Invisible Inanimates and the Syntax of Pronominal Prefixes in Northern Iroquoian

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Invisible Inanimates and Problems for Polysynthesis in Northern Iroquoian[1]

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Abstract: Northern Iroquoian languages are famous for the complexities of their agreement systems, realized through three sets of "pronominal prefixes" (Michelson 2016; Mithun 2017; Mithun and DeCaire 2023). Drawing on new and existing material from Kanien'kéha (Mohawk), this paper proposes a formal model which captures the range of empirical patterns using standard assumptions about argument structure and agreement, combined with the proposal that inanimate nominals have *no person, number or gender (φ) features*, and are thus invisible to the agreement system. This result is important in light of the fact that Kanien'kéha and its close relative Oneida have been the subject of proposals for major parametric variation among human languages. In *The Polysynthesis Parameter*, Baker (1996) draws primarily on Kanien'kéha, arguing that a macroparameter relating to the realization of agreement morphology is responsible for a range of morphosyntactic phenomena in Kanien'kéha and other polysynthetic languages. Koenig and Michelson (2015) examine agreement puzzles in Oneida, and argue for a different type of macroparameter: that Northern Iroquoian languages differ from other languages in lacking a level of argument structure and local syntactic selection altogether. In this paper, I argue that the core empirical patterns can be captured through the proposal that inanimate nominals are featureless, and that reference to hierarchical structure is necessary to capture the full range of facts. The absence of φ-features on inanimates in turn has implications both for the typology of nominal features as well as for the Polysynthesis Parameter, a parameter which requires all arguments in polysynthetic languages to be morphologically referenced on the verb. The larger take-away message will be that complex properties of Kanien'kéha do not require appeal to radical parametric variation, but rather can be seen as the cumulative effect of smaller independently-motivated differences.

Keywords: Northern Iroquoian, Kanien'kéha, agreement, pronominal prefixes, features, polysynthesis

1 Introduction

This paper focuses on agreement puzzles and parametric variation in two closely-related Northern Iroquoian languages: Kanien'kéha (also known as Mohawk) and Oneida. The main theoretical claim advanced here is that the complex distribution of pronominal prefixes in these languages can be captured through the proposal that inanimate nominals lack person, number, and gender (φ) features, and are therefore invisible to the agreement system. This claim is of wider relevance because both of these languages have been separately argued to require major shifts in our understanding of the principles shared by human languages.

[1]First and foremost, I would like to thank the Kanien'kéha language learners and speakers who are working to revitalize and promote this language. I am particularly indebted to Mary Onwá:ri Tekahawáhkwen McDonald, Akwiratékha' Martin, Konwaronhiá:wi Helen Norton, and Katerí Deer for sharing their knowledge of the language with me (though they should not be held responsible for the details of what I say here). I am very grateful to Karin Michelson for her generosity and enthusiasm in discussing Iroquoian languages and linguistics. Thanks to the *Language* editorial team and three anonymous reviewers for extensive feedback and discussion. For helpful discussions, comments, and feedback on various aspects of this project, thanks also to Faruk Akkuş, Luis Alonso-Ovalle, Mark Baker, Arihwí:saks Benedict, Max Blackburn, Chase Boles, James Crippen, Tehokwiráthe Cross, Tsowén:te Cross, Amy Rose Deal, Terrance Gatchalian, Sophia Flaim, Heidi Harley, Robert Henderson, Matthew Hewett, Stefan Keine, JP Koenig, Simon LiVolsi, Karhó:wane McComber, Katya Morgunova, Willie Myers, Ro'nikonhkátste Norton, Will Oxford, Lefteris Paparounas, Martin Renard, and Karonhiióstha Shea Sky, as well as to audiences at UBC, Chicago, U. Arizona, U. Toronto, PLC, and the *Roti'nikonhrowá:nens* and McGill Syntax-Semantics groups; any mistakes or oversights are my own. This research was supported by a Canada Research Chair and a SSHRC Insight Development Grant.

Baker (1996) draws primarily on Kanien'kéha for his proposed "Polysynthesis Parameter"—a macroparameter relating to the realization of agreement morphology, which has far-reaching impacts on the syntax of polysynthetic languages. In a 2015 paper in *Language*, Koenig and Michelson discuss two agreement puzzles in Oneida, and reach a very different conclusion: that Oneida has "no evidence of local selection or the presence of a level of argument structure"; the result, for them, is a much wider range of possible variation in how languages map from semantic representation to morphology (Koenig and Michelson 2015, 41). In this paper, I examine the empirical landscape related to the realization of argument-indexing morphology with a focus on Kanien'kéha, and argue for an analysis which relies on the assumption—standard across various formal frameworks—that nominal arguments are selected and hierarchically organized, together with the proposal that inanimates are featureless, without appeal to macro-parameters.

What are the properties of these languages that have called for such extremities and variation in analyses? At a typological level, Northern Iroquoian languages are head-marking and polysynthetic, making frequent use of noun incorporation as well as derivational and inflectional morphology. Typical examples illustrating the complexity of verbal morphology from Kanien'kéha and Oneida are shown in (1) and (2).[2]

(1) *Enionkhitsenhaién:hahse'* *akwé:kon.*
En-ionkhi-tsenh-a-ien-hahs-e' akwekon
FUT-3PL>1PL-fire-JR-set-BEN-PUNC all
'They will kindle fire for us all.' (Kanien'kéha; Mithun 2006b, 213)

(2) Waʔ-te-khey-atat-yʌ·téle-hs-eʔ Tá·wet kháleʔ Só·s.
FACT-DUP-1SG>3PL-REFL-know-BEN-PUNC David and Susan
'I introduced David and Susan to each other.' (Oneida; Koenig and Michelson 2015, 10)

In addition to being morphologically polysynthetic, Northern Iroquoian languages share characteristics of "non-configurational" languages (Hale 1983; Payne 1992; É. Kiss 1995): they have been described as having "free" or discourse-governed word order, and exhibit null anaphora, with free-standing pronouns being pragmatically marked (e.g., Michelson 2016; Mithun 2017).

Baker (1996, 3) clearly articulates the puzzle that these languages pose for our understanding of cross-linguistic variation. He notes that there are "two extreme positions one can take toward the superficial differences among languages": either Northern Iroquoian languages differ from English in a number of small ways, and that it is "the cumulative effect of all these little differences" which result in their very different surface grammars. On the other extreme, it could be that there is *one major difference* between Kanien'kéha and Oneida on the one hand, and a language like English on the other. Though very different in their ultimate conclusions, Baker (1996) and Koenig and Michelson (2015) both argue for the latter path.

In this paper, I focus on the two main puzzles related to the distribution and realization of pronominal prefixes raised in Koenig and Michelson 2015—a prefix "shift" in the stative aspect, and a restriction on the distribution of animate nominals—and propose that both can be accounted for under a proposal in which inanimate nominals lack features for person, number, and gender altogether. Inanimates are thus entirely ignored by the agreement system. Expanding on existing empirical descriptions with new language mate-

[2] Abbreviations used in glosses follow Leipzig conventions, with the following additions: ANIM – animate; BEN – benefactive; CIS – cislocative; CL – clitic; DISTR – distributive; DUP – duplicative; DU – dual; F – feminine/indefinite; FACT – factual; FOR.PST – former past; HAB – habitual (=imperfective); HUM – human; INAN – inanimate; JR – joiner; N – neuter; NE – particle *ne*; OPT – optative; PL – plural; PUNC – punctual (=perfective); PRON – pronoun; REP – repetitive; REV – reversive; RMT – remote past; SRFL – semi-reflexive; SG – singular; TRANS – translocative; Z – feminine/zoic. Agreement prefixes belong to one of three categories: agentive/subjective (A); patientive/objective (P) or transitive (X>Y), discussed further below. In color versions of this paper, A-prefixes are red, P-prefixes are blue, and transitive prefixes are purple, in line with community-oriented pedagogical materials.

Examples are presented in a 4-line gloss, with the initial line representing the standard orthography and the second line representing the morphological break-down with underlying representations where relevant. Stress and length are assigned by regular word-level phonological processes (Michelson 1988; LiVolsi in prep), and are thus represented only on the first line.

rial, I show that the full range of pronominal prefix patterns in Kanien'kéha is not only compatible with a syntactic analysis relying on standard assumptions about agreement and argument structure, but indeed requires explicit reference to a hierarchical arrangement of arguments.

Finally, I turn to implications of this account. I contextualize the claim that inanimates are featureless within larger literature on nominal typology and discuss typological precedents and implications. Lastly, I note that the proposal that inanimates bear no φ-features requires minimally a weakening of Baker's (1996) *Morphological Visibility Condition* (MVC), the principle underlying the Polysynthesis Parameter which requires all arguments of a verb to be morphologically referenced. I propose that inanimates are invisible to the agreement system and are not associated with null morphemes, but rather the absence of agreement altogether—a result that is incompatible with the MVC. I conclude in the spirit of Haspelmath's (2018) review of the *Handbook of Polysynthesis* (Fortescue et al. 2017) that "polysynthesis" is likely best not treated as a technical term or single property for which a single parameter should account.

The remainder of this paper is organized as follows. Section 2 introduces relevant background on the language and pronominal prefix system; section 3 then articulates the proposal that inanimate nominals lack φ-features altogether. Here I lay out a probe-goal system of Agree that captures the basic patterns of pronominal prefixes in transitive and intransitive clauses. Sections 4 and 5 turn to the two puzzles related to the distribution of pronominal prefixes laid out in Koenig and Michelson 2015. The first involves an "agreement shift" in what is known as the stative aspect. I show that the stative shift pattern provides evidence that inanimate nominals cannot be analyzed as involving null agreement morphology (contra Baker 1996), but rather must be completely ignored by the agreement system. The second puzzle involves restrictions on argument realization in benefactive constructions, which I argue provides evidence that nominal arguments must be hierarchically organized. In each of these sections, I lay out the empirical pattern and then show how the absence of φ-features on inanimates and the probe-goal system developed in section 2, together with independently-supported proposals about clause structure, can handle the facts. Section 6 concludes with a summary and discussion of wider implications for nominal feature typology and for polysynthesis.

2 Northern Iroquoian agreement

Iroquoian languages are divided into Northern and Southern branches (Lounsbury 1978). Cherokee is the only language of the Southern branch, while the Northern branch includes languages of the Six Nations Rotinonhsión:ni (Haudenosaunee or Iroqouis) Confederacy: Kanien'kéha, Oneida, Onondaga, Cayuga, Seneca, and Tuscarora, as well as Wendat (Huron)/Wyandot, and a few less-documented and dormant languages (Michelson 2016; Mithun 2017; Barrie and Uchihara 2019; Mithun and DeCaire 2023). This paper focuses on Kanien'kéha [gan.jʌ̃ʔ.ˈge.ha] (ISO 639-3 moh), a language spoken in what is today called Quebec, Ontario, and New York primarily by Elders who learned it as a first language, as well as by a growing population of fluent second-language speakers and their children. DeCaire (2023) estimates a little over 600 total "advanced level" speakers across all communities, as well as over 1000 intermediate speakers, as the result of robust community-driven language revitalization efforts (Green 2009; Stacey 2016, 2024; Brant 2016, 2023; Green and Maracle 2018; DeCaire 2023; Benedict 2026).

This paper draws on the thorough description of the distribution of pronominal prefixes laid out in Koenig and Michelson 2015. Although their discussion focuses on Oneida, they note that the generalizations they list hold in other Northern Iroquoian languages as well (see also Michelson 2016; Mithun 2006a, 2017 on the close relation between Kanien'kéha and Oneida). Unless otherwise noted, all examples below are presented in Kanien'kéha. The language material in this paper is drawn in part from published sources, cited below and rechecked, and in part from consultation work with community language experts Mary Onwá:ri Tekahawáhkwen McDonald of Ahkwesáhsne and Akwiratékha' Martin of Kahnawà:ke, as

well as additional consultation on the benefactives in section 5 with first-language speakers Konwaronhiá:wi Helen Norton and Katerí Deer of Kahnawà:ke. Elicitation sessions were conducted in English and followed standard context-driven elicitation methodology (see Matthewson 2004; Bowern 2008). In some cases, spelling, glosses, or gloss abbreviations have been modified from original sources for consistency, and Kanien'kéha examples from earlier works have been updated to reflect the current orthographic norms adopted by communities (Lazore 1993). Any remaining or introduced mistakes are my own.

2.1 Verb stems and verbal inflection

Northern Iroquoian languages are typically recognized as having at least three surface parts of speech: nouns, verbs, and particles (see discussion in Michelson 2023b). Verbs will be the primary focus of our discussion here, and the basic layout of the Northern Iroquoian verb stem is previewed in (3) (Lounsbury 1953; Mithun 2009, 2017).

(3) Northern Iroquoian verb morphology
(PREPRONOMINAL PREFIX(ES) –) PRONOMINAL PREFIX – [Verb stem] – ASPECT (– TENSE)

As indicated in (3), verbs include at least a verb stem bearing an aspectual suffix (except imperatives, which lack aspect) and prefixed by a pronominal prefix, discussed in detail below. Verbs may also appear with optional past marking (see Martin 2023b; Gatchalian 2025), and with one or more of a set of what are called "prepronominal prefixes", which encode a range of grammatical information including negation, modality, location, direction, iterativity, and others (Mithun 2017; Barrie and Uchihara 2019). Examples of forms with simple verb stems illustrating the components in (3) are shown in (4).

(4) a. *wa'khní:non'*
wa'-k-hninon-'
FACT-1SGA-buy-PUNC
'I bought it'

b. *katá:wenskwe'*
k-atawen-s-kwe'
1SGA-swim-HAB-FOR.PST
'I used to swim'

c. *wakatórion*
wak-atori-on
1SGP-drive-STAT
'I have driven' (Martin 2023b)

The forms in (4) also serve to illustrate the three core aspects relevant below: perfective (glossed here following Iroquoianist literature as "punctual"); imperfective (glossed "habitual"); and stative. The perfective aspect requires the addition of one of a set of three modal prepronominal prefixes, such as the "factual" *wa'-* in (4a). Forms in the stative aspect, the focus of section 4, may have either a perfect or ongoing state interpretation, depending on their lexical aspect (Michelson 1975; Gatchalian 2025; Cross et al. to appear).

The verb stem represented in square brackets in (3) may itself be internally complex, including minimally a verb root suffixed by one or more derivational suffixes, with incorporated nouns and reflexive or middle ("semi-reflexives" in Iroquoianist terminology) markers preceding the root, as schematized in (5).

(5) Northern Iroquoian verb stem
(SEMI-)REFLEXIVE – NOUN STEM – **verb root** – DERIVATIONAL SUFFIXES

Examples of more complex verbs stems include those previewed in (1) and (2) above, as well as in (6), where

the stem components are enclosed in square brackets and the root is boldfaced. Stem-internal elements sometimes require what is called a "joiner" or a "linker" vowel in order to break up consonant clusters, here glossed 'JR'; on the distribution of the joiner, see Michelson 1988, 1989.

(6) a. *aonsakonwaia'tisákha'*
a-onsa-konwa-[ia't-**isak**-ha]-'
OPT-REP-3PL>ZSG-[body-seek-PURP]-PUNC
'they should go back to look for her' (Mithun 2009, 568)

b. *iakwatenonhsatariha'táhkhwa'*
iakwa-[ate-nonhs-a-**tarih**-a-'t-a-hkw]-ha'
1PL.EXCLA-[SRFL-house-JR-heat-JR-CAUS-JR-INST]-HAB
'we heat our house with it' (Mithun 2005, 453)

2.2 Introducing pronominal prefixes

Central to the larger discussion here are the sets of "pronominal prefixes", which expone person, number, and gender features of arguments. Chafe (1977, 493), discussing Kanien'kéha, Oneida, Onondaga, Cayuga, and Seneca, notes that "each language has on the order of sixty-five or seventy such prefixes, and one of the joys of Iroquoian linguistics has been to unravel their form and function in each language." Kanien'kéha's pronominal prefixes, from Martin 2023b, are shown in appendix A.

Pronominal prefixes are divided into three sets: (i) agent prefixes (also called "subjective"); (ii) patient prefixes (also called "objective"); and (iii) transitive prefixes.[3] These prefixes distinguish person, number, and gender (Lounsbury 1953; Chafe 1977; Michelson 2015; Martin 2023b). Person distinctions include 1st, 2nd, and 3rd persons, as well as a clusivity distinction for 1st-person non-singulars, while number includes singular ('SG'), dual ('DU'), and plural ('PL'). An example of each type of prefix is shown in (7).

(7) a. *iakenihiá:tons*
iakeni-hiaton-s
1DU.EXCLA-write-HAB
'we(DU.EXCL) write'

b. *rotí:ten*
roti-iten
MPLP-be.poor[STAT]
'they(M.PL) are poor'

c. *takhró:ris*
tak-hrori-s
2SG>1SG-tell-HAB
'you tell me' (Martin 2023b)

Third person nominals can be classed into four genders based on the pronominal prefixes they trigger: masculine ('M'), feminine/indefinite ('F'), feminine/zoic ('Z'), and neuter ('N'). Masculine gender is used for singular males and groups with at least one male. The feminine/indefinite gender comprises singular female humans, as well as non-specific or generic human referents. The feminine/zoic, on the other hand, includes singular, dual, and plural female humans, as well as animals and some supernatural beings. The choice of whether to use the feminine/indefinite or the feminine/zoic for singular female humans carries

[3] In color versions of this paper, these appear as red (A-prefixes), blue (P-prefixes) and purple (transitive prefixes), following conventions in pedagogical materials (see e.g., DeCaire 2023). This color scheme reflects the fact, discussed below, that transitive prefixes are often transparently decomposable into components reflecting the two arguments they index (red+blue=purple).

social implications; see discussion in Bonvillain 1973; Abbott 1984; Mithun 2014; Michelson 2015. Finally, nominals denoting inanimate entities are classified as neuter.

I follow Harley and Ritter (2002) and much subsequent work in taking features to be arranged in *geometries*, with more specified features entailing the presence of less specified features. Formally, I propose the featural organizations in (8) for the four genders, shown here together with their corresponding free-standing pronouns, and discussed in turn below.

(8) φ-features for 3rd person nominals

	person	gender	number	pronoun
masculine	[ANIM [HUM]]	[MASC]	[#]	*raónha*
feminine/indefinite	[ANIM [HUM]]	—	—	*akaónha*
feminine/zoic	[ANIM]	—	[#]	*aónha*
neuter	—	—	—	—

With respect to *person* features, I propose that masculine, feminine/indefinite, and feminine/zoic all contain an animate node, [ANIM], which neuter nominals lack. The claim that the least specified person category can be represented by the *absence* of features draws on discussion in Harley and Ritter 2002 as well as other specific works on a range of different languages, discussed further in section 6.1. Masculine and feminine/indefinite genders are further restricted to humans with the feature [HUM]; feminine/zoic lacks this human node, consistent with its use for animals, some supernatural entities, and women in certain contexts, sometimes described as derogatory (Bonvillain 1973; Abbott 1984; Mithun 2014; Michelson 2015). The proposal that the contrast between humans, non-human animates, and inanimates is in fact a distinction in *person* (and not gender) finds precedent in work such as Oxford 2019 for Algonquian, Lochbihler et al. 2021 for Algonquian and Dene, Toosarvandani 2023 for Zapotec, and other works cited there, discussed further in section 6.1. First and second persons would include further specifications on the person node (Harley and Ritter 2002), not discussed here.

I propose that masculine nominals are the only ones formally specified for a gender feature, [MASC]. Under this approach, the two "feminine" genders can be understood as simply the absence of this specification. This aligns with the historical trajectory, for which it has been proposed that the masculine/feminine distinction was the last to emerge (Chafe 1977), as well as with discussion in Boas 1909, noted in Abbott 1984, who called the feminine/indefinite and feminine/zoic the "non-masculine" genders.[4] The proposal that only masculine has a true gender feature may find support in the prefix paradigm in appendix A, in which singular masculine forms typically do not participate in the same range of syncretisms as the other 3rd persons (i.e., these forms would be specified for [MASC]).

Masculine and feminine/zoic encode number distinctions. Neuter and feminine/indefinite nouns do not make number distinctions, and in the glosses I do not include number for these categories. For neuter nominals, this is compatible with the proposal that they lack φ-features altogether. I suggest that the absence of a number distinction for feminine/indefinites correlates with their "indefinite" function, akin to "impersonal pronouns", like German *man*, which have been argued to be featurally deficient (e.g., Ackema and Neeleman 2018; Fenger 2018; see Little 2024 for an overview). Adopting the proposal in Harley and Ritter 2002 that gender and number are both dependent on an INDIVIDUATION node (discussed further in §6.1), one possibility would be to represent the feminine/indefinite as bearing *only* the person features in (8), and lacking an INDIVIDUATION node altogether. The use of the feminine/indefinite with singular female humans can then be understood insofar as this form is *not* marked for masculine gender, and *not* marked for number. For the purposes of this work, I remain agnostic about the featural representation of the three-way number contrast which is available for 1st/2nd persons, masculine, and feminine/zoic nouns; see Harley and Ritter 2002; Cowper 2005.

[4] Abbott (1984, 136) concludes that "Oneida may be better described as having not two feminine genders but none at all."

Finally, note that forms for feminine/zoic singular are nearly always—but not entirely—syncretic with neuter forms, as can be seen in appendix A. The syncretism is shown in (9), and a minimal pair which shows a contrast between neuter and feminine/zoic objects is shown in (10).[5]

(9) a. *kenòn:we's*
ke-nonhwe'-s
1SGA-like-HAB
'I like it(N)'

b. *kenòn:we's*
ke-nonhwe'-s
1SG>ZSG-like-HAB
'I like it(Z)' (Martin 2017, 3)

(10) a. *ienòn:we's*
ie-nonhwe'-s
FA-like-HAB
'she likes it(N)'

b. *konwanòn:we's*
konwa-nonhwe'-s
F>ZSG-like-HAB
'she likes it(Z)' (Baker 1996, 20)

In addition to the contrast in (10), further evidence for a formal distinction between feminine/zoic and neuter comes from the inventory of free-standing pronouns, used in emphatic or contrastive contexts, shown in the rightmost column in (8). While feminine/zoic nominals can be referred to with the pronoun *aónha'*, there is no pronominal form available for inanimates. Finally, while feminine/zoic forms include a number contrast, neuter does not (see appendix A). As Koenig and Michelson (2015) note, even inanimates which are clearly plural appear with a neuter prefix, not with a feminine/zoic plural form.

The above discussion is intended to provide an introduction to the featural distinctions relevant in the pronominal prefix system, though details in the featural representation of *animates* are not crucial to the analysis below. The key claim I motivate below is that neuter nominals lack formal person, number, and gender features altogether. This is in line with work on other languages with animate/inanimate contrasts, for example for languages of the Algonquian and Dene families (Oxford 2019; Lochbihler et al. 2021), as well as with Michelson (2015, 278), who describes neuter as a "formally covert gender" in Oneida. Michelson (2015) similarly contends that neuter arguments are never referenced on the verb, and Koenig and Michelson (2015, 9) describe inanimates as "invisible to morphological derivation". An important part of the proposal below will be that despite being identical on the surface, the verb in (9a) involves agreement *only* with the 1st person argument, while the verb in (9b) involves agreement with *both* arguments. We return to the empirical motivation for this in section 5.

3 Inanimates are featureless

Koenig and Michelson (2015) make four generalizations regarding the distribution of pronominal prefixes in Northern Iroquoian. Taken together, these generalizations cover the empirical patterns that any successful analysis of this system must cover, and so I use them to guide the discussion here. I show that the proposal that inanimates are featureless, coupled with a theoretically grounded proposal about agreement, can derive the full set of generalizations. This section covers the first two generalizations and lays out a system of agreement to capture the distribution of pronominal prefixes; we turn to the third and fourth generalizations in the following two sections. The first generalization is shown in (11).

(11) K&M's GENERALIZATION 1: "All verbs must have a pronominal prefix, which, by default, is a 3rd-person [neuter] prefix."

The forms in (12) illustrate. Verbs with *no arguments*, like the weather verb in (12a), as well as verbs in which the sole argument has been incorporated, as in (12b), appear with a default pronominal prefix.

[5] Throughout, where a Kanien'kéha form corresponds to multiple possible English translations—e.g., the object in (10b) could correspond to English 'it' or 'her'—the free translation corresponds to one possible reading, not the exhaustive list of meanings.

(12) a. *iokennó:re's*
io-kennor-e's
NP-rain-HAB
'it rains' (Michelson et al. 2024, 208)

b. *takawí:ren'ne'*
ta-**ka**-wir-en'-ne'
CIS.FACT-NA-baby-fall-PFV
'the baby fell' (Baker 1996, 317)

My choice to gloss the pronominal prefixes in these forms as "NA" (neuter agent) and "NP" (neuter patient) departs from the glosses of equivalent Oneida forms in Koenig and Michelson (2015), who label the default pronominal prefix in forms equivalent to (25) as "feminine/zoic", and propose that there is no morpheme corresponding to neuter agreement. Recall that singular feminine/zoic forms are nearly—but not always—syncretic with neuter forms. In this paper, I reserve the zoic gloss for verbs with true zoic arguments (see §2.2), and use 'NA' and 'NP' to represent the default forms. Ultimately, my choice of glossing aligns with the larger point in Koenig and Michelson 2015: there is no such thing as true "neuter agreement", and in the absence of an animate argument, the default form surfaces.

Koenig and Michelson's second pronominal prefix generalization is in (13).

(13) K&M's GENERALIZATION 2: "All and only (distinct) animate semantic arguments are referenced by pronominal prefixes."

This generalization is illustrated by transitive predicates in which one of the arguments is inanimate. Compare the intransitive form in (14a), which indexes its sole argument with the feminine/indefinite agent prefix "FA", with the transitive form in (14b). The transitive in (14b) has an inanimate object, which is not indexed by the pronominal prefix (regardless of whether it is overt, pro-dropped, or incorporated).

(14) a. *ieráthens*
ie-rathen-s
FA-climb.up-HAB
'she climbs up' (Martin 2023b)

b. *ienòn:we's (ne à:there')*
ie-nonhwe'-s (ne a'there')
FA-like-HAB (NE basket)
'she likes it (the basket)' (Baker 1996, 204)

While most intransitives are like (14a) in appearing with A-prefixes to index their sole arguments, some intransitives, like *io'ten* 'work' in (15a) take P-prefixes. This gives the languag its characteristic Split-S alignment (Mithun 1991), to which we return below. Importantly here, transitive verbs with inanimate subjects appear with the same P-prefixes found on P-marked intransitives, as shown in (15).

(15) a. *iakoió'tens*
iako-io'ten-s
FP-work-HAB
'she works'

b. *iakoia'takéhnhas*
iako-ia't-akehnha-s
FP-body-help-HAB
'it helps her' (Baker 1996, 204)

The patterns in (14) and (15) are systematic across the language and illustrate that—for the purposes of the verbal morphology—inanimate arguments behave as if they are not there at all.

Finally, note that the qualifier "distinct" in Koenig and Michelson's formulation in (13) covers the fact that reflexive and reciprocal forms are marked via a reflexive prefix on the verb and are morphologically intransitive in terms of their pronominal prefix selection (see (64) and discussion in §5.1). While a detailed analysis of reflexives and reciprocals is outside the scope of this paper, see Baker 1996 for an analysis which is compatible with the probe system proposed below.

3.1 Agent and patient prefixes and their probes

In the remainder of this section, I lay out a model of agreement framed within a generative probe–goal model (see e.g., Béjar 2003; Baker 2008; Preminger 2014; Deal 2025). Though modelled within this specific theoretical framework, the generalizations this model seeks to capture can be summarized in theory-neutral terms as follows: (i) argument-indexing morphology is the result of a feature-sharing relationship between a head (bearing a "probe") and a nominal argument ("goal"); (ii) this relationship ("Agree") is subject to certain locality requirements; and (iii) probe-bearing heads can include sub-lexical elements, such as particular aspects or components of the verbal projection (e.g., v^0). To model the Northern Iroquoian patterns previewed above, I propose that the pronominal prefixes are formally *pronominal clitics* generated as the result of an Agree relation between a φ-probe bearing unvalued features, represented as [uφ], and a nominal argument (Béjar 2003; Preminger 2014). The successful Agree relationship triggers the obligatory creation of a clitic, formally a D^0 head, doubling the nominal in argument position (possibly a null *pro*) (Anagnostopoulou 2003; Preminger 2019).[6] This is illustrated in (16).

(16) $[\ \ldots [_{XP}\ D^0{=}X^0{}_{[u\phi]}\ [\ \ldots [\ \ldots DP\ \ldots]\ ]\ ]\ ]$

① *Agree*; ② *cliticization*

The analysis of the pronominal prefix morphemes as pronominal clitics—i.e., D^0 heads which adjoin to the verb stem—aligns with the spirit of the Iroquoian literature which describes them as *pronouns*. Analyzing these morphemes as pronominal clitics is also consistent with diagnostics in Baker and Kramer 2018, who discuss the inability of pronominal clitics to double nominals that are quantified, anaphoric, or contain a variable bound by a quantifier; a key point in Baker 1996 is that Kanien'kéha does not have nominals of this sort, compatible with the claim that the pronominal prefixes are in fact pronominal D^0 heads. I continue to refer to the pronominal clitic doubles as "pronominal prefixes" below, noting that pronominal clitics need not be *phonological clitics* (see discussion in Bennett et al. 2018; Akkuş et al. 2025).

I propose that A- and P-prefixes are generated by φ-probes on T^0 and v^0, respectively, summarized in (17). This finds language-internal support, discussed below, and also mirrors typical locations for subject- and object-agreement generating probes cross-linguistically; see Deal 2025 for a recent overview.

(17) *A- and P-prefixes and probes*

pronominal prefix	functional head	φ-probe(s)
agent (A)	T^0	[uφ]A-probe
patient (P)	v^0	[uφ]P-probe

[6] Multiple analyses have been proposed for the details of the clitic doubling mechanism, the specifics of which are not crucial here; see Preminger 2019 for discussion and references. An alternative possibility is that the prefixes are formally *agreement* morphemes—i.e., the morphological spell-out of valued φ-features on the probe. Under assumptions in recent work that φ-Agree underlies both options (see e.g., Kramer 2014; Preminger 2019), either possibility is compatible with the core analysis below.

Recall from (3) above that the pronominal clitics attach immediately to the left edge of the verb stem, which is delineated on the right side by an aspectual suffix and optionally a tense suffix. While overt tense morphology is optional, Gatchalian (2025) provides an in-depth analysis of the temporal semantics of Kanienk'éha, and argues that the functional head T^0 is present even when not morphologically realized, making T^0 a suitable host for the A-prefix. I assume that the stem is composed of the heads internal to TP, in line with the Mirror Principle (Baker 1985), and that the clitics move to adjoin to a dedicated clitic position at the left edge of this stem, shown in (18). Prepronominal prefixes, not discussed here, adjoin further to the left.[7]

(18) $\ldots = \boxed{\mathbf{D}^0} = [_{T^0}\ V^0\text{-Voice}^0 + v^0\text{-Asp}^0\text{-}T^0\ ]$

With respect to the Split-S distribution of pronominal prefixes on intransitives, P-marking is often used for non-volitional events—but there are exceptions to this and it is generally agreed that intransitives which take P-prefixes must be understood as lexically specified (Mithun 1991; Baker 1996; Michelson et al. 2016). Baker (1996, §5.4) provides evidence that the choice of agent or patient prefix does not correlate with the independently-diagnosable differences between unergative and unaccusative verbs. For example, Baker (1996, 212) shows that both verbs in (19) pattern as unergatives (e.g., disallow incorporation of their single argument), but one requires an agent prefix, while the other requires a patient prefix. Similarly, the verbs in (20) are both syntactically unaccusative—i.e., their subjects are both internal subjects—but nonetheless differ in their pronominal prefix choice.

(19) *Unergatives*

a. *wa'thahsénto'*
wa'-t-**ra**-hsentho-'
FACT-DUP-MSGA-cry-PUNC
'he cried'

b. *wahoió'ten'*
wa'-**ro**-io'ten-'
FACT-MSGP-work-PUNC
'he worked'

(20) *Unaccusatives*

a. *wahatotáhsi'*
wa'-**ra**-t-otahsi-'
FACT-MSGA-SRFL-appear-PUNC
'he appeared (i.e., came into view)'

b. *wahokè:tohte'*
wa'-**ro**-ke'toht-e'
FACT-MSGP-appear-PUNC
'he appeared (i.e., showed up)'

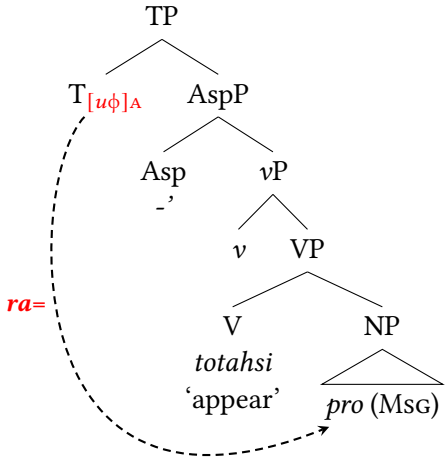
I follow Baker (1996) in taking P-prefixes to be the lexically specified or "marked" form for intransitives, with A-prefixes occurring with intransitives otherwise. The lower placement of the P-prefix probe—i.e., on a head local to the lexical root—aligns with the lexically-specified nature of these forms, as well as the fact that P-prefixes index the highest φ-bearing internal argument, as we will see below.[8] The structures in (21) and (22) illustrate the proposed Agree mechanism for intransitives (here unaccusatives) with A- and P-prefixes, respectively.[9]

[7] This proposal for word formation seems to be compatible with Dyck's (2009) work on related Cayuga, which proposes that the Cayuga verbal complex is larger than a single prosodic domain, and that pronominal prefixes are outside the domain containing the root, which would consist of the bracketed stem in (18). I leave details of the phonological implications of (18) for future work.

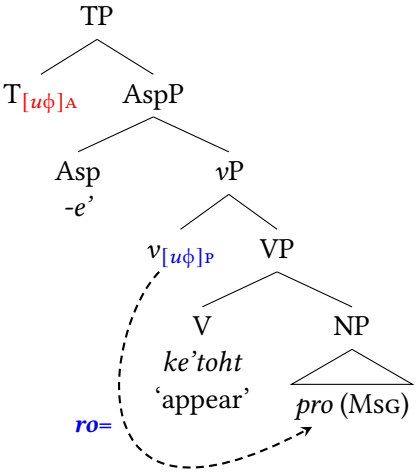
[8] Baker (1996, 217) likens P-prefixes to Icelandic quirky case and locates the feature associated with it on the verb.

[9] Trees here and throughout are simplified in some cases to focus on the main points surrounding argument structure and pronominal prefixes. For example, the form in (20a)/(21) involves a "semi-reflexive" (middle) prefix; a likely home for this would be v^0. Similarly, prepronominal prefixes, such as the factual modal prefix in (20b)/(22) are not represented in these structures.

(21) *intransitive* → A-prefix =(20a)



(22) *intransitive* → P-prefix =(20b)



From the bottom up, the verb combines with the single internal argument; here I represent the root as V (alternately, it could be a category-neutral root verbalized by the v^0 head). Following recent work in argument structure, I assume the v^0 head defines the type of eventuality of the predicate (e.g., eventive or stative, discussed further in §4; see e.g., Harley 2017 and Beavers and Koontz-Garboden 2020 for discussion of different approaches). The eventive *v*P is selected by an aspectual head Asp^0, here punctual (i.e., perfective). In (21), the unvalued φ-features on T^0 search the probe's c-command domain, entering into Agree with the intransitive subject bearing φ-features and triggering movement of the pronominal prefix (i.e., clitic double) from the agent series. The clitic adjoins to the left of the stem, as in (18).

Intransitive verbs which are lexically specified to take P-prefixes feature a lower probe [uϕ]P on v^0, as shown in (22). When a root is lexically specified to appear with P-prefixes, I assume it must be selected by the [uφ]P-probe-bearing v^0 (and conversely, this v^0 does not combine with roots not lexically specified for P-prefixes). I take unergative structures to be similar except the subject is generated in the specifier of *v*P; a lexically-specified [uφ]P-probe on unergative v^0, as in (19b), may cliticize the argument in its specifier.[10]

Crucially, note that the [uφ]A-probe is still present on the T^0 head in (22). In order to capture the absence of A-prefixes cooccuring with P-prefixes, I propose following Anagnostopoulou (2003), Béjar and Rezac (2003), Preminger (2009), and Coon and Keine (2021) that a nominal which has been cliticized is no longer visible for future Agree operations. Furthermore, following Preminger (2014) and much subsequent work, while probes with unvalued features must initiate search operations, failure to find a goal (as for the [uφ]A-probe in (22)) does not result in a derivational crash. Assuming a bottom-up model of syntactic derivation, this system correctly derives the fact that in cases where more than one probe may potentially access a single goal, the lower probe will always trigger the clitic.

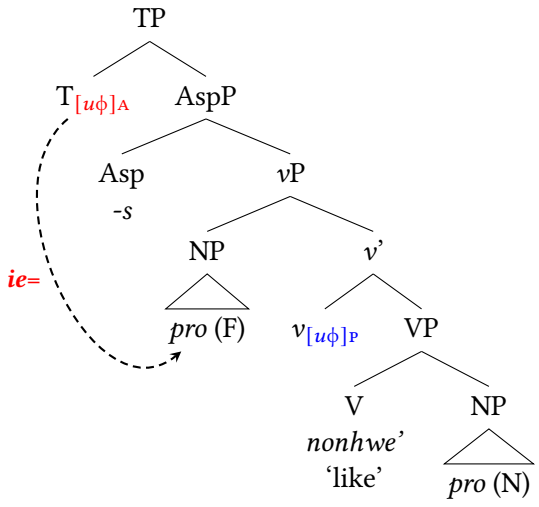
In summary, locating the [uφ]P-probe on a low head, v^0, is motivated by the generalization that P-prefixes reference the *highest internal argument*, as well as by the need for certain verbs to lexically specify a P-prefix (which can be handled by the local selectional relationship between v^0 and the root). Locating the [uφ]A-probe on a higher functional projection, here T^0, aligns with its ability to reference the highest accessible (i.e., not already-agreed-with) nominal, as well as by the stative shift pattern discussed in section 4 below. This system, together with the proposal that inanimates bear no φ-features, provides a straightforward account of the use of these prefixes in transitive verbs which have only a single animate

[10]The lexically-specified [uφ]P-probe on unergative and certain lexically-specified transitive v^0s must be distinguished from the regular (non lexically-specified) [uφ]P-probe on transitive v^0, like the one in (23), discussed below. The former can be seen as "more agressive": it creates a clitic even if this requires Agree into its specifier, and results in an expletive when no goal is found (§3.2); the latter fails when the internal argument is inanimate, allowing the higher [uφ]A-probe to agree with the external argument, discussed further in sections 3.2–3.3.

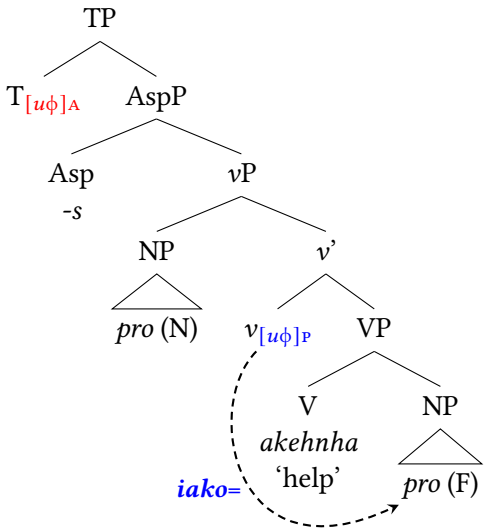
argument, in line with Generalization 2 in (13).

The proposed structure for a transitive verb with an animate external argument and an inanimate internal argument, like the one in (14b), is shown in (23). Here the lower [uφ]P-probe on v^0 finds no goal; the inanimate object is syntactically present and interpreted by the semantics, but due to its lack of φ-features, it is invisible to the agreement system (recall that failure to Agree does not crash the derivation). The higher [uφ]A-probe enters into Agree with the agent in Spec,*v*P, correctly resulting in the A-prefix. For a transitive verb with an inanimate external argument and an animate internal argument, like the one in (15b), the [uφ]P-probe enters into Agree with the internal argument, shown in (24). The featureless external argument is invisible to the higher A-probe, and only the P-prefix surfaces.[11]

(23) *INAN patient* → *A-prefix* =*(14b)*



(24) *INAN agent* → P-prefix =(15b)



The two probes on T^0 and v^0 in (17), combined with the proposal that inanimates are featureless, thus captures the patterns for verbs with only a single animate argument, whether they are transitive or not. This is in line with Koenig and Michelson's second generalization in (13). We now turn to capturing the default pronominal prefix forms from their first generalization in (11).

[11] An anonymous reviewer asks about an alternative possibility: whether inanimate nominals could in fact bear a minimal set of φ-features, but the φ-probes are *relativized* in such a way so as to be unable to see them (for example, all of the φ-probes would be relativized to search for [ANIM]). Relativization of φ-probes is commonly invoked in analyses of agreement systems which exhibit hierarchy effects, such as preferential agreement with 1st and 2nd persons (Béjar 2003; Preminger 2014; Coon and Keine 2021; see Deal 2025 for an overview). If such a system were possible, it would be difficult to distinguish empirically from the one proposed here. However, it is challenging to imagine—based on constraints on feature geometries introduced in §3.1 and typologies of nominal features, discussed further in §6.1—what this minimal φ-feature would be if we restrict ourselves to privative feature values as in Harley and Ritter 2002. In languages which make grammatical distinctions in animacy, inanimates are distinguished by animates by their *lack* of the feature [ANIMATE]. For example, Foley and Toosarvandani (2022) and Toosarvandani (2023) propose what is to my knowledge the most articulated animacy specification for the complex system in Zapotecan languages, which can encode up to a four-way contrast between (i) elders, specified as [ANIM[HUM[ELDER]]], (ii) humans, specified as [ANIM[HUM]], (iii) non-human animates [ANIM], and (iv) inanimates, which lack any specification for animacy: [ ]. Similarly, there is no independent motivation to specify number features on inanimates, which make no number distinctions (§3.1).

The reviewer suggests the possibility of inanimates bearing the *binary* feature [−ANIM], with probes relativized to search only for [+ANIM]. Though a full comparison of the use of privative vs. binary features is beyond the scope of this work, given the alignment of the present proposal with other recent work on person and animacy features, discussed further in §6.1, I maintain the present analysis, which does not require the addition of probe relativization. Ultimately, however, either option amounts to the same larger conclusions I advocate for here: the complexities of Northern Iroquoian agreement detailed in §4–5 can be captured through an analysis in which inanimates are invisible to the probe system, however that invisibility comes about.

3.2 Default forms

As stated in (11), all verbs in Kanienk'éha must appear with a pronominal prefix; when no arguments are accessible for agreement, this is a default prefix (Baker 1996; Koenig and Michelson 2015). We saw initial evidence for this in (12) above; an additional pair is given in (25).

(25) a. *wa'kaién:ta'ne'* *ne atià:tawi*
wa'-**ka**-ient-a-'n-e' ne atia'tawi
FACT-NA-be.on.ground-JR-INCH-PUNC NE shirt
'the shirt landed (on the ground)'

b. *ontia'tawi'tsheraién:ta'ne'*
wa-**w**-atia'wi'-tsher-a-ient-a-'n-e'
FACT-NA-shirt-NMLZ-JR-be.on.ground-JR-INCH-PUNC
'the shirt landed (on the ground)' (Martin 2023a)

At first, one could imagine that the neuter agent prefix in (25a) is the result of the A-probe proposed above entering into agreement with the inanimate subject, *ne atià:tawi* 'the shirt'. However, this same prefix (here a pre-vocalic allomorph) appears even when the subject is incorporated, as in (25b). Incorporated nominals are not viable goals for agreement in Kanien'kéha (Baker 1988, 1996), and we thus have another domain in which inanimate arguments are treated on par with the absence of an argument altogether.[12]

I follow Baker (1996, §7.4.2) in analyzing the default pronominal prefix forms like the ones in (25) as expletives, on par with expletive subject clitics. While subject clitics appear to be less common than object clitics among the world's languages, some subject-clitic languages are shown to use clitics in expletive subject environments, as in the Friulian and Spoken French examples in (26).

(26) a. **Al=** plof.
SUBJ.CL rains
'It's raining.' (Friulian; Poletto and Tortora 2016, 782)

b. Et là, **i=** reste plus qu'un croissant.
and there SUBJ.CL remains more than.one croissant
'And there, there's more than one croissant left.' (Spoken French; Culbertson and Legendre 2014, 88)

Of course, in Split-S Kanien'kéha, expletive subject clitics come in two possible forms: agent (NA) and

[12] As only inanimates typically undergo incorporation, the claim that incorporated nominals do not trigger agreement is not widely testable. However, as Baker (1996) discusses, support for this claim comes from alternations like the one in (i).

(i) a. *Shakonòn:we's* *(ne owirà:'a).*
shako-nonhwe'-s (ne owira'a)
MSG>3PL-like-HAB NE baby
'He likes them (babies).'

b. *Rawiranòn:we's.*
ra-wir-a-nonhwe'-s
MSGA-baby-JR-like-HAB
'He likes babies.' (Baker 1996, 316)

Certain nominals, like *owirà:'a* 'baby', may behave formally as either animate or inanimate. The non-incorporated form in (ia) appears with a transitive prefix indicating an animate plural patient. When the root *wir* 'baby' is incorporated in (ib), a transitive prefix is judged as degraded. Baker (1996, 319) notes there is some variation in judgments in forms like (ib), though "most or all of the textual examples" of animate noun incorporation lack agreement (he does not provide textual counter-examples, and I have not found any). Speakers I consulted disliked the transitive prefix form with the incorporated version in (ib), in line with Baker's characterization. See also fn. 29 below on apparent "incorporation" into stative-only predicates.

patient (NP), as shown in the forms in (12) above, repeated in (27). A successful analysis of these constructions must capture the fact that (i) verbs lexically specified for P-prefixes will show the expletive patient form, and (ii) only a single pronominal prefix is ever present on a stem (in other words, we need to rule out a scenario in which both [uφ]P-probe and [uφ]A-probe produce default forms on a single stem).

(27) a. *iokennó:re's*
io-kennor-e's
NP-rain-HAB
'it rains' (Michelson et al. 2024, 208)

b. *takawí:ren'ne'*
ta-**ka**-wir-en'-ne'
CIS.FACT-NA-baby-fall-PFV
'the baby fell' (Baker 1996, 317)

First, as already noted for P-prefix unergatives in section 3.1, I propose that the lexically-specified [uφ]P-probe proposed for intransitives like (27a) differs from the [uφ]P-probe found on regular transitive verbs in *always* resulting in a clitic, ensuring that the neuter patient form (here *io-*) will always surface in the absence of an accessible animate goal (see also fn. 10). Some evidence for this comes from a relatively small set of transitive verbs discussed in Baker 1996 which are lexically specified to index their *agents* with a P-prefix—but only when the patient is inanimate. In the transitive form in (28a), the masculine plural agent is indexed using the patient clitic; however, when both arguments are animate, as in (28b), the expected transitive prefix appears.[13]

(28) a. *ia'thonón:ko'*
ia'-t-**ron**-onko-'
TRANS.FACT-DUP-MPLP-bump-PUNC
'they bumped it' (Baker 1996, 200)

b. *ia'tekheia'tón:ko'*
ia'-te-**khe**-ia't-onko-'
TRANS.FACT-DUP-1SG>F-body-bump-PUNC
'I bumped her' (Baker 1996, 217)

These forms provide independent evidence that the lexically-specified [uφ]P-probe behaves differently than the [uφ]P-probe found on regular transitives. In a transitive like (14b)/(23) above, an inanimate internal argument results in failure of the [uφ]P-probe and an A-prefix indexes the animate subject. The lexically-specified [uφ]P-probe found on certain transitive and intransitive v^0s, however, is different: it creates a P-prefix in all constructions. In a transitive like (28a), or an unergative like (19b) above, it will enter into Agree with the external argument in Spec,*v*P, and in the absence of any accessible goal, as in (27a), it will result in the default form.

Finally, to capture the fact that only a single pronominal prefix is ever present on a Kanien'kéha stem (i.e., the default A-prefix is only inserted in the absence of any other prefix), I propose that clitics must move to occupy a single dedicated (and obligatorily filled) position at the left edge of the stem, as schematized

[13] The form in (28a) unambiguously indicates an animate agent and an inanimate theme, since an animate theme would require incorporation of the nominal root *ia't* 'body', as in (i), discussed in section 5. Thanks to a reviewer for raising this question.

(i) *ia'tiakoia'tón:ko'*
ia'-t-**iako**-ia't-onko-'
TRANS.FACT-DUP-FSGP-body-bump-PUNC
'it bumped her' (McDonald 2025)

in (18) above, repeated in (29).[14] Recall that T^0 ultimately hosts the stem created by the concatenation of heads terminating in the aspectual suffix or an optional tense suffix.

(29) $\ldots = \boxed{\mathbf{D^0}} = [_{T^0}\ V^0\text{-Voice}^0 + v^0\text{-Asp}^0\text{-}T^0\ ]$

This is in line with Baker's (1996, 217) suggestion that the generalization that all stems have a pronominal prefix can be related to an EPP requirement. This also parallels Arregi and Nevins' (2012) discussion of what they term a "T-noninitiality" requirement in Basque, in which finite auxiliaries must be preceded by a clitic. Typically, this initial clitic position is filled by an absolutive clitic in Basque, but in the absence of an absolutive clitic, an ergative clitic or an *expletive* clitic may be inserted (their "L-support"; Arregi and Nevins 2012, 5.4). In Kanien'kéha, if a patient prefix has been created by the probes internal to *v*P, this clitic will move to occupy the clitic position at the left edge of the stem. If the lower probe fails, the [uφ]A-probe on T^0 may either find a goal and move the resulting A-prefix to the clitic position, *or*, in the absence of any goal, will generate a default form, just as in the Romance examples in (26) above and Basque L-insertion.

3.3 Transitives with two animate arguments

Having tackled the distribution of A- and P-prefixes, we now turn to transitive prefixes. Transitive prefixes are reserved for verbs with two animate arguments, indexing the external argument or agent and the "primary object" in the sense of Dryer 1986 (see details in §5). The primary object is the patient or most patient-like argument of a monotransitive, as in (30a), or the applied argument of a ditransitive, as in (30b).

(30) a. *tahatié:na'*
ta-**rak**-iena-'
CIS.FACT-MSG>1SG-catch-PUNC
'he caught me'

b. *wahá:kon'*
wa'-**rak**-on-'
FACT-MSG>1SG-give-PUNC
'he gave it to me' (Baker 1996, 193)

While in many cases there are pieces of transitive morphemes that can be segmented into features of one argument or the other (Lounsbury 1953; Postal 1962; Bonvillain 1973), these are often treated, at least for expository purposes, as portmanteaux. The gloss X>Y indicates a subject with X features and a primary object with Y features. Additional examples are shown in (31).

(31) a. *wa'tkonrénhsaron'*
wa'-t-**kon**-renhsaron-'
FACT-DUP-1SG>2SG-praise-PUNC
'I praised you'

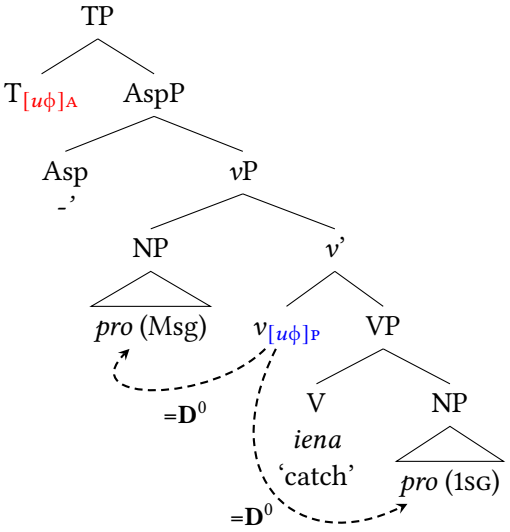
b. *tshisenihró:ris*
tshiseni-hrori-s
2DU>MSG-tell-HAB
'you(DU) tell him' (Martin 2023b)

Transitive prefix formation requires a mechanism with the ability to reference features of two arguments. Formally, I take the transitive prefixes to be the result of clitics generated by the φ-probe located on

[14] For transitive prefixes, which I take to be the result of concatenation of two clitics, I assume these undergo morphological fusion prior to movement (see Halle and Marantz 1993), and are treated by the EPP requirement as a single D^0 head; see §3.3.

v^0 which enters into Agree with the highest internal argument (i.e., the primary object) and the external argument in its specifier, shown in (32). The fact that the [uφ]A-probe on T^0 is *not* involved in the formation of the transitive prefixes will be important to the analysis of statives in section 4. In particular, I will argue below that the probes responsible for the generation of transitive prefixes must be located *below* the head responsible for aspectual contrasts, here Asp^0.

(32) *two animate arguments* → transitive prefix =(30a)



A single head with the ability to access both internal and external arguments, as with transitive v^0 pictured in (32), is regularly employed in literature on agreement which seeks to derive forms which require reference to two arguments, for example hierarchy effects and direct/inverse systems (Béjar 2003; Béjar and Rezac 2009; Deal 2024, 2025). This can be modelled within a Cyclic Agree framework, in which the v^0 agrees with the internal argument and then reprojects a probe which enters into Agree with the external argument, as proposed by Béjar and Rezac (2009) specifically for Kanienk'éha.[15] Alternatively, v^0 could in fact be composed of two bundled heads, v^0 and $Voice^0$ (Harley 2017); the [uφ]P-probe on v^0 would consistently agree with the primary object, and $Voice^0$ could introduce and enter into Agree with the external argument in its specifier via an additional probe, as in analyses of ergative agreement (Wiltschko 2006; Coon 2017). Under any implementation, it is important that the external argument is only agreed with by this low probe when Agree with the primary object is successful (i.e., the object is animate); when the primary object is inanimate, T^0 agrees with the subject resulting in an A-prefix, as in (14b)/(23). This could be captured either via specific conditions on Cyclic Agree and probe reprojection, or, on a two-probe account, via a selectional relation between $Voice^0$ and v^0, in line with transitivity requirements on probes in languages with external argument agreement (see Legate 2017).

Importantly here, the two clitics generated by these Agree relations are local to one another and therefore able to undergo idiosyncratic feature impoverishment and morphological fusion processes (Halle and Marantz 1993; Embick and Noyer 2001), resulting in the opacities and systematic syncretisms in the transitive prefix system, shown in appendix A. The system proposed here is also consistent with the fact

[15] Béjar and Rezac's (2009) account focuses on the morphological form of a subset of pronominal prefixes in Kanien'kéha, which they decompose into individual morphological components. Their focus is on the realization of an element they analyze as an inverse marker, not discussed here. My proposal here shares with Béjar and Rezac's account that the transitive prefixes are created by probes fully within the lower argument structure domain of the clause. However, their work considers only a subset of the transitive paradigm shown in appendix A, and generates *all* prefixes low in the structure (including A-prefixes), which I will argue in §4 cannot capture the full range of alternations.

that—to the extent that some of the transitive prefixes are decomposable into distinct agent and patient components—the component corresponding to features of the agent typically precedes the component corresponding to features of the patient (see e.g., Bonvillain 1973, 139). For the derivation in (32), the clitics corresponding to the masculine singular agent and the 1st person singular patient result in the MSG>1SG form *rak-* (in this particular case, decomposable into *ra* [MASC] and *k* [1SG] components).[16]

3.4 Interim summary

To summarize what we have seen to this point, Kanien'kéha verbs all appear with a single pronominal prefix chosen from one of three sets: agent, patient, or transitive. Importantly, though, transitive prefixes are reserved for verbs with two *animate* arguments; inanimates are ignored by the verbal morphology, with the result that transitive verbs which have only a single animate argument behave *morphologically* as intransitives. In the absence of any accessible animate nominal, a default form appears. These facts are the subject of Koenig and Michelson's first two generalizations, repeated in (33) and (34).

(33) K&M's GENERALIZATION 1: "All verbs must have a pronominal prefix, which, by default, is a 3rd-person [neuter] prefix."

(34) K&M's GENERALIZATION 2: "All and only (distinct) animate semantic arguments are referenced by pronominal prefixes."

I formalized these patterns with the proposal that inanimate arguments are present in the syntactic derivation, but lack φ-features altogether, and are therefore invisible to the pronominal clitic system driven by the φ-probes. Specifically, I proposed that the prefixes are generated by φ-probes located on the functional heads T^0 ([uφ]A-probe) and v^0 ([uφ]P-probe); in a transitive construction with two animate arguments, v^0 enters into Agree with both the primary object and the external argument. Once an argument has undergone cliticization, it is no longer accessible to higher probes. This fact, together with the proposal that clitics adjoin to an obligatorily-filled clitic position at the left edge of the stem delineated by T^0, correctly captures the distribution of expletive forms.

An obvious question arises at this point: are these three different probe mechanisms really necessary? Given that the two probes on T^0 and v^0 can access external and internal arguments, could it not be that these probes work in tandem to create transitive prefixes? Or alternatively, if a Cyclic Agree or low two-probe mechanism is needed to access both arguments to create transitive prefixes, could this same probe not be also responsible for A- and P-prefixes? I argue in the next section that neither mechanism alone suffices to capture the stative shift patterns. Instead, A-prefixes must be generated by a probe at or above the projection responsible for the aspectual contrast, while transitive prefixes must be generated below this projection. In a recent squib, Barrie (2023) discusses the need for separate subject and object probes (contra Béjar and Rezac 2009), but notes further that "there is currently no agreed upon mechanism for agreement in Northern Iroquoian. Indeed," he adds, "there is currently no proposal to account for the difference between subject and object agreement and its interaction with aspect" (Barrie 2023, 438). We turn to this aspectual puzzle—which corresponds to Koenig and Michelson's third generalization—next.

[16] A reviewer notes that while a system like that shown in (32) may capture the fact that transitive MSG>1SG *rak-* is decomposible into *ra-* (MSG) and *k-* (1SG), it does not obviously capture the fact that *ra-* appears to be the masculine singular *agent* prefix, which I take to be generated by the higher [uφ]A-probe on T^0—i.e., not involved in the formation of transitives. Given the effects of aspect on prefix choice to be discussed in §4, I maintain that there is nothing incompatible with claiming that *ra-* is a Vocabulary Item associated with masculine singular features in clitics generated by multiple different probes (i.e.., it's a default masculine form). I set aside a detailed morphological account of prefix forms as a topic for future work.

4 Stative shift

Pronominal prefix patterns in the stative aspect provide additional evidence for the proposal that inanimates are ignored by the verbal morphology, which I capture through the proposal that they lack φ-features. The facts seen to this point are in principle compatible with analysis like that in Baker 1996, in which inanimate nominals undergo agreement, but this agreement happens to be indexed by phonologically null morphemes. However, as discussed in Koenig and Michelson 2015, and summarized by the generalization in (35), details of the stative aspect show that this is not the case.

(35) K&M's Generalization 3: "Polyadic verbs with only one animate semantic argument behave like monadic or medadic predicates with respect to pronominal prefix selection."

As Koenig and Michelson (2015) show, this generalization goes beyond the basic patterns we saw in the previous section: for eventive predicates appearing in the stative aspect, *A-prefixes consistently shift to P-prefixes*, regardless of whether the verb is intransitive, as in (36), or transitive, as in (37).

(36) a. *kahténtie's*
k-ahtenti-'s
1sgA-go.away-hab
'I go away'

b. *wakahténtion*
wak-ahtenti-on
1sgP-go.away-stat
'I have gone away'

(37) a. *kenòn:we's*
ke-nonhwe'-s
1sgA-like-hab
'I like it(n)'

b. *wakenonwè:'on*
wake-nonhwe'-on
1sgP-like-stat
'I have liked it(n)'
(Michelson et al. 2024)

The fact that A-prefixes on eventive stems consistently shift to P-prefixes in the stative results in transitive forms which are possibly ambiguous, as shown in (38).

(38) *wakarahsénthon*
wak-arahsentho-on
1sgP-kick-stat
(i.) 'I have kicked it(n)' **or**
(ii.) 'it(n/z) has kicked me'
(Martin 2023a; McDonald 2023)

The patient pronominal prefix on the form in (38) tells us that *one* argument is animate (here 1st person singular), but not which one. Koenig and Michelson (2015) use the stative facts described in this section as part of their argument that Northern Iroquoian languages lack a level of syntactic argument structure, concluding that "morphological referencing of animate semantic arguments is a purely inflectional process in Oneida, with no syntactic reflex" (pg. 42). In other words, for Koenig and Michelson, the ambiguity in (38) is related to the fact that only a single intransitive morphological prefix form is available in the stative, and it can be associated with either an agent or a patient.

I argue that the probe system proposed above, together with an independently-motivated proposal about the nature of the stative aspect, are able to capture the patterns under the standard and framework-neutral assumption that arguments are selected by predicates and hierarchically organized. Crucially, however, capturing the pattern relies on the claim that inanimates do not enter into agreement.

4.1 Patient prefixes in the stative aspect

In section 3 we observed the split-S pattern found in Kanien'kéha intransitives: some intransitive verbs are specified to take P-prefixes (see (19b), (20b)), while others appear with A-prefixes ((19a), (20a)). Importantly, however, verbs which show aspectual alternations show a different pattern in the *stative aspect*. Kanien'kéha's three-way aspectual contrast previewed in section 2.1 is shown in (39). The intransitive verb *atori* 'drive' appears with agent prefixes in the perfective (aka "punctual", shown here with a future-punctual) and imperfective (aka "habitual") aspects in (39a)–(39b). In the stative aspect form in (39c), however, a pronominal prefix from the *patient* set appears. This is a systematic pattern for all verbs which show aspectual alternations. As previewed in (37), the absence of A-prefixes in the stative aspect also has an effect on transitive verbs with inanimate internal arguments. Recall that transitive verbs with inanimate objects appear with A-prefixes in perfective and imperfective aspects, as in (40a)–(40b). Just as intransitives which take A-prefixes switch to P-prefixes in the stative, so too transitive verbs with inanimate patients must take a P-prefix in the stative, shown in (40c) (Deering and Delisle 1976; Mithun 1991; Koenig and Michelson 2015).

(39) a. *enkató:ri'*
en-**k**-atori-'
FUT-1SGA-drive-PUNC
'I will drive'

b. *katórie's.*
k-atori-'s
1SGA-drive-HAB
'I drive'

c. *wakatórion*
wak-atori-on
1SGP-drive-STAT
'I have driven' (DeCaire 2016)

(40) a. *enkarahsénthо'*
en-**k**-arahsentho-'
FUT-1SGA-kick-PUNC
'I will kick it(N)'

b. *karahsénthos*
k-arahsentho-s
1SGA-kick-HAB
'I kick it(N)'

c. *wakarahsénthon*
wak-arahsentho-on
1SGP-kick-STAT
'I have kicked it(N)' (McDonald 2023)

Verbs which take patient prefixes or transitive prefixes in the punctual and habitual aspects, on the other hand, maintain these prefixes in the stative, as shown by the forms in (41) and (42).

(41) a. *enwakió'ten'*
en-**wak**-io'ten-'
FUT-1SGP-work-PUNC
'I will work'

b. *wakió'tens*
wak-io'ten-s
1SGP-work-HAB
'I work'

c. *wakio'tèn:'en*
wak-io'ten-en
1SGP-work-STAT
'I have worked' (DeCaire 2016)

(42) a. *enkonhró:ri*
en-**kon**-hrori-'
FUT-1SG>2SG-tell-PUNC
'I will tell you'

b. *konhró:ris*
kon-hrori-s
1SG>2SG-tell-HAB
'I tell you'

c. *konhró:ri*
kon-hrori
1SG>2SG-tell[STAT]
'I have told you' (Martin 2025)

The table in (43) illustrates the distribution of transitive, agent, and patient prefixes for verbs which show aspectual alternations.

(43) *Stative aspect prefix alternations*

	ANIM>ANIM	ANIM_P	INAN>ANIM	ANIM_A	ANIM>INAN
PUNCTUAL	TRANS	PAT	PAT	AGT	AGT
HABITUAL	TRANS	PAT	PAT	AGT	AGT
STATIVE	TRANS	PAT	PAT	PAT	PAT

Foreshadowing details of the analysis below, I argue that this distribution supports the claim from section 2 that the probes necessary to create both transitive and patient prefixes are located *below* aspect (and are thus unaffected by aspectual alternations), while the [uφ]A-probe is located higher.

4.2 Accounting for stative shift

In order to formally account for the shift to P-prefixes, I follow the analysis proposed for Kanien'kéha by Ormston (1993) and Baker and Travis (1998): the stative aspect is not a grammatical aspect on par with the habitual and punctual aspects—that is, it does not occupy Asp^0. Rather, it is a light verbal element with stative semantics, its own argument structure, and importantly, its own φ-probe.

Evidence for the special status of the stative aspect is discussed further in Ormston 1993, Baker and Travis 1998, and Gatchalian 2025; I summarize two points here. First, there is a class of property-denoting roots which combines *only* with the stative aspect. "Stative-only" roots like *rak* 'white' and *hnir* 'hard' in (44a) cannot appear in the habitual or punctual aspect without the addition of inchoative or other derivational morphology. Baker and Travis (1998)—elaborated further in Baker 2003—propose these "stative-only" roots are *adjectival* and require the use of a light verb (i.e., the stative) in order to predicate. Second, as Baker and Travis (1998) note, the stative aspect may be followed by further derivational morphology, such as causative and "progressive" morphemes (see examples in Baker and Travis 1998, and Baker and Travis 1998; Gatchalian 2025 on the derivational properties of the progressive); the same is not possible for habitual or punctual aspects. A form illustrating that stative-aspect forms may additionally be nominalized and incorporated is given in (44b). This form involves the nominal *tsikhe't* 'candy' incorporated into the stative predicate *hniron* (hard-STAT); this stem is then nominalized, and incorporated into the verb *k* 'eat', which is in turn inflected with the habitual aspect. While this type of recursive incorporation is considered "creative", the stative aspect marker was deemed necessary.

(44) a. *iohní:ron*
io-hnir-on
NP-hard-STAT
'it is hard'

b. *ktsikhe'tahnirónhtsheraks*
k-tsikhe't-a-**hnir-on**-htsher-a-k-s
1SGA-candy-hard-JR-STAT-NMLZ-JR-eat-HAB
'I eat hard candy.' (McDonald 2025)

As Ormston (1993) and Baker and Travis (1998) note, the proposal that the stative suffix is a verbal element provides us with a natural means to account for the stative prefix shift: like transitive v^0, stative v^0—represented here as $v_{\text{BE}}{}^0$—always bears a [uφ]P-probe and triggers P-prefixes.

For stative-only verbs, the stative $v_{\text{BE}}{}^0$ head combines directly with an adjectival root to derive a stative interpretation, as in (44a). To derive *perfect* interpretations found with verbs that show aspectual alternations, like (39c) above, I propose that the stative head combines with what is effectively a small clause complement, containing the argument structure up through the highest argument (here *v*P), but not the higher aspectual layer associated with the perfective/imperfective contrast (Asp^0). This is in line with the

meaning of these perfect forms: for Comrie (1976, 52), for example, the perfect denotes a state which "indicates the continuing present relevance of a past situation" (see Bertrand et al. 2022 for general discussion as well as Michelson 1975, Gatchalian 2025, and Cross et al. to appear on Kanien'kéha specifically).

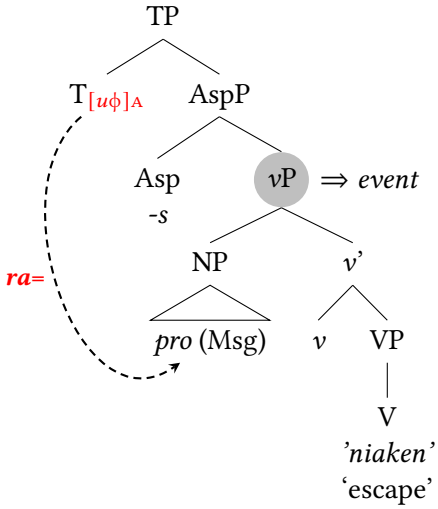
The treatment of the suffix found in the derivation of *perfect* interpretations as a stative light verb also aligns with the discussion in Mithun (2006b), who notes that an imaginable motivation behind the stative-shift pattern exemplified again in (45)–(46) is that "the person involved in *he has escaped* is not now actively instigating an action, simply experiencing the result of a previous event." In other words, while the imperfective form in (45) denotes an *event* of escaping, the stative perfect form in (46) denotes a state of having escaped. This pattern then relates to more general properties of the split-S system.

(45) *ra'niá:ken's*
ra-'niaken-'-s
MsgA-escape-INCH-HAB
'he escapes'

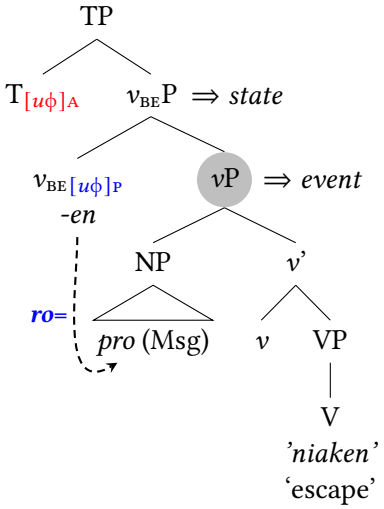
(46) *ro'niakèn:'en*
ro-'niaken-'-en
MsgP-escape-INCH-STAT
'he has escaped' (Mithun 2006b, 198)

In section 3.1 I proposed the structure in (47) for an intransitives with an A-prefix like the one in (45). The head responsible for the two-way perfective~imperfective grammatical aspect contrast, Asp^0, merges with the eventive *v*P, followed by the T^0 head which bears [uφ]A-probe. In the stative form in (46), on the other hand, stative $v_{BE}{}^0$ *merges directly with the* v*P*. The [uφ]P-probe on the stative head enters into Agree with the sole argument, triggering a patient prefix, illustrated in (48). Given the possibility of optional tense morphology on stative forms, there is reason to believe that a T^0 head is still present in these forms—however, given that the lower arguments have already been agreed with, the [uφ]A-probe here will fail.

(47) *Imperfective intransitive → A-prefix =(45)*



(48) *Stative intransitive → P-prefix =(46)*



Note that the *v*P portion of these two forms (highlighted in grey) is identical—in both examples, this portion of the structure will denote an event of a masculine singular subject escaping. What differs is what merges next. In perfective and imperfective forms, like the imperfective in (45)/(47), the aspectual head merges and contributes the appropriate aspectual interpretation. In the stative, however, the stativizing head merges and results in a *perfect* interpretation; i.e., a state in which an event of a masculine singular subject escaping has occurred. This aligns with approaches to the perfect in which the perfect is a stativizer and derives a result state, as in Kamp and Reyle 1993 and Nishiyama and Koenig 2010; see Gatchalian 2025 and Gatchalian et al. to appear for detailed semantic derivations for the Kanien'kéha perfect.

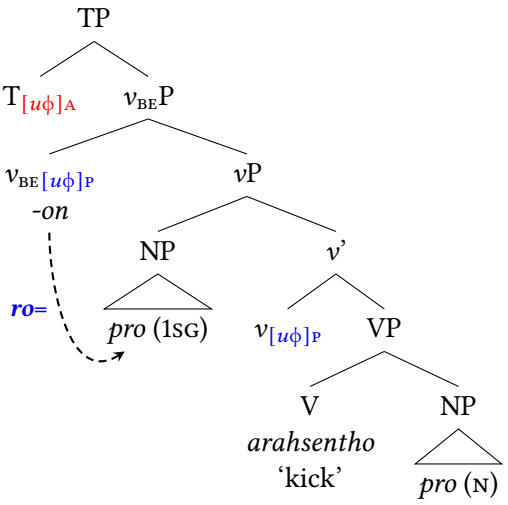
We are now in a position to understand the ambiguous stative form from (38) above, repeated in (49). Recall that in transitive forms with only a single animate argument, the P-prefix consistently references

the animate argument in the stative aspect, regardless of whether that is the agent, as in reading (i.), or the patient, as in (ii.).

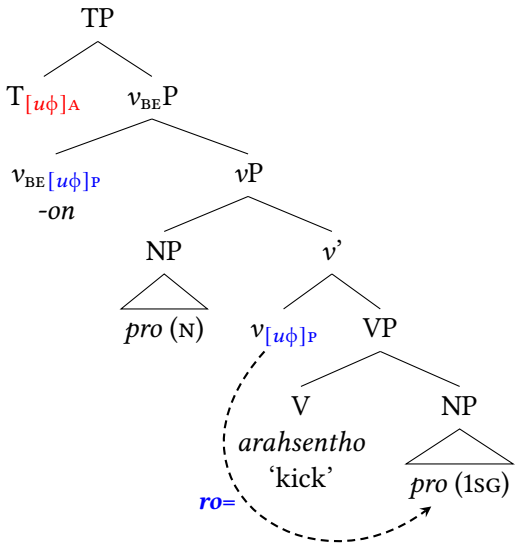
(49) *wakarahsénthon*
wak-arahsentho-on
1SGP-kick-STAT
(i.) 'I have kicked it(N)' **or**
(ii.) 'it(N/Z) has kicked me' (Martin 2023a; McDonald 2023)

The derivations for readings (i.) and (ii.) are shown in (50) and (51), respectively. In (50), the internal argument is inanimate; as in the derivation in (23) above, this means that the [uφ]P-probe on v^0 finds no goal and stops its search. Crucially, in the stative, rather than being selected by Asp^0 and then the [uφ]A-probe-bearing T^0, the *v*P is selected by stative $v_{BE}{}^0$, which also bears a [uφ]P-probe. The [uφ]P-probe enters into Agree with the animate agent, resulting in the P-prefix shown in (50). For the second reading in (49), the internal argument is animate. Here the derivations proceeds as in (24) above: the [uφ]P-probe on transitive v^0 enters into Agree with the animate internal argument; there are no features on the inanimate external argument, so the [uφ]P-probe stops. The stative head merges, just as in (50), but finds no goal: the external argument has no φ-features, and the internal argument has already been cliticized.

(50) *Stative ANIM>INAN → P-prefix (=(49), i.)*



(51) *Stative INAN>ANIM → P-prefix (=(49), ii.)*



The ambiguity in (49) then falls out naturally from the ingredients above. Transitives with animate patients and inanimate agents are expected to expone features of the patient using the P-prefix due to Agree with the [uφ]P-probe on v^0. However, transitive forms in the stative aspect always have two [uφ]P-probes: one on the lower transitive v^0, and one on the stative head itself. The derivation in which only the *agent* is animate is correctly predicted to show a patient prefix because (i) the lower argument is inanimate, meaning the [uφ]P-probe on the lower transitive v^0 fails, and (ii) the stative head bears a [uφ]P-probe which agrees with the animate argument before the higher [uφ]A-probe on T^0 has a chance to probe. The result is then that the higher [uφ]P-probe generates a P-prefix based on Agree with the agent.[17]

This proposal correctly derives the fact that it is only the *agent* prefixes that must shift in the stative aspect. This is because these are the only prefixes under this account that involve a probe on the higher T^0

[17]For completeness, note that an intransitive verb lexically specified for a patient prefix will *also* result in a derivation with two [uφ]P-probes in the stative aspect. Here the lower [uφ]P-probe on v^0 will agree with the single argument; the probe on the stative head will not find a goal due to the fact that the single argument has already cliticized.

head, and this head is made irrelevant in the stative, since the [uφ]P-probe on the lower stative head will always be the one to agree first. Verbs with two animate arguments maintain transitive prefixes across all three aspects, as in (43) above. This fact is again predicted by the proposal here: all of the probes needed to create the transitive prefixes are within *v*P and the full *v*P is projected in a transitive stative. The derivation thus proceeds as in (32) above up through *v*P. The stative head selects the *v*P, but its probe finds no goals since both animate arguments have already been agreed with.

That the shift to P-prefixes in the stative for *transitive verbs* is specific to transitives with inanimate objects can be seen by contrasting the pair in (40) above (with neuter objects, repeated in (52)) with the forms in (53) (with feminine/zoic singular objects). The key fact, foreshadowed by the pair in (36)–(37), is that despite the surface identity between 1st person agentive prefixes in (52a) and transitive prefixes with 1st person agents and feminine/zoic patients (53) (see also (9) above), the stative shift shows us that these have different underlying representations. Forms with inanimate objects behave like intransitives in shifting to P-prefixes (52b), while forms with feminine/zoic objects behave like transitives in maintaining their form (53b); see the table in (43).

(52) a. *karahsénthos*
k-arahsentho-s
1SGA-kick-HAB
'I kick it(N)'

b. *wakarahsénthon*
wak-arahsentho-on
1SGP-kick-STAT
(i.) 'I have kicked it(N)'

(53) a. *karahsénthos*
k-arahsentho-s
1SG>ZSG-kick-HAB
'I kick it(Z)'

b. *karahsénthon*
k-arahsentho-on
1SG>ZSG-kick-STAT
'I have kicked it(Z)' (Martin 2023a)

This pattern is formally captured by the proposal that the φ-features of the feminine/zoic object in (53) have been registered by the [uφ]P-probe; this successful agreement in turn triggers the [uφ]P-probe (or a cyclic reprojection of it; see §3.3) to copy back features from the agent, as in the derivation in (32) above. These two agreement relations result in a *transitive* pronominal prefix—in this case, one which happens to be identical to the 1st person singular A-prefix. In (52a), however, the inanimate internal argument is not registered by the agreement system at all; this form is derived as in (23) above via agreement with the agent by the [uφ]A-probe, which is rendered unavailable in the stative aspect form in (52b). Though different in terms of how it is formalized, this characterization aligns with the analysis of Koenig and Michelson (2015), who consider forms with only a single animate argument to be fundamentally intransitive. Postal (1962) also cites the distinction between (52b) and (53b) as evidence that the feminine/zoic gender must be formally distinguished from neuter, despite frequent syncretism.

Although the formal system—like the patterns themselves—is complex, note that all of the pieces needed to capture the distribution of pronominal prefix realization across the three main aspects find precedent in other work. These are summarized in (54).

(54) *Ingredients of the stative shift analysis*

a. Inanimate nominals lack φ-features (Oxford 2019; Lochbihler et al. 2021);

b. Two φ-probes result in the three sets of prefixes; these can be related to cross-linguistically common probes responsible for *subject* agreement ([uφ]A-probe on T^0) and *object* agreement ([uφ]P-probe on v^0); the lower probe may enter into Agree with the external argument in its specifier (Béjar and Rezac 2009; Deal 2025);

c. Nominals which have undergone cliticization are invisible to future Agree operations (Anagnostopoulou 2003; Béjar and Rezac 2003);

d. The stative aspect does not occupy Asp^0, but is a stative light verb with its own [uφ]P-probe (Ormston 1993; Baker and Travis 1998).

The proposal for stative shift further aligns with work on other aspectually-driven alignment splits in which a split in agreement marking is argued to be governed by the predicative nature of a stative or imperfective aspect marker (see e.g., Laka 2006 on Basque and Coon 2013 on the Mayan language Ch'ol). In line with the claims in Koenig and Michelson, I argue that this shift pattern provides support for the invisibility of specifically *inanimate* nominals to the morphology—but that this can be captured through a hierarchical organization of syntactic arguments, together with the absence of φ-features on inanimates.

5 Animacy restrictions

In this section, I turn to the second agreement puzzle which I claim motivates the absence of φ-features on inanimates. I argue that it is not only *compatible* with the approach to argument structure and the probe-goal system laid out above, but in fact necessitates appeal to a hierarchical organization of arguments. Specifically, this section focuses on the fourth and final of the generalizations listed in Koenig and Michelson 2015, 13, given in (55).

(55) K&M's Generalization 4: "There are no basic or derived stems with three animate semantic arguments.'

Like the stative pattern in the previous section, Koenig and Michelson (2015) propose that this pattern is *morphological* in nature, requiring no reference to syntactic structure. Their characterization of the restriction is as follows: Northern Iroquoian languages can index maximally two animate arguments on the verb, through the transitive series of pronominal prefixes. As we will see below, ditransitive verbs exist, but the third argument is restricted to being *inanimate*. They write that "it is as if inflectional morphology requires arguments to be marked, but is limited (only two arguments can be marked via pronominal prefixes), and, as a result, there are restrictions on the kind of stems (base or derived) that can 'surface' as verb forms" (Koenig and Michelson 2015, 11).[18]

I begin in section 5.1 with a look at animacy restrictions in ditransitives, which provide initial evidence that it is specifically the *theme* (lower object) of a benefactive that must be inanimate. We turn in section 5.2 to benefactives of *intransitives*, which allow us to refine the generalization and connect it to the *structural* position of the arguments in question; these first two subsections draw on the empirical observations in Baker 1996, and relate them to the proposals about pronominal prefixes in the sections above. In section 5.3, I briefly situate the Northern Iroquoian pattern within the more general literature on person/animacy restrictions and discuss how the proposed absence of φ-features on inanimates can capture the patterns.

5.1 Ditransitives

As discussed by Woodbury (1975, 26) for Onondaga, Baker (1996) for Kanien'kéha, and Koenig and Michelson (2015) for Oneida, ditransitives are restricted in Northern Iroquoian languages. Koenig and Michelson (2015, 9) note that this holds both of underived ditransitives such as the Oneida root *u* 'give', and also holds systematically of all derived triadic stems. They illustrate with the Oneida forms in (56)–(57). In both Oneida and Kanien'kéha, animate themes may not incorporate into eventive verbs (with a few apparent exceptions, discussed below). The contrast between the stems in (56) illustrates that *ahseht'* 'find' requires incorporation of the root *yaʔt* 'body' whenever the theme is animate. In (57a), the same root

[18] Mithun (2017, 763) invokes this discussion, writing: "Because there are positions in the verb template for only two core arguments, there are no ditransitive constructions." Based on examples she provides, it appears that she is using the term "ditransitive" specifically to mean verbs with three animate/morphologically referenced arguments.

appears with a benefactive applicative suffix, which introduces a beneficiary. However, this derived stem now cannot appear with an animate theme, as shown by the impossibility of (57b) with incorporated *yaʔt*.

(56) *Oneida transitive stems*

a. -ahseht'-
-hide-
'hide something'

b. -yaʔt-ahseht-
-body-hide-
'hide someone'

(57) *Oneida ditranstitive stems*

a. -ahseht-ʌ(ni)-
-hide-BEN-
'hide something from someone'

b. *-yaʔt-ahseht-ʌ(ni)-
-body-hide-BEN-
int.: 'hide someone from someone'

Baker (1996) describes a similar restriction in Kanien'kéha. In (58a), the cognate ditransitive *on* 'give' is necessarily understood as having an inanimate theme. The verb appears with a transitive pronominal prefix indexing the agent and recipient arguments. As noted by Mithun (2017) and section 3.3 above, this makes Kanien'kéha a *secundative* or *primary object* language in the sense of Dryer 1986: in terms of the agreement system, the applied object of a ditransitive (here the masculine singular recipient) is treated on par with the single object of a monotransitive. In (58b), the only possible interpretation of the stem is one in which the theme is inanimate and the dog is not understood as a verbal argument.

(58) a. *wahí:ion'*
wa-rii-on-'
FACT-1SG>MSG-give-PUNC
'I gave it to him'

b. *#è:rhar enkón:nonte'*
erhar en-kon-nont-e'
dog FUT-1SG>2SG-feed-PUNC
intended: 'I will feed you to the dog'
possible as: 'dog, I will feed you something' (Baker 1996, 193)

In addition to the verbs 'give' and 'feed' in (58), Kanien'kéha ditransitives may also be derived through the addition of a benefactive suffix (Mithun 2006b; Martin 2023b), often realized as *-hs* or *-'s*, as shown by the pair in (59). The benefactive adds a recipient, beneficiary, or maleficiary to the event (Mithun 2006b; Martin 2023b; McDonald 2026), which is then treated as the primary object; the transitive pronominal prefix *khei-* in (59b), for example, indicates a 1st person agent and feminine beneficiary.

(59) a. *Wa'katena'tarón:ten'.*
wa'-**k**-ate-na'tar-ont-en'
FACT-1SGA-SRFL-bread-bake-PUNC
'I baked bread.'

b. *Wa'kheiatena'tarónthahse'* *ne Wá:ri.*
wa'-**khei**-ate-na'tar-onth-a-**hs**-e' ne Wari
FACT-1SG>F-SRFL-bread-bake-JR-BEN-PUNC NE Mary
'I baked bread for Mary.'

As in Oneida, the restriction against animate themes holds of derived ditransitives in Kanien'kéha as well, discussed in detail in Baker 1996. A minimal pair is shown in (60). Here, the monotransitive stem *tshenri* 'find' appears with the benefactive suffix *-'s*. As above, the pronominal prefix indexes the agent and recipient. The theme is not morphologically referenced on the verb, and is restricted to being inanimate.

(60) { *Kà:sere'* / **káskare'* } *enhitshénria'se'*.
{ kasere' / *kaskare' } en-ri-tshenri-a-'s-e'
car friend FUT-1SG>MSG-find-JR-BEN-PUNC
I will find him { a car/*a girlfriend }.' (Baker 1996, 194)

Koenig and Michelson (2015, 10) note that some apparent exceptions to the animacy restriction are found in Oneida texts, but all involve nouns which they argue have "low animacy" or have a meaning suggestive of "depersonification of their referents". These are nouns which pattern unlike typical animates in other ways, for example, in their ability to undergo incorporation. The Oneida equivalent of *káskare'* in (60) is one such noun (depersonifiable into 'mate'), and indeed, Kanien'kéha speakers consulted did not find the example in Baker's original (60) outright unacceptable. However, proper names and unambiguously animate nouns were deemed ungrammatical in ditransitive theme position, as shown in (61). The presence of the incorporated *ia't* 'body' (cognate with Oneida *yaʔt* above) is indicative of an animate theme.

(61) a. **Wá:ri enhiia'tatshénria'se'*.
Wari en-ri-ia't-a-tshenri-a-'s-e'
Mary FUT-1SG>MSG-body-JR-find-JR-BEN-PUNC
intended: 'I will find Mary for him.'

b. **Enkheia'tatshénria'se'* *ne raksà:'a*.
en-khe-ia't-a-tshenri-a-'s-e' ne raksa'a
FUT-1SG>F-body-JR-find-JR-BEN-PUNC NE boy
intended: 'I will find the boy for her.' (Martin 2023a; McDonald 2023)

In a similar vein, the example in (62a) shows that the verb *atenhninon* 'sell' can combine with a 2nd person theme.[19] In (62b) we see that the benefactive applicative can be added to a stem with an inanimate theme; as expected, the transitive prefix here indexes the agent and recipient arguments. However, combining features of (62a) and (62b)—i.e., a 2nd person theme with a beneficiary—is ungrammatical. The ungrammatical form in (62c) shows that such a form is impossible using the pronominal prefix to index features of the agent and recipient and expressing the theme as a free-standing pronoun; other monoclausal attempts at expressing this meaning were deemed equally bad.

(62) a. *Wa'koniatenhní:non'*.
wa'-koni-atenhninon-'
FACT-1SG>2SG-sell-PUNC
'I sold you out.'

b. *Wa'koniatenhní:non'se'*.
wa'-koni-atenhninon-'s-e'
FACT-1SG>2SG-sell-BEN-PUNC
'I sold it to you.'

c. **Í:se'* *wahiiatenhní:non'se'*.
ise' wa-rii-atenhninon-'s-e'
PRON2SG FACT-1SG>MSG-sell-BEN-PUNC
intended: 'I sold you (out) to him.' (Martin 2023a; McDonald 2023)

I propose the structure in (63) for derived ditransitives like those in (62b): the beneficiary is introduced in the specifier of an applicative head (Appl^0), above the theme and below the agent; the head is realized by

[19] This verb can be morphologically decomposed into a form of the semi-reflexive prefix, *aten-* and the root *hninon* 'buy'. Given that the pattern presented here is not restricted this verb, I set these details aside, though see Renard to appear for a proposal.

the benefactive suffix, and its position between the stem and the aspect suffix thus aligns with the Mirror Principle. In the typology of Pylkkänen (2002, 2008), these are *high applicatives*, which relate an argument to an eventuality (here VP; see Renard to appear). The agent and beneficiary (in shaded boxes) may be animate and are referenced by the transitive pronominal prefix created by the probe on v^0 (§3.3); the lower THEME (in a plain box) must be inanimate.

(63) [TP $T^0_{[u\phi]A}$ [AspP Asp^0 [vP AGENT $v^0_{[u\phi]P}$ [ApplP BENEFICIARY $Appl^0$ [V^0 THEME]]]]]

Several pieces of evidence support the proposal that Kanien'kéha benefactives are *high applicatives*, relating a beneficiary to an eventuality, as opposed to *low applicatives*, which relate an argument to another argument (Pylkkänen 2002, 2008). First, the Kanien'kéha benefactive may apply to both unergative and stative verbs, as we will see in section 5.2, in line with Pylkkänen's (2008, 18) diagnostics for high applicative structure. Second, no transfer-of-possession relation is required; the form in (59b), for example, is felicitous both in a context in which I baked bread to give to Mary, as well as in a context in which Mary was supposed to bake bread for a party, but broke her arm and so I stepped in to bake it for her. This flexibility is compatible with high applicative structure, which relates the applied argument to the event, but unexpected with low applicative structure, which is argued to require a transfer-of-possession relation. Finally, Renard (to appear) argues that Kanien'kéha *does* have a low phonologically null "source" applicative, restricted to transfer-of-possession verbs, which contrasts with the high benefactive applicative.[20]

The basic structure in (63) aligns with proposals for ditransitives cross-linguistically in which (i) the head responsible for object agreement, v^0, c-commands both the recipient (i.e., beneficiary or applied object) and the theme in a ditransitive, and (ii) that the recipient c-commands the theme (Harley 2002; Anagnostopoulou 2003; Pylkkänen 2008; Bruening 2010; see discussion in Bárány 2024). One piece of Kanien'kéha-internal evidence for this configuration comes from the secundative nature of the prefix system: as we have already seen (e.g., the pair in (30) above), monotransitive themes are treated on par with ditransitive beneficiaries by the pronominal prefix system. This pattern receives a natural explanation in a structure in which the [uφ]P-probe is consistently present on v^0 and enters into Agree with the closest feature-bearing element it encounters: the applied beneficiary or a monotransitive theme.

Additional evidence that the beneficiary is the more structurally prominent internal argument comes from reflexives, discussed in Baker 1996. The reflexive prefix *atat-* may appear with both mono- and ditransitives, and establishes coreference between the external argument and the *primary object*, as shown by the reflexives of mono- and ditransitives in (64a) and (64b), respectively (Baker 1996; Mithun 2006b). See also Michelson 2023a for similar facts in Oneida.

(64) a. *katatarahsénthos*
k-**atat**-arahsentho-s
1SGA-REFL-kick-HAB
'I kick myself.' (Martin 2023b)

[20] An anonymous reviewer asks about the range of readings possible with the benefactive, also noting that work by Jerro (2021) on Bantu applicatives has called into question a necessary connection between applicative height and semantic interpretation. As Mithun (2006b, 212) notes, the participant added by the Kanien'kéha benefactive applicative is understood to *affected* by the situation or event denoted by the predicate, but may "be affected in a variety of ways": positively affected, adversely affected, or as a recipient. In a similar vein, Michelson et al. (2024, 16) write that the benefactive "modifies the meaning of a verb by adding a participant that benefits from or experiences a situation." Though a full treatment of benefactive applicatives is outside the scope of this work, I assume that these different readings are compatible with the high structured proposed below, and the specific role of the added participant arises pragmatically (consistent, for example, with the different possible scenarios of use for (59b)). Kanien'kéha also possesses a distinct *instrumental applicative*, not discussed here, but see Mithun 2006b.

b. *enkatatahióhare'se'*
en-k-**atat**-ahi-ohare-'s-e'
FUT-1SGA-REFL-fruit-wash-BEN-PUNC
'I will wash the fruit for myself.' (Baker 1996, 202)

I do not offer an account of reflexives here (see discussion in Baker 1996, ch. 5), but note that the fact that reflexivization targets the beneficiary in a ditransitive aligns with the proposal that the beneficiary is more structurally prominent than the theme.

While the ditransitive examples examined so far are all in line with Koenig and Michelson's generalization in (55) that verbs appear with a maximum of two animate arguments, as Baker (1996) discusses, the restriction on animate arguments is not simply about the *number* of animate arguments, but rather about the *syntactic configuration* in (63): themes cannot be animate in the presence of a recipient or applied object. If the problem were simply about the total number of arguments, we might expect ditransitives with animate themes to be possible *if the recipient or agent were inanimate*.

The first option is not testable because the argument added by a benefactive must be animate, regardless of the animacy of the theme (see discussion in Baker 1996, 194). Inanimate beneficiaries were judged bad by speakers I consulted across a number of different forms and contexts. A pair is shown in (65).

(65) a. *Wa'koniahsirahní:non'se'.*
wa'-koni-ahsir-a-hninon-'s-e'
FACT-1SG>2SG-blanket-JR-buy-BEN-PUNC
'I bought a blanket for you.'

b. **Wa'kahsirahní:non'se'* *wanitskwahráhtsheres.*
wa'-k-ahsir-a-hninon-'s-e' w-anitskwahra-htsher-es
FACT-1SGA-blanket-JR-buy-BEN-PUNC NA-chair-NMLZ-be.long[STAT]
intended: 'I bought a blanket for the couch.' (McDonald 2025; Martin 2025)

The second option is testable, and confirms that the generalization requires reference not just to the *number* of animate arguments, but to their structural configuration. Specifically, inanimate subjects of ditransitives are possible, but such constructions still do not permit animate themes in benefactives, as shown in (66). In (66a), we see that an inanimate subject—in this context, a newly-invented child-washing machine—is grammatical with an animate object. As expected, we find a patient prefix reflecting features of the animate object. Adding a benefactive with an animate theme, as in (66b), is ungrammatical regardless of the choice of prefix; here speakers commented that *ia'tohare'se'* (body-wash-BEN-PUNC) is simply not a possible verb (in line with the discussion of the Oneida form in (57b)). The form in (66c) shows that there is no inherent incompatibility with a benefactive form of *ohare* 'wash', so long as the theme is inanimate.[21]

(66) a. *Masín* *wa'akoia'tóhare'* *kheièn:'a.*
masin wa'-ako-ia't-ohare-' khe-ien'a
machine FACT-FP-body-wash-PUNC 1SG>F-child
'The machine washed my daughter.'

b. **Masín* *wa'onkia'tóhare'se'* *kheièn:'a.*
masin wa'-onk-ia't-ohare-'s-e' khe-ien'a
machine FACT-F>1SG-body-wash-BEN-PUNC 1SG>F-child
intended: 'The machine washed my daughter for me.'

[21] Baker (1996, 194) makes a similar point with an example involving rain washing a person; however, the word for 'rain' is not unambiguously nominal. Thanks to Akwiratékha' Martin for discussion of these forms.

c. *Masín* *onke'serehtóhare'se'*.
masin wa'-wake-'sere-ht-ohare-'s-e'
machine FACT-1SGP-car-NMLZ-wash-BEN-PUNC
'The machine washed the car for me.' (Martin 2025; McDonald 2025)

Reflexives of benefactives, Baker (1996) argues, provide further evidence that the restriction against animate themes in ditranstives is not about the number of agreement slots, but about the syntactic configuration. Reflexives, like those in (64) above, consistently show A-prefixes reflecting the features of the external argument and the co-indexed primary object. In principle, then, we might expect the freed-up agreement slot (i.e., the second set of features contributing to a transitive prefix) to be able to index features of an animate theme. As the ungrammatical example in (67) shows, this form is impossible both with an animate feminine theme, as well as with a reflexive theme (since the reflexivization must target the primary object, as in (64)).

(67) **wa'kheiatatia'tóhare'se'*
wa'-khei-atat-ia't-ohare-'s-e'
FACT-1SG>FI-REFL-body-wash-BEN-PUNC
intended: 'I washed her for myself.'
also bad as: 'I washed myself for her.' (Baker 1996, 202)

In this section we have seen that ditransitive themes are restricted from being animate in Kanien'kéha. I propose below that it is precisely because inanimates lack φ-features that they alone are able to appear in this position. First, we turn to differences between benefactives of *intransitives*. The same benefactive suffixes which appear on transitives to derive ditransitives may also appear on intransitives, where they also introduce a beneficiary argument (Martin 2023b). Differences in behaviour between two classes of intransitives will allow us to further pin the animacy restriction to the syntactic structure.

5.2 Benefactives of intransitives

Examples of benefactives of intransitives from Martin 2023b are shown in (68). While benefactives use a consistent set of allomorphs—here the *-hse* form seen above, as well as an allomorph *-(n)i*—they can be distinguished by patterns in pronominal prefix choice.

(68) *Benefactives of intransitives from Martin 2023b*

a.	*ioiánere'*	'it is good'	*watianerá**hse'***	'it is good for me'; 'I find it good'
b.	*iohní:ron*	'it is hard'	*wakhniròn:**se'***	'it is hard for me'; 'I find it hard'
c.	*iókste'*	'it is heavy'	*wakekstè:**se'***	'it is heavy for me'; 'I find it heavy'
d.	*wáhtons*	'it disappears'	*wakahtón:**ni***	'it has disappeared on me'
e.	*tewátia'ks*	'it breaks'	*tewakatià:k**i***	'it has broken on me'
f.	*tkanónhtons*	'I am in control'	*tkonianonhtòn:**se'***	'I am controlling you'
g.	*watió'tens*	'I work'	*konio'tén**hse'***	'I work for you'
h.	*katá:tis*	'I speak'	*koniatatià:**se'***	'I speak for you'
i.	*khtháhrha'*	'I talk'	*konhthará:**ni***	'I am talking to you'
j.	*kká:ratons*	'I tell a story'	*konkaratón:**ni***	'I tell you a story'

The first five forms in (68) appear with inanimate subjects in their underived forms in Martin 2023b, and in their benefactive form, we find the 1st person singular patient prefix *wak(e)-*, indexing the beneficiary (translated colloquially into English as 'for me', 'on me', or 'I find it…'). The second group of forms, on the other hand, appear in their intransitive forms with 1st person singular agents; in the benefactive forms we

now find the *transitive* prefix *kon(i)-*, indexing the 1st person agent and an added 2nd person beneficiary. The choice of benefactive allomorph cross-cuts these patterns.

I propose that the difference between benefactive forms presented with P-prefixes and those with transitive prefixes in (68) is not accidental, but relates to a difference in argument structure: the forms in (a.–e.) of (68) are unaccusatives, while those in (f.–j.) are unergatives. As we will see below, we find a similar animacy restriction to that seen above for applicatives of *unaccusatives*, which restrict their theme arguments to being inanimate; the first set of forms are restricted to appearing with P-prefixes. No such animacy restriction is present for applicatives of unergatives, like those in the bottom half of (68), which may therefore appear with transitive prefixes. An updated generalization—which unifies the restriction on ditransitive and applicative-of-unaccusative themes—is given in (69).

(69) *Revised animacy restriction:* If there are two internal arguments, the lower of the two (i.e., the theme) must be inanimate.

One diagnostic which distinguishes unergatives from unaccusatives is the ability of unaccusative predicates to incorporate their subjects (Baker 1996, 5.4). The examples in (70) show that the unaccusative predicate *kste* 'be heavy' from row c. in (68) can incorporate an inanimate subject. Animate themes like those in (71) may not incorporate, but here trigger the presence of the incorporated nominal *ia't* 'body'.

(70) a. *Iókste'* *ne o'neróhkwa'*.
io-kste' ne o'nerohkwa'
NP-heavy[STAT] NE box
'The box is heavy.'

b. *Io'nerohkwákste'*.
io-**'nerohkw**-a-kste'
NP-box-JR-heavy[STAT]
'The box is heavy.'

(71) a. *Roia'tákste'* *ne raksà:'a*
ro-ia't-a-kste' ne raksa'a
MSGP-body-JR-heavy[STAT] NE boy
'The boy is heavy.'

b. *Saia'tákste'*.
sa-**ia't**-a-kste'
2SGP-body-JR-heavy[STAT]
'You are heavy.' (Martin 2023a; McDonald 2023)

The benefactive applicative suffix can be added to unaccusative stems to introduce a beneficiary. While simple unaccusatives may appear with A- or P-prefixes (§2.2), benefactives of unaccusatives *always* appear with P-prefixes (discussed in Baker 1996, 5.3). The simple unaccusative in (72a) with an incorporated theme appears with an expletive A-prefix; the same verb with a benefactive applicative appears with a P-prefix indexing the applied argument in (72b).[22]

[22] A reviewer asks if the colloquial translation 'Jim dropped the glass' in (72b) suggests an alternate argument structure in which Jim is the agent, noting that it is cross-linguistically common for applicatives to also have a causative function (e.g., Shibatani and Pardeshi 2002). In Kanien'kéha, however, the same verb can also appear with the causative suffix, *-ht*, as in (i). The causative form is good, for example, in a context in which Jim purposefully shakes the table, causing the glass to fall over; the form in (72b), on the other hand, is appropriate in a context in which Jim is clumsy and a glass drops from his hand. In (i), the causative appears with the A-prefix expected of a transitive form with an animate agent and inanimate theme. Furthermore, while the theme of the benefactive in (72b) is restricted to being inanimate (see Baker 1996, 197), this is not the case for the causative form, as in (ii).

(72) a. *Takawí:sen'ne'.*
ta-**ka**-wis-en'-ne'
CIS.FACT-NA-glass-fall-PUNC
'The glass fell.' (Baker 1996, 213)

b. *Sá:k wahowí:sen'se'.*
Sak wa'-**ro**-wis-en'-s-e'
Jim FACT-MSGP-glass-fall-BEN-PUNC
'The glass fell on (i.e., to the detriment of) Jim.'; 'Jim dropped the glass.' (Martin 2023a)

The inanimate theme in a benefactive-of-unaccusative can appear incorporated or not, as seen in the pair in (73a)–(73b). The patient prefix consistently indexes the beneficiary or maleficiary.

(73) a. *Onkékste'se'* *ne o'neróhkwa'.*
wa'-**wak**-kste-'s-e' ne o'nerohkwa'
FACT-1SGP-heavy-BEN-PUNC NE box
'The box was heavy to me.' (i.e., 'I found the box heavy')

b. *Onke'nerohkwákste'se'.*
wa'-**wak**-'nerohkw-a-kste-'s-e'
FACT-1SGP-box-JR-heavy-BEN-PUNC
'The box was heavy to me.' (Martin 2023a; McDonald 2023)

However, the theme of these benefactives may not be animate, as shown by the ungrammatical forms in (74). As with the ditransitives above, these forms are bad on the intended meaning regardless of the choice of pronominal prefix; the intended meaning must simply be expressed in a different way (e.g., using a biclausal construction). Comparison with the forms in (71) above shows that there is no problem with this predicate combining with an animate theme—rather, ungrammaticality arises only with an animate theme in the presence of a benefactive.

(74) a. **Wahakia'tákste'se'* *ne raksà:'a.*
wa'-**rak**-ia't-a-kste-'s-e ne raksa'a
FACT-MSG>1SG-body-JR-heavy-BEN-PUNC NE boy
intended: 'The boy was heavy to me.'

b. **Wahstia'tákste'se'.*
wa'-**hst**-ia't-a-kste-'s-e'
FACT-2SG>1SG-body-JR-heavy-BEN-PUNC
intended: 'You were heavy to me.' (Martin 2023a; McDonald 2023)

This pattern is consistent across a number of benefactives of unaccusatives. The form in (75a) shows that *ahton* 'disappear' can be predicated of a human. A benefactive form is possible with an inanimate theme, as in (75b); as expected, a P-prefix indexes the beneficiary. The transitive prefix indexing two animate entities with the benefactive in (75c), however, is impossible (regardless of the choice of prefix).

(i) *Sá:k tahawí:senhte'.*
Sak ta-**ra**-wis-en-ht-e'
Jim DUP.FACT-MSGA-glass-fall-CAUS-PUNC
'Jim made the glass fall.'

(ii) *Takonià:tenhte'.*
ta-**kon**-ia't-en-ht-e'
DUP.FACT-1SG>2SG-body-fall-CAUS-PUNC
'I made you fall.' (McDonald 2025)

(75) a. *Wa'káhton'.*
wa'-**k**-ahton-'
FACT-1SGA-disappear-PUNC
'I disappeared.'

b. *Wakahtón:ni.*
wak-ahton-ni
1SGP-disappear-BEN[STAT]
'It has disappeared on me.' (Martin 2023b)

c. **Koniahtón:ni.*
koni-ahton-ni
1SG>2SG-disappear-BEN[STAT]
intended: 'You disappeared on me.' / 'I disappeared on you.' (Martin 2023a; McDonald 2023)

A similar trio with another predicate is illustrated in (75). See Baker 1996, 197 for additional examples.[23]

(76) a. *Kentó:re.*
k-entore
1SGA-difficult[STAT]
'I am difficult.' (i.e., I'm a difficult person)

b. *Wakentorà:se'.*
wak-entor-a-'s-e'
1SGP-difficult-JR-BEN[STAT]
'I find it difficult.' (Martin 2023b, 9)

c. **Konientorà:se'.*
koni-entor-a-'se'
1SG>2SG-difficult-JR-BEN[STAT]
intended: 'I find you difficult.' / 'You find me difficult.' (Martin 2023a; McDonald 2023)

I propose that benefactives of unaccusatives have a structure like the one in (77). The relative position of the arguments is identical to the ditransitive in (63) above, but without the external argument in Spec,*v*P. The v^0 head that merges with ApplP always bears a [uφ]P-probe (as with the v^0 in regular monotransitives), ensuring that these forms will always take a P-prefix; I take this to be a selectional fact, which one could imagine is functionally motivated by the fact that Appl^0 always introduces an animate beneficiary in its specifier. The theme must be inanimate, consistent with the revised structure-based generalization in (69). We turn to an account of this restriction in the next section.

(77) $[_{\text{TP}}\ \text{T}^0{}_{[u\phi]_\text{A}}\ [_{\text{AspP}}\ \text{Asp}^0\ [_{v\text{P}}\ v^0{}_{[u\phi]_\text{P}}\ [_{\text{ApplP}}\ \boxed{\text{BENEFICIARY}}\ \text{Appl}^0\ [\ \text{V}^0\ \boxed{\text{THEME}}\ ]\ ]\ ]\ ]\ ]$

Benefactives of unergatives, in contrast, permit two animate arguments. This is shown by the forms in the second half of the table in (68), as well as the pairs in (78b) and (79b). The verb stems *aterennot* 'sing' and *io'ten* 'work' may not incorporate their subjects, consistent with unergative structure. When they appear with a benefactive suffix, they take a transitive prefix indexing the agent and the beneficiary.

[23] While the speakers cited found the example in (76c) ungrammatical, two other speakers found a transitive-benefactive with *entor* possible, but with an interpretation in which someone is causing something to be difficult. For example, (75c) was deemed possible in a context where I'm purposefully making it difficult for a colleague to get their work done: 'I'm making it difficult for you'. These same speakers found other forms above—e.g., (61), (74), (75c)—to be strictly ungrammatical. While further work is needed to understand the range of variation, I suggest that the context offered may indicate an interpretation in which the animate participant is no longer interpreted as a theme, but as an external causer, which fits with the larger generalization here.

(78) a. *Katerennótha'.*
k-aterennot-ha'
1SGA-sing-HAB
'I sing.'

b. *Koniaterennotá:nis.*
koni-aterennot-ani-s
1SG>2SG-sing-BEN-HAB
'I sing to you.' (DeCaire 2023, 207)

(79) a. *Enwatió'ten'.*
en-**wak**-io'ten-'
FUT-1SGP-work-PUNC
'I will work.' (DeCaire 2016)

b. *Enhiió'tenhse'.*
en-**ri**-io'ten-hs-e'
FUT-1SG>MSG-work-BEN-PUNC
'I will work for him.'

The structure here mirrors that for the ditransitive in (63), but now without the theme argument. This structure, together with the proposal about the probes generating pronominal prefixes from section 3 above, correctly predicts that transitive prefixes will be available to index the agent and the applied object.

(80) $[_{TP}\ T^0_{[u\phi]_A}\ [_{AspP}\ Asp^0\ [_{vP}$ AGENT $v^0_{[u\phi]_P}\ [_{ApplP}$ BENEFICIARY $Appl^0\ [\ V^0\ ]\ ]\ ]\ ]\ ]$

The revised animacy restriction in (69) above then correctly captures the full range of empirical patterns, seen in (63), (77), and (80): when two internal arguments are present, only the highest may be animate. Put differently, themes may not be animate in the presence of a higher applied object, which generalizes across the ditransitive and benefactive-of-unaccusative structures in (63) and (77), respectively.

5.3 Situating and accounting for the restriction

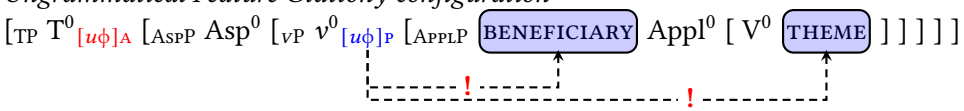
As already pointed out by Baker (1996), an account which derives the ungrammaticality of animate themes in ditransitive constructions from an insufficient number of morphological agreement "slots" on the verb, without appeal to a hierarchical argument structure, fails to capture the contrast between applicatives of unaccusatives and applicatives of unergatives. The probe-goal system laid out in section 3 provides a natural account of the facts: transitive prefixes index only the external argument and the highest internal argument; patient-prefixes are consistently found with benefactives of unaccusatives, consistent with the proposal that P-prefixes are the result of a probe on v^0 (in this case, v^0 that selects ApplP).

Animacy and person restrictions like those seen in Kanien'kéha benefactives are familiar from literature on the Person Case Constraint (PCC). While ditransitives are a common domain in which PCC effects are found, a range of work on person restrictions like these has identified the environments in which these effects occur as environments in which *two accessible nominals are found in the same domain as a single agreeing probe* (Anagnostopoulou 2003; Béjar and Rezac 2003; Nevins 2007; Preminger 2014, 2019; Oxford 2019; Coon and Keine 2021, a.o.). This includes not only ditransitives (with a low probe on v^0), but also dative-subject configurations in Icelandic (Sigurðsson 1996) and Basque (Arregi and Nevins 2012); binomial copular clauses in German (Keine et al. 2019) and Hindi-Urdu (Bhatia and Bhatt 2023); and certain transitives in Algonquian (Keine et al. 2022) and Zapotec (Foley and Toosarvandani 2022), among others. This relates directly to the fact that Kanien'kéha effects are found not just in ditransitives, but also in benefactives of unaccusatives (and crucially *not* with benefactives of unergatives). While such restrictions often involve 1st and 2nd person speech act participants, restrictions related to *animacy*—like the one found in Kanien'kéha—are also reported for other unrelated languages. Zapotec languages, for example, exhibit complex animacy hierarchies, distinguishing animates, from animals, from humans (see fn. 11), and in certain configurations restrict the lower of two nominals from certain animacy specifications.[24] Situated against this backdrop, there is nothing surprising about the animacy restriction in Kanien'kéha.

[24]While Foley and Toosarvandani (2022) describe this as a "gender case constraint", they note that the contrast is in fact one of animacy, which can be integrated into the larger person/animacy hierarchy; see also Toosarvandani 2023 for an analysis of Zapotec animacy as distinctions in *person* features; see also §6.1 below.

Within a probe-goal model, there are two families of accounts which have been used to capture PCC and related effects. Both, I propose, can be extended to Kanien'kéha under the proposal that inanimates lack φ-features. Under a *feature-gluttony* approach to PCC effects proposed in Coon and Keine 2021 (see also Keine and Mendia 2022; Keine et al. 2022; Bhatia and Bhatt 2023; Keine 2024), person restrictions are the result of an *excess* of Agree. Specifically, a probe which has entered into Agree with more than one goal is said to be "gluttonous." A gluttonous probe does not in and of itself give rise to ungrammaticality, but rather, can create irresolvable conflicts for the realization of agreement morphology, or, in the case at hand, for the movement operation involved in cliticization. To apply this approach to Kanien'kéha, I assume that the [uφ]P-probe is a Multiple Agree probe, following Hiraiwa (2001, 2005) and Keine (2024): it must enter into Agree with every accessible (i.e., φ-feature-bearing) nominal in its search domain; Agree is an obligatory operation that must take place when the structural conditions are met (Preminger 2014). Following the approach laid out in more detail in Coon and Keine 2021, I further assume that once a clitic-generating probe has entered into Agree with a nominal, this nominal must undergo cliticization. In the grammatical cases above, when a probe enters into Agree with a single argument, no problems arise. However, when there are two accessible goals in the probe's search domain, as schematized in (81), two clitics must be created. Cliticizing only one or the other nominal would violate the cliticization requirement; cliticizing both would require simultaneous head movement of two D^0 clitics to the host. As a result, a "gluttonous" cliticization probe results in ungrammaticality.[25]

(81) *Ungrammatical Feature Gluttony configuration*



The only possible configurations in Kanien'kéha in which a single probe will have access to multiple accessible goals (i.e., animate goals which have not already undergone cliticization) would be those with two internal arguments. Given that the applied object is always required to be animate, this means that gluttony—and therefore ungrammaticality—will arise exactly in configurations in which the lower of two objects is also animate. Under the proposal that inanimates lack φ-features altogether, they will not create a gluttony problem for the [uφ]P-probe, and correctly expected to be the only possibility for the theme.

An alternative line of approach to PCC effects is a *licensing-based approach*, as in Anagnostopoulou 2003, 2005; Béjar and Rezac 2003; Nevins 2007, and others. Under licensing approaches, ungrammaticality is the result not of *too much* agreement, but rather, *too little* agreement: an intervening nominal blocks the required licensing relation with a lower nominal. In order to capture the Kanien'kéha pattern, one could modify the licensing condition to require that all *animate* (i.e., φ-bearing) nominals be licensed by Agree. Baker's (1996) account of the animacy restrictions on Kanien'kéha themes is a specific version of a licensing account. Under a licensing-based approach, a question arises about why the higher [uφ]A-probe on T^0 could not enter into Agree with—and thereby license—the lower theme in a structure like (77). While various stipulations could be introduced, a point in favour of the gluttony account is the fact that this issue does not arise. Gluttony will cause a problem immediately at the point the [uφ]P-probe triggers Agree; effects of higher probes will be irrelevant. Though I know of no other Kanien'kéha-internal means to distinguish between a gluttony or licensing based approach to the animacy restriction, see Coon and Keine 2021 for empirical concerns with licensing approaches to hierarchy effects in other languages.[26]

[25] A reviewer asks how Kanien'kéha is different from languages like French or Greek, where multiple clitics are common in ditransitives. For grammatical combinations of accusative and dative clitics, these languages are often taken to employ two ordered probes: a person probe [uπ], and then a number probe [u#] (see e.g., Béjar and Rezac 2003). Notably, both French and Greek also show PCC effects; on a Feature Gluttony account, this results in ungrammaticality when the *person probe* enters into Agree with both objects simultaneously; see Coon and Keine 2021 for further discussion.

[26] One important empirical domain for distinguishing these two approaches, discussed in Coon and Keine 2021, is non-finite

For our purposes here, the important take-away message is simply that a full characterization of the animacy restriction in sections 5.1–5.2 relies on a hierarchical representation of arguments, not simply the *number* of animate arguments. The restriction against φ-bearing animates appearing in the lower theme position aligns with cross-linguistic patterns, and can be accounted for straightforwardly under either a feature gluttony or nominal licensing approach through the proposal that inanimates lack φ-features.

6 Conclusions and implications for polysynthesis

This paper examined the complex system of pronominal prefixes in Kanien'kéha, drawing on the empirical generalizations laid out in Koenig and Michelson 2015. In sections 2 and 3 I introduced the basic patterns and outlined a model which relies on two clitic-generating φ-probes: (i) a [uφ]A-probe located on T^0, responsible for A-prefixes; (ii) a [uφ]P-probe located on v^0, responsible for P-prefixes and and transitive prefixes. These probes, coupled with a standard hierarchical approach to argument structure and the proposal that inanimate nominals lack person, number, and gender features, captured the basic patterns.

Sections 4 and 5 examined two core agreement puzzles identified in Koenig and Michelson 2015: the consistent absence of A-prefixes in the stative aspect, and the restriction against animate themes with benefactive applicatives. Both puzzles, I argued, fall out from the proposal that inanimate arguments in Kanien'kéha lack φ-features and are thus ignored by the clitic-generating probe system. I argued further that the latter facts are not only compatible with a standard approach to syntactic selection and argument structure, but *require* reference to a hierarchical organization of arguments, contra conclusions in Koenig and Michelson 2015. In this last section, I conclude with broader implications for nominal typology (§6.1) and polysynthesis and macro-parametric variation more generally (§6.2).

6.1 Implications for nominal typology

The proposed featural representation for Kanien'kéha's four genders is repeated in (82). The main claim advanced in this paper is that inanimate nominals bear no φ-features at all; there is no morpheme corresponding to a "neuter gender", as also proposed in Koenig and Michelson 2015, and similarly no free-standing pronoun. The "neuter agent" and "neuter patient" pronominal prefixes seen above and in the table in appendix A are expletive forms inserted to satisfy an EPP requirement. While Koenig and Michelson's approach to the facts above involves radical alterations to the organization of grammar, the claim here is simply that inanimate nominals are merged in the syntax like other nominals, but are invisible to the probe system responsible for generating pronominal prefixes.

(82) φ-features for 3rd person nominals

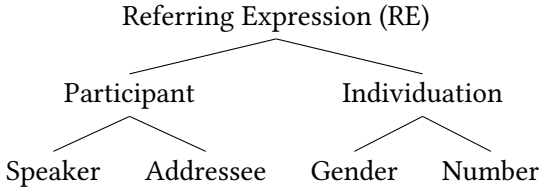
	person	gender	number	pronoun
masculine	[ANIM [HUM]]	[MASC]	[#]	*raónha*
feminine/indefinite	[ANIM [HUM]]	—	—	*akaónha*
feminine/zoic	[ANIM]	—	[#]	*aónha*
neuter	—	—	—	—

The proposal that certain categories of nominals lack certain φ-features is far from new. With respect to person features, models going back to Benveniste 1966, 1971 have recognized the need for a formal distinction between first and second person speech act participants (SAPs), on the one hand, and third

clauses which lack agreement. Under a licensing approach, nominals in these clauses should (absent special stipulations) still require licensing and thus hierarchy effects are expected to remain. In a gluttony approach, on the other hand, restrictions are the result of an *excess* of Agree and non-agreeing clauses are then expected to not show hierarchy effects. In Kanien'kéha, however, all verb forms appear with pronominal prefixes, a point discussed in Baker 1996.

persons on the other. Harley and Ritter (2002) capture this distinction in their feature geometric model by projecting a [PARTICIPANT] node (encompassing SAPs) directly from the top Referring Expression (RE) node in their geometry, a simplified version of which is shown in (83): "when the Participant node is absent, the underspecified Referring Expression node receives a so-called 3rd person interpretation" (Harley and Ritter 2002, 488) ("so-called" because 3rd person is proposed to be the absence of person).

(83) *Simplified feature geometry (Harley and Ritter 2002)*



Subsequent work has argued, however, that at least in certain languages, not all non-participant 3rd persons are alike when it comes to their formal features. Alexiadou and Anagnostopoulou (2006), Lochbihler (2012), and others have proposed that only *inanimate* 3rd persons lack person features in Algonquian; see also Ormazabal and Romero 2001; Béjar and Rezac 2003; Adger and Harbour 2007; Demonte et al. 2011; Toosarvandani 2023, among others, on connections between *animacy* and *person*. Lochbihler et al. (2021) review evidence from Algonquian and Dene language families supporting (i) a connection between animacy and person features; and (ii) the claim that specifically *inanimate* nominals in these language families lack Person features. The distinction between animate and inanimate nominals is captured through the addition of an [ANIMATE] node, dominating [PARTICIPANT], which 3rd person animates bear, as in the Kanien'kéha geometry in (82); further distinctions like [HUMAN] may be added, depending on the animacy distinctions available in a language. Importantly, these geometries are constrained by entailment relations. SAPs in Kanien'kéha, for example, would be specified on the person side of the geometry as [RE[ANIMATE[HUMAN[PARTICIPANT]]]]; 1st and 2nd person discourse participants are human, humans are animate, animates are referring expressions.

Lochbihler et al. (2021) note that they do not claim that inanimate nominals in Algonquian and Dene—which trigger number distinctions in certain contexts—lack number features. However, other work has argued for a wholesale absence of an [INDIVIDUATION] node for certain categories of nominal. Harley and Ritter (2002) discuss Pirahã (Thomason and Everett 2002), Maxakalí (Popovich 1986), and Kwakiutl (Boas 1911) as candidates for languages which lack [INDIVIDUATION]; in these languages, 3rd person pronouns would be represented simply as [RE] with no further featural specifications, on par with my proposal for inanimates in Kanien'kéha. Similarly, impersonal pronouns like Germanic *man* have been proposed to be featurally deficient, in line with my featural representation for the feminine/indefinite. As noted in section 2.2 above, I do not make a specific proposal here about *how* the three-way number contrast is best represented in Kanien'kéha, but assume that both the masculine gender feature and the number contrast is reflected on an [INDIVIDUATION] node, which both neuter and feminine/indefinite nominals lack. As discussed in Harley and Ritter 2002, the interpretation of an underspecified form will depend on the other distinctions available in a particular language; for example, while the absence of person specifications (i.e., the left side of (83)) could indicate a general 3rd person pronoun in a language with no animacy distinctions, it would index only *inanimates* in languages which make more fine-grained distinctions.

Note that while Kanien'kéha inanimates lack φ-features, they are nonetheless Referring Expressions—the root node on which other nominal features are dependent.[27] I assume category-level structure (e.g., nP/DP, or at least RE in Harley and Ritter's sense) distinguishes nominals from other categories, independent of φ-features, and that selectional relations between heads and their arguments hold at this level.

[27] RE in (83) is not intended as a generalized φ-feature (i.e., [φ]); what is important for the central claim here is that bearing φ-features is not a necessary component of being a nominal argument.

Finally, I note if it is correct that certain nominals lack φ-features altogether, this entails that φ-agreement must not be universally necessary for nominal licensing (i.e., abstract Case); see Preminger 2024 and Deal 2025 for summaries of recent work supporting this view.

6.2 Implications for polysynthesis

This work is set within a larger context, in which grammatical properties of Northern Iroquoian languages have been argued to require wide-reaching points of variation across the world's languages: (i) an absence of a syntactic level of argument structure altogether (Koenig and Michelson 2015), and (ii) a macroparameter relating to the realization of nominal arguments and agreement (Baker 1996). I argue that appeal to these types of macroparametric variation is both unnecessary and incompatible with the full set of facts. With respect to the first claim, the account above required reference to a hierarchical organization of arguments; hierarchical structure is necessary, for example, for capturing the differences between benefactives of unergatives and benefactives of unaccusatives in section 5.

In this last section, we turn to brief discussion of implications for the second macroparameter, the "Polysynthesis Parameter" proposed in Baker 1996. The empirical generalizations laid out above, especially the stative shift pattern in section 4, require inanimate nominals to be invisible the agreement system responsible for generating pronominal prefixes. However, the absence of φ-features on inanimates is directly at odds with the Morphological Visibility Condition (MVC) in (84), the formal requirement underlying Baker's macroparameter.

(84) *Morphological Visibility Condition* (Baker 1996, 17)
A phrase X is visible for θ-role assignment from a head Y only if it is coindexed with a morpheme in the word containing Y via:
a. an agreement relationship, or
b. a movement relationship.

According to Baker, polysynthetic languages are languages which are subject to the MVC: all arguments must either be agreed with by the verb (84a), or incorporate into the verb (84b). The agreement morphemes and incorporated nominals in the verbal head-marking system are then taken to absorb case features, and as a result, in order to avoid a Case Filter violation, all unincorporated nominals are necessarily high sentential adjuncts. As Baker notes, this claim draws on precedents such as Jelinek's (1984) Pronominal Argument Hypothesis. For Jelinek, agreement morphemes *are* the arguments, forcing nominals to be adjoined (see also Bresnan and Mchombo 1987); for Baker, agreement morphemes (i.e., the pronominal prefixes in Kanien'kéha) reference null pronouns in argument position. Under both approaches, we achieve a direct connection between core properties of polysynthetic and nonconfigurational languages: the languages are robustly head-marking (because the agreement markers either are the arguments, or obligatorily reference them), and freestanding nominals are optional and flexibly ordered (because they are optional adjuncts).

The status of inanimate nominals then poses a particular problem for the MVC. The empirical patterns above motivated the proposal that inanimates lack φ-features altogether. As detailed in section 4, it cannot be the case that inanimates simply enter into Agree but trigger null morphemes; as discussed in Koenig and Michelson 2015, if this were the case, there would be no straightforward way to account for the difference in behaviour between, for example, transitive verbs with *feminine/zoic* objects, and transitive verbs with *neuter* objects (compare (52) and (53) in §4.2 above). Koenig and Michelson (2015) lay out a system in which inanimate nominals are *semantic* arguments, but not *grammatical* arguments. While I do not discuss the details of their account here, I propose that the empirical observations motivating this claim can be handled by the proposal that inanimates simply lack the φ-features present on animates, and do not require any special claims about argument structure. This means that inanimates cannot satisfy the MVC by

agreement, as in (84a).

For inanimate *internal* arguments, Baker (1996) has an alternative to positing a null neuter agreement morpheme: he argues that the internal argument position is occupied by a neuter nominal, typically null, which incorporates into the verb, thereby satisfying the MVC via (84b). For Baker, this captures the animacy restriction on themes in (69) above: all arguments must be licensed by either agreement or incorporation. When there is an insufficient number of agreement positions available, only inanimate themes may surface, since only these arguments may be licensed by incorporation.

The possibility of incorporation does not exist, however, for inanimate arguments which are *not* in theme position, as in the examples in (85) (see also (15b) and (66) above). Baker (1996) glosses the pronominal prefixes *iako-* and *ro-* as *transitive* prefixes referencing a neuter subject with feminine and masculine objects, respectively. Recall from section 3.1, however, that prefixes found on transitive verbs with inanimate subjects and animate objects are identical to patient prefixes, which my glosses here reflect.

(85) a. *Ónhka iakoia'takéhnhas ne akaónha akonónhkwa'*?
onhka **iako**-ia't-akehnha-s ne akaonha ako-nonhkwa'
who FP-body-help-HAB NE her FSGPOSS-medicine
'Who does her medicine help?' (Baker 1996, 79)

b. *Sá:k raonekó:ta' wa'thoia'tò:rarake'*.
Sak rao-nekota' wa'-t-**ro**-ia't-orarak-e'
Jim MSGPOSS-ladder FACT-DUP-MSGP-body-hit-PUNC
'Jim's ladder hit him.' (Baker 1996, 111)

An important point made in Baker (1988, 1996) is that only *internal* arguments are able to incorporate. Inanimate transitive subject like the ones in (85), then, cannot satisfy the MVC via incorporation. In order to maintain the MVC, then, neuter arguments *must* enter into Agree with functional heads, as in (84a)—a position which is incompatible with the analysis of the complex agreement patterns argued for above.[28]

A rejection of the MVC converges with other recent work which has brought more empirical evidence to bear on properties of Northern Iroquoian, for example, on the question of whether all unincorporated nominals are clausal adjuncts. DeCaire et al. (2017) show that incorporation of internal arguments in Kanien'kéha is not *optional*, as characterized in Baker 1988, 1996, but rather *required* whenever it is possible. It is impossible, they demonstrate, when the internal argument is focussed. In response to the question in (86a), the object receives corrective focus and must appear unincorporated and preverbally, as in (86b). The incorporated version in (86c) is infelicitous in this context.

(86) a. *Wahahonwahní:non' ken ne Shawátis*?
wa'-ra-honw-a-hninon-' ken ne Shawatis
FACT-MSGA-boat-JR-buy-PUNC Q NE John
'Did John buy a boat?'

[28] A reviewer points out that the strongest evidence for a distinction between inanimate (neuter) nominals and feminine/zoic nominals comes from their behaviour as *internal arguments*. Specifically, despite robust syncretism between neuter and zoic forms, pronominal prefixes with 3rd person non-singular external arguments distinguish between forms with feminine/zoic versus neuter internal arguments (see (10) and the table in app. A). Similarly, we observed a difference in the stative shift pattern for neuter versus zoic internal arguments (see e.g., (52) versus (53) in §4). The reviewer asks whether one could then stipulate the presence of φ-features on inanimate *external* arguments (e.g., the [ANIM] feature proposed for feminine/zoic in (8)) in order to allow them to be licensed by agreement. If this were possible, however, we would expect that inanimate external arguments could be referenced with the feminine/zoic pronoun, contrary to fact. Speakers consulted confirm, for example, that it is impossible to replace the inanimate subject in examples like (85b) or (66a) above with the feminine/zoic pronoun *aónha'*, as would be expected if inanimate external arguments bore animate φ-features.

b. *Iah.* ***Kà:sere*** *wahahní:non'.*
iah ka'sere wa'-ra-hninon-'
no car FACT-MSGA-buy-PUNC
'No. He bought a car$_{[FOC]}$.'

c. #*Iah. Waha'**sereht**ahní:non'.*
iah wa'-ra-'sere-ht-a-hninon-'
no FACT-MSGA-car-NMLZ-JR-buy-PUNC
'No. He bought a car.' (DeCaire et al. 2017, 4)

Boles (2024) outlines an account of noun incorporation in which incorporated nominals do not involve a dedicated movement operation (as in the MVC), but rather are bare nPs which lack higher functional projections and thus form part of the larger stem-building process; DP structure, required to host focus features, interrupts incorporation. On Boles' account, *person features* involve higher functional structure, capturing the inability of animate nominals to undergo incorporation.[29] If this account is on the right track, then the wholesale absence of φ-features on inanimate nominals would have a direct relationship to the widespread use of incorporation in Northern Iroquoian. It is not the case that featureless inanimates *directly cause* incorporation; rather, featureless inanimates, combined with independent complex word-building processes in the language family, result in some of the famously complex properties of Northern Iroquoian verbs.

Flaim (2025) further investigates information structure in Kanienéha, and identifies topic and focus positions at the left edge of the clause, which she identifies with Spec,CP and Spec,TP, respectively. A context triggering both topics and foci is given in (87).

(87) a. **Question:** What are you going to buy your son and daughter for Christmas?

b. *Riièn:'a*$_{[TOP]}$ *okóntshera'*$_{[FOC]}$ *enhihní:non'se'*…
riien'a okontshera en-ri-hninon-'s-e'
my.son paint FUT-1SG>MSG-buy-BEN-PUNC
'My son, I'll buy him paint…'

c. *kheièn:'a*$_{[TOP]}$ *ahthén:no*$_{[FOC]}$ *enkhehní:non'se'.*
kheien'a ahthenno en-khe-hninon-'s-e'
my.daughter ball FUT-1SG>F-buy-BEN-PUNC
'my daughter, I'll buy her a ball.' (Flaim 2025)

Dedicated preverbal topic and focus positions, combined with the possibility of clause-final "anti-topics" (see Chafe 1976), allows for all six possible permutations of subject, verb, and object, discussed in Baker 1996 and other works. Crucially, however, a requirement that all overt nominals be high freely-ordered clausal adjuncts—as required by the MVC—does not easily capture these patterns; imposing information-structure based ordering requirements on high adjuncts would simply replicate cross-linguistically common clausal properties in a new domain. While a full review of the impacts of the MVC in Kanien'kéha grammar is outside the scope of this work (and see Koenig and Michelson 1998), it is worth noting that several correlates of polysynthesis proposed in Baker 1996—for example, an absence of nominal anaphors and the absence of nonreferential quantified nominals—are *consistent* with the claim that all nominals are adjuncts, but do not necessitate this conclusion. See also Boles 2025 for an updated look at the Condition C effects

[29] Animate nominals are sometimes described as being able to incorporate into *stative-only* stems in Northern Iroquoian. While not relevant to the larger points here, there are other differences between the restricted incorporation of inanimates into stems which show the regular three-way aspectual contrast, on the one hand, and the apparent incorporation of animates into stative-only stems, on the other (see e.g., Baker 2003; Koenig and Michelson 2015; Barrie 2023; Gatchalian et al. to appear). One approach would be to consider the latter to be more akin to creation of a complex predicate or an attributive construction (Baker 2003, 259).

discussed in Baker 1996.

Where does all of this leave polysynthesis? I conclude that "polsynthesis" should not be seen as the result of a single macro-parameter; I take this to be in line with variation in what are described as characteristic properties of polysynthetic languages, as well as proposals to account for these (see Fortescue et al. 2017). Rather, the unique grammatical properties of Kanien'kéha can be viewed as the cumulative effect of smaller properties. Recent crosslinguistic work in the domain of argument structure and agreement has broadened its scope and worked to account for a typologically broader set of languages. As highlighted throughout the discussion above, all of the formal ingredients used to capture the complex Kanien'kéha patterns find precedent in the literature. A single big macroparametric difference—either via the wholesale absence of a level of syntactic argument structure, as in Koenig and Michelson 2015, or the Morphological Visibility Condition, as in Baker 1996—is not only unnecessary in order to capture the patterns discussed here, but inconsistent with the full set of empirical facts.

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A Kanien'kéha pronominal prefixes

The table in Figure A gives the full set of pronominal prefixes for Kanien'kéha for consonant-initial stems ("C-stems"). The forms are from Martin 2023b, where forms for other stem types can also be found. The format follows that in Lounsbury 1953 with modifications from Michelson et al. 2016 for Oneida. Agent and patient prefixes are shown in red and blue, respectively. As discussed above, these forms are used for verbs with only a single animate argument, regardless of whether they are intransitive (i.e., the animate argument is the only argument) or transitive (i.e., one of the two arguments is neuter). Note that they are almost—but not entirely—syncretic with feminine/zoic forms. Finally, following Michelson 2016, the "neuter" or default prefixes are placed outside of the table, illustrating that they do not otherwise participate in the system.

P→ / A↓	1SG	1DU	1PL	2SG	2DU	2PL	Agent	FZSG	MSG	FI	FZDU/PL	MDU/PL	N
1SG				*kon-*			***k(e)-***		*ri-*	*khe-*			
1EX.DU				*keni-*			***iakeni-***		*hshakeni-*	*iakhi-*			
1EX.PL				*kwa-*			***iakwa-***		*hshakwa-*				
1IN.DU							***teni-***		*htshiteni-*	*iethi-*			
1IN.PL							***tewa-***		*htshitewa-*				
2SG	*tak(e)-*						***hs(e)-***		*htsh(e)-*	*hshe-*			
2DU	*takeni-*						***seni-***		*htshiseni-*	*ietshi-*			
2PL	*takwa-*						***sewa-***		*htshisewa-*				
Patient	***wak(e)-***	***ionkeni-***	***ionkwa-***	***sa-***	***seni-***	***sewa-***		***io-***	***ro-***	***iako-***	***ioti-***	***roti-***	***io-***
FZSG							***ka-***						
MSG	*rak(e)-*	*hshonkeni-*	*hshonkwa-*	*hia-*	*htshiseni-*	*htshisewa-*	***ra-***			*hshako-*			
FI	*ionk(e)-*	*ionkhi-*		*iesa-/ ionsa-*	*ietshi-*		***ie-***	*konwa-*	*ronwa-*	*iontat(e)-*	*konwati-*	*ronwati-*	
FZDU							***keni-***			*iakoti-*	*konwati-/ iakoti-*	*ronwati-/ iakoti-*	
FZPL							***konti-***						
MDU							***hni-***			*hshakoti-*	*konwati-/ hshakoti-*	*ronwati-/ hshakoti-*	
MPL							***rati-***						
N							***ka-***						

Figure 1: Kanien'kéha C-stem pronominal prefixes from Martin 2023b, following the format of Mithun 2010 and Michelson et al. 2016