all* (that) he wanted?

  b. *What* did he say (that) he wanted *all*?

  c. *What all* did he say (that) he wanted?

  (McCloskey 2000:61)

In summary, we see that phasehood diagnostics typically focus on the availability of the phase edge position (Spec,CP and Spec,*v*P). This focus derives from the notion that phase-internal elements must vacate the phase domain in order to be accessible to syntactic operations and mechanisms that originate outside of the phase. As discussed in this section, edge-filling effects suggest that Spec,CP must be a landing site for phrases that move out of each intermediate phase domain, and reconstruction effects and *wh*-quantifier float provide circumstantial support for this view. We will also see that there is some evidence that Spec,*v*P is an escape hatch as well, as argued to be the case in Dinka by van Urk and Richards (2015). Note that the phasehood diagnostics discussed thus far all concern the application of a syntactic operation *out of* a phase domain (i.e. Move); in chapter 5, I will show a complementary set of diagnostics that concerns the application of a syntactic operation *into* a phase domain (i.e. Agree).

2.4 Issues with defining phases

In this section, I discuss remaining issues with the formalization of phasehood. I will begin first with an overview of the difficulties concerning the definition of phases, and then turn to issues surrounding their formal properties. This section ends by laying out some questions concerning the very nature of phases, and asking whether the Phase Impenetrability Condition is theoretically necessary.

In their original formulation, phases were assumed to be 'convergent objects' that were 'independent at the interfaces', and that were complete in their 'propositional content' (Chomsky, 2000). However, as alluded to throughout this section, each of these definitions comes with their own set of issues. First, defining phases in terms of convergence requires the syntax to *look-ahead* and evaluate potential derivations in terms of their eventual (un)acceptability. Since phases were meant to ensure computational efficiency, this look-ahead problem raised serious concerns about defining phases in terms of convergence. Further, Preminger (2011a, 2014) shows that the idea of feature-checking being crucial for convergence—which is the basis of Chomsky?s convergence-based attempt to define phases—is flawed in the first place.

Second, the assumption that phases are independent at the interfaces is too vague, given that many (if not all) of the diagnostics concerning the behaviour of phases at PF and LF are intertwined with *syntactic* properties as well. Additionally, we saw that two of the three standard diagnostics only provide circumstantial support for phasehood. That is, reconstruction effects and *wh*-quantifier float only show that moving a phrase through the edge position is a *possibility*, not that it is a *necessity*.

Finally, determining when a syntactic object is complete in its propositional content is arbitrary: (Chomsky, 2000) proposes that vP is a phase since its theta roles are assigned, and that CP is a phase since it includes both tense and force. According to Chomsky (2000), only transitive and unergative vPs constitute phases; neither unaccusative nor passive vPs are phases since they lack external arguments. Yet, all of the available theta roles are indeed assigned across all of these vPs regardless of whether an external argument is selected or not. As for CPs, there is no independent motivation for grouping both tense *and* force together in this definition; one could imagine a theory where tense comprises its own phasal boundary to the exclusion of force. Gallego (2006) argues for this very view based on phase-like effects in the TP domain in Spanish and other null subject languages.

Given these issues and concerns surrounding the nature of phases, we must then question the necessity for the subsequent proposals that developed out of phase theory. For example, does linguistic theory necessitate the incorporation of both the Strong and Weak formulations of the Phase Impenetrability Condition? If we push this question even further, do we need the PIC at all? At this stage of phase theory, there are several conflicting accounts about the nature of phases; in some models, phasal boundaries can be manipulated via head-movement (den Dikken, 2007; Gallego, 2006, 2010); in other models, only specific types of XPs are phases depending on their syntactic environment (Bošković, 2014). As will be discussed in the next chapter, others have proposed that there are no phases at all—rather, what look like the effects of phases are in fact simply A-over-A effects (Halpert, 2019; Rackowski and Richards, 2005). That is, the 'phase head' is just the closest goal for a syntactic operation, and the interior of the 'phase' is inaccessible due to the independent principle of minimality (Rizzi, 1990, 2001). Under this view, phases

are not a syntactic object and so the issues that they raise are unproblematic in these A-over-A approaches. Analyses such as those proposed by Rackowski and Richards (2005) and Halpert (2019) may thus constitute the better model for linguistic theory, depending on the strength and accuracy of the empirical predictions and evidence.

Chapter 3: Neutralizing phasal boundaries

There are two major approaches to phase unlocking (i.e., the neutralization of phase boundaries) that I will discuss in this dissertation. One family of approaches derives phasehood as an intervention effect (e.g. Abels, 2003; Rackowski and Richards, 2005; Halpert, 2019), where the interior of the so-called 'phase' is inaccessible due to general principles of syntactic locality: the 'phase' head is a closer goal than anything properly contained inside the phase. A second family of approaches (e.g. Preminger, 2011; Van Urk and Richards, 2015) assumes that the Phase Impenetrability Condition is a syntactic primitive, which can be alleviated by establishing Agree with the phasal head. This chapter discusses these two approaches in detail, and outlines the theoretical issues at stake under each set of assumptions.

3.1   The Phase Impenetrability Condition as an intervention effect

This section discusses a major approach of neutralizing phasal boundaries that derives the PIC as an epiphenomenal *intervention under locality* effect, one derived from minimality and intervention. Under these models, phase boundaries are reanalyzed as interveners for syntactic operations, which block potential lower goals from being targeted (see e.g. Rackowski and Richards 2005, Halpert 2019, among others). Some aspects of

these ideas are found in Abels (2003) as well, particularly in his section 2.2. In this section, I discuss the phase unlocking mechanisms proposed in two analyses: (i) Tagalog wh-movement as proposed in Rackowski and Richards (2005), and (ii) Zulu (Bantu) hyper-raising as proposed in Halpert (2019).

Beginning first with Rackowski and Richards (2005), we see that, in Tagalog, the verb may agree with the subject or with the embedded clause. Rackowski and Richards assume that this relation is marked via the case-sensitive agreement morphology. As shown in (1a), nominative (NOM) agreement morphology surfaces if the verb agrees with the subject. In contrast, accusative (ACC) agreement morphology appears if the verb agrees with the embedded clause, as in (1b).

(1)   a.   **M**-agsa-sabi ang kalaba   [na masarap ang bulaklak]
                 NOM-ASP-say ANG water.buffalo that delicious ANG flower
                 '**The water buffalo** will say that the flower is delicious.'

        b.   Sa-sabih-**in**   ng kalaba   [na masarap ang bulaklak]
                 ASP-say-ACC CS water.buffalo that delicious ANG flower
                 'A/The water buffalo will say **that the flower is delicious**.'

                 (Rackowski & Richards 2005:586)

The variation in verbal agreement morphology has important consequences for the availability of *wh*-movement. As shown below in (2a), *wh*-extraction from an embedded CP is only possible when the verb has agreed with the clause. If the verb agrees with the subject, as in (2b), *wh*-extraction is prohibited.

(2)   a.   Kailan sa-sabih-**in**   ng sundalo [na u-uwi   ang pangulo]?
                 when   ASP-say-ACC CS soldier that NOM.ASP-go.home ANG president
                 'When will the soldier say [that the president will go home ___]?'

b. *Kailan **m**-agsa-sabi   ang sundalo [na u-uwi   ang pangulo]?
    when   NOM-ASP-say ANG soldier   that NOM.ASP-go.home ANG president
    Intended: 'When will the soldier say [that the president will go home ___]?'

(Rackowski & Richards 2005:586)

Rackowski and Richards (2005) take this agreement restriction on *wh*-extraction to indi-cate that the embedded clause is an *intervener*. That is, the CP is the first goal that is tar-geted by the syntactic operation responsible for moving the embedded *wh*-element out of the embedded clause. The intervener must be rendered inert if the embedded *wh*-element is to be extracted. Rackowski and Richards (2005) propose that *Agree* preconditions *wh*-extraction—that is, agreement with the intervening CP layer renders it invisible for subsequent operations. The set of assumptions that derive this effect is provided below.

(3)   a.   A probe must Agree with the *closest* goal α that *can move*.

       b.   A goal α *can move* if it is a phase.

       c.   A goal α is the *closest* one to a probe if there is no distinct goal β such that

            for some X (X a head or maximal projection), X c-commands α but not β.

       d.   Once a probe P is related by Agree with a goal G, P can ignore G for the rest

            of the derivation (Hiraiwa, 2001; Richards, 1998).

       e.   *v* has a Case feature that is checked via Agree. It can also bear EPP-features

            that move active phrases to its edge.

       f.   C$_{[+wh]}$ has a [+wh] feature that is checked via Agree (and sometimes Move).

            (Rackowski and Richards, 2005:582)

Under this set of assumptions, the Phase Impenetrability Condition is derived as an A-over-A effect. Specifically, the type of A-over-A configuration adopted here crucially requires the intervener to *dominate* (i.e. contain) the goal. This particular structural relation is important for the PIC-as-intervention model since the probe must encounter the phrase that behaves like a 'phasal' boundary. In the structure below, for example, the interior of the *v*P phase domain cannot be accessed because (i) the *v*P can move, and (ii) the *v*P dominates a *wh*-feature.

(4)   *The PIC as A-over-A*
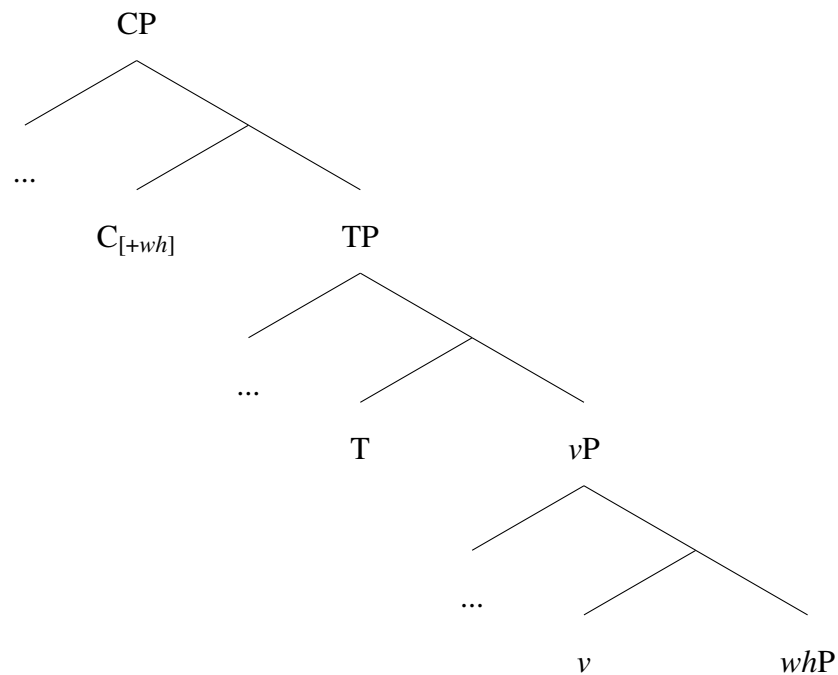
In order for the embedded *wh*-phrase to be extracted, the *v*P phase boundary must first be rendered transparent. Being successfully targeted for Agree meets this requirement, and the agreement morphology on the matrix verb in (5) reflects this Agree relation.

(5) a. Kailan sa-sabih-**in**   ng sundalo [na u-uwi   ang pangulo]?
         when   ASP-say-ACC CS soldier   that NOM.ASP-go.home ANG president
         'When will the soldier say [that the president will go home ___]?'

     b. *Kailan **m**-agsa-sabi   ang sundalo [na u-uwi   ang pangulo]?
         when   NOM-ASP-say ANG soldier   that NOM.ASP-go.home ANG president
         Intended: 'When will the soldier say [that the president will go home ___]?'

     (Rackowski & Richards 2005:586)

As demonstrated in the Tagalog sentences above, the embedded *wh*-phrase can only be

extracted if the embedded clause has been Agreed with. Under this analysis, the PIC is

an epiphenomenon: the interior of the phase in accessible due to general principles of

locality. That is, the phase head constitutes the closest goal, which derives the *effect* of

the PIC. The Tagalog data shows that, if the phase head is rendered transparent under

Agree, the interior of the phase can indeed be accessed. This suggests that the PIC is not

a syntactic primitive.

Following the conclusions of Rackowski and Richards (2005) with respect to the

PIC, I will now turn to the analysis of Zulu raising proposed in Halpert (2019). Halpert

argues that Zulu hyper-raising also instantiates an A-over-A effect. That is, the 'phase'

itself is a closer goal for agreement, which bleeds the targeting of an XP lower in the

structure. Under this view, the head of the so-called phase bears a feature which satisfies

the initial Agree operation from a higher probe: if no further searches are triggered, then

the result is a phasal boundary effect. If a second cycle of Agree is triggered, however,

then an XP lower in the structure will be targeted for agreement. I discuss this analysis in

more detail in the remainder of this section.

Note that, conceptually speaking, Cyclic Agree does not appear to be better vis-á-vis *look-ahead* than phases, since subsequent Agree operations are triggered by an *unvalued* probe that does not crash the derivation. However, Preminger (2011a, 2014) shows that attempting to derive convergent structures under feature-checking accounts is flawed. Additionally, look-ahead was problematic in phase theory with respect to *computational efficiency*. Building syntactic structures in phases meant that the derivation *could not* access its endgame form, and so the computational load was lighter than an alternative theory where the derivation *could* track whether the relevant steps would eventually result in convergence. Look-ahead was never part of the motivation for Cyclic Agree, and so potential look-ahead issues are not as damaging for these models.

Returning now to Halpert's analysis of Zulu hyper-raising, consider the data provided below. As shown in (6a-b), raising out of an embedded CP clause is possible in Zulu, but raising out of an embedded infinitival TP is prohibited, as in (6c).

(6)   a.   ku-bonakala [ukuthi **uZinhle**   **u**-zo-xova   ujeqe]
            17S-seem   that   AUG.1Zinhle 1S-FUT-make AUG.1steam.bread
            'It seems that Zinhle will make steamed bread.'

       b.   **uZinhle**$_i$ **u**-bonakala [ukuthi t$_i$ **u**-zo-xova   ujeqe]
            AUG.1Zinhle$_i$ 1S-seem   that   t$_i$ 1S-FUT-make AUG.1steam.bread
            'It seems that Zinhle will make steamed bread.'

       c. ***uZinhle**$_i$ **u**-bonakala [t$_i$ uku-(zo-)xova   ujeqe]
            AUG.1Zinhle$_i$ 1S-seem   t$_i$ INF-(FUT-)make AUG.1steamed.bread
            Intended: 'It seems that Zinhle will make steamed bread.'   (Halpert

            2019:124)

The raising profile of Zulu stands in contrast to the raising profile of English, where raising out of embedded CPs is prohibited, as in (7), and raising out of embedded infinitival TPs is possible, as in (8).

(7) a. It seems that John eats pizza.

     b. *John$_i$ seems (that) t$_i$ eats pizza.

(8) a. John$_i$ seems t$_i$ to eat pizza.

     b. *It seems John to eat pizza.

Halpert derives these patterns under two assumptions: (i) both TPs and CPs bear φ-features, and as such are goals for ϕ-agreement from matrix T; and (ii) only TPs can satisfy the EPP in Zulu. Expanding first on (i), we see below that infinitival TPs, like DP arguments, control both subject and object agreement morphology in Zulu. The sentences in (9) illustrate this phenomenon in the *subject* agreement domain: (9a) shows that a preverbal DP argument that is a member of noun class15 triggers *ku-* subject agreement morphology, and (9b) shows that the same agreement marking is required when Spec,TP is filled by an infinitival TP.

(9) a. ukudla   **ku**-mnandi
         AUG.15food 15S-nice
         'Food is nice.'

     b. uku-xova   ujeqe   **ku**-mnandi
         AUG.15-make AUG.1steamed.bread 15S-nice
         'Making steamed bread is nice.'   (Halpert 2019:139)

As for *object* agreement, consider the sentences below. Note that the *ya-* morpheme has been argued to indicate that the *v*P is empty (Buell, 2005; Halpert, 2015). In these cases, the *v*P-external arguments can control object agreement: the DP argument in (10a) and the infinitival TP in (10b) both trigger *ku-*.

(10) a. ngi-ya-**ku**-funa]_{*v*P}   ukudla
          1SG.S-YA-15/17O-want AUG.15/17food
          'I want food.'

      b. ngi-ya-**ku**-funa]_{*v*P}   [uku-xova   ujeqe   ]
          1SG.S-YA-15/17O-want AUG.15/17-make AUG.1steamed.bread
          'I want to make steamed bread.'   (Halpert 2019:139)

Looking now at the behaviour of embedded CPs, there is evidence that they bear φ-features as well. First, we see that CP complements may optionally control object agreement—specifically, class 15/17 agreement morphology. In (11a) below, the *ya-* morpheme indicates an empty *v*P, as above in (10). Since object agreement is not possible with *v*P-internal elements, the appearance of *ku-* alongside *ya-* suggests that the embedded CP is controlling object agreement on the matrix verb. The sentence in (11b) demonstrates that this is indeed the case since, without *ya-*, *ku-* cannot appear.

(11) a. ngi-ya-**ku**-cabanga]_{*v*P} [ukuthi uMlu   u-ya-bhukuda manje]
          1SG.S-YA-17O-think that   AUG.1Mlu 1S-YA-swim now
          'I think that Mlu is swimming now.'

      b. *ngi-**ku**-cabanga [ukuthi uMlu   u-ya-bhukuda manje]]_{*v*P}
          1SG.S-17O-think that   AUG.1Mlu 1S-YA-swim now
          'I think that Mlu is swimming now.'   (Halpert 2019:140-141)

However, although CPs can control object agreement morphology, they cannot control subject agreement in Spec,TP (unlike infinitival TPs). As shown below, preverbal CPs cannot trigger *ku-* subject agreement. Note that, even though subject-agreement and object-agreement sometimes take the same shape (in some noun classes, such as 15/17), they can nevertheless be distinguished by their position within the verbal complex.

(12)   *[ukuthi w-a-thatha   umhlala phansi] **ku**-ya-ngi-mangaza
        that   1S-PST-take AUG.1sit down   17S-YA-1SG.O-surprise
        Intended: 'That he retired surprises me.'   (Halpert 2019:141)

In summary, both CPs and infinitival TPs bear class 15/17 φ-features in Zulu, given that they can control object agreement morphology. However, only infinitival TPs can satisfy the EPP requirement since they—and not CPs—can appear in Spec,TP of a superordinate clause, and trigger subject agreement. These properties, coupled with the implementation of *Cyclic Agree* (Béjar and Rezac, 2009; Clem, 2018; Keine and Dash, 2018) and *feature interaction and satisfaction* (Deal, 2015), derive the Zulu hyper-raising patterns below, as I will now discuss.[1] Note that there is an alternative agreement pattern for the sentence with hyper-raising in (13b), where agreement morphology for either the raised subject (noun class 1) and the embedded CP (noun class 17) is possible.

(13)   a.   ku-bonakala [ukuthi **uZinhle**   **u**-zo-xova   ujeqe]
              17S-seem   that   AUG.1Zinhle 1S-FUT-make AUG.1steam.bread
              'It seems that Zinhle will make steamed bread.'

       b.   **uZinhle**$_i$ **u-/ku**-bonakala [ukuthi t$_i$ **u**-zo-xova   ujeqe]
              AUG.1Zinhle$_i$ 1S/17S-seem   that   t$_i$ 1S-FUT-make AUG.1steam.bread

---

[1]I discuss the motivation and implementation of both Cyclic Agree and feature interaction/satisfaction in chapter 5.

'It seems that Zinhle will make steamed bread.'

    c. *$\mathbf{uZinhle}_i$ $\mathbf{u}$-bonakala [t_i uku-(zo-)xova   ujeqe]
          AUG.1Zinhle$_i$ 1S-seem t_i INF-(FUT-)make AUG.1steamed.bread
          Intended: 'It seems that Zinhle will make steamed bread.'   (Halpert

          2019:124)

Halpert's analysis of (13a) assumes that the embedded subject has remained inside the CP. As an expletive construction, a null expletive is inserted in the matrix Spec,TP which triggers *ku-* agreement morphology. The null expletive fulfills the EPP requirement, so no further operations are necessary.

    The patterns in (13b), where the embedded subject has raised out of the CP, is derived as a second cycle Agree that is initiated following intervention by the CP. We saw above that CPs bear φ-features; they are thus targeted first by the φ-probe on T. This results in an A-over-A configuration (Chomsky, 1964) such that the CP intervenes and blocks agreement with potential goals lower in the structure, as in (14).

(14)   *First cycle Agree and the EPP*

```
                    ...
                   /  \
                  /    \
                 /     /\
               T⁰     /  \
                 ⸗   /    \
              ku-bonakala   CP
                             /\
                            /  \
                        ukuthi  TP
                                /\
                               /  \
                           uZinhle /\
                                  /  \
                             uzoxova ujeqe
```
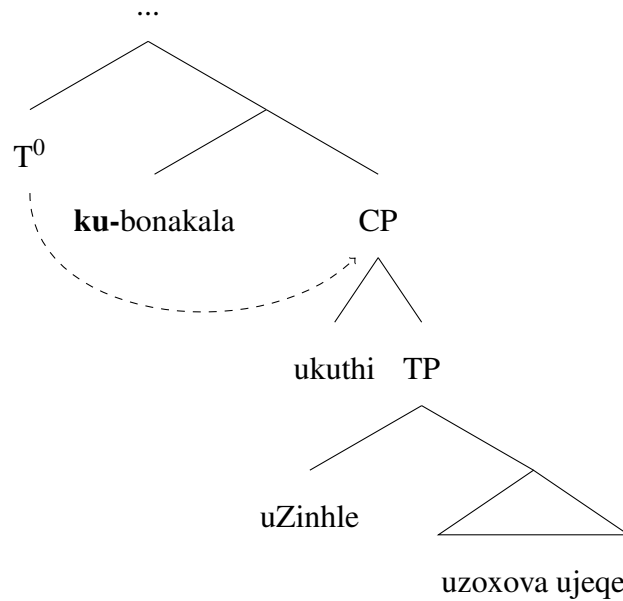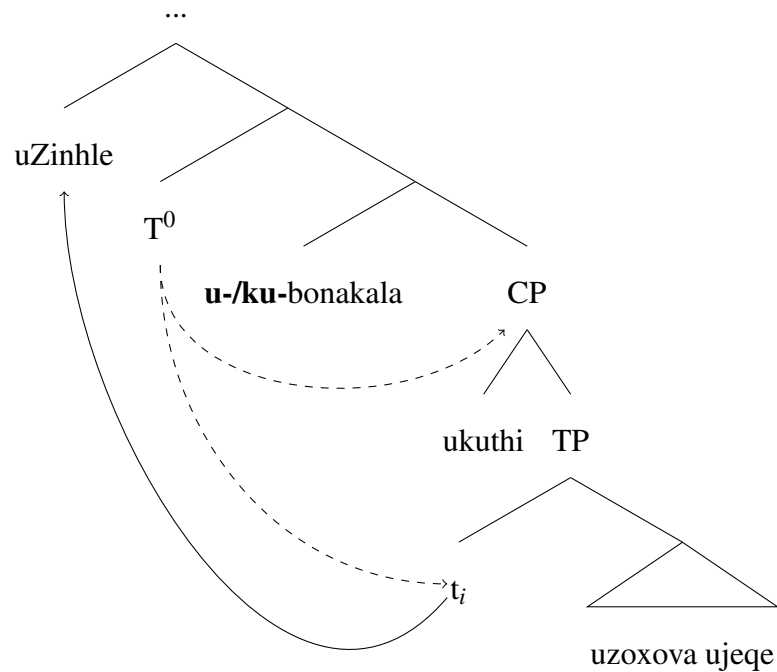
Following Deal (2015), Halpert assumes that the φ-probe on T *interacts* with the CP, i.e. the φ-features on CP are evaluated for agreement. Halpert also assumes that CPs cannot satisfy the EPP in Zulu (since they cannot occupy Spec,TP), and thus the first cycle of Agree is not *satisfied*. A second cycle of Agree is initiated, which is now free to ignore the CP (i.e. the highest A), as in (15). The embedded DP subject is targeted and agreed with, and the embedded subject moves to the matrix Spec,TP position to satisfy the EPP. Halpert takes the optionality in exponing *u-* vs. *ku-* agreement morphology to indicate that two cycles of Agree have indeed been initiated. Since two sets of φ-features have been evaluated for agreement (one by the embedded CP and the other by the embedded DP subject), both of those sets of φ-features are on T. Either set may surface, i.e. be 'exponed' via the morphosyntactic mechanisms that translate the φ-features on syntactic heads to actual morphemes.

(15)   *Second cycle Agree and the EPP*

```
                          ...
                 ╱                  ╲
          uZinhle          ╱                ╲
              ↑         T⁰       ╱                  ╲
              ⌇      u-/ku-bonakala          CP
              ⌇                          ╱        ╲
              ⌇                      ukuthi   TP
              ⌇                              ╱      ╲
              └─────────────────── tᵢ    ╱    ╲
                                        uzoxova ujeqe
```

Finally, Halpert derives the lack of raising out of infinitival TPs, as in (13c), as an instance of first cycle Agree, i.e. there is no second Agree search to satisfy the EPP. As previously discussed, we saw that infinitivals bear φ-features as well—but, unlike CPs, TPs can also satisfy the EPP in Zulu. Thus, when they are targeted by matrix T, they serve as satisfactory goals for the φ-probe on T and move to Spec,TP to satisfy the EPP. Under this analysis, there is no opportunity to raise embedded DP subjects since the φ-probe will never target them. Further, it *is* possible for TPs to appear preverbally in the canonical subject position, as shown in (16).

(16)   a.   [uku-   (zo)-   fika   k-   ubusika]   ku-ya-bonakala
               AUG.15- (FUT)-   arrive 15ASSOC- AUG.14winter   15S-YA-seem
               'Winter's arrival is evident.'/'We can tell that winter is coming.'

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b. ?[uku-   xova ujeqe   kukaZinhle]   ku-ya-bonakala
AUG.15- make AUG.1bread 15ASSOC.1Zinhle 15S-YA-seem
'It's evident that Zinhle is making steamed bread.'

In summary, this section discussed the mechanisms deriving Tagalog wh-movement and

Zulu hyper-raising as A-over-A effects, rather than PIC-driven inaccessibility issues. In

Tagalog, the phase is the closer goal and thus is evaluated first by syntactic operations. If

elements inside the phase are to be extracted, the phase must first be rendered transparent.

This requirement is met under Agree in Tagalog, which is overtly marked as agreement

morphology on the embedding verb. Note that these relations follow from general princi-

ples of locality and agreement; the PIC itself is not a component of the analysis.

As for Zulu, the empirical data were derived under a model where both infinitival

TPs and CPs are φ-goals in Zulu, but only infinitival TPs can satisfy the EPP. Thus,

raising out of infinitives is blocked since the infinitive itself moves to Spec,TP. When

embedded CPs are targeted by matrix T, a second cycle of Agree is initiated since CPs

do not satisfy the EPP. Since the CP layer has interacted with the probe on T, it no longer

behaves as an intervener—thus, the second search allows T to ignore the clause boundary

and target the embedded subject for φ-agreement and movement. In either analysis, the

theoretical notion of the PIC was argued to be an epiphenomenon that derived from other,

independent properties of the syntax.

3.2   Alleviating the Phase Impenetrability Condition

In this section, I will discuss a family of approaches that, in contrast to those dis-

cussed in section 3.1, assumes the PIC *is* a syntactic primitive. As in the models discussed

in chapter 2, phases are assumed to be pre-determined chunks of structure that the syntax builds. Accordingly, these analyses further assume that the Phase Impenetrability Condition independently governs the inaccessibility of the interior of those phasal structures. Under these views, the PIC is relaxed just in case the phase head is targeted for Agree. If that operation is successful, then the interior of the phase can be accessed for subsequent operations. I will first discuss this model as introduced in Preminger (2011b), followed by an overview of its extension in van Urk and Richards (2015).

Turning first to Preminger (2011b), we see that, cross-linguistically, person and number agreement stand in an asymmetrical relationship: In languages that allow long-distance agreement, *person* agreement is more fragile than *number* agreement. This generalization is formulated below.

(17)   *Relative Aptitude for Failed Agreement (RAFA)*

person at-a-distance $>>$ number at-a-distance ($>>$ any agreement at close range)

Preminger (2011b)

In other words, if number agreement is disrupted in a given language X, then person agreement is disrupted there as well. Notably, this implicational relationship does not hold the other way around: disrupting person agreement does not entail that number agreement is disrupted as well. Preminger proposes that this behaviour follow from a model where (i) φ-agreement is split into two distinct probes that are situated on their respective syntactic heads (a person probe on π^0, and a number probe on $\#^0$); and (ii) $\#^0$ immediately c-commands π^0, as illustrated below.

(18)   [... [$_{\#P}$ #^{0} [$_{\pi P}$ π^0 [... DP ...]]]]

        (Preminger, 2011b)

This analysis has two advantages. First, any intervener for #^{0} will also be an intervener

for π^0, whether that intervention arises from the presence of a separate, intervening DP,

or from the presence of a phasal boundary.

(19)   a.   [... [$_{\#P}$ #^{0} [$_{\pi P}$ π^0 [... INTERVENER DP ...]]]]

        b.   [... [$_{\#P}$ #^{0} [$_{\pi P}$ π^0 [$_{PHASE}$ DP ...]]]]

        (Preminger, 2011b)

Second, the analysis allows for cases where only person agreement is disrupted (and num-

ber agreement is successful). As shown below, a clitic-doubled nominal leaves behind an

A-trace (Anagnostopoulou, 2006) which is invisible for the purposes of Agree. Since

neither the clitic nor the trace is an intervener for #^{0}, the number probe can access the DP

target.

(20)   [... [$_{\#P}$ #^{0} [$_{\pi P}$ CL$_i$–π^0 [... ~~INTERVENER$_i$~~>DP ...]]]]

        (Preminger, 2011b)

Preminger assumes that the same general mechanism is applicable to the Tagalog *wh*-

movement restrictions discussed in Rackowski and Richards (2005), where *wh*-movement

from an embedded clause is possible just in case the embedded clause has been agreed

with. In this scenario, Agree between the probe on π^0 and the phase alleviates the PIC. The probe on $\#^0$ can thus access the interior of the structure and target the embedded DP.

(21)   [... [#P $\#^0$ [πP π^0 [PHASE DP ...]]]]

        (Preminger, 2011b)

As the main focus of Preminger (2011b) is the asymmetrical relationship between person and number agreement, especially in relation to Baker's Structural Condition on Person Agreement (SCOPA) (Baker, 2011), the *unphasing* aspect of the analysis was not further developed there. However, van Urk and Richards (2015) assume this property to be a crucial component of their analysis of Dinka (Nilotic) extraction patterns. I will now turn to an overview of their analysis for the remainder of this section.

van Urk and Richards (2015) show that, in Dinka, extraction from embedded CPs must be preceded by movement of the CP to Spec,*v*P, which is itself parasitic on Agree. As shown below in (22), both Spec,CP and Spec,*v*P must be occupied.

(22)   a.   Bòl à-cé̤   Dèŋ lɛ́k ákèkö̤ol
              Bol 3SG-PRF Deng tell story
              'Bol told Deng a story.'

        b.   Bòl à-cé̤   ákèkö̤ol lɛ́k Dèŋ
              Bol 3SG-PRF story   tell Deng
              'Bol told Deng a story.'

        c.   *Bòl à-cé̤   lɛ́k Dèŋ ákèkö̤ol
              Bol 3SG-PRF tell Deng story
              Intended: 'Bol told Deng a story.'

        d.   *à-cé̤   Bòl lɛ́k Dèŋ ákèkö̤ol
              3SG-PRF Bol tell Deng story

Intended: 'Bol told Deng a story.'

(van Urk and Richards 2015:134)

However, if there is an embedded CP complement, as in (23), it appears that both Spec,CP
and Spec,vP can be empty.

(23)   a.   Bòl à-cɛ́   Dὲŋ lɛ́k [Ayén à-cɛ́   kìtáp ɣɔ́ɔc]
            Bol 3SG-PRF Deng tell Ayen 3SG-PRF book buy
            'Bol told Deng that [Ayen bought a book].'

       b.   Bòl à-cɛ́   lɛ́k Dὲŋ [Ayén à-cɛ́   kìtáp ɣɔ́ɔc]
            Bol 3SG-PRF tell Deng Ayen 3SG-PRF book buy
            'Bol told Deng that [Ayen bought a book].'

       c.   à-cɛ́   Bôl   lɛ́k Dὲŋ [Ayén à-cɛ́   kìtáp ɣɔ́ɔc]
            3SG-PRF Bol.GEN tell Deng Ayen 3SG-PRF book buy
            'Bol told Deng that [Ayen bought a book].'

            (van Urk and Richards 2015:135)

To account for this pattern, van Urk and Richards propose that, in Dinka, CP complements

pattern as DPs: they can check Case in Spec,vP, and further move to the matrix Spec,CP.

Furthermore, CPs linearize to the right. Thus, the positions in Spec,CP and Spec,vP only

appear to be empty in (23b-c)—underlyingly, the embedded CP moves to a rightward

specifier(s) and appears sentence-finally. Some of the evidence for this movement is

provided in (24), below, where filling Spec,vP with another DP blocks movement of the

embedded CP to the matrix Spec,CP. Note that, even though the matrix Spec,CP appears

to be empty in this case, due to the right-hand linearization of CPs (see above), movement

of the embedded CP must pass through Spec,vP en route to the higher landing site.

(24) *à-cɛ́ɛ̣ Bôl Dɛ̀ŋ lɛ́k [Ayén à-cɛ́ɛ̣ kìtáp ɣɔ́ɔc]
3SG-PRF Bol.GEN Deng tell Ayen 3SG-PRF book buy
Intended: 'Bol told Deng that [Ayen bought a book].'

(van Urk and Richards 2015:136)

Additionally, long-distance extraction from finite CPs requires movement through the

intermediate Spec,*v*P, as illustrated in (25).

(25) a. Yeŋà cíi̤ Yâa̤r lɛ́k Dɛ̀ŋ [yè cíi̤ Bôl tuɔ̀ɔc
who PRF.NS Yaar.GEN tell Deng C PRF.NS Bol.GEN send
wṳ́ṳt]?
cattle.camp.LOC
'Who did Yaar tell Deng that Bol sent to the cattle camp?'

b. *Yeŋà cíi̤ Yâa̤r Dɛ̀ŋ lɛ́k [yè cíi̤ Bôl tuɔ̀ɔc
who PRF.NS Yaar.GEN Deng tell C PRF.NS Bol.GEN send
wṳ́ṳt]?
cattle.camp.LOC
Intended: 'Who did Yaar tell Deng that Bol sent to the cattle camp?'

(van Urk and Richards 2015:137–138)

van Urk and Richards tie this phenomenon to a precondition on movement—namely,

that movement is parasitic on Agree. Thus, if a *wh*-element is to be extracted from an em-

bedded CP, *v* must first Agree with that CP. They argue that the embedded CP projection,

as a phasal boundary, acts as an intervener for the *wh*-probe (building on Rackowski and

Richards, 2005). Since the embedded CP has a *wh*-element in its specifier, the CP itself

must have a *wh*-feature as well (since it triggers *wh*-movement within its domain). Thus,

under the A-over-A Principle (Chomsky, 1964), the CP is the closer goal to the probe on

the matrix *v* than the *wh*-phrase, and acts as an intervener.

55

In order to derive embedded *wh*-extraction from the CP, van Urk and Richards adopt a version of the Principle of Minimal Compliance (Rackowski and Richards, 2005; Richards, 1998), which was formulated to account for the ability of the second, third, etc. *wh*-phrase in multiple-*wh* questions to violate island conditions. That is, in some languages with multiple *wh*-movement (e.g., Bulgarian and Romanian), the highest *wh*-phrase must move first, and must do so in a way that obeys locality restrictions, including islands. Once that requirement is satisfied, subsequent *wh*-phrases may move out of islands to the same CP layer. As characterized below, this property has the effect of allowing subsequent operations to be exempted from syntactic conditions, provided the initial operation fulfills those requirement(s).

(26)   *Principle of Minimal Compliance (PMC)*

Once a probe P Agrees with a goal G, P can ignore G for the rest of the derivation.

(van Urk and Richards, 2015:142, citing Rackowski and Richards, 2005)

In Dinka, the PMC is met through the initial Agree relation between the matrix *v* and the embedded CP, an operation that then triggers movement of that CP to Spec,*v*P. Having satisfied the PMC, *v* is free to ignore the CP node during a subsequent search, leaving *v* free to access the *wh*-phrase in the embedded Spec,CP. The *wh*-phrase then lands in the matrix CP.

van Urk and Richards (2015) note that similar restrictions are found in a diverse set of languages, e.g. Chamorro (Chung, 1998; den Dikken, 2009a) and Hungarian (den Dikken, 2009b, 2012). It has been argued that, in these languages, both A$'$- and A-

movement is mediated by Agree between the embedding *v* and the embedded CP—namely, movement out of the phase is preconditioned by Agree with the phase head. Broadly, this family of proposals argues that Agree between a head and a phase alleviates the PIC, which renders the interior of the phase accessible to further operations.

However, the existing literature on mediating phasehood with Agree has largely focused on extraction constraints from embedded CPs, rather on the ability to probe into the interior of the phase. What I will propose in the next chapter is that Georgian number agreement is another manifestation of this pattern. Namely, a probe may Agree with a *v*P 'phase', and, once this relation is established, a subsequent probe can search further into the *v*P and target previously-inaccessible arguments. Thus, taken together, there are at least two possible outcomes of undoing phasehood via Agree: (i) Agreeing with a phase head can allow A- and A′-movement out of that phase, and (ii) Agreeing with a phase head can allow subsequent probes search inside the phase. In chapter 5, I outline the core aspects of this view with respect to the Georgian agreement system, showing how this pattern manifests within the agreement domain.

3.3   Summary and desiderata

This section summarizes the advantages that *phase unlocking* has provided for our theory of phases, and outlines the theoretical issues and empirical predications that arise under the two sub-approaches to phase unlocking.

3.3.1 Summary

To begin, the broad family of phase unlocking analyses avoids many of the issues inherent to formalizing phasehood. As discussed in chapter 2, phases were assumed to be pre-determined chunks of syntactic structure that were Transferred to the interfaces independently of the overall structure. While this view lent itself to computational efficiency, it also gave rise to several issues in terms of formalization and definition. Namely, 'phasehood' was tenuously defined in terms of convergence, theta role assignment, and propositional content, none of which held up to scrutiny. The standard phasal categories were assumed a priori, and cross-linguistic investigation suggested that phasehood was not limited to just CP, *v*P, or DP (for an overview, see Citko, 2014). In addition, the Phase Impenetrability Condition was shown to have its set of problems (even after several revisions and reformulations), and its theoretical necessity has been called into question given that much of its empirical motivation can be attributed to independently necessary syntactic properties—most notably, minimality.

Under the phase unlocking models discussed in this section, the PIC is essentially an *intervention* effect. As the closer goal for a syntactic operation, the so-called phase head blocks syntactic operations from accessing material lower in the structure; this property derives the Phase Impenetrability Condition as a general locality issue. Both intervention effects and minimality effects are motivated independently of phase theory, so subsuming phasehood under these phenomena results in a more parsimonious theory. We can also circumvent the issues surrounding the formal definition of phases and possible phasal categories by assuming the 'phase' head bears a feature relevant to the syntactic operation in

question. As noted in the previous section, there are two distinct models of phase unlocking: (i) the PIC is purely an A-over-A effect, and (ii) the PIC is a syntactic primitive, but one whose effects can be alleviated. While both approaches take phases to be instances of intervention, and derive the PIC without referring to Transfer, they differ in how they derive crosslinguistic variation in phasehood. The remainder of this section further outlines these properties, particularly with respect to *accessibility* and *variation*.

3.3.2 Desiderata

As just noted, the two approaches to phase unlocking highlight (at least) two theoretical issues that are stake: *accessibility* of the interior of the phase, and *variation* in phasal categories across languages. While phase domains are accessible under both the *PIC-as-intervention* and *alleviating-the-PIC* models—and thus accessibility cannot be used to adjudicate between the two models—they have different explanations for the crosslinguistic variation of phases. These are summarized in the table below, and I will argue in favour of the *PIC-as-intervention* approach in the remainder of this thesis.

(27)   *Two models of phase unlocking*

	PIC-AS-INTERVENTION	ALLEVIATING-THE-PIC
IS THE INTERIOR OF THE PHASE ACCESSIBLE?	Yes	Yes
HOW IS PHASEHOOD DERIVED?	Phasehood correlates with φ-intervention	Stipulation

Turning first to the accessibility issue, we saw that accessing the interior of the 'phase' is possible under both models, and they raise similar issues with respect to Trans-

fer and the PIC. Under the alleviating-the-PIC model, Transfer is fundamentally incompatible with "unlocking"—and with PMC effects more generally—given that phases would have to be 'unshipped' from the interfaces once the PMC is met. At first glance, this may seem desirable since Transfer as an independent mechanism is ruled out under the alleviating-the-PIC model. However, models that alleviate the PIC cede explanatory ground since they can no longer derive the PIC from properties of the syntax. In contrast, under the PIC-is-intervention model, there is no theoretical requirement for an independent constraint like the PIC since it can be reduced to minimality. As such, distinct phase-driven Transfer cycles are unnecessary since locality and intervention derive the inaccessibility effect previously attributed to Transfer.

In addressing the accessibility issue, I examine cases of phase unlocking in chapter 5 where Agree appears to target arguments that are base-generated below a phasal boundary, and that crucially stay below that boundary. Specifically, my analysis of the Georgian agreement system shows that number agreement targets a vP-internal argument just in case person agreement first targets v itself. My proposal thus necessitates a view where 'phases' do not undergo Transfer to the interfaces, though this result alone does not adjudicate between the two models of phase unlocking. In order to distinguish between the two models, we need to examine cases where they differ. I will focus on this point in the remainder of this section.

Turning now to explaining crosslinguistic variation in phasal categories, we see that the two approaches differ with respect to the identity of phases, and whether phases are cross-linguistically uniform. Under both approaches to phase unlocking, the 'phase' is merely the closest goal for the operation at hand (e.g., Agree). While the alleviating-

the-PIC approach faces the same questions concerning the definition of phases that we noted with respect to standard phase theory, the PIC-is-intervention approach provides a clear pathway to track *why* the 'phase' intervenes. Namely, what look like phasehood effects arise due to the presence of syntactic features—and, ideally, we would be able to independently diagnose the presence of these features, whether syntactically or morphologically. In my analysis of Georgian agreement in chapter 5, I show that the vP 'phase' is a case of φ-intervention, where the φ-probe on v is an intervener with respect to person agreement. My proposal thus suggests that 'phasehood' across languages correlates with phi-agreement, i.e. for any given language, vP behaves as a 'phase' just in case v bears a φ-probe. Thus, languages without a vP 'phase' lack a φ-probe on v, e.g. Hindi-Urdu (see Keine, 2017; further discussion in chapter 6). Additionally, languages with a non-canonical 'phase'—such as TP—have a φ-probe on that syntactic head, e.g. potentially Spanish and other null subject languages (see Gallego, 2006; 2010). With these views in mind, I now turn to an overview of Georgian clausal structure which lays the basis and foundations for the comprehensive analysis of its agreement system.

Chapter 4: Basic properties of Georgian

Georgian, also known as *Kartvelian*, is a South Caucasian language with approximately four million speakers. It is the official language of the country of Georgia, and the data provided in this thesis come from my own fieldwork with Georgian-speaking consultants (unless otherwise cited). This chapter provides an overview of the Georgian agreement system, as well as its clausal architecture, case alignment, and pronominal licensing requirements (for more description, see Harris, 1981; Hewitt, 1995, Makharoblidze, 2012). (For discussion on Georgian phonology and phonotactics, see Butskhrikidze (2002) and Beguš (2020), and references therein.) As will be discussed in section 4.1, Georgian has two major agreement paradigms (the *basic* and *inverse*). Section 4.2 shows that *subjects* in the two paradigms occupy different structural positions: subjects of verbs in the basic agreement paradigm are external arguments, whereas subjects of verbs in the inverse agreement paradigm are experiencer arguments. Section 4.2 also shows that Georgian has both head-initial and head-final projections. The remainder of this chapter describes the splits in Georgian case-marking and pronominal licensing: section 4.3 describes the Georgian case alignment patterns, and section 4.4 describes the Georgian person-based licensing requirements for 1st and 2nd person arguments. The descriptions provided here motivate the structures and mechanisms adopted for the remainder of this

dissertation, which are fundamental for the analysis of the Georgian *v*P 'phase' as purely

φ-intervention (which will be discussed in Chapter 5).

4.1 Description of the Georgian agreement system

This section describes the Georgian agreement patterns as they appear throughout

two broad categories of tense: the *past*, which is generally referred to as the *aorist* in the

traditional Georgian philological literature, and the *present*. Before delving into the de-

tails of the Georgian agreement paradigms, note that this dissertation will focus primarily

on verb forms that appear in the *aorist* since it has overt markers for tense/aspect/mood

(TAM).

Further, the discussion of inverse agreement in section 4.1.3 is limited to verbs that

idiosyncratically take dative subjects. The class of such verbs in Georgian include stems

such as '*nd*', "to want", '*q'var*' "to love", '*xsov*' "to remember", '*ḡviž*' "to be awake", and

'*žul*' "to hate"—namely, typical psych verbs. Inverse verbs require additional prefixes that

co-vary with the subject. These prefixes are traditionally referred to as *versionizers*, and,

outside of the inverse agreement paradigm, they indicate the status of an applied argu-

ment: '*a-*' can mark causatives and locatives, '*i-*' can have either a reflexive or possessive

meaning, '*u-*' appears with benefactive applicative arguments, and '*e-*' appears with psy-

chological predicates (Lomashvili, 2011). While the versionizers are productive in the

basic agreement paradigm (i.e. they mark a relevant applied argument), they behave akin

to agreement in the inverse agreement paradigm. That is, inverse subjects (which obli-

gatorily trigger versionizers) are not subject to the various applicative interpretations that basic subjects receive with the same versionizers.

The term 'inverse/inversion' may also refer to a broader set of agreement patterns found throughout Georgian, e.g. those involving the perfect as well as the marking of evidentiality (Harris, 1981). While the agreement marking is the same for verbs in the perfect/evidential and those with quirky dative subjects, the former require different thematic suffixes unrelated to the agreement markers discussed here. Given the additional complexity of any analysis of Georgian agreement that would address the perfect and the marking of evidentiality, I leave these additional uses of inverse agreement aside for further research. I focus here only on verbs whose subjects must be marked dative even when those verbs are not marked for perfect or evidentiality.

4.1.1 General properties

The Georgian verbal complex features many person- and TAM-markers which appear as both prefixes and suffixes, many of which are also fusional or zero exponents. The two major agreement paradigms—*basic* and *inverse*—are found throughout eleven *screeves*, i.e. verbal paradigms that feature specific fusional TAM morphology such as the imperfect, future, conditional, and others (see below). The term derives from Georgian '*mts'k'rivi*' "row", which traditionally appears in Georgian grammars (see, e.g., Chikobava, 1950; Kavtaradze, 1954; Shanidze, 1973). TAM morphology typically comprises (at least) two types of markers, such as various *preverbs* (PRV) that signal aspect, and thematic suffixes (TS) that signal tense and mood.

The screeves are further grouped into three *series*, based on the case-marking of the arguments involved. As shown below, the three series are (i) the present, (ii), the aorist, and (iii) the perfect (Harris, 1981:46; Aronson, 1990:41; Melikishvili, 1998, 2001). Note that the case-marking of the *subject* dictates the series of the verb: Georgian is typically described as having seven distinct cases (nominative, ergative, dative, genitive, instrumental, adverbial, and vocative), but only nominative, ergative, and dative are used to mark subjects.

(1)   *Georgian conjugation classes*

SUBJECT CASE	SERIES	SCREEVES		
Nominative	I[a]	Present	Imperfect	Conjunctive present
		Future	Conditional	Conjunctive future
Ergative	II[a]	Aorist		Conjunctive past
Dative	III[b]	Present perfect (evidential)	Pluperfect	Conjunctive perfect

[a] Basic paradigm

[b] Inverse paradigm

Turning now to agreement, we see below that predicate-argument agreement in Georgian two-place sentences is marked by a set of prefixes and and a set of suffixes, as well as plural agreement via '-*t*'.

(2)   man   tkven   da-**g**-p'at'iž-a̠-**t**
        3SG.ERG 2PL.NOM PRV-2-invite-3SG.AOR-PL
        'She/he invited **you (pl)**.'

Broadly speaking, the prefixes mark the features of one argument, whereas the suffixes mark the features of the other. The prefixes are tense/aspect-invariant, and, as will be

shown in the next sections, there are some cases where they appear to exhibit person hierarchy effects. I remain agnostic as to their potential status as doubled clitics or agreement suffixes, and the analysis developed in chapter 5 does not rely on this distinction. In contrast, the forms of the suffixes (except '*-t*') show sensitivity to tense/aspect and do not exhibit person hierarchy effects.

The agreement patterns that I will overview in the following sections appear throughout different series. The *basic* agreement paradigm is followed by most verbs in Series I and II, whereas the *inverse* agreement paradigm is characterized by Series III conjugation and verbs that idiosyncratically take dative subjects (see Harris, 1981). Notably, the arguments that the prefixes and suffixes track are, for the most part, flipped between the two paradigms (hence the name 'inverse'). In the basic agreement paradigm, the prefixes co-vary with the object while the suffixes co-vary with the subject. In the inverse paradigm, the prefixes co-vary with the subject in the inverse agreement pattern while the suffixes co-vary with the object. I discuss the details of these paradigms below.

4.1.2   The basic agreement paradigm

Consider the data below. In each case, the form of the prefix co-varies with the person features of the object: '*g-*' marks the 2nd person object in (3a) regardless of number, '*m-*' marks the 1st person singular object in (3b), and '*gv-*' marks the 1st person plural object in (3c).

(3)   a.   me   šen   da-**g**-p'at'iž-e
            1SG.ERG 2SG.NOM PRV-2-invite-1/2.AOR
            'I invited **you (sg)**.'

    b.   šen   me   da-**m**-p'at'iž-e
         2SG.ERG 1SG.NOM PRV-1-invite-1/2.AOR
         'You (sg) invited **me**.'

    c.   šen   čven   da-**gv**-p'at'iž-e
         2SG.ERG 1PL.NOM PRV-1PL-invite-1/2.AOR
         'You (sg) invited **us**.'

3rd person objects are generally unmarked, as seen below in (4a-b), except when the subject is 1st person—in these cases, the prefix '*v-*' appears, as in (4c).[1]

(4)   a.   šen   is   da-p'at'iž-e
           2SG.ERG 3SG.NOM PRV-invite-1/2.AOR
           'You (sg) invited him/her.'

        b.   man   is   da-p'at'iž-a
           3SG.ERG 3SG.NOM PRV-invite-3SG.AOR
           'She/he invited him/her.'

        c.   me   is   da-**v**-p'at'iž-e
           1SG.ERG 3SG.NOM PRV-1-invite-1/2.AOR
           'I invited him/her.'

A closer look at the vocalic suffixes in (3-5) shows a difference in their distribution with respect to person. The suffix '*-e*' appears with participant subjects (i.e., 1st and 2nd person) in the aorist, as in (4c) and (5a). In contrast, (5b) shows that '*-a*' appears with 3rd person singular subjects (also in the aorist). The number of the participant subject

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[1]This is not the only way to describe the distribution of this prefix. As characterized here, I am presupposing that '*v-*' is a a morphologically-conditioned allomorph of a 3rd person object prefix whose appearance is triggered by the 1st person subject. Its distribution could also be described as a 1st person subject prefix that fails to surface when the object is 2nd person, possibly due to morphological competition. At this point in the thesis, there is no a priori reason to prefer one characterization over the other. I describe '*v-*' as a form specific to 1>3 contexts only for the reason that the distribution of '*g-*' is more stable, i.e. it appears in all cases with a 2nd person object, and the other prefixes seem to be object markers as well. Ultimately, the characterization pursued in the main text turns out to facilitate a formal distinction between '*v-*' and the other prefixes as *second vs. first cycle agreement*. I will further motivate this characterization in chapter 5, based on previous work by Béjar (2003); Béjar and Rezac (2009) and others.

does not affect the form of the suffix—number is marked by a separate agreement marker

'-*t*'—but 3rd person plural subjects do trigger another form altogether, as in (5c).

(5) a. šen   me   da-m-p'at'iž-**e**
         2SG.ERG 1SG.NOM PRV-1-invite-1/2.AOR
         '**You** invited me.'

     b. man   čven   da-gv-p'at'iž-**a**
         3SG.ERG 1PL.NOM PRV-1PL-invite-3SG.AOR
         '**She/he** invited us.'

     c. mat   čven   da-gv-p'at'iž-**es**
         3PL.ERG 1PL.NOM PRV-1PL-invite-3PL.AOR
         '**They** invited us.'

A similar pattern holds for the verb forms used to express the present and future. As

illustrated in (6a), there is no overt suffix for participant subjects, but '-*s*' marks 3rd

person singular subjects, as in (6b), whereas '-*en*' marks 3rd person plural subjects, as in

(6c).

(6) a. šen   čven   gv-p'at'iž-eb-∅
         2SG.NOM 1PL.DAT 1PL-invite-TS
         'You invite us.'

     b. is   čven   gv-p'at'iž-eb-**s**
         3SG.NOM 1PL.DAT 1PL-invite-TS-3SG.PRES
         '**She/he** invites us.'

     c. isini   čven   gv-p'at'iž-eb-**en**
         3PL.NOM 1PL.DAT 1PL-invite-TS-3PL.PRES
         '**They** invite us.'

Now consider the distribution of the plural marker '-*t*'. This suffix appears after the aforementioned person-sensitive suffixes and can mark a 2nd person plural argument in either the subject position, as in (7a), or the object position, as in (7b).

(7)   a.   tkven   is   da-p'at'iž-e-**t**
                2PL.ERG 3SG.NOM PRV-invite-1/2.AOR-PL
                '**You (pl)** invited him/her.'

        b.   man   tkven   da-g-p'at'iž-a-**t**
                3SG.ERG 2PL.NOM PRV-2-invite-3SG.AOR-PL
                'She/he invited **you (pl)**.'

There are two puzzles associated with the verbal plural marker '-*t*', one of which concerns asymmetrical plural marking, and a second concerning the blocking of '-*t*'. First, '-*t*' can appear when a 1st person plural argument is a subject, as in (8a), but not when it is an object, as in (8b). This is surprising given that, as shown in (7a-b), the appearance of '-*t*' can be triggered by the plurality of a 2nd person argument regardless of whether that argument is a subject or object. That is, we would expect 1st person plural arguments to trigger the same kind of *omnivorous* number agreement (Nevins, 2011) as 2nd person plural arguments do.

(8)   a.   čven   is   da-v-p'at'iž-e-**t**
                1PL.ERG 3SG.NOM PRV-1-invite-1/2.AOR-PL
                '**We** invited him/her.'

        b.   man   čven   da-gv-p'at'iž-a-(*****t**)
                3SG.ERG 1PL.NOM PRV-1PL-invite-3SG.AOR
                'She/he invited **us**.'

Second, 3rd person plural subjects block the appearance of '-*t*' even if the object is 2nd person plural. As we saw in (7b), 2nd person plural objects are marked with '-*t*' when the subject is 3rd person *singular*, which suggests that the number feature of the subject plays some role in this particular blocking effect.

(9)   mat   tkven   da-g-p'at'iž-es(-*t)
        3PL.ERG 2PL.NOM PRV-2-invite-3PL.AOR-PL
        'They invited you (pl).'

More generally, '-*t*' cannot appear with 3rd person plural subjects in the basic agreement paradigm (Series I and II), as illustrated below in (10). This is not the case for the inverse agreement paradigm – (11a) shows that '-*t*' can mark 3rd person plural subjects of inverse verbs, a pattern that will be further discussed in the following section. Note that the configuration in (11a) is the only configuration where 3rd person plural arguments can be marked with '-*t*', i.e. when the 3rd person plural argument is the *subject*, and the *object* is also 3rd person. If these roles are reversed, as in (11b), '-*t*' can no longer mark the 3rd person plural argument.

(10)   isini   mas   p'at'iž-eb-en(-*t)
        3PL.NOM 3SG.DAT invite-TS-3PL.PRES(-PL)
        'They invite him/her.'

(11)   a.   mat   is   u-q'var-**t**
              3PL.DAT 3SG.NOM VER-love-PL
              '**They** love him/her.'

        b.   mas   isini   u-q'var-da(-*t)
              3SG.DAT 3PL.NOM VER-love-TS-PL
              'She/he loves them.'

The tables in(12?13) summarize the agreement patterns described in this section. Three of the four overt prefixes track the features of the object: '*m-*' marks 1st person singular objects, '*gv-*' marks 1st person plural objects, and '*g-*' marks 2nd person objects regardless of number. The distribution of '*v-*', the fourth overt prefix, can be described in two ways: either it is a 1st person subject prefix that is overridden by a 2nd person object marker, or it is an allomorph of a 3rd person object prefix that is conditioned by a 1st person subject (see footnote 2).

(12)   *Series I – Basic agreement patterns*[2]

S \ O	1SG	1PL	2SG	2PL	3SG	3PL
1SG	—	—	*g- -∅*	*g- -∅-t*	*v- -∅*	*v- -∅*
1PL	—	—	*g- -∅-t*	*g- -∅-t*	*v- -∅-t*	*v- -∅-t*
2SG	*m- -∅*	*gv- -∅*	—	—	*∅- -∅*	*∅- -∅*
2PL	*m- -∅-t*	*gv- -∅-t*	—	—	*-∅--t*	*-∅--t*
3SG	*m- -s*	*gv- -s*	*g- -s*	*g- -t*	*-s*	*-s*
3PL	*m- -en*	*gv- -en*	*g- -en*	*g- -en*	*-en*	*-en*

These tables show that the forms of the prefixes are identical across Series I and II, in contrast to the TAM-conditioned variation in the forms in the suffixes. In Series I (used to express the present and future), '*-en*' marks 3rd person plural subjects and '*-s*' marks 3rd person singular subjects; there are no overt suffixes for participant subjects in Series I. In Series II (used to express the past), '*-es*' marks 3rd person plural subjects and '*-a*'

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[2]Consultants cannot provide translations for the following argument combinations in a way that corresponds to the typical transitive construction: 1SG>1PL, 1PL>1SG, 2SG>2PL, or 2PL>2SG. Rather, sentences with these combinations require the the pronominal direct object to appear as a reflexive such as, for example, *tʃemi tavi* 'my head'. Although the corresponding English translations are awkward, they are possible given an appropriate context, e.g. 'I saw us on TV last night'. While this difference between Georgian and English is an outstanding puzzle in its own right, I leave it aside for the current purposes of this thesis (see Lasnik 1981 for more discussion on binding obviations).

marks 3rd person singular subjects; in addition, '-*e*' marks participant subjects, regardless of number.

(13)   *Series II – Basic agreement patterns*

S \ O	1SG	1PL	2SG	2PL	3SG	3PL
1SG	—	—	*g- -e*	*g- -e-t*	*v- -e*	*v- -e*
1PL	—	—	*g- -e-t*	*g- -e-t*	*v- -e-t*	*v- -e-t*
2SG	*m- -e*	*gv- -e*	—	—	∅- *-e*	∅- *-e*
2PL	*m- -e-t*	*gv- -e-t*	—	—	*-e-t*	*-e-t*
3SG	*m- -a*	*gv- -a*	*g- -a*	*g- -a-t*	*-a*	*-a*
3PL	*m- -es*	*gv- -es*	*g- -es*	*g- -es*	*-es*	*-es*

Throughout this discussion, I assume that the markers in Series I and II are iso-morphic up to the level of phonology. Note that there is a discrepancy in the cells corresponding to a 3rd person singular subject acting on a 2nd person plural object: in Series I, the '-*t*' suffix does not overtly mark the 2nd person plural argument, but the suffix does appear in Series II. I adopt a phonological account of this discrepancy, rather than a morphosyntactic one: I assume [st] coda clusters reduce to [t] (see section 5.5.2 for further discussion on this point). The view that this discrepancy in the distribution of '-*t*' between the two paradigms may be conditioned by phonology may come as a surprise, given that Georgian is known for its complex onset clusters. However, Georgian is conservative in its coda clusters, which are surprisingly rigid (Beguš, 2020; Butskhrikidze, 2002).

For the remaining cells in both series, the plural marker '-*t*' consistently appears with 1st and 2nd person plural subjects; '-*t*' does not mark 1st person plural objects. Note that there is some ambiguity here in 2PL>1PL contexts—it is unclear which argument

'-*t*' is marking, if it is indeed marking only one argument. In order to maintain a more uniform characterization concerning 1st person plural objects, I will assume that the 2nd person plural subject is responsible for the appearance of '-*t*' in this case. When it comes to object marking, '-*t*' can appear with 2nd person plural objects, except when the subject is 3rd person plural. In both series, 3rd person plural arguments cannot trigger '-*t*' in either subject or object position.

4.1.3   The inverse agreement paradigm

As briefly mentioned in section 4.1.1, the arguments that the prefixes and suffixes mark in the inverse agreement paradigms are, for the most part, flipped compared to the basic agreement paradigm. Recall that, in Series I and II, '*m-*', '*gv-*', and '*g-*' are prefixes that respectively mark 1st person singular, 1st person plural, and 2nd person objects. In Series III and inverse verbs, these same prefixes mark the subject—in addition, the '*i-*' versionizer vowel is obligatory with participant subjects in the inverse. These patterns are shown below in (14).

(14)   a.   me   is   **m-i**-q'var-s
              1SG.DAT 3SG.NOM 1-VER-love-3SG.PRES
              'I love him/her.'

        b.   čven   is   **gv-i**-q'var-s
              1PL.DAT 3SG.NOM 1PL-VER-love-3SG.PRES
              'We love him/her.'

        c.   šen   is   **g-i**-q'var-s
              2SG.DAT 3SG.NOM 2-VER-love-3SG.PRES
              'You (sg) love him/her.'

d. tkven   is   **g-i-**q'var-t
    2PL.DAT 3SG.NOM 2-VER-love-PL
    'You (pl) love him/her.'

Similarly, the distribution of '*v-*' is also flipped in the inverse agreement paradigm—it appears only when the subject is 3rd person and the object is 1st person, as shown below. There are two points to note here: the alternative description of '*v-*' as a competing exponent losing out to the 2nd person marker '*g-*' is consistent in this paradigm as well; and the versionizer vowel '*u-*' is obligatory with 3rd person subjects (cf. '*i-*' with participant subjects, above).

(15) a. mas   me   **v-**u̲-q'var-v-ar
          3SG.DAT 1SG.NOM 1-VER-love-1-be.PRES
          '**She/he** loves me.'

      b. mat   me   **v-**u̲-q'var-v-ar
          3PL.DAT 1SG.NOM 1-VER-love-1-be.PRES
          '**They** love me.'

As seen in (15) above and shown again in (16) below, another type of agreement marking appears in inverse clauses with participant subjects, one which did not occur in the corresponding configurations in the basic: the 1st person object is marked as a '*v-*' prefix on a dummy verb '*ar*' "be" (Nash, 1994). This prefix marks 1st person objects, regardless of number, and it appears to be sensitive to person features only. It is perhaps unsurprising that the 'subject-oriented' suffixes described in the previous section are sensitive to the object in the inverse agreement paradigm.

(16) a. šen   me   g-i-q'var-**v**-<u>ar</u>
       2SG.DAT 1SG.NOM 2-VER-love-1-be.PRES
       'You (sg) love **me**.'

     b. mas   čven   v-u-q'var-**v**-<u>ar</u>-**t**
       3SG.DAT 1PL.NOM 1-VER-love-1-be.PRES-PL
       'She/he loves **us**.'

Similarly, the 2nd person agreement marker '*x-*' appears in inverse clauses with 2nd person singular and plural objects, as shown below.

(17) a. me   šen   m-i-q'var-**x**-<u>ar</u>
       1SG.DAT 2SG.NOM 1SG-VER-love-2-be.PRES
       'I love **you (sg)**.'

     b. mas   tkven   u-q'var-**x**-<u>ar</u>-**t**
       3SG.DAT 2PL.NOM VER-love-2-be.PRES-PL
       'She/he loves **you (pl)**.'

To reiterate, 1st and 2nd person object agreement *in the inverse* manifests as prefixes on a dummy verb, a pattern that does not appear in the basic agreement paradigm—except for copular constructions, as shown below. I will argue in Chapter 5 that there is a principled reason why the 1st and 2nd person inverse agreement markers in (16-17) and the copular constructions in (18) are form-identical, and for why this kind of dummy-verb marking arises in cases like(15–16) in the first place; both will be tied to licensing requirements of 1st and 2nd person arguments.

(18) a. pexšišveli **v**-ar
       barefoot   1-be.PRES
       '**I** am barefoot.'

b.	pexšišveli **x**-ar
	barefoot 2-be.PRES
	'**You (sg)** are barefoot.' (Harris, 1981:106–107)

There is no fundamental difference concerning 3rd person agreement between the basic

and inverse agreement paradigms. 3rd person arguments are marked with the same agree-

ment morphemes that appear throughout the basic paradigm, modulo the differences in

number sensitivity and subject vs. object agreement. One point of difference relative to

the basic agreement paradigm, though, is that there is no apparent sensitivity to the num-

ber features of 3rd person objects in the inverse: the suffix '-*s*' marks both, as in (19).

(19)	a.	me is m-i-q'var-**s**
		1SG.DAT 3SG.NOM 1-VER-love-3SG.PRES
		'I love **him/her**.'

	b.	me isini m-i-q'var-**s**
		1SG.DAT 3PL.NOM 1-VER-love-3SG.PRES
		'I love **them**.'

The data in (16-19) illustrates the split in how 1st/2nd person and 3rd person arguments

are marked in the inverse agreement paradigm: 1st and 2nd persons require exceptional,

complex agreement forms, whereas 3rd person does not. I will return to the role of these

elements throughout the following sections of the dissertation, as this difference will play

a significant role in deriving the agreement patterns both within the inverse paradigm, and

between the inverse and basic.

Before delving into the distribution of the plural marker '-*t*', it should be recapitu-

lated what the main differences between the basic and inverse agreement paradigms are.

Both paradigms have agreement prefixes and suffixes, but their behaviour (i.e. the argu-

ment they mark) flips between paradigms. In the basic, the prefixes track the *object* and

the suffixes track the *subject*; in the inverse, the prefixes track the *subject* and the suffixes

track the *object*. So, keeping the grammatical roles of the arguments constant, the agree-

ment patterns between the basic and inverse paradigms appear to be a mirror image.[3]

However, once we investigate the behaviour of the plural marker '-*t*', this mirror-image

analogy begins to break down.

Starting from the part of the distribution that *is* a perfect mirror image, the sentences

in (20) show that 1st person plural inverse *objects*—but not *subjects*—can be marked by

'-*t*'. This is contra the behaviour of '-*t*' in the basic paradigm, where 1st person plural

arguments could be marked by -*t* as *subjects*, but not as *objects*. This is shown in (21),

repeated from (8) above.

(20)   a.   mas   čven   v-u-q'var-v-ar-**t**
                 3SG.DAT 1PL.NOM 1-VER-love-1-be.PRES-PL
                 'She/he loves **us**.'

        b.   čven   is   gv-i-q'var-s-(*****t**)
                 1PL.DAT 3SG.NOM 1PL-VER-love-3.PRES-PL
                 '**We** love him/her.'

(21)   a.   man   čven   da-gv-p'at'iž-a-(*****t**)
                 3SG.ERG 1PL.NOM PRV-1PL-invite-3SG.AOR
                 'She/he invited **us**.'

        b.   čven   is   da-v-p'at'iž-e-**t**
                 1PL.ERG 3SG.NOM PRV-1-invite-1/2.AOR-PL
                 '**We** invited him/her.'

---

[3]I use the term 'grammatical role' very broadly here, namely as a way to refer to *subject* and *object* without further reference to thematic roles or structural position.

The mirror image analogy breaks down in the following two puzzles. Recall from the

basic paradigm that 3rd person plural subjects block number agreement with 2nd person

plural objects, as in (22). However, this blocking effect does not extend to the inverse

paradigm, as shown in (23).

(22)   mat   tkven   da-g-p'at'iž-es(-*t)
        3PL.ERG 2PL.NOM PRV-2-invite-3PL.AOR-PL
        'They invited you (pl).'

(23)   a.   tkven   isini   g-i-q'var-t
             2PL.DAT 3PL.NOM 2-VER-love-PL
             '**You (pl)** love them.'

        b.   mat   tkven   u-q'var-x-ar-t
             3PL.DAT 2PL.NOM VER-love-2-be.PRES-PL
             'They love **you (pl)**.'

Finally, '-t' can mark 3rd person plural subjects in the inverse (if the object is also 3rd

person), as in (24). But, as (25) shows, this is not the case for the basic paradigm.

(24)   mat   is   u-q'var-t
        3PL.DAT 3SG.NOM VER-love-PL
        '**They** love him/her.'

(25)   a.   man   isini   da-p'at'iž-a(-*t)
             3SG.ERG 3PL.NOM PRV-invite-3SG.AOR-PL
             'She/he invited them.'

        b.   mat   is   da-p'at'iž-es(-*t)
             3PL.ERG 3SG.NOM PRV-invite-3PL.AOR-(PL)
             'They invited him/her.'

Furthermore, the behaviour of the *versionizer vowels* also differs between paradigms. In the basic, they are productive and their appearance is tied to the introduction of an applicative argument (which is not obligatory). There, '*a-*' can mark causatives and locatives, '*i-*' can have either a reflexive or possessive meaning, '*u-*' appears with benefactive applicative arguments, and '*e-*' appears with psychological predicates. In the inverse, however, they are strictly associated with person features and tense/aspect. In both the present and in the aorist, '*i-*' appears with 1st and 2nd person subjects whereas '*u-*' appears with 3rd person subjects only.

(26) a. me   is   m-**i**-q'var-s
          1SG.DAT 3SG.NOM 1-VER-love-3.PRES
          '**I** love him/her.'

      b. šen   is   g-**i**-q'var-s
          2SG.DAT 3SG.NOM 2-VER-love-3.PRES
          '**You (sg)** love him/her.'

      c. mas   is   **u**-q'var-s
          3SG.DAT 3SG.NOM VER-love-3.PRES
          '**She/he** loves him/her.'

(27) a. me   is   m-**i**-q'var-d-a
          1SG.DAT 3SG.NOM 1-VER-love-TS-3.AOR
          '**I** loved him/her.'

      b. šen   is   g-**i**-q'var-d-a
          2SG.DAT 3SG.NOM 2-VER-love-TS-3.AOR
          '**You (sg)** loved him/her.'

      c. mas   is   **u**-q'var-d-a
          3SG.DAT 3SG.NOM VER-love-TS-3.AOR
          '**She/he** loved him/her.'

The table below summarizes the agreement patterns surveyed in this section. In the inverse agreement paradigm, the prefixes track the subject with the 'object' markers from the basic agreement paradigm: '*m-*' marks 1st person singular subjects, '*gv-*' marks 1st person plural subjects, and '*g-*' marks 2nd person subjects regardless of number. The prefix '*v-*' can be described as a 3rd person subject marker that only appears when the object is 1st person, but, as discussed in the previous section, this is not the only way to characterize this prefix.

(28)   *Series III – Inverse agreement patterns (present)*

S \ O	1SG	1PL	2SG	2PL	3SG	3PL
1SG	—	—	*m-i- -x-ar*	*m-i- -x-ar-t*	*m-i- -s*	*m-i- -s*
1PL	—	—	*gv-i- -x-ar*	*gv-i- -x-ar-t*	*gv-i- -s*	*gv-i- -s*
2SG	*g-i- -v-ar*	*g-i- -v-ar-t*	—	—	*g-i- -s*	*g-i- -s*
2PL	*g-i- -v-ar-t*	*g-i- -v-ar-t*	—	—	*g-i- -t*	*g-i- -t*
3SG	*v-u- -v-ar*	*v-u- -v-ar-t*	*u- -x-ar*	*u- -x-ar-t*	*u- -s*	*u- -s*
3PL	*v-u- -v-ar*	*v-u- -v-ar-t*	*u- -x-ar*	*u- -x-ar-t*	*u- -t*	*u- -t*

Importantly, the distribution of the plural marker '*-t*' in the inverse is not straightforwardly a mirror image of its distribution in the basic; the plural marking patterns will provide the main empirical evidence for the argument that the probe responsible for person agreement first evaluates v(P). In particular, the observation that '*-t*' marks 3rd person plural inverse subjects just in case the object is also 3rd person suggests that this combination of person features and structural positions, and only this combination, allows the probe responsible for number agreement to access arguments inside the vP.

Furthermore, the agreement patterns described in this section suggest that *inverse subjects* have lower positions that *basic subjects*, given that the former triggers object agreement morphology. In the next section, I show that this is indeed the case. I will also show that both subjects are higher in the structure than true objects are.

4.2   The Georgian clause structure

This section motivates the assumed structure of the Georgian clause in the basic and inverse agreement paradigms. In section 4.2.1, I show that Georgian has both head-initial and head-final structures. In section 4.2.2, I discuss the motivations for adopting an analysis where basic subjects are introduced in Spec,*v*P (Béjar, 2003; Béjar and Rezac, 2009). In section 4.2.3, I argue that inverse subjects are lower than *v*P—they are introduced by Appl^0, based on evidence from the distribution of the prefixes, interaction with additional arguments in the clause, and binding behaviour (Béjar, 2003; Lomashvili and Harley, 2011; McGinnis, 1995, 1997). In either case, the object is generated in the VP.

4.2.1   Argument positions: The basic agreement paradigm

For subjects of verbs that take basic agreement, I follow a family of analyses that place the subject in a syntactic position accessible to T^0 (Legate, 2008; Nash, 2017) given that nominative case appears to be closely related to this head. For example, nominalizations (traditionally referred to as the "*masdar*" in the Georgian literature) cannot feature nominative arguments, as shown below, since T^0 is absent in these structures.

(29)   a.   Giorg-i   lobian-s   č'am-s.
                 Giorg-NOM lobiani-DAT eat-3SG.PRES
                 'Giorgi is eating lobiani.'

       b.   (*Giorg-i)   lobian-is   č'am-a.
                 Giorg-NOM lobiani-GEN eat-NMLZ
                 Intended: 'Giorgi's eating of lobiani.'   (Borise, 2019:96)

Following Nash (2017), I assume that the subject does not move to Spec,TP, but the analysis developed in section 5 does not rely on this property. The proposed analysis also does not rely on the specifics of the case-licensing system in Georgian as developed in Nash (2017) and Legate (2008), i.e. whether case is dependent or inherent (more on this in section 4.3). I assume that subjects of verbs in Series I and II are base-generated in similar positions given that they trigger the same agreement patterns (specifically, the prefixes). As such, I follow Béjar (2003) and Béjar and Rezac (2009) and adopt the structure below for clauses with verbs that follow the basic agreement paradigm.

(30)   *Structure for the basic agreement paradigm*[4]

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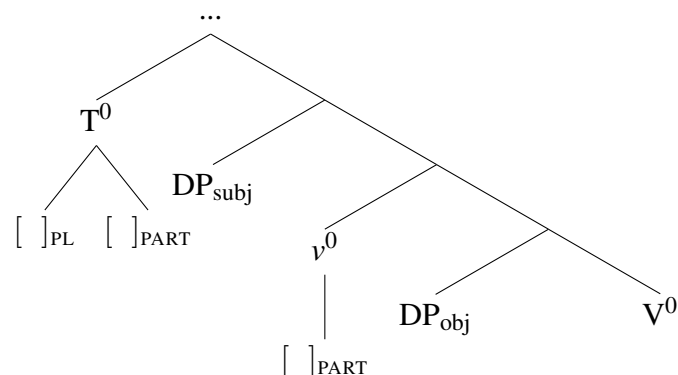
[4]Note that this structure does not include a VoiceP projection; I remain agnostic as to whether Georgian has such a layer or not.

Positioning the subject in Spec,vP, regardless of case or series, is motivated primarily by the person-marking agreement prefixes. In particular, the distribution of 'v-' throughout the basic agreement paradigm suggests that it is sensitive to the combination of 1st and 3rd person arguments. Thus, the probe that expones the prefixal agreement markers must be able to evaluate both the subject and object. To derive this sensitivity, I adopt Cyclic Agree approaches where both arguments are targeted by a single probe (Béjar, 2003; Béjar and Rezac, 2009).[5] In the remainder of this dissertation, I place the external argument (i.e. the subject of verbs in Series I and II) in Spec,vP and the internal argument in VP. A φ-probe on v^0 will thus encounter the internal argument first, while also being able to evaluate the external argument under certain circumstances relating to the mechanics of Cyclic Agree (see below). Only then can the φ-features of both arguments trigger the spell-out of a unique agreement morpheme, e.g. 'v-'. I discuss further motivation for Cyclic Agree-based analyses in section 5, as well as the derivations of the agreement prefixes. In the next section, I argue subjects of verbs that fall under the *inverse* agreement paradigm are base-generated lower than v^0, namely in Spec,ApplP.
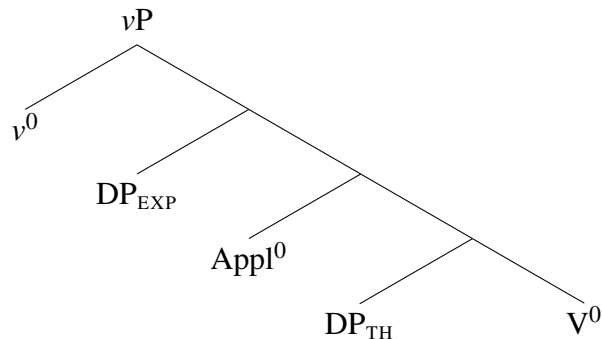
4.2.2   Argument positions: The inverse agreement paradigm

This section focuses on the empirical motivations for placing subjects of inverse verbs in Spec,ApplP, as shown below.

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[5]Cyclic Agree is not the *a priori* only way to capture this two-argument sensitivity; one could also imagine that each argument is targeted by a unique probe, and the prefix is a result of *fusion*. If that is indeed the case, then we would expect to see further evidence of fusion throughout the forms of the prefixes. However, there is a clear preference for object agreement in Georgian, which would be unexpected under a fusion analysis. Additionally, what looks like fusion is limited to just two combinations of arguments: 1st person acting on 3rd, and 2nd person acting on 3rd. There is no corresponding sensitivity to 3rd person acting on 1st or 2nd, which we might expect under a fusion analysis of the basic agreement paradigm.

(31)   *Inverse subjects in Spec,ApplP*

```
                    vP
                   /  \
                 v⁰    \
                  \     \
                 DP_EXP  \
                    \     \
                  Appl⁰    \
                      \     \
                    DP_TH   V⁰
```

The first piece of evidence comes from the distribution of the prefixes for inverse

verbs. As was shown in section 4.1.2, the '*m-*' prefix appears just in case the subject

is 1st person—but only in the inverse agreement paradigm. In the basic paradigm, '*m-*'

marks 1st person objects. The appearance of '*m-*' in (32) thus suggests that the 1st person

inverse subject is the first argument encountered by the probe responsible for exponing

the prefixes. I assume that this is because inverse subjects are introduced lower in the

structure than the subjects of non-inverse verbs.

(32)   a.   me   is   **m**-i-q'var-s
              1SG.DAT 3SG.NOM 1-VER-love-3SG.PRES
   '**I** love him/her.'

Consider the sentence in (33), which features a ditransitive verb in the basic agreement

paradigm. This construction provides a point of comparison to the sentence in (32), which

I argue feature similar argument structures *except (32) lacks an external argument in*

Spec,vP. In (33), the clause has an argument in Spec,vP (i.e. a basic subject) and the

prefix tracks the indirect object. This suggests that the probe responsible for exponing

the prefixes indeed targets the closest accessible argument, rather than strictly the (direct) object. In ditransitives in the basic agreement paradigm, it is the indirect argument that controls this agreement prefix. We can explain this if indirect objects are introduced in a position that is higher than the direct object and still lower than *v*. Spec,ApplP is precisely such a position, and it is a natural place for an indirect object to be introduced into the structure.

(33)　　man　　　mo-**m**-ts-a　　　　　me　　　c'ign-i
　　　　　3SG.ERG PRV-1-give-3SG.AOR 1SG.DAT book-NOM
　　　　　'She/he gave **me** a book.'

(34)　　*Structure for ditransitive verbs*
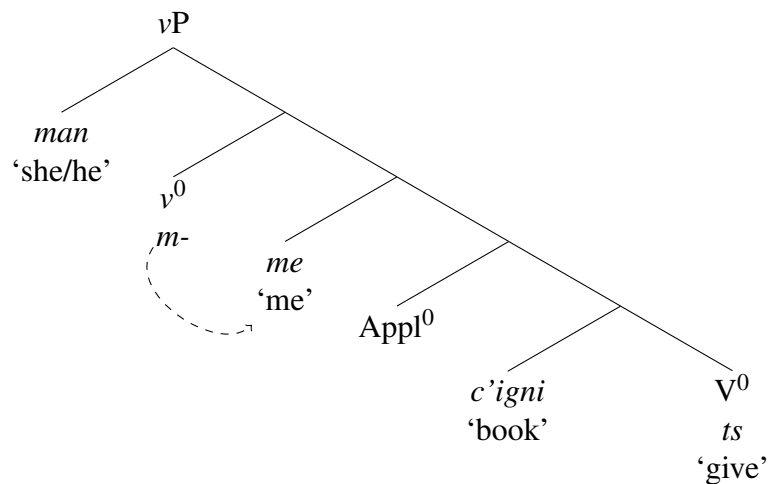
Furthermore, the sentence in (35) provides reason to think that the agreement probe is indeed on v^0. Recall that, in the basic agreement paradigm, the '*v*-' prefix appears when the subject is 1st person and the object is 3rd person. In a ditransitive construction, the '*v*-' prefix appears when the subject is 1st person and the indirect object is 3rd person. If the subject is introduced as an external argument is in Spec,*v*P, and the indirect object

as an applicative argument in Spec,ApplP, then a probe on v^0 can potentially target both arguments. This position between the two arguments captures the appearance of 'v-'. If the agreement probe were lower, say, between the applicative argument and the internal argument, we would not expect any prefix to appear since the 3→3 argument combination does not trigger any overt agreement morphology.

(35)   me   mas   c'ign-i   mi-**v**-e-ts-i
        1SG.ERG 3SG.DAT book-NOM PRV-1>3-give-1/2.AOR
        '**I** gave **him/her** a book.'

(36)   *Applicative arguments in Spec,ApplP (=30)*
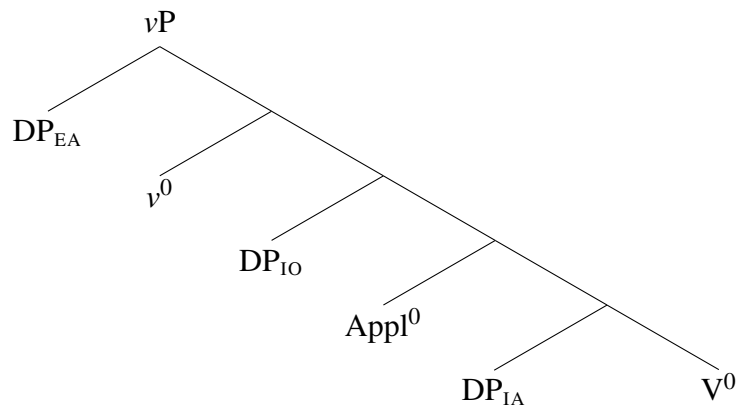
Second, it is not possible for another applied argument to be introduced in inverse verb constructions (Lomashvili, 2011). This follows from the assumption that $Appl^0$ has already introduced the so-called inverse subject, and thus any additional arguments must be introduced as adjuncts, as shown below.

(37)   a. *Dato-s   **Gio-s**   Nino   u-**u**-q'var-s
            Dato-DAT Gio-DAT Nino.NOM APPL-APPL-love-3SG.PRES
            Intended: 'Dato loves Nino because of Gio.'

b. Dato-s   Nino   Mariam-is   gamo   u-q'var-s
Dato-DAT Nino.NOM Mariam-GEN because.of APPL-love-3SG.PRES
'Dato loves Nino because of Gio.'

Third, (38a) shows that inverse subjects can bind nominative-object anaphors, showing

that the dative subjects are higher than the nominative objects (Amiridze, 2003; Harris,

1981; McGinnis, 1995, 1997). Reversing the binder and bindee in terms of their argument

roles/case marking results in an unacceptable string, as in (38b). While this does not

show that the dative argument is in Spec,ApplP per se, it does show that it is higher

than the non-dative one. Coupled with the observations concerning (33) and (35) above,

however, we can pinpoint the location as indeed being Spec,ApplP. Further, (38c) shows

that scrambling the nominative argument to the left of the dative one does not resolve the

binding issue.

(38)   a. **Vano-s**   u-q'var-s   tav-isi   tav-i
Vano-DAT VER-love-3SG.PRES self-GEN self-NOM
'**Vano** loves himself.'

b. *tav-is   tav-s   u-q'var-s   **Vano**
self-GEN self-DAT VER-love-3SG.PRES Vano.NOM
Intended: '**Vano** loves himself.'

c. ***Vano**   u-q'var-s   tav-is   tav-s
Vano-NOM VER-love-3sc sg.pres self-GEN self-DAT
Intended: '**Vano** loves himself.'   (Harris 1981:208)

Finally, McGinnis (1997) shows that the behaviour of inverse subjects parallels other

dative-marked arguments throughout the basic agreement paradigm. McGinnis notes that

dative indirect objects can bind nominative direct objects, as in (39a). Nominative direct

objects cannot bind dative indirect objects, even if the nominative argument is scrambled

to the left of the dative, as in (39b), in parallel to (38c) above. This shows that, across

the board, dative arguments are structurally higher than nominative arguments, and that

scrambling does not affect binding relations.

(39) a. Nino-m   a-nax-a   čven   pat'ara Gela-s   tav-isi
          Nino-ERG CAUS-see-3SG.AOR 1PL.POSS little   Gela-DAT self-GEN
          tav-i
          self-NOM
          'Nino showed our little Gela$_i$ himself$_i$.'

      b. Nino-m   a-nax-a   Gela   tav-is   tav-s
          Nino-ERG CAUS-see-3SG.AOR Gela-NOM self-GEN self-DAT
          'Nino showed him/herself$_{i/*j}$ Gela$_j$.'   (McGinnis 1997:5)

The combination of these facts suggest that inverse subjects are introduced by Appl^0 as

experiencer arguments, as illustrated below.

(40)   *Inverse subjects in Spec,ApplP*
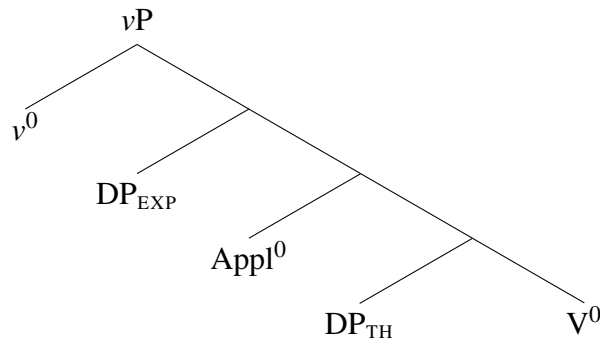
Since the inverse subject is base-generated below v^0, these arguments are evaluated

first by the φ-probe on that head. This mechanism gives rise to the 'object' agreement

patterns that were described in sections 4.1.2 and 4.1.3—namely, that the prefixes used

to mark objects of verbs in the basic agreement paradigm are also used to mark subjects

of verbs in the inverse agreement paradigm. In the inverse, the subject is the closest goal to the probe on v^0 (in contrast to the basic, where the subject is introduced in the specifier of v). With this structure, we also derive the subject-oriented behaviour of inverse subjects with respect to binding, since the inverse subject is base-generated above the direct object. Finally, placing inverse subjects in Spec,ApplP explains why applied arguments cannot appear in inverse verb constructions: the position is already occupied, so additional arguments must appear as adjuncts.

Note that I have assumed a head-initial structure for all projections excluding the VP thus far. In the next section, I provide an overview of Georgian as a mixed-headed language, where, in the verbal domain, only the VP is head-final.

4.2.3 Georgian is head-initial and head-final

This chapter assumed thus far that Georgian is head-final in the VP domain, and that projections above this layer are head-initial. This section discusses the empirical facts that motivate this structure. First, as shown below, postpositional phrases (PPs), genitive + noun combinations, participial relative clauses (RCs), and small clauses (SCs) all show head-final properties (Borise, 2019; Harris, 1981). The sentences below demonstrate head-finality in the nominal domain: (41) shows that the postposition must appear at the end of the PP, and (42) shows that the head noun must follow the genitive.

(41)   a.   alkimik'os-eb-is-**tvis**
                alchemist-PL-GEN-for
                '**for** the alchemists"

b. *__tvis__ alkimik'os-eb-is
   for alchemist-PL-GEN
   Intended: '__for__ the alchemists"

(42) a. __Amerik'-is__ še-ert-eb-ul-i   št'at'-eb-i
         America-GEN PRV-one-SF-PTCP-NOM state-PL-NOM
         'United States of America'

      b. *Še-ert-eb-ul-i   št'at'-eb-i   __Amerik'-is__
         PRV-one-SF-PTCP-NOM state-PL-NOM America-GEN
         Intended: 'United States of America'

      (Borise, 2019:82-83)

We also see head-final properties in the verbal domain, as shown below (see also Lo-mashvili, 2011). In (43-44), the predicative element has to appear at the end of the phrase.[6] (Borise, 2019) argues that, if we assume that these clauses do not include any other functional projection, then the verb must be in its base-generated position. The word order thus reflects the underlying structure of the VP, and, as seen in the (b) examples, the OV word order indicates that the VP is head-final in Georgian.
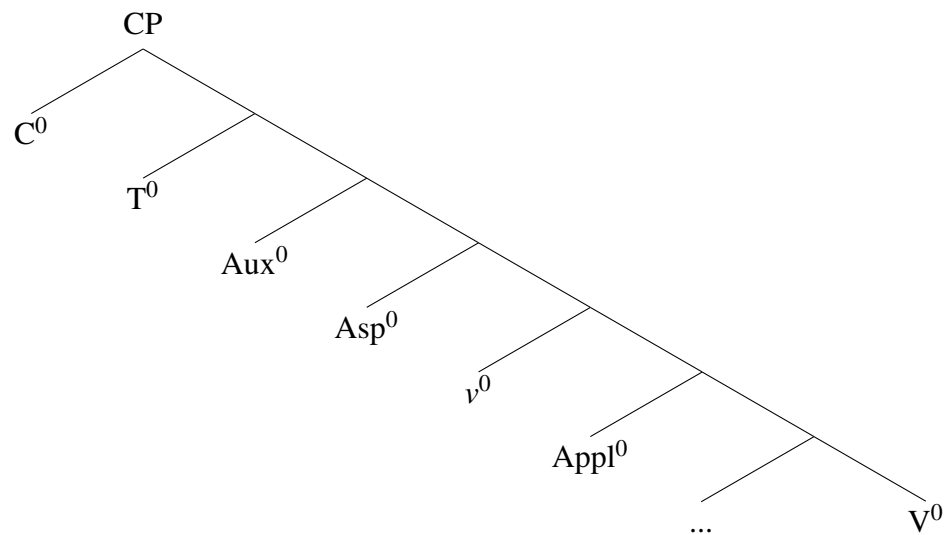
(43) a. [$_{PtcpP}$ Ek'a-s __c'a-k'itx-ul-i__   ] c'ign-i
         [Eka-GEN PRV-read.PRF-PTCP-NOM] book-NOM
         'the book Eka read'   (Foley, 2013:8)

      b. *[$_{PtcpP}$ __c'a-k'itx-ul-i__   Ek'a-s   ] c'ign-i
         [PRV-read.PRF-PTCP-NOM Eka-GEN] book-NOM
         Intended: 'the book Eka read'

(44) a. Manana   [$_{SC}$ Gela-s __č'k'vian-ad__] tvl-i-s
         Manana.NOM [Gela-DAT smart-as   ] consider-SM-3SG.PRES

---

[6]See Borise (2019) for more examples of Georgian head-finality in the VP domain, e.g. object + verb idioms and nonfinite + finite verb constructions.

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'Manana considers Gela smart.'

b. *Manana   [SC **č'k'vian-ad** Gela-s   ] tvl-i-s
    Manana.NOM [smart-as   Gela-DAT] consider-SM-3SG.PRES
    Intended: 'Manana considers Gela smart.'

When we look beyond the nominal and verbal domains, however, we see that Georgian displays *head-initial* properties. For example, (45) shows that the complementizer of embedded CPs must appear at the beginning of the phrase. The distribution of relative pronouns is similar, as they must also appear in initial position, shown in (46).

(45)   Marik'a   pikrob-s   [CP **rom** Giorgi-m   (***rom**) mankana-s
    Marik'a.NOM think-3SG.PRES [COMP Giorgi-ERG COMP   car-DAT
    (***rom**) i-q'id-a   (***rom**)]
    COMP   VER-buy-3SG.AOR COMP   ]
    'Marika thinks that Giorgi bought a car.'

    (Borise, 2019:85)

(46)   a.   [DP k'ac-i   [CP romel-ma   [C -c   [TP ... [*v*P še-gh-eb-a
      [man-NOM [which-ERG [COMP [... [PRV-paint-SF-3SG.AOR
      saxl-i   ]]]]]
      house-NOM]
      'the man who painted the house'

  b.   [DP k'ac-i   [CP vin [C -c   [TP ... [*v*P še-gh-eb-a
      [man-NOM [who [COMP [... [PRV-paint-SF-3SG.AOR
      saxl-i   ]]]]]
      house-NOM]]]]]
      'the man who painted the house'

      (Borise, 2019:87-88)

While there is ongoing discussion in the Georgian literature concerning its head-final vs. head-initial status (Asatiani and Skopeteas, 2012; Lomashvili, 2011), I will not discuss

the finer details here since the proposed analysis of Georgian agreement does not rely on head-initial or head-final properties. I will instead note that Georgian is similar to German in its clausal structure—namely, that C is head-initial while the verbal domain is head-final—and that the observed mixed-headedness pattern is consistent with the Final-Over-Final-Condition (Sheehan et al., 2017). I will adopt the structure below for the remainder of this thesis, but only for simplicity; to reiterate, the analysis that will be proposed in chapter 5 does not rely on this exact structure.

(47)   *Georgian clausal architecture*

```
        CP
       /  \
     C⁰    \
          T⁰  \
             Aux⁰ \
                 Asp⁰ \
                     v⁰  \
                        Appl⁰ \
                             ... \
                                 V⁰
```

4.3   Georgian case-marking

This section discusses general case alignment properties in Georgian. The proposal developed in the next section does not rely on any particular model of deriving Georgian's case alignment; as we will see, every DP goal in the three main cases (ergative, nominative, dative) is visible to agreement probes. Adjudicating between competing theories of

case assignment in Georgian is thus orthogonal to the goals of this dissertation. Rather, I will lay out a broad description of the case marking patterns as well as two major analyses of how they arise.

As mentioned in section 4.1.1., Georgian distinguishes between seven cases: nominative, ergative, dative, genitive, instrumental, adverbial, and vocative. Of these seven, only the first three mark subjects throughout the various series and screeves. As shown below in (48), repeated from section 4.1.1, subjects in Series I are marked *nominative*, (some) subjects in Series II are marked *ergative*, and (some) subjects in Series III are marked *dative*.

(48)   *Georgian conjugation classes*

SUBJECT CASE	SERIES	SCREEVE		
Nominative	I[a]	Present	Imperfect	Conjunctive present
		Future	Conditional	Conjunctive future
Ergative	II[a]	Aorist		Conjunctive past
Dative	III[b]	Present perfect (evidential)	Pluperfect	Conjunctive perfect

[a] Basic paradigm

[b] Inverse paradigm

This is not the whole picture, however. First, not all subjects are treated alike within the three series: in Series I, all subjects, regardless of agency or transitivity, are marked the same to the exclusion of objects. This is shown below, where the subjects are marked nominative and the object is marked dative.

(49)   a.   **Giorg-i**   dghes <u>mankana-s</u> q'idul-ob-s.
              Giorg-NOM today car-DAT   buy-SF-3SG.PRES
              'Giorgi is buying a car today.'

b. **Elene** a-cemin-eb-s.
Elene.NOM VER-sneeze-SF-3SG.PRES
'Elene is sneezing.'

c. **Močveneba** u-činar-d-eb-a.
ghost.NOM VER-disappear-INCH-SF-3SG.PRES
'The ghost is disappearing.'

(Borise, 2019:80)

In Series II and III, however, there is an 'activity' split among subjects (Harris, 1985).

Only 'active' subjects (i.e. subjects of transitive and unergative verbs) are marked erga-

tive in Series II and dative in Series III. 'Inactive' subjects (i.e. subjects of unaccusative

verbs) are marked with the same case as objects in Series II and III—namely, they are all

marked with nominative regardless of series. In (50a-b) below, for example, the transitive

and active subject are respectively marked ergative, while the inactive subject in (50c) is

marked nominative.

(50) a. **Giorgi-m** gušin <u>mankana</u> i-q'id-a.
Giorgi-ERG yesterday car.NOM VER-buy-3SG.AOR
'Giorgi bought a car yesterday.'

b. **Elene-m** da-a-cemin-a.
Elene-ERG PRV-VER-sneeze-3SG.AOR
'Elene sneezed.'

c. <u>Močveneba</u> ga-u-činar-d-a.
ghost.NOM PRV-VER-disappear-SM-3SG.AOR
'The ghost disappeared.'

(Borise, 2019:80)

If we abstract away from the active/inactive subject case-marking, Georgian displays a

TAM-based split-ergative case alignment: in Series I, Georgian exhibits a nominative-

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accusative case-marking system, whereas in Series II and III, Georgian seemingly displays an ergative-absolutive alignment. Indeed, the primary axis along which the Screeves (and thus, the Series) are distinguished is Tense/Aspect, as was shown above in (49-50). Based on this perspective, many have indeed characterized Georgian as a *split-ergative* language, e.g. Hewitt (1987, 1995), Nash (1995, 2017); Nash and Rouvert (1997), Boeder (1979), King (1994), Tuite (1999), and Andréasson (2001). However, the active/inactive subject distinction in Series II and III—and its consequences for case-marking—suggests that treating Georgian as a *split-active* language may be more accurate, as argued by Aronson (1970), Comrie (1973), Klimov (1973, 1977); Klimov and Dzidziguri (1979), Harris (1981), Asatiani (1982), Amiridze (1998, 2006), and Melikishvili (1998, 2001). See also Anderson (1984) and subsequent work for more discussion on Georgian case alignment.

Moving on from the contentious status of Georgian as a split-ergative vs. split-active language, I will now discuss the general mechanics of *case assignment* proposed by Legate (2008) and Nash (2017). While both analyses assume that case in Georgian is licensed in situ, and that nominative case is related to T^0, the crucial difference between the two models lies in how *ergative* case is assigned. In Legate (2008), ergative is inherent and assigned in situ in Spec,*v*P. Once the external argument is assigned ergative, it no longer enters into the case-assignment calculus. The remaining argument is then assigned nominative under licensing by T^0, which explains why nominative case disappears in nominalizations (i.e. structures lacking T^0), as discussed in section 4.2.1. This is demonstrated below.

(51)   *Ergative as inherent case*

TP
T⁰
DP_ERG
v⁰
Appl⁰
DP_NOM
V⁰
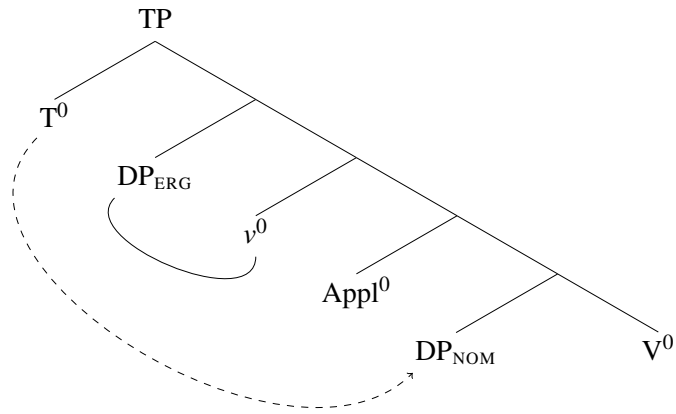
In contrast, Nash (2017) argues for a hybrid model of case assignment. Ergative case in Georgian is *dependent*, which is assigned to the higher of two arguments that are both within the same *v*P domain and have unvalued case features. Once ergative (i.e. dependent) case is assigned, nominative case is *head-assigned* viia T^0, similarly to Legate (2008). This is illustrated below.

(52)   *Ergative as dependent case*

TP
T⁰
DP_ERG
v⁰
Appl⁰
DP_NOM
V⁰

While there are many additional details to the analyses of Georgian case assignment proposed by Legate and Nash, I will leave those aside here and refer the reader to those works. The proposed analysis in chapter 5 does not crucially rely on either model of case assignment, since all nominals in the three main cases (ergative, nominative, dative) are potential goals in Georgian. That is, Georgian is not a *case discriminating* (Bobaljik, 2008) language. While many languages make a distinction concerning which cases are accessible for agreement, as shown below, Georgian does not. For example, Bobaljik (2008) shows that Hindi only allows agreement with *unmarked* case, i.e. arguments with nominative case. Nepali, however, allows agreement with the first two categories: *unmarked* and *dependent case*, i.e. arguments that are marked nominative or ergative.

(53)   *Case accessibility*

        UNMARKED CASE > DEPENDENT CASE > LEXICAL/OBLIQUE CASE

        (Bobaljik, 2008:303)

As shown below (repeated from sections 4.1.2–4.1.3), Georgian allows agreement with all three categories: *unmarked, dependent*, and *lexical/oblique* case. That is, agreement mechanisms can target nominals that are marked nominative, ergative, or dative case (modulo locality principles).

(54)   a.   me   mas   **v**-p'at'iž-eb
              1SG.NOM 3SG.DAT 1-invite-TS
              '**I** am inviting him/her.'   (Series I–nominative subject)

        b.   me   is   da-**v**-p'at'iž-**e**
              1SG.ERG 3SG.NOM PRV-invite-1/2.AOR
              '**I** invited him/her.'   (Series II–ergative subject)

    c.   me   is   **m**-i-q'var-s

         1SG.DAT 3SG.NOM 1-VER-love-3SG.PRES

         '**I** love him/her.'   (Series III–dative subject)

In summary, this section provided a broad overview of the case-marking patterns in Georgian. In Series I (i.e. the present), Georgian exhibits a nominative–accusative case-alignment, where, specifically, all subjects are marked nominative and all objects are marked dative. There are splits with respect to case-marking and subject agency in Series II and III, however. In Series II (i.e. the aorist), Georgian displays an ergative–absolutive case-alignment, but only active subjects are marked ergative; inactive subjects, as well as objects, receive nominative. This activity distinction is found in Series III, as well, i.e. the perfect. There, only active subjects are marked with dative; in contrast, inactive subjects and objects are receive nominative. This dissertation does not adhere to any particular model of case-assignment in Georgian, since, as a non-case-discriminating language, all nominals may be targeted for agreement regardless of its specific case-marking. I now turn to a discussion of pronominal licensing in Georgian, particularly the different requirements for 1st and 2nd person arguments in exclusion to 3rd person arguments.

4.4   Pronominal licensing

This section provides an overview of the licensing requirements for Georgian pronominals, drawing from patterns related to dative intervention and Person Case Constraints (PCC) effects. The term "PCC" describes a range of phenomena that restricts the combination of internal arguments of a ditransitive, and it comes in at least four types: (i) *Weak*, (ii) *Strong*, (iii) *Me-First*, and (iv) *Ultrastrong*. I will not discuss the properties of

each variety here, but see, e.g., Nevins (2007) for further discussion. Before continuing, note that Georgian has Strong PCC effects, which force the theme to be 3rd person in the presence of an indirect object (see, e.g.,(54a–c) below).

I will begin by overviewing the general properties of ditransitives in Georgian. First, we know from the previous discussion concerning the distribution of the prefixes and binding that the indirect object is higher than the direct object, and it is marked with dative case. Although 1st and 2nd person pronouns are syncretic for all case-marking, (55) shows that dative case is detectable with 3rd person pronouns (as well as non-pronominal noun phrases).

(55)   man   mi-ts-a   **mas**   c'ign-i
       3SG.ERG PRV-give-3SG.AOR 3SG.DAT book-NOM
       'S/he gave **him/her** a book.'

In Georgian, 1st/2nd person direct objects are prohibited in the context of an indirect object (Harris 1981; Rezac 2009, 2011). The verb in (56) below appears with the 2nd person prefix '*g-*', showing that the probe targets the 2nd person indirect object. If the direct object is 3rd person, as in (54a), the sentence is acceptable. If, however, the direct object is 1st person, as in (54b), the resulting string is unacceptable. This contrast shows that a 1st person direct object cannot be licensed in its base-generated position when a 2nd person argument intervenes for agreement. As shown in (54c), there is a possible repair strategy that allows 1st and 2nd persons to co-occur in the licensing domain of v^0: a 1st person direct object can appear with a 2nd person indirect object (and vice versa) just in case the direct object is encased in a nominative-marked reflexive, which Harris

(1981) refers to as *object camouflage* (see also Amiridze, 2006; Rezac, 2009, 2011). I

discuss this repair strategy in more detail at the end of this section.

(56) a. man   mo-**g**-ts-a   šen   c'ign-i
          3SG.ERG PRV-2-give-3SG.AOR 2SG.DAT book-NOM
          'S/he gave **you** a book.'

      b. *man   mo-**g**-q'id-a   šen   me
          3SG.ERG PRV-2-sell-3SG.AOR 2SG.DAT 1SG.NOM
          Intended: 'S/he sold me to **you**.'

      c. man   mo-**g**-q'id-a   šen   <u>čem-i</u>   <u>tav-i</u>
          3SG.ERG PRV-2-sell-3SG.AOR 2SG.DAT 1SG.POSS-NOM self-NOM
          'S/he sold <u>me</u> to **you**.'

I would like to now draw a connection between the properties involved in this Georgian

pattern and those involved in Basque absolutive-displacement phenomena. Rezac (2008)

shows that there are two types of unaccusative constructions in Basque: one where the

dative is higher than the absolutive (DAT>ABS), and another where the absolutive argu-

ment is higher than the dative (ABS>DAT). However, it is only in the DAT>ABS cases

where 1st and 2nd person arguments cannot appear as direct objects, as illustrated below.

Note that this is a strong PCC effect.

(57) *Ni$_i$ Itxaso-ri$_j$ gustatzen ni-a-tzai-o$_j$
      I.ABS Itxaso-DAT liking   1-TM-$\sqrt{}$D-3
      Intended: 'Itxaso likes me.'

There is a possible repair strategy, however: if the 1st/2nd person object is marked with

ergative case (instead of absolutive), the resulting string is acceptable.

(58)   Itxaso-ri$_i$ zu-k/*zu$_j$ gustatzen d-i-o$_i$-zu$_j$
       Itxaso-DAT you-ERG/ABS liking   X-$\sqrt{}$ED-3-2
       'Itxaso likes you.' (NB: no agreement form at all available with *zu*)

Rezac (2008) proposes that 1st and 2nd person arguments are subject to a Person Licens-
ing Condition (PLC), which dictates that [PARTICIPANT]-bearing arguments must enter
into an Agree relation with a functional head in order to be licensed(Béjar and Rezac,
2003). Thus, assuming a structure like (59) below, 1st/2nd person absolutive arguments
cannot be licensed by v^0 since the higher dative argument blocks agreement with the ob-
ject. However, 1st/2nd person absolutive arguments may move into a higher agreement
domain to avoid PLC violations, as in (60). By moving into the agreement domain of T^0,
they can receive ergative case there and fulfill their licensing requirement by entering into
an Agree relation with T^0.

(59)   *PLC violation*
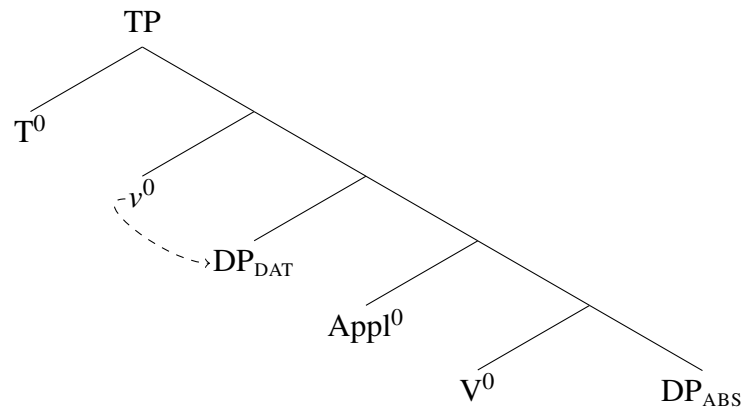
(60)   *PLC repair*
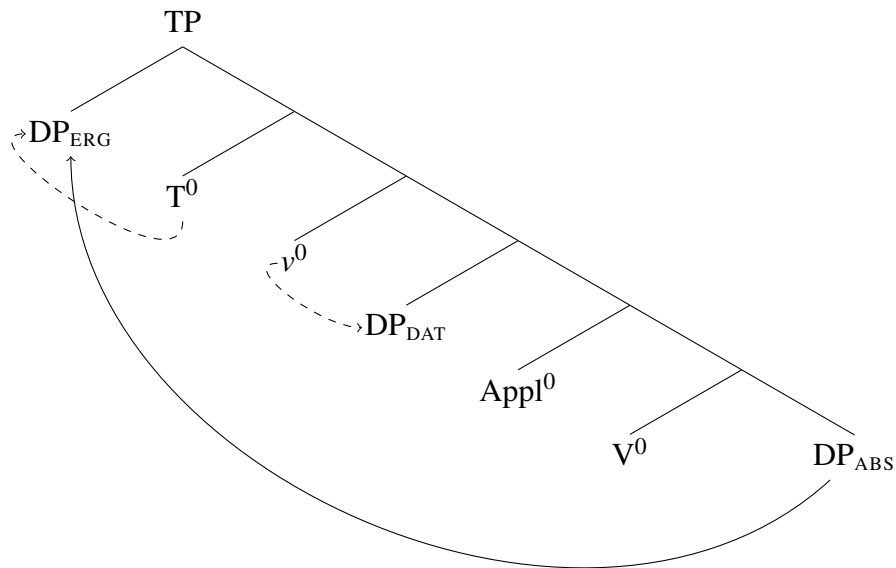
    In striking parallel to what Rezac (2008) shows for absolutive-displacement in Basque, Georgian too allows otherwise-unlicensed participant pronouns to move—under certain circumstances—to a higher agreement position, where they can be licensed-by-agreement. Specifically, in Georgian, the specifier position of a head H^0 above vP (and below TP) is a higher landing—and licensing—site for [PARTICIPANT]-bearing objects which would otherwise not be licensed in their base-generated positions. The auxiliary '*-var, -xar*' verb forms for inverse constructions with 1st and 2nd person objects, repeated below, as well as the Strong PCC effects in Georgian ditransitives both suggest that [PARTICIPANT]-bearing arguments must be licensed.

(61)   a.   šen   me   g-i-q'var-**v**-<u>ar</u>
                 2SG.DAT 1SG.NOM 2-VER-love-1-be.PRES
                'You (sg) love **me**.'

        b.   me   šen   m-i-q'var-**x**-<u>ar</u>
                 1SG.DAT 2SG.NOM 1SG-VER-love-2-be.PRES

'I love **you (sg)**.'

In ditransitives, a non-licensed 1st/2nd person theme must be encased in a PP-like structure if there is an intervening argument. In the inverse, however, 1st and 2nd person inverse objects can (and must) move through the edge of the vP phase on their way to be licensed by this higher head, a relation indicated by agreement on the dummy '*ar*' "be". I assume that this movement is triggered by an EPP feature on v^0. Specifically, in the verbal structure corresponding to the basic agreement paradigm, that EPP feature is discharged when v introduces an external argument (and thus 1st/2nd person themes cannot move for licensing in ditransitives). Since v^0 does not introduce an argument in the verbal structure corresponding to the inverse agreement paradigm, the EPP feature remains active and triggers movement for non-licensed 1st/2nd person themes.

Evidence for the view that the introduction of external arguments can block movement for internal ones can be found in causative constructions. Since causative v^0 introduces an external argument in its specifier, movement through the vP should be blocked, given that the EPP feature on v^0 has been discharged. We thus expect to lose the auxiliary '*-var, -xar*' forms of 1st and 2nd person agreement morphology in these cases—a prediction that is borne out, as shown below.

(62) a. Dato   Giorgi-s   **čemstavs** a-q'var-eb-s
          Dato.NOM Giorgi-DAT 1SG.REFL CAUS-love-TS-3SG.PRES
          'Dato makes Giorgi love **me**.'

      b. Dato   Giorgi-s   **šenstavs** a-q'var-eb-s
          Dato.NOM Giorgi-DAT 2SG.REFL CAUS-love-TS-3SG.PRES
          'Dato makes Giorgi love **you**.'

In the sentences in (62), the 3rd person applicative argument *Giorgis* intervenes for agreement from v^0 and prevents licensing of the [PARTICIPANT]-bearing theme argument. In a non-causativized construction, that theme argument could move through the vP phase edge to be licensed higher. Here, however, the introduction of the 3rd person external argument/causer *Dato* discharges the EPP feature on v^0 and blocks movement through the vP edge. Thus, the [PARTICIPANT]-bearing theme is trapped in its base-generated position, and 'object camouflage' (Harris, 1981) applies as a last resort operation (as in ditransitive constructions). While questions remain about the proper analysis of object camouflage, the empirical data show that a [PARTICIPANT]-bearing theme argument does not need to be licensed by agreement proper once camouflage applies. It remains in its VP-internal position, and '-*var, xar*' do not appear since licensing from the higher head H^0 is not triggered in the derivation.

Summarizing the conclusions drawn in this chapter, evidence from the distribution of prefixes, binding, and interaction with additional arguments suggest that inverse subjects are higher than objects. They are also lower than basic subjects, since they trigger 'object' agreement morphology (and block agreement with the object). Taken together, these facts point to inverse subjects being merged in Spec,ApplP. In contrast, basic subjects are introduced in Spec,vP. In both paradigms, objects are in VP.

The core difference between these two clause structures is the position of 'subjects', which interacts with licensing requirements of 1st and 2nd person arguments. Together, they derive the differences in person- and number-agreement. In the basic paradigm, the external argument is accessible to the higher probes on T^0 (and the internal argument is accessible to the probe on v^0). In the inverse paradigm, however, the experiencer applica-

tive argument is inside the *v*P 'phase' and thus inaccessible; it also blocks agreement with the internal argument.

The view that *v*P-internal experiencer applicative arguments intervene for agreement from v^0 is a crucial part of the proposed analysis in chapter 5. This intervention results in 1st and 2nd person inverse objects moving through the edge of the *v*P in order to be agreed with—and licensed by—a higher functional head. Importantly, the licensing requirements exhibited by 1st and 2nd person pronominals in Georgian can be independently observed via PCC effects.

In the next chapter, I provide an analysis of the Georgian agreement system that spans both the basic and inverse agreement paradigms, while also showing that the apparent 'phasehood' of the *v*P is epiphenomenal. That is, *v* is a φ-intervener in Georgian since, as a locus of φ-agreement, it bears φ-features and is a viable target for operations that originate outside of the *v*P domain.

Chapter 5: Phasehood as φ-intervention in Georgian

This chapter provides a comprehensive analysis of the Georgian agreement system, focusing in particular on two intriguing agreement patterns between the *basic* and *inverse* agreement paradigms. First, as shown in (1), the verbal plural marker '-*t*' can mark 1st and 2nd person plural subjects, which is not the case for 3rd person plural subjects, as shown in (2).

(1)   a.   čven   is   da-v-p'at'iž-e-**t**
               1PL.ERG 3SG.NOM PRV-1-invite-1/2.AOR-PL
               '**We** invited him/her.'

        b.   tkven   is   da-p'at'iž-e-**t**
               2PL.ERG 3SG.NOM PRV-invite-1/2.AOR-PL
               '**You (pl)** invited him/her.'

(2)   mat   is   da-p'at'iž-eb-en(-***t**)
        3PL.ERG 3SG.NOM PRV-invite-TS-3PL.AOR(-PL)
        'They invited him/her.'

The restriction in (2) is only found in the basic agreement paradigm, however. In the inverse agreement paradigm, '-*t*' exceptionally marks 3rd person plural subjects—but only when the object is also a 3rd person argument, as in (3). This number agreement is one of two puzzles that this chapter will address.

(3) mat   is   u-χvar-**t**
     3PL.DAT 3SG.NOM VER-love-PL
     '**They** love him/her.'

Second, 1st and 2nd person objects of verbs in the inverse agreement pattern trigger a

distinct set of agreement morphology that is not found in the corresponding configura-

tions in the basic agreement paradigm. As shown below, 1st and 2nd person objects are

marked as additional agreement affixes on the auxiliary dummy-verb '*ar*' "be". In these

configurations, 1st and 2nd person inverse objects also block number agreement with the

3rd person plural inverse subject. This person agreement is the second puzzle that this

chapter will address.

(4) a. mat   me   v-u-q'var-v-ar-(*****t**)
         3PL.DAT 1SG.NOM 1-VER-love-1-be.PRES-PL
         '*****They** love me.'

     b. mat   šen   u-q'var-x-ar-(*****t**)
         3PL.DAT 2SG.NOM VER-love-2-be.PRES-PL
         '*****They** love you (sg)'.

This is not to say that these are the *only* noteworthy agreement patterns—the Geor-

gian agreement system is notoriously complex and has been studied extensively over a

number of years in several frameworks (e.g. Harris, 1981; Anderson, 1991; Béjar, 2003,

Béjar, and Rezac 2009; McGinnis, 2013; Blix, 2016; among many others). A central puz-

zle that this chapter focuses on is the distribution of the plural marker '-*t*' with different

combinations of arguments throughout both the basic and inverse agreement paradigms.

This chapter also focuses on the puzzle revolving around the auxiliary verb forms re-

quired by 1st and 2nd person objects in the inverse agreement paradigm. I will go into

further detail on Georgian agreement in the following sections, and provide a full set of derivations. I will also argue that there is value in investigating a well-defined slice of the empirical pie (viz. the distribution of '-*t*') in this manner.

I will build an analysis that treats '-*t*' as an exponent of the NUMBER agreement probe (Anagnostopoulou, 2003; Béjar, 2003; Laka, 1993; Preminger, 2011b; Shlonsky, 1989; Sigurðsson, 1996; Sigurðsson and Holmberg, 2008) whose agreement domain can be expanded if and only if the PERSON probe (ibid.) agrees with the vP 'phase' (on domain expansion, see Béjar and Rezac, 2009; Keine and Dash, 2018; Clem, 2018; inter alia). This analysis will provide empirical support for the PIC-is-intervention approach. The crux of this argument derives from the number agreement patterns discussed above, which arise when person agreement first targets v^0. Since this head bears a φ-probe, it also, by extension, bears φ-features. Furthermore, I assume any probe that has successfully targeted a DP copies [φ] onto itself, and [φ] is a viable target for *person* and *number* probes alike.

Thus, as a goal for φ-agreement, v^0 is made transparent by the initial Agree relation when a higher probe on T^0 searches for *person* features. Due to the cyclic nature of Agree in Georgian, a subsequent search for *number* features allows the probe on T^0 to bypass v^0 entirely and target a vP-internal argument. My proposal thus undermines the necessity of Transfer as a component of the syntactic derivation.

5.1 An analysis of Georgian agreement

This section lays out the details of the proposed analysis of the Georgian agreement system. I adopt the structures below in (5-6) for clauses corresponding to the basic and inverse agreement paradigms; see chapter 4 for a detailed discussion of their motivations. The major difference between the two is the position of the subject: in the basic paradigm, the subject is introduced by v^0, whereas the subject is introduced by $Appl^0$ in the inverse. In both cases, the subject is above the object. As will be argued in the following section, the differences and similarities between the basic and inverse agreement paradigms follow from placing the basic subject above v^0 and the inverse subject below v^0. Namely, the person probe on T^0 will necessarily target the subject first in the basic since it is in Spec,vP. In contrast, the person probe will necessarily first target v in its entirety in the inverse since the experiencer applicative argument is lower, in Spec,ApplP; this position also explains why inverse subjects trigger the appearance of agreement markers which, in the basic agreement paradigm, mark objects rather than subjects.

(5)   *Structure for the basic*

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(6)   *Structure for the inverse*

```
                        ...
                   ╱          ╲
                  ╱              ╲
              T⁰                    ╲
            ╱    ╲        ╲            ╲
          ╱        ╲    v⁰               ╲
      [ ]PL    [ ]PART    │                 ╲
                          │       DP           ╲
                       [ ]PART          ╲        ╲
                                      Appl⁰        ╲
                                           ╲         ╲
                                          DP          V⁰
```
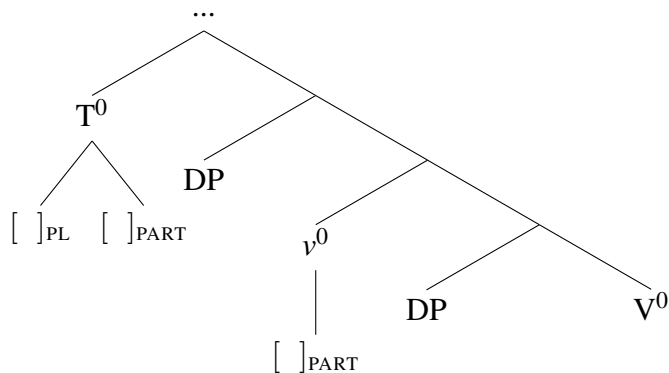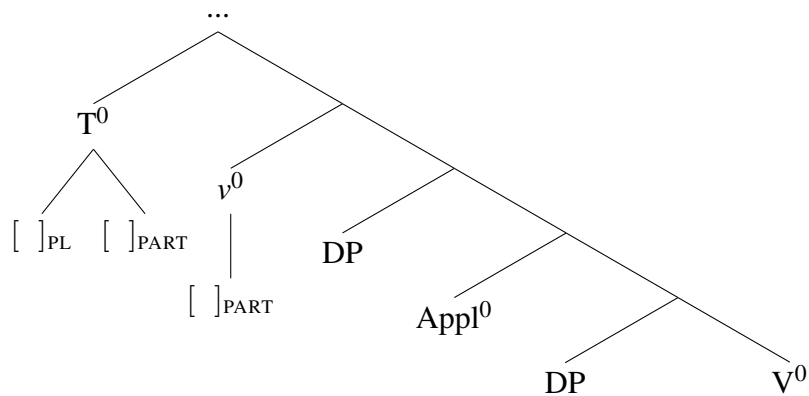
In both structures, the subject is above the object, which captures the ability of the subject

to bind anaphors regardless of whether they fall under the basic or inverse agreement

paradigm (section 4; see also Harris, 1981; Amiridze, 2003). In the structure in (5),

the external argument in Spec,vP will always be accessible to the probes on T^0. I will

argue that this accessibility straightforwardly derives the subject agreement patterns of

the basic paradigm suffixes, since those suffixes reflect the agreement relation established

between T^0 and the external argument. In contrast, placing the subject experiencer DP

argument inside the vP phase, as in (6), has the effect of *phase unlocking* in the structure

corresponding to the inverse agreement paradigm. Specifically, an Agree relation can be

established with the vP since there is no DP at the vP edge to halt the search. Once v^0 has

been targeted—and is therefore no longer a viable intervener—the search space for the

number probe on T^0 includes the complement of v. Consequently, the number probe can

target the argument in Spec,ApplP. If that argument is plural, this results in plural inverse

subjects triggering the appearance of '-*t*'—including 3rd person plural ones.

Importantly, much of the motivation for this analyses derives from licensing requirements that 1st and 2nd person pronominals (and only 1st and 2nd persons) are subject to. As was discussed in chapter 4, the observation that 1st and 2nd person arguments must be licensed in Georgian was independently attested in Strong PCC effects, which indicated that 1st and 2nd person arguments must be targeted for agreement. In this thesis, I will assume that licensing can be achieved via (i) Agree from a licensing head, and (ii) being introduced by *v*.

The remainder of this chapter is organized as follows. In section 5.1.1, I discuss the representation of pronominal ϕ-features adopted in this paper. The remainder of this section discusses the derivations of the agreement slots: the prefixes (5.1.2), the versionizers (5.1.3), and the suffixes (5.1.4).

5.1.1 Feature geometric representations

I adopt the simplified feature geometric representations of 1st, 2nd, and 3rd person arguments for Georgian below. Each argument is minimally represented as "φ", a property that allows them to be targeted for evaluation by φ-probes. Consequently, φ-arguments cannot be skipped over by a φ-probe, even if they do not bear the relevant specific person/number/gender features (see below for a refinement of this statement, in terms of Deal's 2015 *Interaction and Satisfaction* framework). 1st and 2nd person arguments additionally carry a [PARTICIPANT] feature. Finally, 1st persons also carry [AUTHOR]. In each case, the argument may bear a [PLURAL] feature to represent plurality.

(7) *1st*　　　　　　　　(8) *2nd*　　　　　　　　(9) *3rd*

```
      φ                    φ                    φ
     / \                  / \                   |
  PART  (PL)           PART  (PL)             (PL)
    |
  AUTH
```
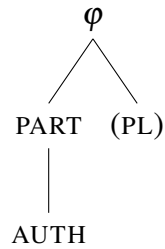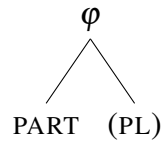
One could imagine a representation where 2nd persons bear an additional [AD-DRESSEE] feature. Harley and Ritter (2002) argued that such a representations are possible, but McGinnis (2005) shows that this makes the wrong prediction for languages without clusivity distinctions. In such languages, the 1st person plural *inclusive* is always conflated with the 1st person plural, never the 2nd person plural. If the [AUTHOR] and [ADDRESSEE] features were both generally available, we would expect to find cases where the 1st person inclusive is conflated with 2nd person plurals cross-linguistically. Since this is not the case, McGinnis proposes that the primary dependent of [PARTICI-PANT] is [AUTHOR], which is activated if the language has a 1st person vs. 2nd person distinction. If the language also has a clusivity distinction, the [ADDRESSEE] feature is specified for 2nd persons as a secondary dependent. Since Georgian does not distinguish 1st person exclusive from 1st person inclusive, I assume the representations above.

5.1.2 Deriving the prefixes

This section discusses the placement of the prefixes on v^0, which has become fairly standard in syntactic analyses of Georgian, following Béjar (2003); Béjar and Rezac

(2009). The structure corresponding to the basic and inverse agreement paradigms are repeated below in (10-11).

(10)   *Structure for the basic*
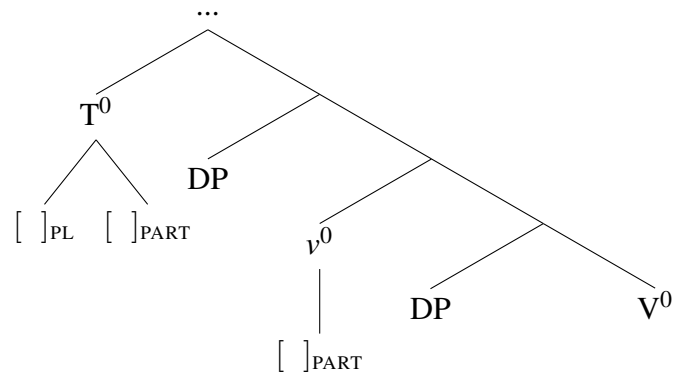
(11)   *Structure for the inverse*
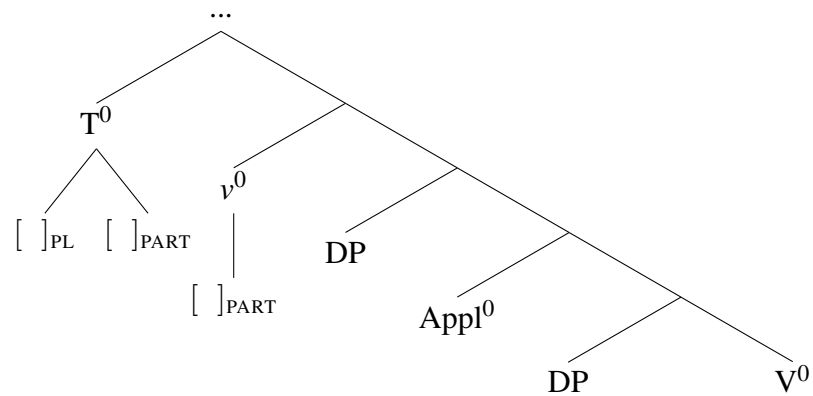
Since the subject is introduced higher than v^0 in the basic, v^0 targets the object first (and then potentially the subject). In the inverse, however, v^0 first targets the subject in Spec,ApplP (and then potentially the object).

Before continuing this particular discussion, I will briefly overview what is meant by "potentially". Deal (2015) shows that, in Nez Perce complementizer agreement, the probe searches until *satisfied*, which, in the Nez Perce case, means until it encounters a 2nd person goal. For example, if the 2nd person argument is in subject position, as in (12a), the only agreement on the complementizer is with the 2nd person. In contrast, if the 2nd person argument is the object, the complementizer shows agreement with the 2nd person *and* the non-2nd person subject, as in (12b).

(12) a. ke-**m** kaa pro_{subj} cewcew-téetum pro_{obj}
          C-2   then PRO.2SG telephone-TAM PRO.1SG
          'When **you** call me.'

      b. ke-**m**-<u>ex</u> kaa pro_{subj} cewcew-téetum pro_{obj}
          C-2-1   then PRO.1SG telephone-TAM PRO.2SG
          'When <u>I</u> call **you**.'

      (Deal 2015:6)

These data points provide the core empirical evidence in favour of a *feature interaction and satisfaction* model of agreement (see Deal 2015 for details of the proposal). That is, probes halt once they are *satisfied* by the feature that values them, but they *interact* with non-satisfactory features that they encounter during search.

I analyze the Georgian prefix '*v-*' as indicative of satisfaction with a 1st person argument following interaction with a 3rd person argument. As previously discussed, we know that '*v-*' and '*Ø-*' respectively mark a particular *combination* of arguments, rather than a single argument. In the basic paradigm, '*v-*' and '*Ø-*' indicate that there is a 1st/2nd person subject and a 3rd person object; in the inverse, they indicate that the subject is

3rd person and the object is 1st/2nd person. This pattern can be captured by placing a person probe on v^0: in the basic paradigms, the probe is between the external and internal arguments; in the inverse paradigm, the probe is above both arguments. In either case, the probe searches until satisfied by a [PARTICIPANT] feature and interacts with each argument along the way (i.e. 3rd persons). In the basic, the probe interacts with the 3rd person internal argument and is satisfied by the 1st/2nd person external argument. In the inverse, the 3rd person experiencer argument is targeted first by the probe; the probe is then satisfied by the 1st/2nd person internal argument. I lay out aspects of these derivations in more detail below.

Feature interaction/satisfaction alone will not capture the distribution of the 'v-' and '∅-' prefixes, however. That is because, in the basic, in cases where the object does not bear [PARTICIPANT] and can therefore not satisfy the requirements of v, targeting the subject requires expanding the search domain of the probe. To achieve this, we also need *Cyclic Agree* (Béjar and Rezac, 2009; Clem, 2018; Keine and Dash, 2018). These models hold that there are multiple rounds of probe searches, which is allowed just in case the previous cycle was unsuccessful. Béjar and Rezac (2009) argue that the probe searches upward for the second cycle; Keine and Dash (2018) propose instead that unvalued features on a probe may project. This reworking retains standard notions of the directionality and locality of Agree—probing is still limited to c-command under the Keine and Dash (2018) account, since intermediate heads can target an argument in specifier position under sisterhood (which is a subcase of c-command) once the unvalued features on the head project to the "bar level". In this sense, "projection" is essentially "percolation". Under Bare Phrase Structure (Chomsky, 1994), v^0, v', and vP are all the same syntactic object: If

Agree is satisfied during the first cycle, there is no unvalued feature left to trigger another Agree cycle, since v^0 and v' are the same object. Conversely, if Agree is *not* satisfied during the first cycle, then there *are* unvalued features "on" v', and so another Agree cycle is triggered.

Adopting the shared insight behind these proposals, I adopt the following model for deriving the Georgian prefixes, which are the exponents of v^0. In the first cycle of Agree, the probe targets the closest argument it c-commands; if the probe remains unvalued, those features may project and search again. In the second cycle of Agree, the probe will target the argument in the specifier of the head that hosts the probe. In order to derive the specific agreement markers, I adopt the system of Vocabulary Insertion (VI) as formalized in Distributed Morphology (DM) (Halle and Marantz, 1993). In DM, Vocabulary Insertion is the mechanism by which the *syntax* is mapped to *phonological forms*; specifically, VI pairs syntactic terminals with phonological underlying representations (which may be null). For Georgian prefixes, I assume that they spell-out according to the VI rules below.[1]

(13)   *Vocabulary Items, prefixes on v^0*

v-	$\leftrightarrow$	[AUTHOR] / ___ [−PARTICIPANT]
Ø-	$\leftrightarrow$	[+PARTICIPANT] / ___ [−PARTICIPANT]
gv-	$\leftrightarrow$	[AUTHOR, PLURAL]
m-	$\leftrightarrow$	[AUTHOR]
g-	$\leftrightarrow$	[+PARTICIPANT]

---

[1]Note that the 1st person subject marker '*v-*' appears to also be present in the 1st person plural object marker '*gv-*'. This may have arisen diachronically throughout the development of Modern Georgian—that is, '*gv-*' may be historically comprised of the 2nd person prefix '*g-*' plus the 1st person subject prefix '*v-*'—but I will assume that, synchronically, '*gv-*' is not decomposed.
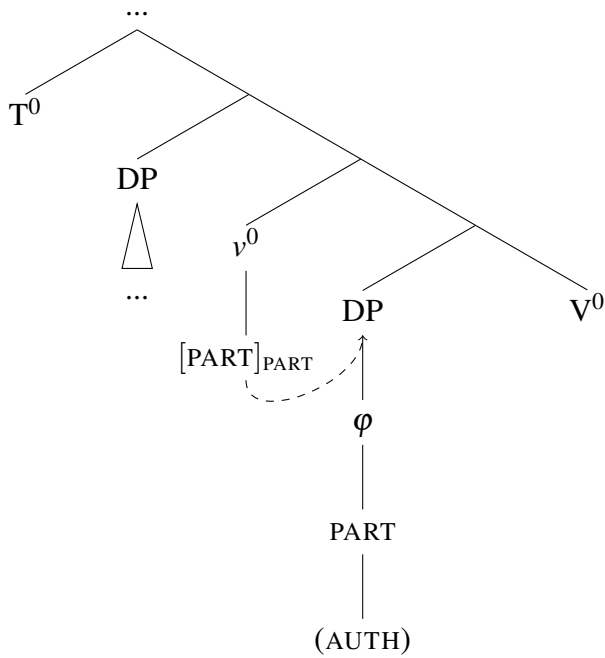
In characterizing the distribution of the vocabulary items in(13), I am assuming that morphological rules—unlike syntactic ones—can make reference to the *absence* of [PARTICIPANT], represented here as [–PARTICIPANT]. Some version of this must be possible in order to account for, say, the distribution of the English simple present 3rd person singular /-z/. This particular morpheme is restricted to the environment corresponding to finite, nonpast, indicative, 3rd person, and singular—a distribution which almost certainly requires reference to at least some categories that, syntactically speaking, are represented simply as the absence of a more marked option. In other words, it is exceedingly likely that at least one of these categories is syntactically represented as simply the absence of [INFINITIVE], [PAST], [SUBJUNCTIVE], [PARTICIPANT], and/or [PLURAL], respectively. Given this, I assume VI rules may refer to syntactically underspecified features.

The derivation of the 1st person plural '*gv-*', 1st person singular '*m-*', and 2nd person '*g-*' are all instances of first-cycle Agree. In the basic paradigm, the [PARTICIPANT] probe on v^0 searches its domain and is satisfied by the 1st/2nd person arguments. It does not interact with any other argument since, at this point in the derivation, the only argument in its domain is the object. This is illustrated in (14).[2]

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[2]For ease of exposition, I will not include the person and number probes on T^0 in the following structures since they are not discussed in this section.
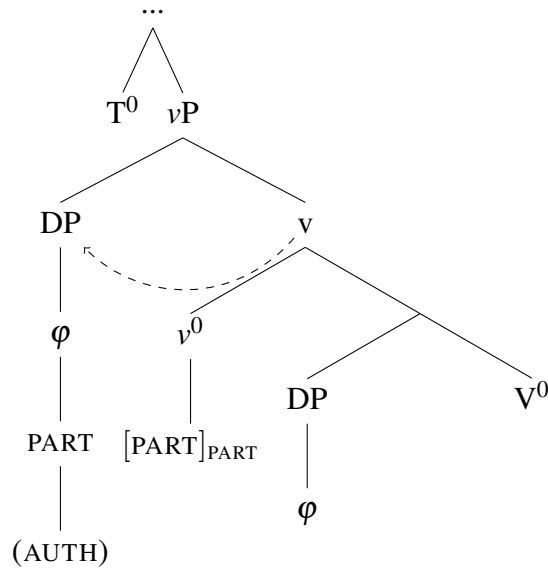
(14)   *First-cycle Agree (basic)*

$$\begin{array}{c}
\ldots \\
\diagup\quad\diagdown \\
T^0\qquad\qquad\qquad\qquad \\
\diagup\quad\diagdown \\
DP \qquad\qquad\qquad \\
\triangle \quad v^0 \\
\ldots \qquad\quad DP \qquad\qquad V^0 \\
[\text{PART}]_{\text{PART}} \\
\varphi \\
\text{PART} \\
(\text{AUTH})
\end{array}$$

In the inverse paradigm, a similar derivation obtains. The [PARTICIPANT] probe on v^0 searches its domain for an appropriate goal, but it instead encounters the inverse subject first in Spec,ApplP. If the inverse subject is 1st or 2nd person, as in (15), the search halts—having been satisfied by a [PARTICIPANT] feature—and does not interact with any other argument.

(15) *First-cycle Agree (inverse)*

```
                          ...
                         /   \
                        /     \
                   T⁰  /       \
                      /         \
                  v⁰ /           \
                    |             \
                    |    DP        \
          [PART]_PART     ↗|        \
                 ⌣_____↗  |   Appl⁰  \
                        φ        \    \
                        |      DP  \   V⁰
                        |      /\   \
                     PART    /__\
                             ...
                    (AUTH)
```
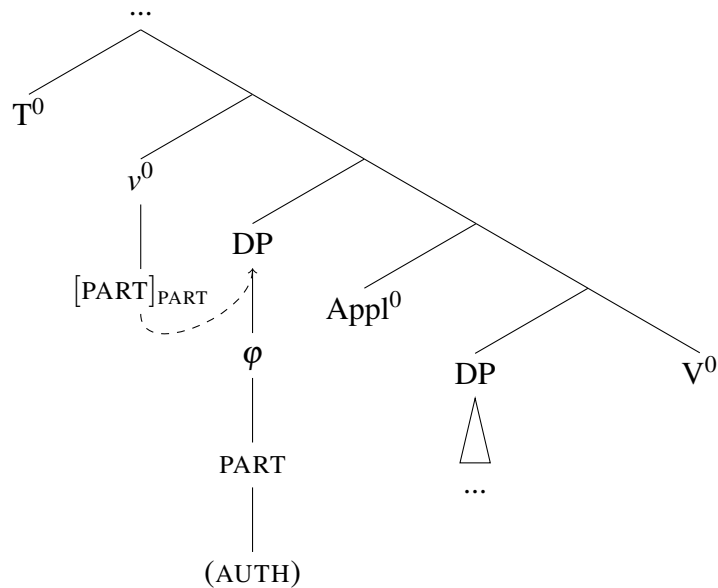
The remaining prefixes, '*v*-' and '∅-', are instances of second-cycle Agree. As before, the [PARTICIPANT] probe on v^0 searches its domain and is satisfied by 1st/2nd arguments. But, in the basic paradigm, the probe v^0 first encounters the object, which—in this case—is 3rd person, as in (16). Although the 3rd person object does not bear [PARTICIPANT], it—like all arguments—is represented as "φ". It is this feature that the probe interacts with, i.e. the probe necessarily encounters a φ feature but remains unvalued. The probe is thus not satisfied and its unvalued features project to the level we could descriptively call v'. The probe searches its domain again, where the first argument it encounters is the 1st/2nd person argument in subject position (under sisterhood with the intermediate projection). Now the probe is satisfied, crucially following its interaction with a 3rd person object.

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(16)   *Second-cycle Agree (basic)*

```
                    ...
                   /  \
                 T⁰    vP
                      /    \
                    DP       v
                    |       / \
                    φ      v⁰   \
                    |      |    / \
                 PART  [PART]ₚₐᵣₜ DP   V⁰
                    |              |
                 (AUTH)           φ
```

For the inverse paradigm, shown in (17), the [PARTICIPANT] probe on v^0 first encounters the 3rd person subject in Spec,ApplP, and—as above—the probe is not satisfied and the search halts. Its unvalued features project and the probe searches again. Before this search, however, the 1st/2nd person inverse object moves to Spec,vP for licensing requirements (see section 4.4 in the previous chapter for discussion on why 1st/2nd objects need to move in the first place). The second search thus results in feature satisfaction—since the moved 1st/2nd person arguments bear [PARTICIPANT] features—after prior feature interaction with the 3rd person subject.

(17)   *Second-cycle Agree (inverse)*
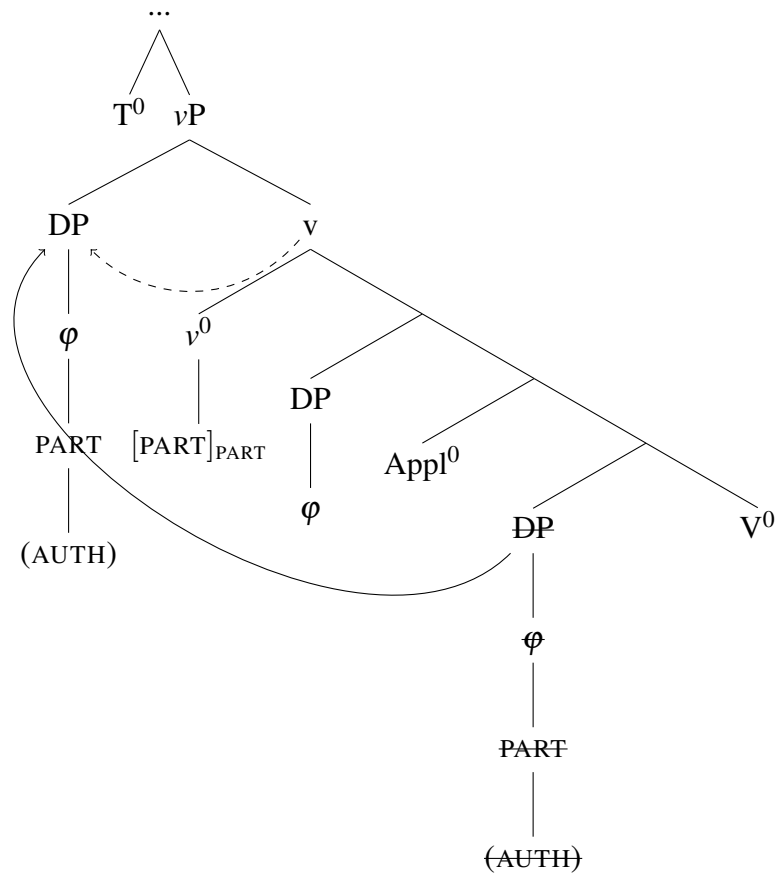
In summary, I argued that the distribution of the prefixes between the Georgian basic and inverse agreement paradigms provides evidence for the following properties: (i) unvalued features on a probe project and trigger a second cycle of Agree, and (ii) φ-probes interact with intervening arguments while searching for satisfactory features. I analyzed the '*gv-*', '*m-*' and '*g-*' prefixes as instances of first-cycle Agree; second-cycle Agree yields '*v-*' and '∅-'. Finally, I argued that the exponence of '*v-*' and '∅-' indicates interaction with a 3rd person argument. They spell-out as a result of the [PARTICIPANT]-bearing probe on v^0 searching for a satisfactory goal (i.e. 1st or 2nd person arguments), while interacting with other arguments encountered in the process (i.e. 3rd persons).

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5.1.3 Deriving the versionizers

This section discusses the derivation of the versionizer vowels, which I take to be the exponence of $Appl^0$ reflecting the argument introduced in its specifier. As discussed in chapter 4 (specifically, section 4.1), there is overt morphosyntactic evidence that inverse verb constructions feature both *v*P *and* ApplP projections. The prefixes that appear in the basic agreement paradigm, for example, appear in the inverse agreement paradigm as well, and I argued that the prefixes spell-out on v^0. I also showed that the versionizers, i.e. applicative morphemes, are obligatory in the inverse agreement paradigm. Given that both of these markers co-occur in inverse verb constructions, I conclude that the corresponding syntactic structures include both *v*P and ApplP, as shown below.

(18)   *1st/2nd persons in Spec,ApplP*

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(19)   *3rd persons in Spec,ApplP*

```
                      vP
                    /    \
                  /       \
               ...        /  \
                        v⁰    ApplP
                             /     \
                           DP      Appl′
                           |      /    \
                           φ   Appl⁰   VP
                               u-      /\
                                      /  \
                                     ...
```
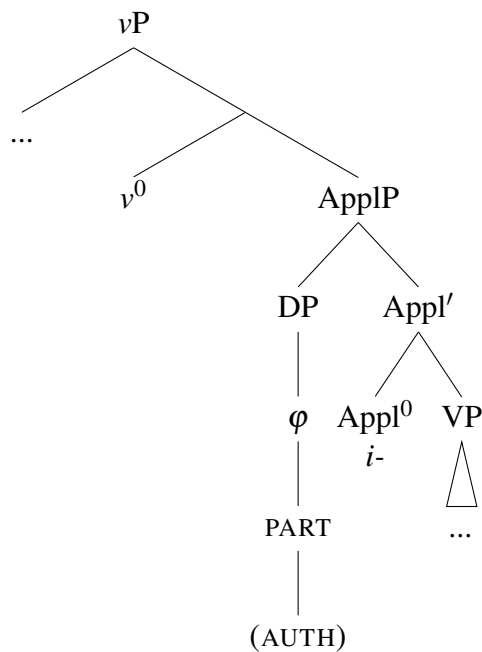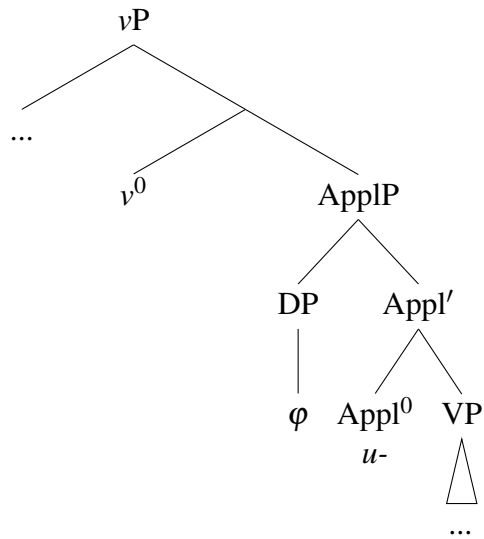
Recall that the applicative morphology is productive in the basic paradigm, but not in the inverse. I therefore assume that ApplP is 'deficient' in the inverse paradigm since the applicative morphology behaves more like subject agreement.[3] That is, the '*i-*' versionizer invariably appears with 1st/2nd persons whereas '*u-*' invariably appears with 3rd persons.

(20)   *Vocabulary Items, 'versionizers' on Appl⁰*

i-	↔	[+PARTICIPANT]
u-	↔	elsewhere

The spell-out of '*i-*' and '*u-*' is just the exponence of Appl⁰ based on the argument it introduces in its specifier. Note that this is the case only for the 'deficient' Appl⁰ that appears with verbs in the inverse agreement paradigm. In the case of a fully productive

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[3]This deficiency may be a side effect of the well-defined class of lexical verbs in the inverse paradigm, i.e. psych-verbs.

Appl^0, such as a causative, I assume that the more-specified causative Appl^0 exponent '*a-*' overrides the person-marking '*i-, u-*'.

5.2 Deriving the suffixes

Deriving the suffixes makes use of the property that the person probe on T^0 can enter into an Agree relation with the unvalued [PARTICIPANT] feature on v^0. The overall intuition and mechanics behind this proposal are as follows. In the basic, Spec,vP is always filled by the subject, and so the person and number probes on T^0 will always find a DP argument. In the inverse, however, this will only occur when 1st/2nd person themes move through Spec,vP to fulfill their licensing requirements. In any other case, Spec,vP will be empty and so the probes will necessarily encounter vP in its entirety first. As the "vP" and "v^0" are instances of the same syntactic object (Chomsky, 1994), the person probe may target the v phase head and establish an Agree relation with it. This has the effect of 'unlocking' the phase for further Agree operations from the number probe, which renders the vP-internal 3rd person arguments accessible for agreement.

5.2.1 Inverse agreement paradigm

Recall that in the inverse paradigm, 1st and 2nd person objects are respectively marked by the prefixes '*v-*' and '*x-*' on the dummy '*ar*' (Nash, 1994; Lomashvili and Harley, 2011), and 3rd person objects are marked by the suffix '*-s*'. I adopt the VIs below for the distribution of the inverse person-marking suffixes.

(21)   *Vocabulary Items, suffixes on T^0*

v- $\leftrightarrow$ [AUTH] / ___ H
x- $\leftrightarrow$ [PART] / ___ H
-*s* $\leftrightarrow$ elsewhere

For now, I assume that 1st and 2nd person inverse objects obligatorily move through Spec,vP for licensing from a higher head H^0 (Rezac, 2008). As previously mentioned, T^0 lacks the ability to license [PARTICIPANT]-bearing arguments in Georgian, since we otherwise might expect an Agree relation to rescue the derivation in these contexts. That is, we would not expect the auxiliary '-*var, -xar*' verb forms to appear just in case a 1st/2nd person argument is the object of an inverse verb, if T^0 was indeed generally available to license such arguments. For consistency, I assume that T^0 is not a licensing head throughout the Georgian agreement system (see also Lomashvili and Harley, 2011 for arguments that the exponents of T^0 do not constitute φ-agreement).[4]. Movement of 1st and 2nd person internal arguments through the edge of the vP phase to a higher licensing position is triggered by the EPP feature on v in applicative unaccusative (viz. inverse) constructions, a feature that remains active since an external argument was not introduced. Once the 1st/2nd person themes are in their higher positions, they are in range of the [PARTICIPANT]-bearing person probe on T^0; since they bear the relevant feature, the probe is satisfied and an Agree relation is established. There, the 1st/2nd person theme is accessible to a [PLURAL]-bearing number probe on T^0 as well. If that argument plural, the plural marker '-*t*' is exponed. Since the person and number probes are on T^0, I assume that the exponence of the inverse-specific '*v*-, *x*-' affixes is conditioned by the

---

[4]As for the basic agreement paradigm, I assume licensing occurs for 1st/2nd person external arguments by virtue of being introduced into the structure by v

presence of the H(P) where 1st/2nd person arguments are licensed; '*ar*' is the exponent

of the licensing head itself.

(22)   *3rd person subject and 1st/2nd person plural object (inverse)*
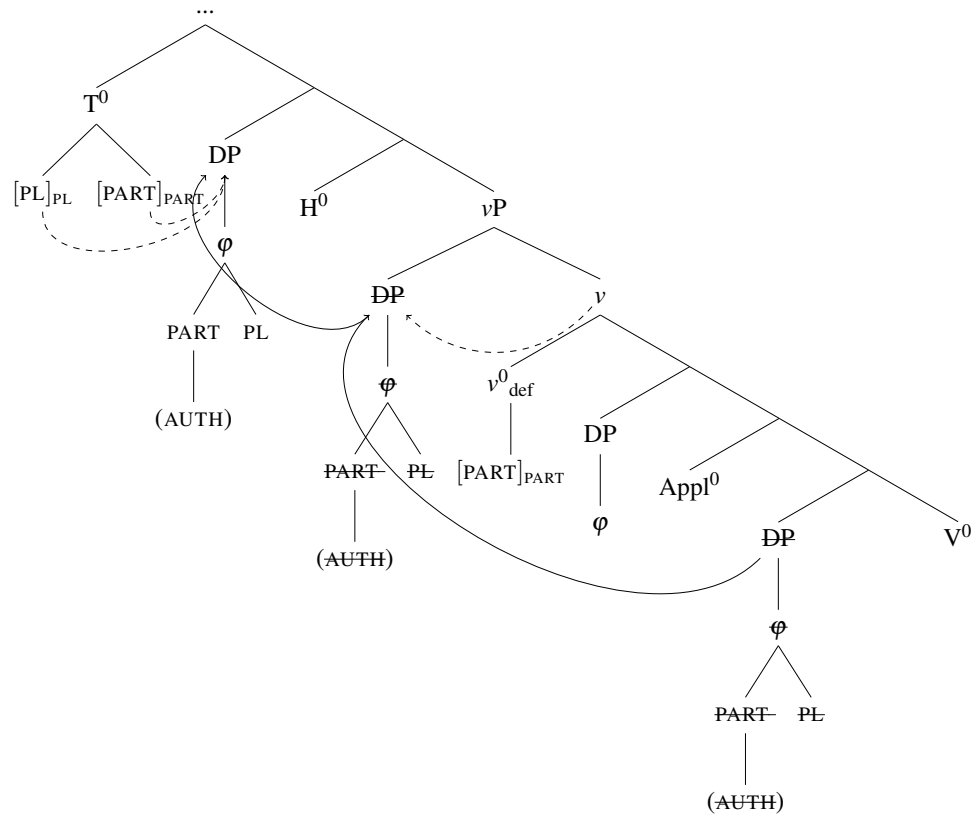
A different state of affairs arises when the object is 3rd person. In this case, the

object does not require licensing and therefore remains low and inaccessible to the person

probe on T^0. Since there is no argument in Spec,vP, the person probe first encounters vP

in its entirety. Since v^0 bears a φ-probe and thus bears φ-features, it must be evaluated

by the probe and cannot immediately be ignored in favour of a lower goal. However,

v^0 does not carry the feature that the person probe is seeking, so this agreement relation

renders v^0 transparent for subsequent agreement operations. With no further interveners,

3rd person inverse subjects in Spec,ApplP are now accessible to the number probe, which

will spell-out as '-*t*' if it finds a plural feature, as in (23).

(23)   *3rd person plural subject and 3rd person object (inverse)*
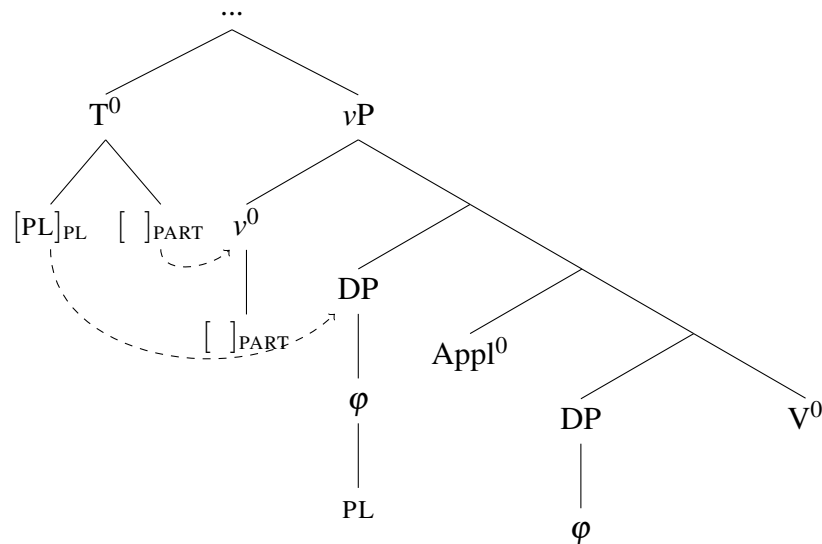
This analysis captures the fact that 3rd person plural subjects trigger '-*t*' in the

inverse. As we will see in section 5.2.2, this is not the case in the basic, a fact that the

current analysis is also able to derive. This analysis also captures the fact that number

distinctions among 3rd person plural objects are not tracked by the agreement system in

the inverse (cf. the basic agreement suffixes, which show a number distinction). A person

probe expands the agreement domain for the number probe (both on T^0), allowing the

number probe to target 3rd person plural experiencers in Spec,ApplP. Since the person

probe never finds a DP argument in contexts with 3rd person themes, '-*s/-a*' will always

be exponed as 'person' agreement (i.e. as the outcome of failed agreement; Preminger,

2014).

Additionally, this analysis predicts that any structure with (i) no external argument in Spec,vP, and (ii) a 3rd person plural argument below v^0 will generate the verbal plural marker '-*t*'. Adversity causatives provide such a test case: since these constructions do not contain a syntactic causer argument in Spec,vP, the φ-probe on v will intervene for person agreement (for further discussion of the structure of adversity causatives, see Lomashvili, 2011). This initial Agree relation renders the interior of the vP domain accessible for further Agree operations, as evidenced by the marking of 3rd person plural causees with '-*t*'. As shown below, this prediction is shown to be correct.

(24)   mat   kaghald-i   e-glej-in-eb-a-**t**
        3PL.DAT paper-NOM APPL-tear-CAUS-TH-3SG.AOR-PL
        '**They** are caused to tear paper.'

5.2.2 Basic agreement paradigm

Deriving the basic suffixes makes use of the same machinery as the inverse, but the structure of basic-paradigm clauses ensures that the person probe on T^0 necessarily interacts with an argument since Spec,vP is always filled. At first glance, this might seem at odds with the phase unlocking accounts discussed in chapter 3. Under those accounts, phases were derived A-over-A effects—that is, intervention effects—that arise via the structural relation of *dominance*. That is, what counts as the intervener for the syntactic operation at hand is the *maximal projection*, since it dominates the goal whose features are being sought after. This is shown below, repeated from the discussion concerning Rackowski and Richards (2005) in section 3.1.

(25)   *The PIC as A-over-A*

CP
...
$C_{[+wh]}$
TP
...
T
*v*P
...
v
*wh*P
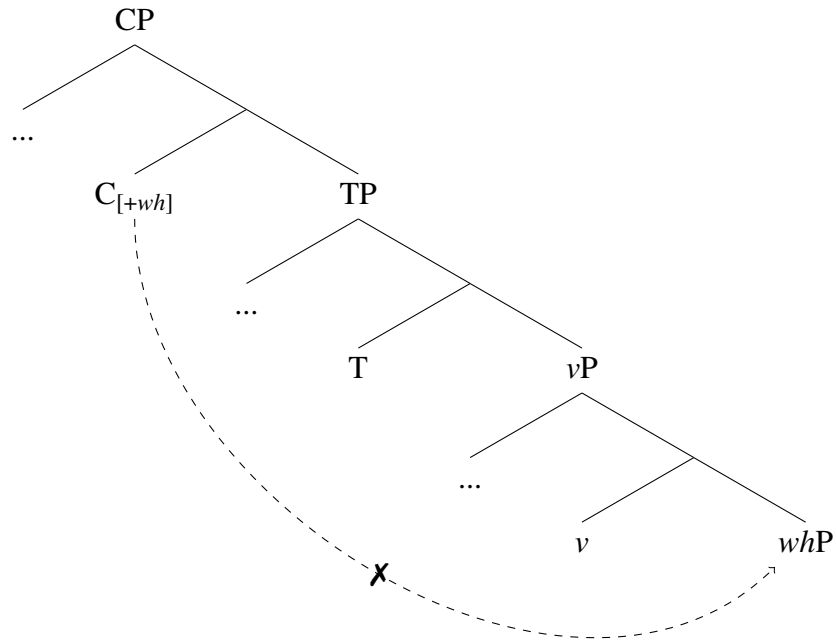
In Georgian, the person probe on T^0 will necessarily encounter the *v*P layer first, even in structures corresponding to the basic agreement paradigm. Under the A-over-A configuration illustrated above, we might then expect the *v*P to act as an intervener. However, this is not what we see in the Georgian basic agreement paradigm, where both the person and number probes T^0 target the external argument in Spec,*v*P, and only the external argument. Given this agreement, it must be the case that the *v*P maximal projection does *not* intervene. Rackowski and Richards's (2005) model offers a solution to this issue, which derives from the definition of *closest goal* below.

(26)   A goal α is the *closest* one to a probe if there is no distinct goal β such that for

some X (X a head or maximal projection), X c-commands α but not β.

(Rackowski and Richards, 2005:582)

This definition allows the highest specifier of a phrase to be accessible to Agree. Thus, the DP argument in Spec,vP constitutes the closest goal to the probes on T^0, as illustrated in (27).

(27)   *Structure for the basic*
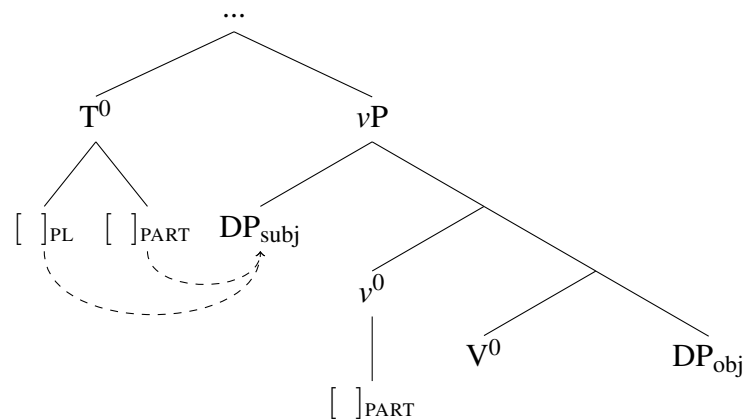
I will now address the differences in the forms of the suffixes between the basic and inverse agreement paradigms, particularly regarding 3rd person plural subjects, as shown below. In the basic paradigm, 3rd person plural subjects are marked by a single suffix which expresses person and number features as well as tense (e.g. '-*dnen*' in 28a), but, in the inverse, they are marked by separate suffixes which independently express person and number features (e.g. '-*da*' and '-*t*', in 28b).

(28) a. mat   is   xedav-**dnen**
        3PL.ERG 3SG.NOM see.IMPF-3PL.IMPF
        '**They** saw him/her.'

    b. mat   is   u-q'var-**da**-**t**
        3PL.DAT 3SG.NOM APPL-love-3.IMPF-PL
        '**They** loved him/her.'

This difference correlates with whether the probes on T^0 target the same syntactic element

or not. That is, both of the probes target the 3rd person plural argument in Spec,vP in the

basic; in contrast, the probes target different elements in the inverse—the person probe

agrees with the v phase head, and the number probe agrees with the 3rd person plural

argument in Spec,ApplP. The model proposed here seeks to capture this correlation.

I assume that VI potentially proceeds in two cycles (Deal, 2015). The first cycle

expones as many features as possible—provided they originate from the same source—

deriving the 3rd person plural specific morphemes in the basic agreement paradigm. A

second cycle of VI targets individual features left unexponed after the first cycle and

expones any appropriate feature separately. This second cycle derives the marking of 3rd

person plural subjects in the inverse agreement paradigm, where they appear to be marked

by both '-*da*' and '-*t*'. However, the '-*da*' morpheme is the exponent of the Agree relation

established between the person probe on T^0 and the unvalued [PARTICIPANT] feature on

v. The plural marker '-*t*' is the morpheme that marks the 3rd person plural argument, i.e.

the exponent of the successfully-valued number probe on T^0.

Multiple cycles of VI also addresses an issue concerning 2nd person plural basic

objects. These arguments trigger '-*t*' (modulo phonological considerations) regardless of

the φ-features of the subject, as shown below, even though they are targeted for agreement

by v^0 (as indicated by the '*g*-' prefix). Under the proposed analysis, the 2nd person plural object is licensed in its base-generated position, so there is no reason for this argument to move to a higher position where it can be targeted by the number probe on T. Later in this section, I will argue that this particular occurrence of '-*t*' derives from a second VI cycle, as described above.

(29) man   tkven   da-g-p'at'iž-a-**t**
      3SG.ERG 2PL.NOM PRV-2-invite-3SG.AOR-PL
      'She/he invited **you (pl)**.'

There are, admittedly, some stipulations to this approach, such as multiple cycles of VI that include an additional mechanism that fissions unexponed features. There are two advantages, however. First, it captures the 3rd person plural '-*dnen*' in the basic paradigm vs. '-*da*' + '-*t*' distinction in the inverse, both under the same set of vocabulary items. Since 3rd person plural arguments are in Spec,*v*P, they are accessible to the number probe on T^0 and so we might expect both suffixes to co-occur, e.g. '*mat is da-p'a't'iʒ-es-(*t)*' "They invited him/her." This is not the attested pattern, so there must be some fusion/fission operation at play here. While we could posit a null plural marker in these contexts, this would be ad hoc.

Alternatively, we could appeal to a phonological rule that reduces [st] and [nt] clusters such that [t] deletes in these contexts. Indeed, the analysis proposed here implicitly adopts a similar rule; recall from section 2 that both agreement markers for 3SG→2PL appear in the past tense ('-*a*' and '-*t*', respectively) but not in the present (where we would expect '-*s*' and '-*t*', but only '-*t*' appears). Since final [st] clusters appear to be
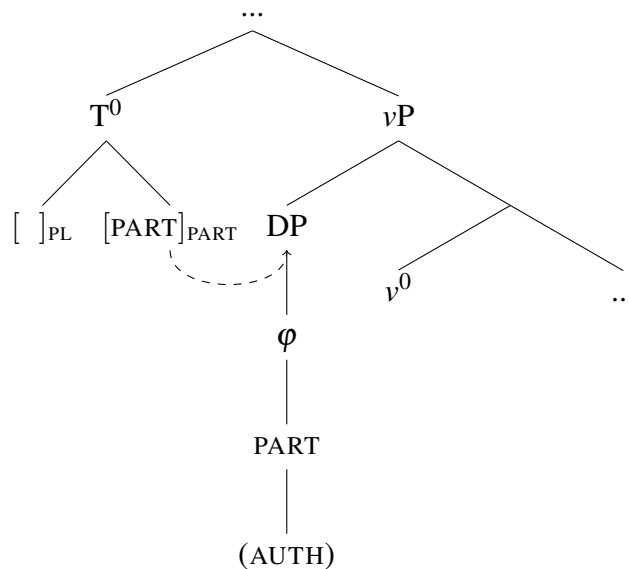
absent across the board in Georgian, I have assumed that both markers are underlyingly represented in the present tense, and that the cluster phonologically reduces to [t] (see Butskhrikidze, 2002; Beguš, 2018; and references therein). If we were to adopt this toy phonological reduction approach, however, then the [st] cluster would have to reduce to [s] alone in some circumstances, and to [t] alone in others, despite the fact that the distinction between the environments is not phonological but rather morphosyntactic. That is, the underlying [st] cluster in 3PL→2PL (3rd person plural '-*es*' with 2nd person plural '-*t*') would result in [s]. But, 3SG→2PL would result in [t] (from the 3rd person singular '-*s*' and 2nd person plural '-*t*'). Furthermore, there is no parallel for final [nt] clusters (3rd person plural '-*en*' with 2nd person plural '-*t*'), and such word-final clusters do appear in Georgian.

Second, this model captures the differences between the two paradigms without requiring vocabulary items that make reference to a feature like [paradigm: basic/inverse]. That is, the current proposal avoids the need for one set of vocabulary items that would apply for verbs in the basic paradigm, and another set that would apply for verbs in the inverse paradigm. The proposed analysis derives the basic/inverse distinction via the structural position of arguments (Spec,*v*P vs. Spec,ApplP), licensing requirements for 1st/2nd person arguments, and *v*P intervention. What may at first glance appear to be the tense-sensitivity of the agreement morphemes with respect to the 'basic' or the 'inverse' falls out from whether the probes together expone as many features as possible, or separately expone what they can.

The following derivations demonstrate the workings of this model. First, consider a structure with 1st or 2nd person singular external arguments in Spec,*v*P. In this case, only the person probe on T^0 is successfully valued, and so '*-e*' is exponed.
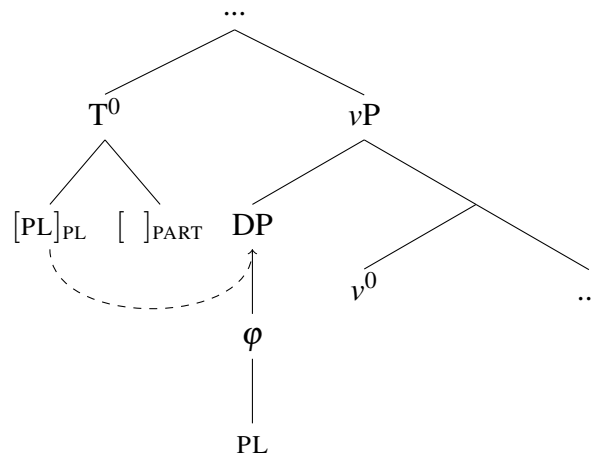
(30)   *1st/2nd person singular subjects (basic)*

```
                        ...
               ┌─────────┴─────────┐
              T⁰                    vP
        ┌──────┴──────┐        ┌─────┴─────┐
     [ ]PL  [PART]PART   DP    v⁰          ...
              └ ─ ─ ─ ─ ─ ┘↑
                          |
                          φ
                          |
                        PART
                          |
                       (AUTH)
```

In the case of 1st and 2nd person plural external arguments, both the person and number probes on T^0 are successful. Since there is no VI for [PARTICIPANT, PLURAL] as a single bundle, a fission operation applies and '*-e*' and '*-t*' are exponed separately in the second cycle of vocabulary insertion.

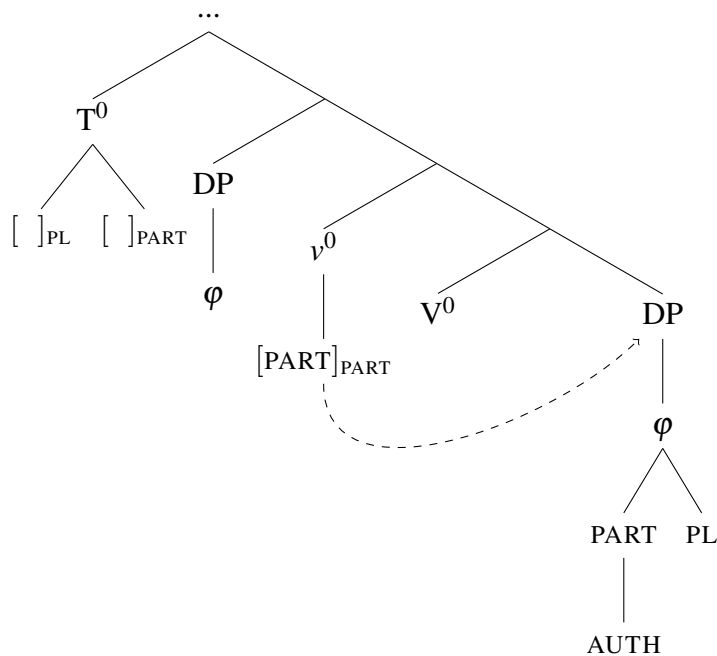(31)   *1st/2nd person plural subjects (basic)*
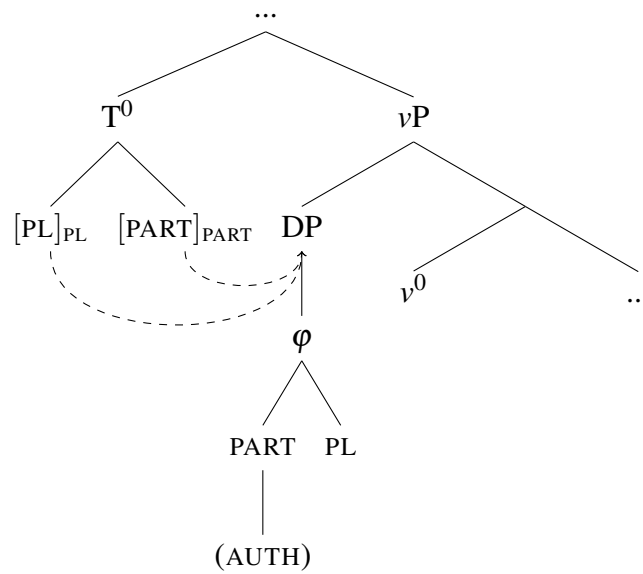
Consider now cases with 3rd person plural external arguments. While the person probe on T^0 fails to be valued, the number probe succeeds. Since there is a VI for [– PARTICIPANT, PLURAL], '-*es*' is exponed in the first vocabulary insertion cycle (capturing its marking of person and number in a single morpheme).

(32)   *3rd person plural subjects (basic)*

$$
\begin{array}{c}
\ldots \\
\diagup\quad\diagdown \\
\mathrm{T}^0 \qquad\qquad v\mathrm{P}
\end{array}
$$

$[\mathrm{PL}]_{\mathrm{PL}} \quad [\ \ ]_{\mathrm{PART}} \quad \mathrm{DP}$

$v^0 \qquad\qquad \ldots$

φ

PL

The remaining two derivations concern 1st and 2nd person plural internal arguments that co-occur with 3rd person singular external arguments. Under the proposed analysis, 1st and 2nd person plural internal arguments are both targeted for agreement and licensed by v^0, and thus remain in their base-generated positions inside the VP. Consider first the derivation featuring a 3rd person singular subject and a 1st person plural internal argument. The derivation for in this case is straightforward: the person and number probes on T^0 target the 3rd person singular argument in Spec,vP. Both probes fail since the 3rd person singular external argument lacks both [PARTICIPANT] and [PLURAL], and thus '-*a*' is exponed as the elsewhere. Furthermore, as was discussed in section 5.1.2., the Agree relation established between v^0 and the 1st person plural internal argument triggers the exponent '*gv-*'.

(33)   *3rd person singular subjects, 1st person plural objects (basic)*

```
                            ...
               ┌─────────────┴────────────┐
              T⁰                           │
         ┌────┴────┐                       │
    [ ]PL   [ ]PART   DP              ┌─────┴─────┐
                       │             v⁰            │
                       φ              │      ┌──────┴──────┐
                              [PART]PART   V⁰           DP
                                      ╷                   │
                                       ╲                  φ
                                        ╲ ─ ─ ─ ─ ─↗ ┌────┴────┐
                                                   PART    PL
                                                    │
                                                  AUTH
```

Finally, consider the derivation featuring a 3rd person singular subject and a 2nd person plural internal argument. As in the previous derivation, the 2nd person plural internal argument is targeted for agreement by v^0, but, in contrast to the previous derivation, there is no VI that expones the person and number features of the 2nd person plural argument in a single morpheme. There is only a VI rule exponing the *person* feature, i.e. '*g-*'. Following Halle and Marantz (1993) and Harbour (2016), I assume in this thesis that the unexponed number feature undergoes fission. Under this view, the two exponents that mark 2nd person plural internal arguments, i.e. '*g- ... -t*', are underlyingly from the same source even though they appear to be separate on the verbal stem.[5]

At this point, it seems as though we have two accidentally homophonous plural markers in Georgian: '*-t*' that originates from the number probe on T^0, and '*-t*' that

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[5]Pretheoretically, Georgian has many circumflexes. However, '*g- ... -t*' is the only circumflex in the verbal paradigm; other circumflexes are in the adjectival or nominal domain.

originates from v^0 under fission. But note that '-*t*' expones a lone [PLURAL] feature in each case, and so the apparent accidental homophony can perhaps be subsumed under a last-resort strategy. I leave this puzzle for future work, however, and rather discuss the derivation featuring 2nd person plural internal arguments. As above, the person and number probes on T^0 remain unvalued since the 3rd person external argument in Spec,vP does not bear the relevant features. Thus, '-*a*' is exponed as the elsewhere case. The Agree relation established between v^0 and the 2nd person plural internal argument triggers the exponent '*g*-', and '-*t*' spells-out as well following fission of the [PLURAL] feature.[6]

(34)   *3rd person singular subjects, 2nd person plural object (basic)*
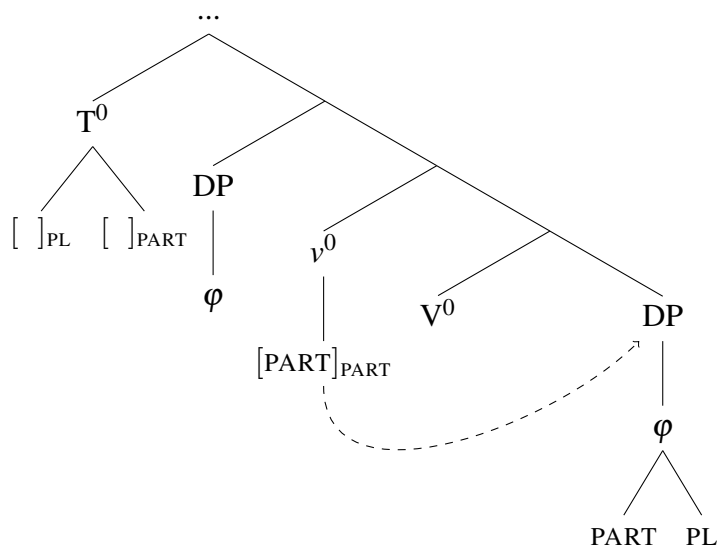
In summary, I have shown that the differences between the basic and inverse agreement paradigms follow from variations in three properties: (i) the structural position of

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[6]For an alternative analysis, see Bondarenko and Zompí, (2020). They propose that '-*t*' derives from *leftover agreement*, where a probe on T^0 agrees with the *unexponed* number feature on v^0, which orginates from the 2nd person plural object. Their account thus involves interleaving syntactic mechanisms (such as Agree) and morphological operations (such as VI).

the "subjects", (ii) licensing requirements for 1st and 2nd person arguments, and (iii) rendering v(P) transparent for cyclic Agree. In verbs corresponding to the so-called basic paradigm, a 1st/2nd person theme will never need to move for licensing requirements in a monotransitive construction since it is accessible to and licensed by Agree from v^0. Relatedly, 1st/2nd person external arguments are licensed in situ by virtue of being introduced by v^0. Importantly, the presence of an external argument in Spec,vP ensures that the person and number probes will always find a φ-bearing goal. The two-cycle approach to Vocabulary Insertion (Deal, 2015) derives the distribution of the strictly subject-oriented suffixes. 3rd person plural external arguments are marked by '-*es*', an instance of first cycle VI, i.e. there exists a VI exponing [− PARTICIPANT, PLURAL] as a single bundle. There is no such exponent for [+ PARTICIPANT, PLURAL], however, so 1st and 2nd person plural external arguments are marked by two cycles of VI, i.e. '-*e*' and '-*t*' separately.

5.3   Previous analyses of Georgian agreement

In this section, I will provide overviews of various influential analyses of Georgian agreement, and discuss details of these analyses as they pertain to the inverse agreement paradigm. The broad issue at stake for the proposed analysis outlined in this chapter is the relation between the basic and inverse agreement paradigms, which is close to, but not exactly, a mirror-image relation. As will be shown in the following sections, current analyses of Georgian agreement are either (i) too geared towards the basic paradigm (and so, the only options they leave for the inverse is to be an exact copy of the basic, or the mirror image of the basic, neither of which is accurate), or (ii) so powerful as to allow

any relation (and so, the inverse paradigm could have in principle been any 6x6 table of forms), and its close-if-imperfect relation to the mirror image of the basic comes out as an accident. Additionally, there is also the narrow issue of what allows 3rd person inverse subjects to be marked by '-t', and only when the theme is also 3rd person. This pattern is not predicted to be possible in any of the accounts surveyed here.

5.3.1 Basic agreement-only accounts

The Georgian agreement system has received a wealth of attention, with analyses ranging from purely morphological (Halle and Marantz, 1993), purely syntactic (Béjar, 2003; Béjar and Rezac, 2009), or a mix of the two (Lomashvili and Harley, 2011). Further, analyses have been attempted using several different frameworks, e.g. Optimality Theory (Foley, 2017) and Nanosyntax (Blix, 2016, 2021), as well as the standard Agree framework (McGinnis, 2013). I provide a brief overview of these accounts below.

Working within the Optimality Theory (OT) framework (McCarthy and Prince, 1995; Smolensky and Prince, 1993), Foley (2016) draws from the notion of phonological *conspiracies* (Kisseberth, 1970) to derive Georgian agreement. Foley argues that the blocking patterns observed in Georgian agreement with respect to *-s-t, *en-t, *es-t*, and *gv-t* constitute a morphological conspiracy against multiple exponence of the person and number features of a single argument. Given that multiple exponence of person and number *is* possible in corners of the Georgian agreement system, as shown below, it is unclear how robust this conspiracy is.

(35)   mas   čven   **v**-u-q'var-**v**-ar-**t**
         3SG.DAT 1PL.NOM 1-VER-love-1-be-PL
         'She/he loves **us**.'

Furthermore, each of the agreement markers in Foley's analysis are specified as *subject* or *object* agreement. As such, extending the analysis to the inverse paradigm requires a separate (but identical) set of the prefixes, i.e. the 'object' markers in the basic agreement paradigm must be specified as 'subject' markers in the inverse agreement paradigm. Beyond the question of how appealing such an approach may or may not be, it faces a problem that is arguably more serious: while the distribution of the prefixes in the inverse paradigm may be a perfect mirror image of the basic, this is not the case for the distribution of the suffixes. For example, the 3rd person plural suffixes '-*es, -en*', which consistently mark the role of these arguments as subjects throughout the basic agreement paradigm, do not appear anywhere in the inverse agreement paradigm. These facts are captured by the analysis put forth here, but it is not clear how they would be derived in Foley's system.

      Finally, Foley analyzes the verbal plural marker '-*t*' as omnivorous number agreement exponing #^{0}, which is relativized to [PLURAL]-bearing arguments. The analysis thus predicts that, in the inverse paradigm, '-*t*' will mark 3rd person plural objects when the subject is singular. As shown below, this prediction is incorrect—only 3rd person plural subjects trigger '-*t*', with the added restriction that the object is 3rd person singular.

(36)   a.   mas   isini   u-q'var-**s/*t**
            3SG.DAT 3PL.NOM VER-love-3SG.PRES
            'She/he loves them.'

b. mat   is   u-q'var-**t**
    3PL.DAT 3SG.NOM VER-love-PL
    '**They** love him/her.'

Blix's (2016) analysis of Georgian agreement is based in the Nanosyntax framework (Caha, 2009; Pantcheva, 2011; Starke, 2009, 2011), which derives Georgian agreement via *spans*.[7] That is, heads and features are organized into binary branching structures which are operated on by syntax to spell out spans of heads. This approach keeps the major insights of previous syntactic analyses in that the prefixes track the ϕ-features of the object by placing the licensing probe low in the structure, below the subject but above the object. The distribution of the affixes are captured by a cyclic and bottom-up spell out. Although Blix's analysis can account for the basic agreement paradigm, possible extensions to the inverse paradigm remain unexplored. Since the analysis requires subjects to be higher than objects in order to derive the distribution of the prefixes, modelling the inverse agreement paradigm would require the object to be higher than the subject. However, the data discussed in chapter 4 shows that this is not the right structural relation between the arguments in the inverse.

Halle and Marantz (1993) model Georgian agreement purely in the morphological module, via a series of *fission* and *fusion* operations that, respectively, (i) split a single node into two, and (ii) create a single node out of two. They assume that the prefixes begin as a cluster of clitics, which are fused into a single node; they further argue that plural features fission off (except in the case of the 1st person plural prefix '*gv-*'). For example, the 2nd person plural triggers the insertion of both the person prefix '*g-*' and the

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[7]Blix's analysis also derives the agreement patterns in Laz, a closely-related language to Georgian. I will not discuss the Laz agreement system here, and rather refer the reader to Blix's (2016) thesis.

number suffix '-t'; since there is no 'gt-' exponent realizing both 2nd person and plural, the plural feature is fissioned off and surfaces as '-t' alone.

However, Halle and Marantz's account does not derive the preference for object agreement in Georgian (specifically in the basic agreement paradigm) where the prefixes generally behave like object agreement markers in basic transitive clauses. As was discussed in the previous section, the prefixes '*m-, gv-,*' and '*g-*' respectively mark 1st person singular, 1st person plural, and 2nd person objects. As was also discussed, there is another marker for 1st person arguments, '*v-*', which marks their role as subjects. Given that there are two distinct agreement morphemes for 1st person arguments that mark their roles as subjects vs. objects, we can use their distribution to conclude that object agreement morphology is indeed preferred over subject agreement. The sentence in (37) below shows that the 1st person subject marker '*v-*' cannot appear when the object is 2nd person; rather, the 2nd person object marker '*g-*' must appear in the prefixal slot. Under Halle and Marantz's system, this preference for object agreement morphology is completely coincidental—it does not follow from any aspects of the model.

(37)   me   šen   da-**g/*v**-p'at'iž-e
        1SG.ERG 2SG.NOM PRV-2-invite-1/2.AOR
        'I invited **you (sg)**.'

In a similar framework, McGinnis (2013) analyzes Georgian number marking as a syntactic competition between uninterpretable [#, Group] features on T^0 that are subject to fission if they are not fully valued during first search; this competition derives the plural suffixes specific to 3rd person plural subjects as well as the '*-s-t*' blocking effect.

McGinnis proposes that, since the Georgian TAM suffix marks tense, aspect, and mood, the syntactic heads C^0, T^0, and Asp^0—i.e., the heads which bear those features—fuse to form a single morphosyntactic node. Crucially, this fusion occurs before Vocabulary Insertion (VI), where the Vocabulary entry for '-*t*' is specified as [#, Group] and the entry for '-*s*' is the single feature [#]. The Vocabulary entry for 3rd person plural '-*es*' is even more specified, bearing at least [Aorist, Group]. The blocking effect that the plural suffix '-*t*' has over the default number suffix '-*s*' is thus captured by placing them inside the same set of VI rules for spell-out on T^0: since the Vocabulary entry for the '-*t*' is more specified than '-*s*', '-*t*' will block '-*s*' in the observed contexts (3SG→2PL). Finally, 3rd person plural subjects never trigger '-*es*' and '-*t*' together since the Vocabulary entry for the former is more specified than the latter.

However, it is likely not the case that this blocking effect arises in the morphosyntax: there is reason to think that '-*s*' is blocked in the presence of '-*t*' because of phonological/phonotactic restrictions. For example, there are no [st] word-final clusters in Georgian. In addition, the tense-sensitive suffix and the number suffix *can* co-occur in the past tense where the tense-sensitive suffix is the vocalic '-*a*'; this further suggests a phonotactic restriction rather than a morphosyntactic one. Furthermore, McGinnis' (2013) account is subject to the same set of problems faced by the accounts proposed by Foley (2016) and Blix (2016). Namely, by focusing solely on the basic agreement paradigm, possible extensions to the inverse agreement paradigm are unclear, and the relationship between the two paradigms is unexplained.

To summarize: although the analyses surveyed in this section laid the groundwork for a morphosyntactic approach to the Georgian agreement system, restricting the empir-

ical desiderata to the basic agreement paradigm leaves the inverse agreement paradigm unexplained. Additionally, the proposed blocking effects concerning multiple exponence and plural marking were argued to be inconclusive concerning the actual workings of the Georgian agreement system, and phonotactic restrictions.

5.3.2 Accounts including the inverse agreement paradigm

The first model to be discussed in this section is Béjar and Rezac (2009), who develop a *Cyclic Agree* account of the prefixes in Georgian agreement where agreement morphology can reflect first- or second-cycle Agree. They propose a low φ-probe on v^0 that necessarily targets the internal argument first. If that argument fully values the probe, first-cycle agreement obtains and object agreement surfaces. If the internal argument does not satisfy the probe, however, then the remaining unvalued features on the probe project, and the probe targets the (external) argument in its specifier (see also Keine and Dash, 2018; Clem, 2018). If the external argument values any of the remaining features on the probe, then second-cycle agreement obtains and subject agreement surfaces.

The analysis proposed in Béjar and Rezac (2009) focuses exclusively on the distribution of the prefixes in the basic agreement paradigm; the TAM-sensitive suffixes are not discussed nor the number suffix '-*t*', and so their account does not serve as a comprehensive analysis. While there is also some discussion of number agreement and the inverse agreement paradigm in Béjar (2003), it is also limited to the prefixes. Following Marantz (1989) and McGinnis (1995, 1997), Béjar situates inverse subjects lower than v^0 (see also

chapter 4); in this position, the dative experiencer argument is necessarily targeted first by the probes on v^0 and T^0.

However, the analysis does not capture the ability of 3rd person plural inverse subjects to trigger '-t' just in case the object is also 3rd person. Although the phenomenon is noted to be possible, it is dismissed as an innovation possible only among a subset of Georgian speakers (see the author's footnote 17, p. 134; see also Carmack, 1997). However, innovative or not, it is entirely robust among the Georgian consultants I have worked with, and so the pattern needs to be accounted for.

The second model discussed in this section is Lomashvili and Harley (2011), who provide a unified analysis of the basic and inverse paradigms. The differences between the agreement patterns are derived via morphotactic templates and drawing parallels to *discontinuous bleeding* (Noyer 1992), where the insertion of a more-specified exponent in one position bleeds the insertion of a less-specified exponent that would otherwise be inserted in a different position. The two agreement slots in Lomashvili and Harley's analysis are (i) prefixal, which expones the features of the subject or the object (i.e., they may compete in a particular context), and (ii) suffixal, which expones the number feature of the object (i.e., this is where '-t' is spelled-out; Lomashvili and Harley do not treat the tense/aspect suffixes as agreement markers). Lomashvili and Harley assume that the exponence of these affixes takes place in the (post-syntactic) morphological module.

(38)   *Verb agreement template (Lomashvili and Harley 2011:244)*

        AGREEMENT PREFIX   —   Verb stem   —   AGREEMENT SUFFIX

Following Béjar (2003), they place a low probe on v^0 that necessarily targets the internal argument; they also place a higher probe on T^0 that necessarily targets the external argument first. In either case, the probes may only agree with Case-active DPs, and they probe for both person and number features. Finally, they argue that a phase-based account of Spell-Out derives the blocking effects of the agreement morphemes. Finally, Lomashvili and Harley assume that, in Georgian, only arguments that bear [+PARTICIPANT]—i.e. 1st and 2nd persons—can value a φ-probe. So, for the authors, 3rd person arguments cannot be agreed with, which is a point that I will discuss in short order.

The logic of their analysis of the basic agreement paradigm is as follows: (i) the probe on v^0 agrees with the internal argument; (ii) the vP phase spells-out and Vocabulary Insertion (VI) for the agreement slots is triggered; (iii) the probe on T^0 agrees with the external argument in Spec,vP; (iv) construction of the matrix CP results in spell-out of the remaining structure, triggering a second round of Vocabulary Insertion for both the agreement slots. Crucial to their analysis is the cyclic nature of phasal spell-out—since VI occurs within the vP phase, object agreement is privileged. Thus, spell-out of the vP phase can potentially result in bleeding the exponence of subject agreement, which is in the TP domain.

Lomashvili and Harley also offer an account of the inverse agreement paradigm, which uses the same machinery proposed for the basic. For these verbs, they assume that both the experiencer and theme arguments are VP-internal, i.e. dyadic unaccusatives (or unapplicative accusatives), a structure that I adopted here, as well.

Given these argument positions, the probe on v^0 will necessarily target the higher experiencer DP first, resulting in what looks like object agreement morphology with the

logical subject. Further, Lomashvili and Harley assume that the *v*P does not instantiate a phase for these structures, and so the *v*P does not spell-out until the matrix CP is constructed. If there is a 1st person experiencer argument and a 2nd person theme (or vice versa), there is a morphotactic competition concerning the 1st person singular prefix '*m-*' and the 2nd person '*x-*'. Lomashvili and Harley propose that, since '*m-*' and '*x-*' compete for the same position in one and the same phase (cf. the basic paradigm, where the *v*P phase has Spelled-Out by this point), a Last Resort mechanism of '*ar*'-insertion applies which creates a second prefixal agreement slot. In this case, then, there is no templatic restriction blocking one prefix over the other: '*m-*' fills the prefixal agreement slot for the main verb, and '*x-*' fills the prefixal agreement slot for the dummy auxiliary '*ar*', which Lomashvili and Harley take to be the default realization of T^0 (as with English *do*-support).

While Lomashvili and Harley go a long way in providing a unified analysis of the two agreement paradigms in Georgian, they assume that 3rd person arguments cannot enter into Agree relations, and thus cannot be targeted by ϕ-probes. While this view is not unheard of in the current literature on agreement, their account predicts that the plural marker '*-t*' will never mark 3rd person plural arguments. As shown in section 2.3.1, however, '*-t*' can indeed mark such arguments, albeit in a very specific context: when the 3rd person plural argument is the experiencer argument of a verb in the inverse agreement paradigm, and the theme is also 3rd person. Lomashvili and Harley do not discuss this phenomenon at all, and in fact explicitly say that 3rd person plural arguments never trigger '*-t*'. n summary, this section showed the limits of previous analyses that included the derivation of the inverse agreement paradigm. These analyses included the

assumptions, shared with the current account, that inverse subjects are indeed higher than inverse objects, and that phasal boundaries play a role in the differences between the two agreement paradigms, but the models fall short of deriving 3rd person plural number agreement in the inverse paradigm. Each account assumed that 3rd person arguments are invisible for agreement in Georgian, whether that be for Case or φ-feature reasons. Even if 3rd person plural inverse subjects were indeed visible to agreement in these accounts, then, as [PLURAL]-bearing arguments, they should trigger '-t' across the board. However, we know this is not the case and so these analyses are faced with both under- and over-generation issues.

Given that the proposed analysis of the Georgian agreement system—and its main competitors—have been discussed in detail, I now turn to a discussion of extending the PIC-as-intervention model to Hindi-Urdu, which has been argued to lack vP phasehood (Keine, 2017). I will show that the Hindi-Urdu data suggests that phasehood correlates with φ-probes, and thus φ-features on the 'phase' head in question. In this case, v^0 does not bear a φ-probe, and so the lack of phase effects results from the absence of φ-features on v^0.

Chapter 6:   Further investigating phases as φ-intervention

The discussion in this chapter addresses two topics. First, I provide an overview of Keine (2017), which argues that vP is not a phase. Drawing from Hindi-Urdu, Keine shows that long-distance agreement can span multiple vP boundaries, but notably cannot span any CP boundaries.[1]. This suggests that only CPs are phases. I will argue that these effects arise for reasons that are independently diagnosable from the Hindi-Urdu agreement system. The loci of φ-agreement in the language is only T^0. Since v^0 does not bear a φ-probe in Hindi-Urdu, it does not bear φ-features. Thus, it does not act as an intervener. This property straightforwardly explains the absence of phase effects in the vP domain in Hindi-Urdu.

In the remainder of this section, I discuss some remaining questions with respect to the PIC-as-intervention approach. Namely, I outline potential investigations into the status of *derived* vs. *base-generated* φ-features, as well as selectional conditions related to operational triggers and pronominal licensing.

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[1]A similar effect is found in *wh*-licensing phenomena in Hindi-Urdu.

6.1   A case study addressing the lack of phase effects

This section discusses the status of *v*P phases in Hindi, as analyzed in Keine (2017). The analysis tests the status of the *v*P as a phasal category, using the Agree operation as a diagnostic. Given the formulation of phases and the PIC, we should not find φ-agreement relations across multiple *v*P clauses *if vP is a phase*. Keine shows that we do find such agreement relations in Hindi, and subsequently concludes that *v*P is not a phase. I argue that *v* in Hindi does not bear its own φ-feature, and that, consequently, *v*P does not behave as a phasal category. Under the framework adopted in this dissertation, *v* is not a φ-intervener in Hindi, and so the absence of *v*P 'phase' effects is entirely expected.

Before delving into the details of Keine's analysis, I will first set up the issue at hand. The main theoretical question addressed in Keine (2017) is the status of *v*P phases, particularly with respect to the *Phase Impenetrability Condition* (Chomsky, 2001). Given the structure and phasal boundaries outlined below, a prediction of Chomsky's proposal is that agreement relations cannot obtain across multiple *v*P projections.

(1) $[_{\text{TP}} \text{ DP } \text{T}_{[u\varphi]} [_{v\text{P}} \, v \, [_{\text{VP}} \text{ V } \text{DP}_{[\varphi]} \,]]]$

That is, embedding multiple *v*Ps between TP and VP should block agreement from T with an internal argument, since the lowest VP will spell out as soon as the higher of two *v*P structures are merged.

(2) $[_{\text{TP}} \text{ DP } \text{T}_{[u\varphi]} [_{v\text{P}} \, v \, [_{v\text{P}} \, v \, [_{\text{VP}} \text{ V } \text{DP}_{[\varphi]} \,]]]]$

As will be shown in the remainder of this section, data from Hindi φ-agreement shows that these relations span across multiple vP boundaries, which constitutes evidence against vP phases. To begin, note that the verb agrees with the structurally highest non-case-marked argument in Hindi. As shown in the sentences below, ensuring that the subject is case-marked forces agreement with the object. As part of an idiomatic expression, the object in (3b) resists movement. We can thus conclude that the verb is agreeing with an argument that remains in the vP domain.

(3) a. raam-ne bhains ke aage *biin* bajaa-*yii*
         Ram-ERG buffalo in front.of flute.F.SG play-PERF.F.SG
         'Ram did something futile.' (*lit.* 'Ram played the flute in front of buffalo.')

     b. #*biin*$_i$ raam-ne bhains ke aage t_i bajaa-*yii*
         flute.F.SG Ram-ERG buffalo in front.of t play-PERF.F.SG
         'The flute, Ram played in front of buffalo.' (*idiomatic reading deviant*)

         (Keine, 2017:178–179)

Hindi also has long-distance agreement, where Agree targets an argument that is further embedded in a complement clause. Certain complement clauses in Hindi obligatorily contain a vP projection (Bhatt, 2005; Davison, 2010) and crucially lack a CP layer (Bhatt, 2005; Chandra, 2007; Dayal, 1996). Under the view that vPs constitute phases, long-distance agreement with an object embedded within a vP complement clause should not be possible. But, as shown below, such agreement relations *are* possible, which suggests that vPs do not constitute phasal boundaries.

(4) raam-ne [bhains ke aage *biin* bajaa-nii] caah-*ii*
     Ram-ERG buffalo in front.of flute.F.SG play-INF.F.SG want-PERF.F.SG

'Ram wanted to do something futile.' (*idiomatic reading possible*)

(Keine, 2017:179)

(5)   [TP T[*uφ*] [*v*P *v* [VP V [nonfinite clause [*v*P *v* [VP V DP[*φ*]]]]]]]

Keine further shows that long-distance agreement may also span *three v*P boundaries, albeit the resulting sentence is degraded due to processing complexity.

(6)   ?Raam-ne [[bhains ke aage   *biin*   bajaa-nii]   shuruu kar-nii]
      Ram-ERG [[buffalo in front.of flute.F.SG play-INF.F.SG] start   do-INF.F.SG]
      caah-*ii*
      want-PERF.F.SG
      'Ram wanted to start doing something futile.' (*idiomatic reading possible*)

(7)   [TP T[*uφ*] [*v*P *v* [VP V [nonfinite clause [*v*P *v* [VP V [nonfinite clause [*v*P *v* [VP V DP[*φ*]

      ]]]]]]]]]]

Contrast this with the behaviour of CPs with respect to long-distance agreement in similar configurations. As shown in (8), long-distance agreement cannot target an argument inside an embedded CP. This suggests that Hindi does have phasal categories, but they are limited to CPs.

(8)   laṛkõ-ne soc-aa/*-*ii*   [CP ki monaa-ne *ghazal*
      boys-ERG think-PERF.M.SG/-PERF.F.SG [that Mona-ERG ghazal.F
      gaa-yii   thii   ]
      sing-PERF.F.SG be.PAST.F.SG
      'The boys thought that Mona had sung ghazal.'

      (Keine, 2017:181, citing Bhatt, 2005:776)

Keine concludes that the behaviour of embedded vP and CP complement clauses with respect to long-distance agreement in Hindi are indicative of their phasal status: CPs are phases, and vPs are not. The behaviour of vPs with respect to long-distance agreement in Hindi provides a testing ground for identifying the universal status of phases. Under the model of phasehood that I have argued for in this dissertation, the Hindi behaviour follows from the location of φ-agreement in the structure. That is, all φ-agreement originates from T in Hindi, not from v. Since v does not bear a φ-probe, it does not constitute a potential goal for φ-agreement—thus, it is not an intervener. The lack of the phase effects Hindi is thus expected under this notion of phasality.

Before moving on, I will note that Hindi-Urdu has agreement both on main verbs/auxiliaries and on participial verbs. At first glance, this looks like a language with φ-probes on both T^0 and v^0, which would contradict my claim that all φ-agreement in Hindi-Urdu originates from T^0, and only from T^0. But, there is reason to believe that agreement on participles in Hindi-Urdu does not, in fact, originate on v^0 but is instead "parasitic" on T^0, which is where Agree originates. In order to illustrate this property, consider the arguments put forth by Bhatt (2005). We see in (9) below that long-distance agreement in Hindi-Urdu co-occurs with agreement on the embedded infinitival verb.

(9)   Ram-ne   [roṭii   khaa-nii] chaah-ii   thii
          Ram-ERG bread.F eat-INF.F want-PFV.F be.PST.F.SG
          'Ram had wanted to eat (the) bread.'

          (Bhatt, 2005:769)

The sentences below show that the agreement relations in (9) are obligatory. That is, long-distance agreement without infinitival agreement is not possible, as in (10a); and neither is infinitival agreement without long-distance agreement, as in (10b).

(10)   a. *Ram-ne [roṭii khaa-naa] chaah-ii thii
           Ram-ERG bread.F eat-INF.M.SG want-PFV.F be.PST.F.SG
           Intended: 'Ram had wanted to eat (the) bread.'

        b. *Ram-ne [roṭii khaa-nii] chaah-aa thaa
           Ram-ERG bread.F eat-INF.F want-PFV.M.SG be.PST.M.SG
           Intended: 'Ram had wanted to eat (the) bread.'

        (Bhatt, 2005: 770)

While I will not discuss the details of the Bhatt's (2005) analysis here, note that these agreement restrictions suggest that infinitival agreement (and participial agreement as well; see Bhatt, 2005 for discussion) is indeed *parasitic* on long-distance agreement. That is, the φ-agreement exhibited by embedded infinitival verbs in Hindi-Urdu obligatorily draws from the φ-agreement exhibited by the matrix verb. Bhatt concludes that only (finite) T^0 bears a φ-probe in Hindi-Urdu. This claim, which I have adopted in this thesis as well, thus explains both the LDA restrictions and the lack of phase effects in the *v*P domain in Hindi-Urdu.

Moving beyond Hindi-Urdu, we might also expect to find phase effects around syntactic heads that (i) are not canonically considered to be phase heads, and (ii) bear a φ-probe. Two families of analyses may bear on this prediction, specifically those of *phase extension* (den Dikken, 2007) and *phase sliding* (Gallego, 2006, 2010). Both of these approaches expand the limits of the phase domain under head-movement—namely,

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the vP phase domain includes the TP domain just in case v^0 undergoes head-movement to T^0. I will not discuss these approaches in greater detail here, but I will note that, in the phase sliding literature, much of the arguments are based on the relationship between T^0 and φ-agreement in Spanish and other null subject languages. This property hints at the possibility that, in these languages, T^0 acts as a phase head because T^0 is the locus of φ-agreement. *If* this is indeed the case, then the empirical data underpinning the phase sliding (and possibly phase extension) literature can be straightforwardly captured under the approach pursued in this dissertation. I leave this possibility aside for now, however, and turn to some other remaining questions concerning phases as instances of φ-intervention.

6.2 Remaining questions

In this section, I outline some issues and questions that are raised by intervention accounts of phasehood. While there are many potential research avenues to further explore, perhaps the most pressing ones at the outset concern the relationship between *wh*-licensing and φ-intervention. Or, more generally, A$'$-dependencies and φ-agreement. I will discuss two broad questions below.

An obvious source of tension between the standard diagnostics of phasehood and the view of phasehood put forth in this dissertation concerns the A$'$ nature of evidence for phasal boundaries. Most (if not all) standard phasehood diagnostics are based on *wh*-movement and relativization, and other A$'$-related processes (Boeckx, 2008; Felser, 2004; Fox, 1999; Lahne, 2008; Legate, 2003; McCloskey, 2006). Notably for our pur-

poses, these diagnostics are unrelated to φ-features and intervention. If φ-intervention is indeed the underlying mechanism to phase effects, then it is not clear how—or why—the presence of φ-probes on a given functional head would pre-empt the possibilities of *wh*-extraction and relativization strategies within that language. As discussed in chapter 3, however, there is robust evidence that φ-intervention in languages such as Tagalog does indeed bear on A′-operations such as *wh*-movement. One logical possibility that addresses the A- vs. A′ tension involves categorizing [*wh*] as a kind of φ-feature. In fact, the phenomenon of "*wh*-agreement" suggests that this may be *more* than just a logical possibility. In Abaza, for example, *wh*-agreement manifests in cases where φ-agreement is overridden with a special, dedicated exponent just in case the targeted DP is a *wh*-phrase (see section 2.2 of Baier, 2018). This suggests that *wh*- and φ-agreement can be unified under a single model, as argued by Baier (2018). If we categorize [*wh*] as a kind of φ-feature, then capturing A′ phase effects in terms of φ-intervention becomes quite a bit easier.

The canonical restrictions on A′-operations across the CP/*v*P boundary suggests that there is indeed an accessibility issue—namely, that CPs and *v*Ps constitute phasal boundaries, at least in some languages. Under the view of phases argued in this project, the 'phasal boundary' must constitute a φ-goal; ideally, we would be able to detect those φ-feature correlates alongside the restrictions in A′-operations. While I argued that this is the case for Hindi CPs and *v*Ps, future work should include a wider crosslinguistic investigation of these correlates.

The phasehood-as-intervention model should also be extended to the DP phase. Although the thesis did not discuss this particular phasal domain, potential extensions

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are quite obvious since DPs are the canonical φ-goals. Namely, it should be possible to use the same logic proposed in this thesis to make DP phasehood epiphenomenal as well, and the results of that exploration could perhaps bear on the organization of φ-features throughout the DP domain. For example, we could imagine that all φ-features are specified at the maximal DP projection. If this were the case, then we would *not* expect extraction out of the DP to be possible since the full bundle of φ-features would always intervene for Agree. We could also imagine that φ-features are hosted on different syntactic heads throughout the DP domain, as argued by Kramer (2015) and subsequent work. In this case, we *would* expect extraction out of the DP to be possible; in a language with Cyclic Agree and separate person- and number-probes (and perhaps a gender-probe as well), the initial Agree search could render the DP layer transparent for further Agree operations.

Another potential future exploration concerns the nature of φ-features and their behaviour with respect to being base-generated or derived. For instance, the CP/TP/vP itself is taken to be a goal for φ-agreement under intervention accounts of phasehood and the PIC. One research question that I leave for further exploration is whether the *derived φ-features* of functional phrases, which originate from a φ-probe, are subject to the same syntactic conditions as *base-generated φ-features*, which originate inside a nominal. Any results of this investigation will thus bear on questions of locality, agreement, and projection, given the identity issues between functional and nominal phrases.

Further investigations should also focus on selectional conditions related to operational triggers and pronominal licensing. In Georgian, for example, pronominal arguments that are unlicensed in their base-generated positions must vacate the vP domain,

but this movement strategy is only possible when the edge of the domain is empty. This restriction only applies to A-movement, however, as A′-movement in Georgian occurs whether the edge is empty or filled. One possibility for this difference between the two types of movement concerns the needs of the functional head: under A-movement, the selectional conditions enforced by *v* are met since it has selected a complement and introduced its external argument, and so no further operations are triggered. In contrast, the A′-movement cases are solely mitigated by the conditions of a functional head which, crucially, is not related to v. Investigating these phenomena will thus address issues concerning selection, movement, and the A/A′-distinction.

Selectional conditions may also bear on some remaining questions for the Tagalog *wh*-extraction patterns discussed in chapter 3. In Tagalog, and elsewhere in Austronesian languages, *wh*-extraction from *adjunct* clauses is not subject to the same agreement constraints that were observed in *wh*-extraction from *complement* clauses. Thus, phase unlocking via Agree appears to be optional for adjuncts in Austronesian. I cannot offer a solution at this juncture, though it seems likely that the agreement restriction between the two types of *wh*-extraction patterns is related to *c-selection*, since only complement clauses are selected by the embedding verb in order to fulfill some set of conditions.

Chapter 7:   Conclusion

This dissertation investigated two broad phenomena: (i) the Georgian agreement system, specifically the distribution of the verbal plural marker between the basic and inverse agreement paradigms, and (ii) its ramifications and contributions to the reanalysis of phases and the Phase Impenetrability Condition as (φ-)intervention effects. I overview the core properties of these investigations in the remainder of this chapter.

7.1   A comprehensive analysis of the Georgian agreement system

This dissertation offered a novel analysis of the Georgian agreement system, which was primarily based on (i) the inverse agreement paradigm, and (ii) the differences in the distribution of the verbal plural marker '-*t*' between the basic and inverse paradigms. This addressed long-standing puzzles concerning some asymmetries in person and number agreement in Georgian. The person agreement concerning 1st and 2nd person inverse objects, which triggers the appearance of auxiliary verb forms that are not found in the corresponding configurations in the basic paradigm, was derived from pronominal licensing requirements for 1st and 2nd person arguments (which can be independently seen in Georgian PCC effects). In particular, I argued that these licensing requirements force 1st/2nd person inverse objects to move to a high position, where they subsequently block

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number agreement with 3PL inverse subjects. The number agreement concerning 3rd person plural inverse subjects, which only occurs when the object is also 3rd person, was derived under an intervention and Cyclic Agree approach. In particular, I argued that the φ-features on v^0 (which originate from its φ-probe) intervene for *person* agreement since inverse subjects are merged below v^0. Given that initial Agree relation, v^0 is transparent for further operations, which results in the 3rd person plural argument in Spec,ApplP being the closest goal for *number* agreement.

More broadly, I showed that the differences between the Georgian basic vs. inverse agreement paradigms *and* the distribution of the verbal plural marker cannot be reduced to flipping the overall patterns. Rather, characterizing Georgian inverse verbs as dyadic applicative unaccusatives captures the near-mirror image agreement patterns of the agreement paradigms. It also provides more insight into the basic agreement patterns, which is the default agreement paradigm. In both cases, a low probe on v^0 first evaluates the closest c-commanded argument (i.e. the object in the basic, and the subject in the inverse); if unsatisfied, it targets the argument in its specifier (i.e. the subject in the basic, or a moved 1st/2nd person object in the inverse). Then, a higher person probe on T^0, above the vP, targets the subject in the basic, and the object in the inverse (modulo some restrictions based on the PLC and accessibility, as discussed).

The proposed analysis builds on standard tools of syntactic and morphological analysis, such as Agree (Chomsky, 2000) and Vocabulary Insertion (Distributed Morphology; Halle and Marantz, 1993). There are also several elements that are somewhat newer, such as as *cyclic domain expansion* (Béjar and Rezac, 2009; Clem, 2018; Keine and Dash, 2018) and *feature interaction and satisfaction* (Deal, 2015) which have nevertheless been

motivated elsewhere in unrelated languages (e.g. Nishnaabemwin, Nez Perce, Basque, and Hindi). Making use of these tools here provides more crosslinguistic support for these growing bodies of analyses, and allows us to describe the relationship between the basic and inverse agreement paradigms in Georgian. Crucially, this allows us to capture the ways in which *inverse* agreement deviates from being the mere mirror image of *basic* agreement—namely, in ways that are associated with other things we know about the syntax of dative arguments and applicatives crosslinguistically. There is plenty more to be done, but these are the initial steps of what our theory of agreement needs to look like in order to model one of the most complex known agreement systems in natural language.

7.2 Phases as φ-intervention

A crucial part of the analysis of the Georgian agreement system involved analyzing the vP as an intervening goal for φ-agreement. That is, in Georgian, v^0 bears a φ-probe, which translates to v^0 bearing φ-features. As the closest goal for φ-agreement, the interior of the Georgian vP 'phase' is inaccessible under general principles of minimality and intervention. Once that intervener is made transparent under Agree, syntactic material lower in the structure can then be accessed in subsequent cyclic Agree operations. This proposal joins and contributes to a growing family of approaches that subsumes phasehood and the PIC under more general locality constraints (Rackowski and Richards, 2005; Halpert, 2019, and others).

More specifically, the proposed analysis of Georgian agreement adjudicates between two broad families of phasehood and the PIC, in particular with respect to Trans-

fer and deriving the crosslinguistic variation in phasal categories. Under the PIC-as-intervention model, there is no theoretical requirement for an independent constraint like the PIC since its effects can be reduced to minimality. In this dissertation, I argued that Georgian number agreement targets a vP-internal argument just in case person agreement first targets v^0 itself. My proposal thus necessitates a view where 'phases' do not undergo Transfer to the interfaces.

Finally, I argued that the PIC-as-intervention approach provides a clear explanation as to why the 'phase' intervenes. This is especially notable in contrast to the the alleviating-the-PIC approach, which inherits the problems regarding defining phases from standard phase theory. Namely, under PIC-as-intervention approach, there will hopefully be observable correlates of the (morpho-)syntactic features that derive the intervention effects. In my analysis of Georgian agreement, I showed that the vP 'phase' is a case of φ-intervention, where the φ-probe on v is an intervener with respect to person agreement. My proposal thus suggests that 'phasehood' across languages may correlate with phi-agreement. Thus, for any given language, vP behaves as a 'phase' just in case v bears a φ-probe. Languages without a vP 'phase' lack a φ-probe on v, which I argued to be the case in Hindi-Urdu.

There are several remaining questions given the scope of this project, as well as its consequences for linguistic theory. This thesis does not aim to completely subsume all of phase theory under general locality constraints; it may be the case that some phrases are indeed special in the sense that they signal points in the derivation where certain operations can and must apply (e.g. Cyclic Linearization; Fox and Pesetsky, 2004). Rather, this dissertation aims to recategorize certain phase-based phenomena as intervention effects

by discussing what the morphosyntactic correlates of such a recategorization might look like. Thus, we gain a better understanding what counts as a phase crosslinguistically, which will hopefully result in clearer insights into phase theory itself.

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