

Mirrors and Microparameters:
Phrase Structure Beyond Free Word Order

David Adger, Daniel Harbour, Laurel Watkins

September 2008

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Acknowledgements

We wish to express our profound gratitude to Dorothy Delaune, Florene Taylor, Dorothy Gray and Ellafay Horse, and to Gus Palmer Jr., for sharing with us their knowledge of the Kiowa language, and to Carrie Guoladdle, Carl and Vanessa Jennings, and Lynda Delaune for facilitating many meetings. All were unstinting in their generosity, patience, and enthusiasm and, without them, the research reported below would not have been possible.

Portions and versions of this work were presented at the Linguistic Association of Great Britain (University of Cambridge 2005), GLOW XXX (Universitetet i Tromsø 2007), and the Conference on Quantification and Focus (Queen Mary, University of London 2007), and at colloquia at the University of York (2005), the University of Newcastle upon Tyne (2006), the School for Oriental and African Studies (2006), the University of Toronto (2006), and Universität Potsdam (2008). We thank the organizers and audiences of those meetings. We are furthermore grateful to Guglielmo Cinque, Roland Hinterhölzl and Andrew Nevins for detailed comments on manuscript drafts, and to Stepanie Harves, Richard Kayne, Alec Marantz, Vieri Samek-Ludovici and Anna Szabolcsi for discussion of ideas at earlier stages.

The work reported below was funded by the British Arts and Humanities Research Council, grant number RG/AN1310/APN17572, and also incorporated results from Watkins' earlier US National Science Foundation grant, SBR 9109866, and recordings kindly and fortuitously provided by the Summer Institute of Linguistics. We thank all three bodies.

Abbreviations and notation

-	morpheme boundary
—	phonological boundary between agreement prefix and verb
—	absence of material
∅	zero morpheme
1	first person
2	second person
3	third person
A	animate plural (an agreement type)
ACC	accusative
ACT	active
AG	agent
ANAPH	anaphor
ASP.∅	zero aspect
AUX	auxiliary
CONJ	conjunction
CNTFL	counterfactual
D	dual
DEP	dependent (subordinate)
DO	direct object
DETR	detransitive
DISTR	distributive
EVID	evidential
EX	exclusive
F	feminine
FACT	factive
FOCUS	focus
FREQ	frequentative
GEN	genitive
HAB	habitual
HORT	hortative
I	inverse (number, generally singular for inanimates, plural for animates)
IMP	imperative
IMPF	imperfective
IN	inclusive
INDEF	indefinite
INF	infinitive
INFER	inferential
INJ	injunctive
INSTR	instrumental
IO	indirect object
LOC	locative

MIR	mirative
MOD	modal
NE	<i>ne</i> (a Mohawk morpheme)
NEG	negative
NOM	nominative
NONPAST	nonpast
NV	non-verbal
O	object
OBLIG	obligational
OPPSEX	opposite sex
OPT	optative
P	plural
PAST	past
PF	perfective
POSS	possessive
PRES	present
PROH	prohibitive
PRIOR	prior
PRIV	privative
PRT	particle
PUNC	punctual
Q	interrogative
REAL	real, prototypical
REFL	reflexive
REL	relative clause marker
S	singular
STAT	stative
SPCH	speech
SURM	surmissory
TE	<i>té</i> (a Kiowa morpheme)
Z	zoic (a Mohawk gender)

Kiowa phonemes and orthography

Consonants

	Labial	Dental	Alveolar	Palatal	Velar	Laryngeal
Voiceless stop	p	t			k	(ʔ)
Aspirated stop	ph	th			kh	
Ejective stop	pʼ	tʼ			kʼ	
Voiced stop	b	d			g	
Voiceless affricate			x [c]			
Ejective affricate			xʼ			
Voiceless fricative			s			h
Voiced fricative			z			
Nasals	m	n				
Liquid		l				
Glide	w			y		

Vowels

	Short		Long		Diphthong	
	Front	Back	Front	Back	Front	Back
High	i	u	ii	uu		ui
Mid	e	o	ei	ou		oi
Low	a	ɔ	aa	ɔɔ	ai	ɔi

Vowel diacritics

	High tone		Falling tone		Low tone	
	Short	Long	Short	Long	Short	Long
Oral	ṽ	ṽṽ	ṽ̌	ṽ̌ṽ	v	vv
Nasal	ṽ̃	ṽ̃ṽ̃	ṽ̌̃	ṽ̌̃ṽ̃	ṽ	ṽṽ

Chapter 1

Introduction

1.1. What this book is about

There is a difference between liberty and anarchy. Liberty is freedom from some constraints; anarchy is the absence of all. Nonconfigurationality, defined as the confluence of radical pro-drop, freedom of word order and non-contiguity of (sub)constituents, seems to represent the anarchic end of the linguistic spectrum. What is missing from current studies is the search for order beyond these three simple criteria. In this book, we tackle this issue through the detailed study of one particular nonconfigurational language, showing that robust configurational effects, familiar from other languages, lie beyond the scope of the three definitional criteria. This holds important implications for linguistic theory as it entails that the deep phrasal architecture of nonconfigurational languages does not differ radically from that of more commonly studied ones.

We will show that Kiowa, our language of study, has radical pro-drop, extremely free argument order, and free splitting of constituents. These are the hallmarks of nonconfigurationality. However, Kiowa exhibits three major configurational restrictions and the interplay between these and Kiowa's nonconfigurational properties is important for how we understand crosslinguistic variation, syntactic structure and the nature of the syntactic interfaces. The generalizations all involve mirroring of hierarchies around the axis of the verb. In one case, preverbal particles and postverbal suffixes have inverse orders; in another case, postverbal constituents are rigidly bound in the reverse of their default (hierarchically induced) order; and in the last case, one and the same set of focus-marked and quantificational elements is banned from the pre- and postverbal extremities.

In deriving these generalizations, we develop a theory of clause structure with several important ramifications. These relate to the nature of crosslinguistic parametrization (in particular, the notion of macro- versus microparameters), to the syntax–semantics interface (the interpretation of different varieties of argument chains), and to the morphology–syntax interface and the theory of phrase structure (specifically, the explanatory utility of Mirror Theory, Brody 2000a).

We begin, in chapter 2, with one of the most influential approaches to nonconfigurationality, the Pronominal Argument Hypothesis developed by Jelinek (1984) and implemented in greatest detail, by Baker (1996), as a macroparameter (that is, as an abstract specification of deep organizing principles of the language). We show that Kiowa bears all of the hallmarks of nonconfigurationality and yet that a pronominal argument analysis fails for this language in a way that suggests a microparametric approach, best stated in terms of properties of functional heads in Kiowa clauses (*cf.* Legate 2001).

In chapter 3, therefore, we focus on the salient characteristics of the Kiowa clause. We establish two of the generalizations mentioned in the opening paragraph and tie these to crosslinguistic work on the hierarchy of functional projections. These generalizations form the basis of chapter 4, where we compare three accounts of phrase structure and show that Mirror Theory provides the best account of both generalizations: the configurationality of the clausal spine, and the configurationality this induces after the verb.

With this in hand, we turn, in chapter 5, to freedom of argument order before the verb, arguing that much of it is due to movement operations arising from information- and discourse-structural considerations. Against the background of this freedom of argument placement, we elaborate a third generalization: that certain classes of expressions, including focal-marked and quantificational items, are forbidden from certain syntactically distinct positions.

In chapter 6, we explain this generalization by first showing that the Mirror theoretic analysis we developed in chapter 4 gives us a range of possible chain types. A maximally simple approach to the syntax–semantics interface gives us an explanation for the restrictions in terms of positions that can only be occupied in virtue of base generation (External Merge).

Overall, we argue that Kiowa nonconfigurationality is best thought of as arising from a conspiracy of microparameters interacting with universal principles of clause structure, chain formation and the syntax–semantics interface. Moreover, we demonstrate the inadequacy of movement-based theories of apparent rightward specifiers, even when implemented in terms of roll-up remnant derivations, and show that the possibility of apparent rightward specifiers is intimately tied to the morphology–syntax interface (1a–c). This amounts to the claim that one of the major trends of recent syntactic research is incorrect.

For explicitness, we state here the parameters, and parameter settings, argued for in the subsequent chapters:

(1) **Parameter settings in Kiowa**

- a. absence, for some heads, of any morphological realization
- b. low spell out of the verb and its affixes
- c. absence of Case- and EPP-related movement
- d. the possibility of scrambling and, relatedly, obligatory surface scope of quantifiers

- e. the transparency of DPs to extraction of a left specifier, that is, inactivity of the Left Branch Condition
- f. the availability of Romance-like Clitic Left Dislocation structures

1.2. The Kiowa language

In the remainder of this chapter, we present a brief summary of the core properties of Kiowa grammar. This introduces both the main phenomena to be analyzed in subsequent chapters and provides general background necessary to understanding the glossing system used throughout this book. More detail on most of the topics summarized below can be found in Watkins 1984. We begin with some brief notes about the people whose language this is.

1.2.1. Historical sketch

When they first entered written historical records, the Kiowa were resident in the Black Hills of Montana. According to tribal memory, the original tribe had split and migrated in different directions owing to a dispute between two chiefs over the sharing of udders (Harrington 1928 records the account in Kiowa). The Kiowas constitute the southern half of the split. The other half is supposed to have traveled to the north. Mooney (1898/1979: 154) writes that:

Several stories are current in the tribe in support of this belief. One woman, now [in 1898] about 80 years of age, when a child was taken by her father with others on a visit to their old friends, the Crows, and says that while there they met a white trader from the north, who addressed them in the Kiowa tongue, which he said he learned from a tribe living farther north, which spoke the Kiowa language.

(We may add that similar stories continue to arise: when discussing the story of the udders with a Kiowa singer in his mid-thirties, Harbour was informed that, at a northern powwow, a member of another tribe claimed to have understood the words of a prayer or song that a Kiowa elder had recited.) Mooney tentatively concludes that such stories “at least offer a suggestion concerning the direction in which the linguistic affinity of the Kiowa is to be sought” (*ibid.*).

However, already by 1910, the attention of linguists was focused on the Southwest rather than on the North, and specifically on the similarities between Kiowa and the Tanoan languages (Harrington 1910). This relationship continued to be investigated (*e.g.*, Harrington 1928, Trager 1951) until Hale (1962, 1967) definitively demonstrated that Kiowa and the Tanoan languages are indeed related.

By the time of Mooney’s and Harrington’s investigations, the Kiowas had become a Plains tribe, resident primarily in Oklahoma. The current Kiowa Tribal Complex is located in Carnegie, Oklahoma, and members of the tribe live mostly in Caddo, Kiowa and Comanche counties. The community’s distribution over three counties

is the result of deliberate US Government policy. By 1876, white exploitation of resources, as well as deliberately excessive hunting, had precipitated the collapse of the buffalo population, on which the Kiowas depended for many necessities: food to last through the winter, clothing, implements, and shelter (in the shape of hides for teepees). With the continuation of their traditional lifestyle thus rendered impossible, they at last agreed to settle on a joint Kiowa-Comanche-Apache reservation and to receive government rations.

The US government soon found it convenient to break its side of the agreement with these tribes: the reservation provided the tribes with sufficient coherence for the maintenance of autonomous identities, cultures and languages. Moreover, it placed out of reach of white settlers the valuable grasslands that comprised the reservation. So, Congress passed two acts (the General Allotment Act of 1887 and, more controversially, the Jerome Act of 1901), which, by 1907, had had the effect of transferring 80% of the reservation into white hands. Furthermore, ownership of the remaining 20% was so distributed that different tribes were substantially dispersed, not only amongst members of other tribes, but also amongst the nonnative population.

The Kiowa language is spoken fluently now only by a few dozen elders, however even that number risks being an overestimation. Members of the next generation often have good comprehension of the language, but they rarely have so intimate a grasp of grammar, lexicon and stylistics. Amongst the younger generations, knowledge of the language rarely consists of more than some songs and individual words (though it should be noted that some younger singers do have extensive knowledge of song lyrics). The prognosis for the language is therefore not good. However, there are now recordings, transcriptions and translations (many of which were inputs to this project; see especially chapter 5) which mean that future generations of Kiowas are likely to inherit a substantial record of their language in its cultural context, even if direct inheritance of the language becomes impossible.

1.2.2. Grammatical sketch

Basic word order

Kiowa is a rich agreement language with relatively free word order. A basic (informationally unmarked) order is nonetheless discernible:

- (2) Particles » Agent » Indirect Object » Direct Object » Verb
- (3) Hón Paithalíí P!óóthópdek!ii áádó ó- thème- ʔəmɔɔ
NEG Vincent Daniel stick 3S:3S:3I-break-make.NEG
‘Vincent didn’t make Daniel break the stick’ (Harbour 2007: 14)
- (4) Hét [nóó gɔ́ ám] xégun thóúse bédêi- ʔɔ
HORT 1 CONJ 2 dog bones 1IN.D:3S:3D-give.IMP

‘Let’s you and I give two bones to the dog’

Sentences like (3)–(4) are rare for two reasons. First, Kiowa permits pro-drop of any argument DP, as in (5)–(6) (Watkins 1990), making sentences with three overt arguments rare (two examples in our narrative corpus).

- (5) Hón ́- thêm- ʔʔmɔɔ
NEG 3S:3S:3I-break-make.NEG
‘He didn’t make him break it’

- (6) Hét bédêi- ʔʔ
HORT 1IN.D:3S:3D-give.IMP
‘Let’s give them to it’

Second, DPs, as well as other constituents, are frequently dislocated to the left or right edge of the sentence.

- (7) Hón máthɔn ʃ- xááɳɔɔ
NEG girl 3S-arrive.NEG
‘The girl didn’t arrive’

- (8) Máthɔn hón ʃ- xááɳɔɔ
girl NEG 3S-arrive.NEG
‘The girl didn’t arrive’

- (9) Hón ʃ- xááɳɔɔ máthɔn
NEG 3S-arrive.NEG girl
‘The girl didn’t arrive’

These dislocations correlate with information structure and discourse structure, leftward dislocation for topic and focus, rightward for certain kinds of old information. These are discussed at length in chapters 4–6 (and in Harbour, Watkins, and Adger 2008).

Semantically, the particles in (2) express a variety of aspectual, modal and evidential meanings, as well as negation. Many obligatorily cooccur with inflection suffixes on the verb. These are discussed at length in chapters 3–4.

- (10) **Béthɔɔ h́ón** ám em-d́ǵ-**mɔɔ-hel**
MIR NEG 2 2S-be- NEG- EVID
‘I didn’t realize it wasn’t you’ (Adger and Harbour 2007: 17)
- (11) **Háyáttó h́ón** ʃ- deḷ- héḷ-**mɔɔ-t!ɔɔ**
maybe NEG 3S-sleep-die-NEG- MOD
‘Maybe he won’t fall asleep’ (*ibid.*)
- (12) **Béthɔɔ an** ́- bôu- hɔnx!ou- **yii- t!ɔɔ- dei**
MIR HAB :3S:3I-always-come late-IMPF-MOD-EVID

‘I didn’t realize he was going to keep on coming late’

(*ibid.*)

Nouns and agreement

Nominal morphology is sparse in Kiowa. There is no case marking either for DPs or pronouns, and the only marking for number is inverse marking (a property wholly unrelated to the nomenclaturally identical Algonquian phenomenon). For the purposes of the investigation below, and despite its fascinating behavior, this marking is irrelevant. However, it must be briefly discussed as a preliminary to other aspects of the grammar detailed below.

In their simplest form, nouns are limited in the number of tokens they can refer to. For instance, **tógúl** means ‘one or two young men’, **áá** means ‘two or more trees’ and **k!ôn** means ‘two tomatoes’. Naturally, however, speakers may at times need to refer to pluralities of young men, singularities of trees, or unpaired tomatoes. In such circumstances, where the the inherent number of the noun and the number of tokens talked of mismatch, the noun is inverse marked. Curiously, one and the same suffix attaches to the nouns just given for the plural, the singular and the non-dual: **tógúúdó** ‘young men’, **áádó** ‘a tree’ and **k!ôpdó** ‘a tomato’ or ‘more than two tomatoes’. (However, the form of inverse marking is subject to phonological variation; Watkins 1984, Harbour 2007.)

The inverse is integral to agreement in Kiowa. For non-inverse-marked nouns, agreement straightforwardly reflects number (and person). For instance, in the following sentences, it is only by attending to the agreement that one can know the number of stones referred to:

- (13) X!óú ∅– dóó
stone 3S–be
‘It’s a stone’
- (14) X!óú e– dóó
stone 3D–be
‘They’re [two] stones’
- (15) X!óú gya–dóó
stone 3P– be
‘They’re stones’

Inverse-marked nouns, by contrast, trigger a separate agreement type (glossed as I, mnemonic for ‘inverse’), irrespective of whether they refer to singularities, dualities or pluralities:

- (16) Áádó e– dóó
stick 3I–be
‘It’s a stick’

- (17) Nóó e- dóó
 1 1I-be
 ‘It’s us (him/her and me)’
- (18) Tógúúdó e- dóó
 young men 3I-be
 ‘They’re young men’

It should be noted that there are other ways in which the correlation between number and agreement can be obscured. The first is that there is a fifth agreement type, A (animate), restricted to pluralities of higher animates, such as Kiowas, men, women, horses:

- (19) Kóígú á- dóó
 Kiowas 3A-be
 ‘They’re Kiowas’

The second is that some nouns, especially those that form homogeneous (collective) plurals, use ‘singular’ agreement in the plural:

- (20) Áá Ø- dóó
 trees 3S-be
 ‘They’re trees’

And the third is that other nouns, especially those that are collections of heterogeneous parts, use ‘plural’ agreement in the singular and dual:

- (21) Khóódé gya-dóó
 pants 3P-be
 ‘It’s one/two/several pants’

The semantics, syntax and morphology of this system are analyzed at length in Harbour (2007). For present purposes, the best we can do is to warn the reader that apparent mismatch between prefix glosses and translations are the systematic results of the system just outlined.

Nominal syntax

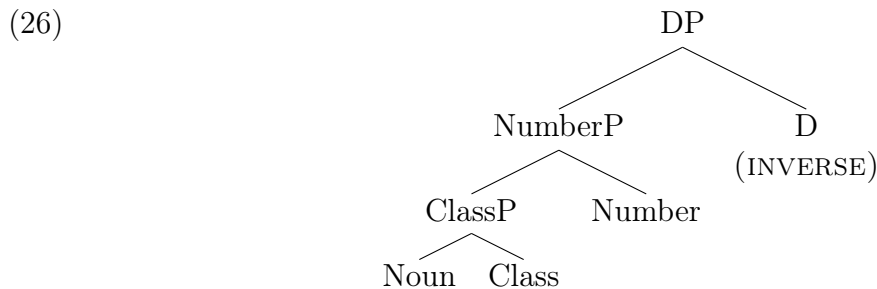
As ‘stick’, ‘dog’ and ‘bone’ in (3)–(4) make apparent, nouns in Kiowa may appear bare. In fact, there are no definite or indefinite articles. However, the language possesses other determiners (**téí** ‘all’, **té-** ‘every, each’, **étté** ‘many, much’, **háote** ‘several, a few’, **páá** ‘some/one’, **kôl** ‘some’), demonstratives (**éíde/gɔ**, **éíhɔde/gɔ** ‘this, these’, **óide/gɔ**, **óíhɔde/gɔ** ‘that, those’), and numerals (**páágo** ‘one’, **yíí** ‘two’, ..., **kóódokhij mósóókhij ónt!ɔthəə** ‘one hundred and sixty-five’, ...). Except for **té-** ‘each, every’, which forms a compound with its noun, all these may occur pre- or postnominally, or bare:

- (22) a. **étté tóú ~ tóú étté** ‘many houses’
 b. **étté** ‘many [houses]’
- (23) a. **éíde áá ~ áá éíde** ‘these trees’
 b. **éíde** ‘these [trees]’
- (24) a. **yíí álɔɔ ~ álɔɔ yíí** ‘two apples’
 b. **yíí** ‘two [apples]’

Of these, only the demonstratives bear inverse marking. They do so if, and only if, their corresponding noun does (or, would, in the case of bare demonstratives):

- (25) a. **éígɔ (áádɔ)**
 this/these.I trees.I
 ‘this (tree)’
- b. **éíde (áá)**
 this/these trees
 ‘these (trees)’
- c. ***éígɔ áá**
 this/these.I trees
 ‘these trees, this tree’
- d. ***éíde áádɔ**
 this/these trees.I
 ‘these trees, this tree’
- e. ***éígɔ**
 this/these.I
 ‘this [referring to a tree]’
- f. ***éíde**
 this/these
 ‘these [referring to some trees]’

Harbour (2007) argues that noun phrases in Kiowa have the structure in (26), where D is the locus of inverse marking:



We return to the structural position of quantifiers, demonstratives and numerals in chapter 6.

In most cases, D is only overt when inverse marked. However, for some nouns (including indefinite quantifiers), and for relative clauses, D is overt in all cases. (The example below is constructed so that inverse marking on the noun and relative clause match phonologically; this is not generally the case.)

- (27) hón- dé gya-məkúíme-de
 something-D 3P- useful- D
 ‘something that is useful [*e.g.*, an action]’
- (28) hón- gǎ e- məkúíme-gǎ
 something-D.I 3P-useful- D.I
 ‘something that useful [*e.g.*, an implement]’

In addition to the postnominal relative clauses above, Kiowa possesses relative clauses without an overt head.

- (29) Hegǎ óíhyǎǎ [ǎǎ gya-khohái- dǎǎ]-de bat- thǎǎǎǎǎ
 then there REL 3P- exactly-be -D 2S:3P-find.MOD
 ‘Then that way you will find their exact character’ (Watkins 1984: 232)

The left boundary of the relative clauses can be identified, as in (29), by the (optional) presence of the subordinating particle **ǎ(ǎ)gǎ** (possibly related to the deictic **ǎǎkǎ** ‘there’) and the anaphoric particle **ám**. This **ǎ(ǎ)gǎ** may also occur in postnominal relative clauses:

- (30) Thalí [ǎǎ ám xégun á- p!ǎi] -de é- tǎǎǎǎǎ
 boy REL ANAPH dog :3S:3S-lose.PF-D 3D:3S-talk to.AUX
 ‘They are talking to the boy who lost his dog’ (Watkins 1984: 233)

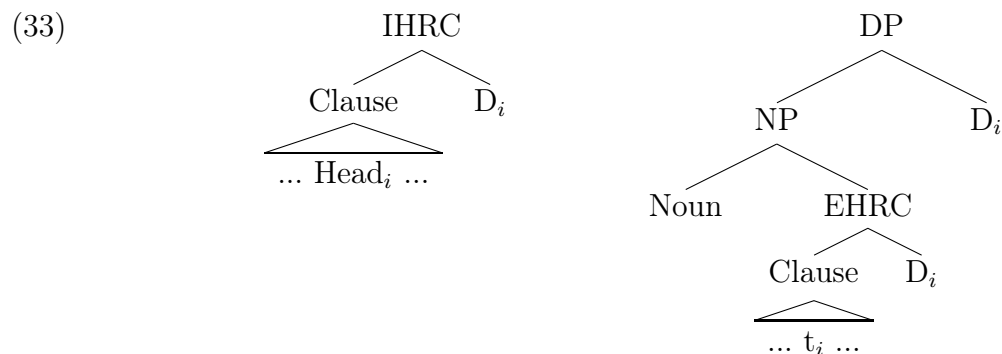
The right edge in both (29) and (30) can be identified by the near obligatory **-de/-gǎ** suffixes.

These elements permit one to recognize that Kiowa also has internally headed relative clauses. The head in such cases may be pre- or postverbal, though the former is more common:

- (31) Maayí bé- klíyá-dǎǎ [ǎǎ ólkhóí-t!ókhôí e- dǎǎ]-gǎ
 woman :3I:3S-with- be REL crazy- whitemen 3I-be -D.I
 ‘A woman was with the crazy whitemen (that there were)’
- (32) Ø- Tǎǎǎǎǎ, [Ø- khǎǎmei k!yáǎǎhǎǎ]-de Ø- hǎǎhel
 3S-say.IMPF 3S:3S-name.IMPF.EVID man -D 3S-die.EVID
 ‘He said, naming the man, that he had died’
 (Watkins 1984: 247, revised translation)

In sum, relative clauses are constructed by merging D to a clause, where the head of the relative clause may be internal or external. D and the head agree for

whether they are inverse marked. We assume that the internally headed relative clause contains a trace (though this is not crucial to anything below).



In addition to nominal modification via relative clauses, Kiowa also allows the combination of nouns and a small range of adjectival predicates. In contrast to the elements just discussed, these are strictly suffixal and form compounds with their nouns.

- (34)
- | | | | |
|------------|------------|-----------|----------------|
| x!óú-êl | xégun-syan | tou- gúl | k!íí- t!áí- de |
| rock-big.S | dog- small | house-red | male-white-D |
| big rock | little dog | red house | White man |

As can be seen from the rightmost example here, suffixal adjectives occur between the noun and the D. Further examples with inverse marking are:

- (35)
- a. áá- kyq̣i- mǝ
 - pole-long.S-I
 - ‘a long pole’
 - b. thalii-b̥i- dǝ
 - boy- big.D/P-I
 - ‘big boys’

Attributive adjectival modification is not an overly common strategy, as the language generally prefers verbs, as in (36)–(37), to play this role.

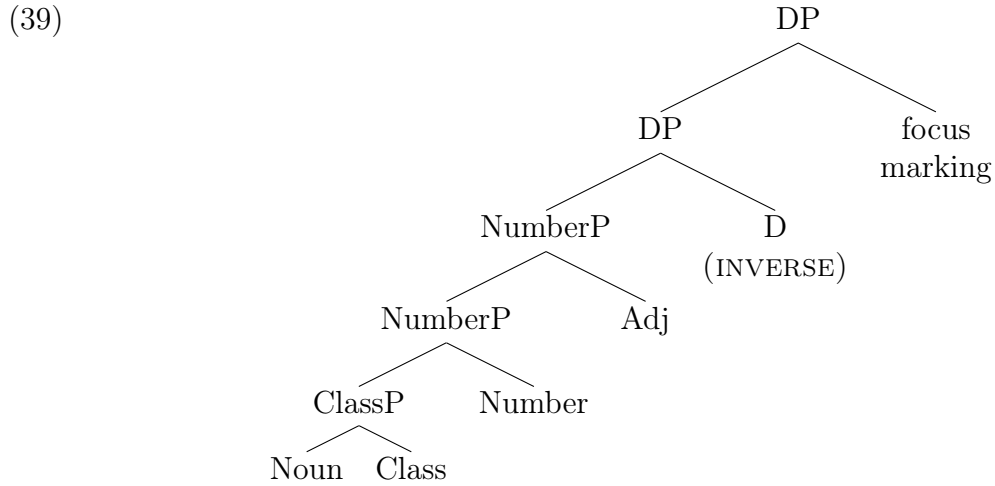
- (36)
- | |
|------------------------------------|
| x!óú gya-kót- haa- de |
| rock 3P- hard-DEP.STAT-D |
| ‘hard stone’, ‘stone that is hard’ |
- (37)
- | |
|--|
| ááhyq̣i e- péí- dǝ-gǝ |
| cottonwood.I 3I-dead-be- D.I |
| ‘a dead cottonwood’, ‘a cottonwood that is dead’ (Watkins 1984: 230–231) |

The final relevant element of nominal syntax is focus marking, also found only as a suffix:

- | | | | | |
|------|----------|---------|----------|--------------|
| (38) | nóó-x!al | nóó-al | yíi- koo | áá- dɔ-deki |
| | 1- also | 1- also | two-only | tree-I- only |
| | me too | me too | only two | only a tree |

As can be seen from the rightmost example, focus marking occurs to the right of D (it follows the inverse marking). Focus marking, and its relation with inverse marking, is described in detail in section 5.3.1.

This gives us an expanded structure for the DP:



Given Kiowa's freedom of word order, it is, perhaps, not overly surprising to find split DP constituents. Compare (40), which was spontaneously uttered, with its split-free paraphrase (41).

- (40) **Dôiette** an **pénhaa** gya- ôugu xóíkya
 too much HAB sugar 1S:3S-pour.IMPF coffee.LOC
 'I'm always putting too much sugar in my coffee'
- (41) An xóíkyá **dôiette** **pénhaa** gya- ôugu
 HAB coffee.LOC too much sugar 1S:3S-pour.IMPF
 'I'm always putting too much sugar in my coffee'

Three more examples are:

- (42) **Páágo** gya- bóú **k!yááhîi**
 one 1S:3S-see.PF man
 'I saw the one man' (Harrington 1928: 45)
- (43) **Éíde** hâatêl **k!ódál** á- dóó?
 that who.Q car :3S:3S-be
 'Whose car is that?'
- (44) **Éígútk!o** hâatêl **yíi** ɛ- hân?
 biscuit who.Q two 3S:3D-devour.PF

‘Who ate two biscuits?’

Similarly, externally headed relative clauses may be split from their head noun:

- (45) Kóígú món á- dós [ógw á- kíidéi] -gw
Kiowas INFER 3A-be REL 3A-live.EVID-D.I
‘It was probably Kiowas who were living there’ (Watkins 1984: 234)
- (46) Hón óíhɔde k!yááhhî Ø- dósómw [ám dós- tóúthái] -de
NEG that man 3S-be.NEG REL 3S:1D-talk with-D
‘That’s not the man who spoke to us’ (Watkins 1984: 234)

We do not analyze such split constituents here, but see chapters 5 and 6 for some further discussion.

Pronouns

Kiowa has only two pronouns: **nós** for all first persons, whether singular, dual or plural, inclusive or exclusive; and **ám** for second person, whether singular, dual or plural. Generally, agreement on the verb is sufficient to identify participants and pronouns are not used. Their inclusion tends to be emphatic or contrastive:

- (47) Nós gyat- ómtós
1 1S:3P-do.MOD
‘I will do it’
- (48) T!ókhók!íí Ø- tóúnêi, “Hó ám em-dós an be- x!aanhóúlêi- de?”
white man 3S-said Q you 2S- be HAB 2S:3A-trick.IMPF.EVID-D
Séndé Ø- tóúnêi, “Hɔɔ, nós a- dós,” Ø- tóúnêi.
Sende 3S-said yes I 1S-be 3S-said
‘The white man said, “Is it you that is always cheating people?” Sende said, “Yes, that’s me.”’

Both pronouns have apparently more emphatic forms, **nóséhî**, **ámhî**, attained by suffixing the same **hî** (REAL) that derives **k!yááhhî** ‘man’ from **k!íí** ‘male’, **touhî** ‘teepee’ from **tóú** ‘house’, and **səənéhî** ‘rattlesnake’ from **səəné** ‘snake’.

There are no third person pronouns, but the above described demonstratives can be used instead, with similarly emphatic sense to pronouns:

- (49) Óide gya- ómtós
that 3S:3P-do.MOD
‘He will do it’
- (50) Gígó óíhɔ-x!al Ø- hólhel hegó
CONJ that-also 3S:3S-kill.EVID then
‘And he killed that one too’

Adpositions

Kiowa uses postpositions to express a variety of locative, and related, notions:

- | | | | |
|------|------------------|--------------------|---------------------|
| (51) | k'ǝǝ- pa | Indian Fair-kya | ǎǎǎ- aadǎ- yǎǎ |
| | bank-against | Indian Fair-at | apple-tree.I-from |
| | against the bank | at the Indian Fair | from the apple tree |

Postpositions also frequently attach to relative clauses. This is expected given our treatment of relative clauses as DPs.

- (52) [Hegó món mîn é- p!óidé] dé-oi yán- gút
 then INFER about to 2S:1S-forget.IMPF D-LOC 1S:2S:3P-write.PF
 ‘You were probably about to forget me around the time I wrote to you’
 (Watkins 1984: 235)

- (53) Dé- mǝkyǎ-phɿ̌ [ʒɔ̌ an em-ǎǎgya] dé-ɛ̌
 1S:3I-readied-stand.PF REL HAB 2S- sit.S/D D- LOC
 'I placed it (a folding table) in readiness where you usually sit'
 (Watkins 1984: 235)

It will be observed from (52) and (53) that we do not generally attempt to characterize, in the glosses, the nature of different postpositions' semantics.

Postpositional phrases differ from argument DPs in that only the latter agree. When the applicative argument in (54a) is expressed as a postpositional phrase, the verb agrees only for ‘boys’, as in (54b):

- (54) a. Thalyóp nó- xán
 boys :1S:3I-arrive.PF
 ‘The boys came to me’
 b. Thalyóp nóó-ẹ̀ e- xán
 boys 1- LOC 3I-arrive.PF
 ‘The boys came to me’ (Adger and Harbour 2007: 4)

The complex verb

Verbs consist of two parts, an agreement prefix (next subsection) and a complex verb. The latter consists of the parts below:

- (55) Incorporates **Root** Distributive Aspect Negation Future Evidential

Incorporation is described in the appendix. The inflectional suffixes, which will be discussed in detail in chapters 3–4, show allomorphy for a variety of different properties, including agentivity, stativity and transitivity. For instance, the future suffix, MOD, has, abstracting away from phonologically predictable tone, an agentive

form **tɔɔ** (29) and a non-agentive form **t!ɔɔ** (11). The evidential suffix, EVID, too shows variation, appearing as **dei** after IMPF-MOD in (12), as **êi** fused with IMPF as in **tóúñêi** ‘say.IMPF.EVID’, and elsewhere, as in (10), as **hel**. For full exposition, see Watkins (1984), Harbour (2004). In subsequent examples, readers should take such variation as being allomorphically conditioned.

The agreement prefix

The agreement prefix is the only obligatory part of the verbal complex other than the root itself. It registers up to three DPs: external argument, indirect object and direct object. There are some 100-to-160 prefixes (depending one’s criteria of homophony). Harbour (2003) shows that this prefix is phonologically independent from the rest of the verb, except in one regard: some prefixes may force the entire verb to have low tone. (In our orthography, low tone is unmarked, in contrast to high and falling.) As in (56) and (57), pairs of prefixes are frequently otherwise indistinguishable.

- (56) Áádɔ mén– thêṁ
stick 2D:3D:3I–break.PF
‘You two broke the stick belonging to them two’
- (57) Áádɔ mén– them
stick 2D:3A:3I–break.PF
‘You two broke the stick belonging to them all’

Our glosses do not generally indicate which prefixes have this tone lowering effect as it can be deduced: verbs have low tone on all syllables if, and if only, preceded by a tone lowering prefix. However, in the few cases where it is relevant, we mark tone lowering prefixes with * (as on the next page).

In our glosses, prefixes have the following structure. In **z-**, *z* is the subject of an unaccusative predicate, as in:

- (58) A– maayí- ɬɬgya
1S–woman-be seated.S/D
‘I’m sitting like a woman’

In **x:z-**, *x* is the agent of a transitive verb and *z*, the direct object:

- (59) Maayí gya– bónmɔ
woman 1S:3S–look.IMPF
‘I’m looking at the/a woman’

In **x:y:z-**, *x* is the agent of a (di)transitive verb and *y*, the indirect object, and *z*, the direct object: (56)–(57). Finally, in **:y:z-**, *z* is the subject of the unaccusative (it triggers however agreement identical to that triggered by the *z* direct object in

(58)), and *y* is the indirect object, such as the possessor of *z* or a benefactor of the event:

- (60) Thalyóp nó- xán
 boys :1S:3I-arrive.PF
 ‘The boys came to me’

Thus, in prefix glosses, something of the form **:n:** is an indirect object; something of the form **:n** is a direct object; and something of the form **n** is a subject/agent. The table summarizes this information.

Glossing system for Kiowa agreement prefixes

Prefix type	Argument type
x:y:z-	<i>x</i> = agent of (di)transitive verb <i>y</i> = indirect object / applicative of (di)transitive <i>z</i> = direct object of (di)transitive
x:z-	<i>x</i> = agent of transitive <i>z</i> = direct object of transitive
:y:z-	<i>y</i> = applicative of unaccusative <i>z</i> = subject of unaccusative
z-	<i>z</i> = subject of unaccusative

Note that there are no verbs without object agreement in Kiowa: even unergatives bear overtly transitive agreement. Therefore, there are no prefixes of the form *x:-*.

The linear order in this glossing system reflects the linear constituency of the agreement prefixes themselves. Owing to tight fusion, the prefix has been misdescribed as a portmanteau. However, a variety of work has shown that the prefix is composed entirely of φ -features of the agent, indirect object and direct object, plus morphological defaults (Merrifield 1959, Watkins 1984, Harbour 2003, 2007). When we decompose the prefixes, we find that agent exponents precede direct object exponents. This is evident below in that the coda of the prefixes (iá*, ed, ...) covaries with the identity of the direct object (3S, 3D, ...), whereas the onset and agent remain invariant. (* indicates prefixes with tone lowering potential; the colons between prefix segments replace the normal segmentation device, ‘-’, in imitation of the prefix notation. On hyphenation, see the next paragraph.)¹

- (61) a. b:iá* b:ed b:iád* b:éd
 2P:3S 2P:3D 2P:3P 2P:3I

¹We give hypothetical underlying forms as per Harbour (2007). Such segmented forms unavoidably show allomorphy (as between [iá*] \Leftrightarrow :3S/P__ and [ia] \Leftrightarrow :3S/s__). Moreover, the surface forms arise by predictable phonological variation (*e.g.*, dental-velar switching in the 1S:-forms, [gia] \mapsto **gya**, and [ge] \mapsto **de**). See Harbour (2007), or the other references in the main text, for details.

- b. g:ia g:en g:iat g:é
 1s:3S 1s:3D 1s:3P 1s:3I

Similarly, we find that indirect object exponents precede direct object exponents:

- (62) a. b:ó b:éd b:ád b:ód
 :2P:3S :2P:3D :2P:3P :2P:3I
 b. d:ó d:éd d:iád d:ód
 :1P:3S :1P:3D :1P:3P :1P:3I

Lastly, and again similarly, we find that agent exponents precede indirect object exponents:

- (63) a. b:iâ* b:édê* b:iádiâ* b:ódô*
 2P:3S:3S 2P:3S:3D 2P:3S:3P 2P:3S:3I
 b. g:iá g:én g:ián g:ó
 1s:3S:3S 2P:3S:3S 2P:3S:3P 2P:3S:3I

Together, these three pairwise orders yield the well-ordering Agent \gg Indirect Object \gg Direct Object, the precise order that was illustrated for argument DPs in (3)–(4).

In the glossing system, prefixes are separated from their verb by an en-dash (–) rather than by the hyphen (–) which is reserved for segmentation of morphemes.² The reason for this notation is that it represents the semidependence of the prefix on the verb: linear position and tone lowering indicate that the prefix is a dependent of the verb; against this, however, lack of high tone spreading, of intervocalic voicing, of dental-velar switching, and of resyllabification indicate that the prefix is a domain in its own right. We briefly illustrate these properties, as they will be of some relevance in sections 2.4.2 and 4.5.3.

Beginning with properties that indicate a dependence between prefix and verb, the first, linear position, is most obvious: every verb has a prefix (modulo zeroes), and everything that comes between a prefix and its verb forms a phonological unit (for the purpose of tone spreading, dental-velar switching, *etc.*) with the verb itself. Consequently, material that linearly intervenes between prefix and verb can be counted part of the verb’s phonological domain, and it is at the left edge of this domain that the prefix is located. The second property, tone lowering, was illustrated above (56)–(57). This lowering affects every syllable in the verb’s phonological domain, including incorporates and suffixes. Hence, compare **sémóópíphóútóúdô** following **a–** in (64), with **semɔɔpiphoutoudɔ** following **bá***– in (65):

- (64) Hón a– sém– óópí-phóú- tóúdô
 NEG 2S:3S–secretly-fish- catch-send.NEG

²In infrequent cases of Kiowa in the running text, prefixes are separated by a simple hyphen and other morphemes are not separated at all. For instance, example text **a-báá-t!óó** would be running text **a-báát!óó**.

- ‘You didn’t secretly send him fishing’
 (65) Hón bá*- sem- ɔɔpɪ-phou-toudɔɔ
 NEG 2P:3S-secretly-fish- catch-send.NEG
 ‘You all didn’t secretly send him fishing’

This type of tonal interaction also occurs within the verb. For instance, if we replace **sém-** ‘secretly’ with **óbóí*** ‘really’, all subsequent tones are lowered: compare **sémóópíphóútóúdôɔ** with **óbóíɔɔpɪphoutoudɔɔ**:

- (66) Hón a- óbóí- ɔɔpɪ-phou-toudɔɔ
 NEG 2S:3S-really-fish- catch-send.NEG
 ‘You didn’t really send him fishing’

The fact that tone lowering is a property both of agreement prefixes and elements within the complex verb suggests that the former is part of the latter. However, more considerations weigh against this conclusion than favor it.

First, high tone, in contrast to low tone, does not spread from prefix to verb. Let us first illustrate the high tone spreading within the complex verb. When incorporated, **t!óm-** ‘first’ and **thɔɔ-** ‘sit’ have low tone. Hence:

- (67) A- t!óm- thɔɔ-xán
 1S-secretly-first-sit.NV-arrive
 ‘I was, secretly, born first’

If we further incorporate **sém-** ‘secretly’, its high tone spreads, raising the successive lows:

- (68) A- sém-t!óm- thóó- xán
 1S-first-sit.NV-arrive
 ‘I was secretly born first’

However, high tone does not spread from prefixes onto successive lows—

- (69) Á- t!óm-thɔɔ- xán (*Á-t!ómthóóxán)
 3A-first- sit.NV-arrive
 ‘They were born first’

—suggesting that prefixes are not in the same domain as the verb.

A similar point is made by final devoicing. Consider the following prefix pairs: **bét~bédêi** :2P:3D~2P:3S:3D, **bát~bágîi** :2P:3P~2P:3S:3P, **bót~bódôɔ** :2P:3I~2P:3S:3I. In each pair, the final devoiced **-t** of the first prefix corresponds to the intervocalic voiced **-d-** (↦**g/_i**) of the second. This is clearly a phonological alternation (Watkins 1984 observes that the language forbids syllable-final voiced obstruents). The same effect occurs in other parts of the language, as in suffixation of the locative **-ôɔ**: **xát~xáádôɔ** ‘door’~‘at/on the door’, **bót~bóúdôɔ** ‘belly’~‘at/on the belly’.

It does not, however, occur between prefix and verb: **gyát-ḡḡ** ‘they gave us it’ and **bat-ôṁ** ‘do it’, for instance, are not pronounced as ***gyá(á)d-ḡḡ** ‘they gave us it’ and ***ba(á)d-ôṁ** (the bracketed vowels represent lengthening of the type that occurs with ‘door’ and ‘belly’).

Likewise, the process of dental-velar switching just illustrated **bát~bádîi**→**bágîi** emphasizes the separation between prefix and verb. The process affects suffixes, as in **hîite~hîikii** ‘vomit.IMP’~‘vomit.IMP.IMP’ and **sót+hîi** → **sókhîi** ‘just.REAL’. However (with only one exception, attributable to a performance effect), speakers do not permit switching between a prefix and verb: **bat-hîi** ‘2S:3P–take.IMP’, for instance, does not become ***bakhîi**.

It is therefore evident agreement is dependent on but not wholly integrated into the verb. This is the rationale behind the en-dash notation, separating prefixes from their verbs.³

Clausal complementation

Clausal complements are encoded by a number of means. Most commonly, for verbs of communication, a direct quotation is used:

- (70) Nen- bôu- tɔʉtɔɔ “Ma-áá” ba- tó
 1S:3D–always-talk.AUX 2D– come.IMP 1S.SPCH–act
 ‘I talked to them a long time and I convinced them to come’
 (Watkins 1984: 236)

Alternatively, an unquoted thought may be juxtaposed to the main clause:

- (71) Nóó an a- ḡḡdep ... món nóó ɔɔzá- t!ḡḡ- hop ba- dóó
 1 HAB 1S–think.IMP.IMP INFER 1 udder-angry-travelers 1IN.P–be
 ‘I believe that we are those who traveled off angry over an udder’
- (72) Hóndó t!ókhóí-k!íí ∅- khohái- xan- x!al hétó hón gyat-
 why.INDEF white- man 3S–exactly-arrive.PF-also still NEG 1S:3P–
 ɔ́ɔguuguu
 catch on.NEG
 ‘I haven’t yet ascertained exactly why the white man came’

³If we restrict attention to (de)voicing and dental-velar switching, it is possible to view the boundary between prefix and verb simply as a syllable boundary. This is because the processes depend on syllabification: where syllable boundaries are flexible, as in inflexion, both processes occur; where syllable boundaries are more rigid, as in incorporation and compounds, we find exceptions. For instance, in **sét+ii** ‘bear cub’, the syllable boundary remains rigid, **sétíí**, and we find neither voicing nor switching (***sédíí**, ***ségíí**, ***sékíí**). (Note that one says **bá.gîi**, *etc.*, not ***bág.îi**. In the Mount Scott dialect of the late Mr Bointy, syllabification was different, **bát.îi**, and voicing and dental-velar switching did not apply.) However, the lack of high tone spreading cannot be explained in this way.

Complements may also have the appearance of relative clauses:

- (73) Hó gya- háigyádɔɔ [ógɔ em-t!óɔ]-dé
 Q :3A:3P-known REL 2S- stay-D
 ‘Do they know you’re here?’
- (74) [Hábêi- khii em-ôi- tou- baɣniit!ɔɔ]- de hón em- xááyôɔ
 which.INDEF-day 2S- again-house-go.IMPF.MOD-D NEG 1S:2S-ask.NEG
 ‘I did not ask you which day you would be going back home’

Wh-movement

Wh-words in Kiowa differ from the corresponding indefinite only in terms of tone—**hôn**dé ~ **hón**dé ‘what.Q’ ~ ‘something’, **hôn**dó ~ **hón**dó ‘why.Q’ ~ ‘for some reason’, **hâ**agyá ~ **há**agyá ‘where.Q’ ~ ‘somewhere’—and, sometimes, not even there—**há**áxo ‘how.Q, somehow’.

Although arguments and adjuncts may be freely positioned in Kiowa, occurring before the preverbal particles, after them, or after the verb, *wh*-elements may only occur preparticularly (or, in the absence of particles, simply preverbally):

- (75) Hôndé an bét- píí- klúttɔ
 what.Q HAB 2S:3I:3P-food-lay.P.IMPF
 ‘What do you feed them [horses]?’
- (76) Hàagyâi-xeɪ an án- píí- klúttɔ?
 which- horse HAB :3S:3P-food-lay.P.IMPF
 ‘Which horse do you feed?’
- (77) Hôndó hón bat- pódôɔ?
 why.Q NEG 2S:3P-eat.NEG
 ‘Why aren’t you eating?’

They are, however, unacceptable if postparticular:

- (78) *An hôndé bét- píí- klúttɔ?
 HAB what.Q 2S:3I:3P-food-lay.P.IMPF
 ‘What do you feed them [horses]?’
- (79) *An hàagyâi-xeɪ án- píí- klúttɔ?
 HAB which- horse :3S:3P-food-lay.P.IMPF
 ‘Which horse do you feed?’
- (80) *Hón hôndó bat- pódôɔ?
 NEG why.Q 2S:3P-eat.NEG
 ‘Why aren’t you eating?’

—or postverbal:

- (81) *An bét- píí- k!úttɔ hɔndé?
 HAB 2S:3I:3P-food-lay.P.IMPF what.Q
 ‘What do you feed them [horses]?’
- (82) *An án- píí- k!úttɔ hâagyâi-xeɪ?
 HAB :3S:3P-food-lay.P.IMPF which- horse
 ‘Which horse do you feed?’
- (83) *Hón bat- pódôɔ hɔndó?
 NEG 2S:3P-eat.NEG why.Q
 ‘Why aren’t you eating?’

We will argue in chapter 4 that the particles mark layers of clausal structure up to the lower part of the complementizer domain. We therefore interpret the obligatory fronting of *wh*-elements as syntactic *wh*-movement to the specifier of CP.

The only possible extraction site for *wh*-elements is the matrix clause. This fact is to be emphasized, as there will be several points in later chapters where seasoned syntacticians will wonder why we do not test rival hypotheses using crossclausal extraction. The answer is that the language does not permit it: extraction from subordinate clauses is unacceptable.⁴

- (84) *Hâatêl nɔ́ɔ-plii gɔ- tét ⟨hâatêl⟩ Carnegie-ku Ø- báánêi?
 who.Q 1- sister 3S:2S-tell.PF who.Q Carnegie-LOC 3S-go.IMPF.EVID
 ‘Who did my sister tell you was going to Carnegie?’
- (85) *Háote k!yááhyop yán- háigyádɔɔ [ɔ́gɔ ⟨háote k!yááhyop⟩
 how many.Q men :2S:3P-know REL how many.Q men
 á- t!óó]-de?
 3A-stay-D
 ‘Do you know how many men are staying?’

In a related vein, we note that extraction from adjunct clauses is also degraded:

- (86) ??Hɔndé- maa háyá ⟨hɔndé- maa ⟩ Ø- ɔ́mgyá dotto
 what.Q-woman somewhere what.Q-woman 3S-make.DETR.IMPF because

⁴The late Dorothy Kodaseet did, seemingly, permit crossclausal *wh*-dependencies, involving *wh*-movement to the lowest complementizer position and pleonastic **hááxo** ‘how’ in the higher positions:

- (i) Hááxo Óúmaa Ø- tóúgyaa hɔndé- tto P!óóthɔpdek!ii xégun Ø- hól?
 how Oumaa 3S-say.IMPF what.Q-INSTR Daniel dog 3S:3S-kill.PF
 ‘What did Oumaa say Daniel killed the dog with?’

However, it is possible that these clauses are merely juxtaposed, independent questions: ‘What did Oumaa say? What did Daniel kill the dog with?’. Unfortunately, Mrs Kodaseet became too ill for further collaboration shortly after this study began. We do not know of other speakers who permit such structures.

em-óólya?

2S- cry.IMPF

‘Which woman is such that you crying because she died?’

- (87) ??Hâatêl ʒgɔl yán- thǎǎmtɔɔ negó yán- ómdét!ɔɔ?
who.Q if.CNTFL 3S:2S:3P-help.MOD CONJ 3S:2S:3P-make.DETR.MOD

‘Who is such that, if they had helped you, you would have finished?’

Wh-movement is discussed in chapters 4–6.

1.2.3. Sources and methodology

Sources

In addition to published materials about the Kiowa language (which are always cited as such), the current study builds on three further resources: unpublished writings of the late Dr Parker McKenzie, recordings from the Summer Institute of Linguistics, and fieldnotes by Harbour and by Watkins.

Dr McKenzie (1897–1999) was a native Kiowa and meticulous self-trained documenter of the Kiowa language. His writings consist of personal correspondence and transcriptions of stories. During their long collaboration, Dr McKenzie gave Watkins copies of all of these. After his death in 1999, the originals were deposited with The Oklahoma Historical Society, in Oklahoma City.

The Summer Institute of Linguistics recordings, made in Norman, Oklahoma, in the 1950’s, were generously, and serendipitously, sent to us, in their original reel-to-reel format, at the start of the grant during which the research reported below was undertaken. Digitized copies have been deposited with the Kiowa Tribal Museum in Carnegie, Oklahoma.

Both McKenzie’s writings and the SIL recordings are almost exclusively in monolingual Kiowa. Translation of the former has been undertaken by McKenzie and Watkins; transcription and translation of the latter, by Harbour and Watkins, working with Dorothy Delaune, Florene Taylor, Dorothy Gray, Ellafay Horse and the late Dorothy Kodaseet. We expect the results of these labor-intensive processes to be made available in the coming years.

Methodology

Working on the syntax and semantics of languages of which one is not a native speaker, or even a frequent speaker, is, to put it mildly, a challenge. Enormous care must be taken in the elicitation and interpretation of native speaker judgments, so as to guard against one’s own biases and so as to ensure that one understands, at least to some extent, what the native speaker thinks they are being asked to do. It is, for instance, all too easy for the speaker to think that the linguists are wondering whether the test sentences are comprehensible, while the linguists, assuming

they are comprehensible, are wondering whether they sound anywhere near to native. And such misunderstandings can arise from one sentence to the next, even in well controlled settings. Therefore, we feel some comments are warranted on the methodology employed in this study.

Most of our sessions involved of a single native speaker, one, or more often two, linguists (Harbour and Watkins), and one (or sometimes more) younger Kiowas. In total, we worked with five speakers during the research period April 2004 to May 2007, though previous work with a further eight speakers is incorporated. The advantage of working as a pair of linguists was that we were able, during the sessions, to spot each other's miscommunications or misinterpretations, and, after the sessions, to discuss how the consultant had interpreted questions about grammaticality and which methods of framing such questions had proved most successful.

In order to prevent fatigue during the session, we alternated grammatical work with vocabulary documentation (Dorothy Delaune and Florene Taylor would frequently surprise us with rare words that had occurred to them between sessions), with recording and transcription of songs, and with transcription and translation of old recordings.⁵

Crucial sentence types were tested with the same speaker at different times, and/or with different speakers. Where possible, the departure points for elicitation were previously recorded sentences, though in some instances, mock narratives, or even pictures, were used. Only examples that are relatively easily accessible and replicable have been reported here and incorporated into the theory we construct. We believe that these approximated to cases where our consultants had an idea of how that sentence in question, even if deviant, might be intended.

To give an impression of our self-imposed limits, we mention that one particular line of research (to do with relativized minimality and feature intervention) was abandoned because the judgments were too hard to replicate (as they took so long to contextualize and set up) and because we had no notion of what the speakers thought we were asking them. This last point perhaps deserves some explanation, which we give by relating an incident. At one point, we were using pictures to test the relative scope of *only* and negation in sentences describing positions of animals and furniture relative to one another. Asked whether she could use a particular sentence to describe the picture, one consultant said she did not know why you would want to say it. This reaction made us realize that, as presented, the sentence served no communicative function, as we could see the picture just as well as she could. Watkins then suggested pretending that she was speaking to Harbour about the situation in the picture and that they were in different rooms. At which point, the consultant gave a judgment that was subsequently confirmed on later occasions. Clearly, the speaker wanted to know what the sentence was for and was not assessing

⁵The transcription of these spontaneous narratives fulfilled a second aim of the grant that funded the research reported below, namely, to see how a language with word order as free as Kiowa's deploys that freedom in spontaneous usage. On which, see Harbour, Watkins, and Adger 2008.

its grammaticality or interpretation in the abstract. Unfortunately, some of the sentences needed to test relativized minimality violations (with controls for other hypotheses) are so tortuous, and possess such straightforward paraphrases, that a reasonable speaker can hardly imagine that they would be ‘for’ anything.

We are acutely aware that Kiowa is a gravely endangered language and that the time and knowledge of our consultants is very precious. We believe we have an obligation to the people whose tongue this is to present as true a reflection of their language as possible, without overbending it to pursue theoretical ends. What follows, therefore, is a methodological balance, between the demands of theoretical investigation and the practicalities of work in the field.

Chapter 2

Nonconfigurationality and Polysynthesis

2.1. Introduction

In this chapter, we discuss a number of the properties that make a syntactic analysis of Kiowa challenging, focusing on the freedom of argument order which the language displays. We show how Kiowa falls into the broad typological class of nonconfigurational languages, and outline a number of theoretical approaches to such languages. A landmark study in this area is Baker (1996), which proposes a theoretical system intended to provide a unified view of these languages, bringing them under a single ‘macroparameter’, the Polysynthesis Parameter. Baker’s proposal is a development of an older idea for dealing with free word order languages first suggested by von Humboldt (1836): apparent overt arguments are to be thought of as being in adjoined positions, linked to a clause-internal clitic.

We use this theory as a lens through which to investigate the structures of Kiowa, and we show that Kiowa indeed displays almost all of the hallmarks which one would think should firmly place it under the Polysynthesis Parameter’s purview. However, the approach, in the end, turns out to be inadequate for DPs whose semantic type is more complex than that of a simple referential element. We show that Kiowa has a number of nominals which have semantic types incompatible with the kind of analysis of the language that the Polysynthesis Parameter would predict: quantificational elements, especially bare quantifiers, and focus marked elements. It turns out then, that we need a different theory of clause structure which is compatible with a nonconfigurational typological profile. We argue here that such a theory is ‘microparametric’ (*cf.* Legate 2001): the nonconfigurational profile is the result of a conspiracy of a number of interacting parameters, each of which can be tied down to the specification of a particular functional element of clause structure.

2.2. Grammatical functions and fixity of order

The traditional notions of subject and object conflate (at least) two distinct types of configurationality in the way that they have been applied to familiar languages such as English: the order and hierarchical placement of DP arguments depends partially on their thematic role and partially on their Case and agreement properties. Within the Principles and Parameters framework, this dual nature is dealt with via the idea that the clause is split into distinct domains: one for thematic licensing and another for Case/agreement licensing. Specifically, within the thematic-related domain of the clause (the verb phrase), agents are generated hierarchically superior to patients, while within the Case/agreement domain, hierarchically differentiated positions act as the landing sites for movements of the arguments generated in the verb phrase. These movements may broadly preserve the thematic configuration (*e.g.*, in transitive active clauses) or disrupt it (*e.g.*, in passives). This kind of theory is intended to capture the rather strict ordering constraints that languages like English observe.

However, as has been long known, many languages do not impose such strict ordering on DP arguments. In fact, in some languages, the order of arguments is rather free, with the thematic status of arguments being ‘tracked’ instead by case or agreement morphology. Such languages, which have rich agreement or case systems, also usually allow arguments to be freely omitted, and sometimes freely split apart (with adjectives or determiners appearing at some distance from their associated nouns). The traditional term for such languages is *nonconfigurational* (to be precisely defined below).

Nonconfigurational languages pose a challenge for approaches to clause structure built on the basis of languages like English: is the phrase structure of configurational and nonconfigurational languages radically different, or is it broadly the same? Our eventual conclusion will be that the basic phrase structure of the clause is the same, but that operations which disrupt that order are more widely available in free word order languages. As we will see, this is a rather different viewpoint from that taken elsewhere in the previous generative literature on nonconfigurationality.

2.3. Definitions and history

One of the earliest generative treatments to tackle the question of nonconfigurationality was Hale’s (1983). There, Hale focused on the syntax of Warlpiri, a Pama-Nyungan language of Western Australia. Warlpiri displays a remarkable freedom of word order. Indeed, Hale remarks:

to an extraordinary degree, it is true of Warlpiri that sentences containing the same content words in different linear arrangements count as repetitions of one another (Hale 1983: 5)

Hale proposed an initial typological characterization of nonconfigurational languages which we can summarize as follows:

- (1) A language is *nonconfigurational* if its arguments may be:
- a. freely ordered
 - b. freely omitted
 - c. freely split

Hale's analysis of nonconfigurational languages (exemplified by Warlpiri) is that they have a dual structure: while their argument structure is configurational, their phrase structure is essentially flat. He implements this by assuming the following phrase structure rule for finite clauses:

- (2) $V' \rightarrow \text{Aux } X'^* V X'^*$

Here X' is a categorially undetermined phrase, and the asterisk is read as the Kleene star, so that this phrase structure rule forces clauses to have an initial auxiliary, followed by any number of phrases of any type, followed by the verb, followed again by any number of phrases of any type. The auxiliary is then moved to second position by a phonological rule.

Hale's approach to the phrase structure of nonconfigurationality generates free word order as follows. Since there are no categorial restrictions on the non-verbal elements of (2), lexical insertion can instantiate these nodes with words in any linear order. So for a sentence like (3), we also have the possible orders in (4):

- (3) Ngarrka-ngku ka wawirri panti-rni
 man- ERG PRES.IMPF kangaroo spear-NONPAST
 'The man is spearing the kangaroo' (Hale 1983: 3)
- (4) Wawirri ka pantirni ngarrkangku
 Pantirni ka ngarrkangku wawirri
 Ngarrkangku ka pantirni wawirri
 Pantirni ka wawirri ngarrkangku
 Wawirri ka ngarrkangku pantirni (Hale 1983: 3)

Similarly, Hale analyzed discontinuous constituents, like (5), as emerging from this general schema. Since the X 's in the phrase structural rules impose no constraints on the categorial identity of the elements they dominate, it is possible to have an ergative NP preceding the verb and an agreeing ergative adjective afterwards:

- (5) Maliki-rli- ji yarlku-rnu wiri-ngki
 dog- ERG-1SO bite- PAST big- ERG
 'A big dog bit me' (Hale *et al*, 1995: 1434)

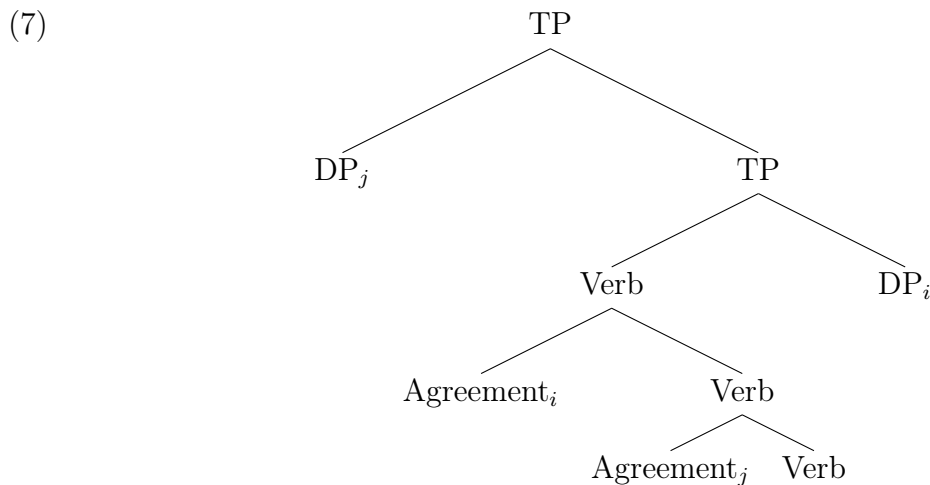
Finally, since the Kleene star allows a zero occurrence of X , it is possible to omit arguments entirely:

- (6) Purra-nja-rla nga-rnu
 cook- INF-C.PRIOR eat- PAST
 ‘Having cooked (it), (he/she/it) ate (it)’ (Laughren 1989: 326)

However, it is not the case that there are no selectional restrictions between verbs and their arguments in Warlpiri, and Hale proposes that Warlpiri does have hierarchical structure, but only in the lexical structure associated with words. At the level of lexical structure, the subject of a transitive does in fact asymmetrically command its object, but, at the level of phrase structure, this hierarchical asymmetry does not obtain. This idea was adopted into the LFG literature as one general approach to nonconfigurality in that framework (see Austin and Bresnan 1996).

An alternative perspective, developed in some detail by Jelinek (1984), builds on the intuition originally expressed by von Humboldt (1836), that it is actually the agreement morphemes on the morphologically rich verb that are the arguments, and that the language is configurational at a morphological (rather than lexical) level. In Jelinek’s system, any overt nominal arguments are essentially adjuncts, but they are linked to clitic elements in the clause via a set of matching rules (for Warlpiri, these rules involve compatibility of case marking between the DPs and the clitics).

From this perspective, nonconfigurational languages are actually configurational, with agreement morphemes/clitics doing the work of full DP’s in languages like English. The elements that look like overt DP arguments are actually structurally akin to adjuncts. This means that we have the following rough structure:



Here the apparent overt DP arguments are adjoined to the clause, and are loosely related to these agreement morphemes by sharing features with them. Since it is the agreement affixes that are actually the true arguments, overt DPs are unnecessary, leading to apparent free omission of arguments. Since the overt DPs are loosely related to the agreement morphemes, they may be freely ordered. This general approach has also been taken by Baker (1996), who assumes that the relation is akin to that of a kind of left dislocation. We take up Baker’s proposal in the next

section.

More recently, Legate (2001) has argued that there is no single macroparametric approach to nonconfigurationality, but rather that the characteristics of such languages arise from a confluence of lexical parametric choices. The fact that a number of languages work in this way does not demand an explanation in terms of a deep parameter with massive ramifications through the grammar; rather, clusters of phenomena are explained by the interaction of a number of lexical parameters. Perhaps, following Newmeyer (2005), the appearance of the same clustering effects in genetically diverse languages can be explained also in broadly functionalist terms: certain clusterings simply make languages easier to use. Alternatively, the formal nature of a particular parameter setting may preclude certain values of other parameters, leading to clustering effects. Legate's work prefigures the conclusions we will reach in the following discussion.

Within current minimalist theory, Hale's approach has generally been abandoned. The phrase structural view of syntax which allowed flat structures has been replaced with a highly hierarchical system, where all nodes are binary branching. In addition, much of current theory takes argument structural properties of verbs to be encoded syntactically, with no separate lexical representation of any significance (Borer 2005, Ramchand 2008). On the other hand, Jelinek's approach has been developed further by Mark Baker, as part of an argument that differences between human languages can be tied down to deep abstract parameters that have major impacts on the structural properties of human languages.

2.4. Baker's macroparametric approach

The approach to nonconfigurationality that we focus on here is that of Baker (1996). Baker is strictly concerned with what he terms the Polysynthesis Parameter, which provides an account of the nonconfigurationality of certain languages. Polysynthesis, as Baker defines the term, describes those languages which have robust noun incorporation together with the general properties of nonconfigurationality discussed above. Noun incorporation shows considerable crosslinguistic variation, and indeed Kiowa noun incorporation is somewhat different from that discussed by Baker (see the appendix). In this book, we are interested in the kinds of configurational effects that emerge once we look beyond Hale's three core criteria of nonconfigurationality. For this reason, we will concentrate on how the kind of approach that Baker develops to nonconfigurationality might be applied to Kiowa.

The core of the account for nonconfigurationality builds on the intuition developed from Jelinek (1984): overt DP arguments in nonconfigurational languages are in adjoined, rather than in specifier, positions. The true arguments of the verb are pronominals (or, for Jelinek, affixes), which are in specifier positions. Overt DP arguments are coindexed with these. For example, an apparent overt object in such a language would actually look as follows:

(8) [TP ... V pro_i] DP_i

Structures where the overt object is the complement of V are ruled out:

(9) *[TP ... V DP]

Baker ensures that such languages have this structure via a parameter:

(10) **Morphological Visibility Condition**

An XP 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) Agreement *or* (b) Movement (incorporation) (Baker 1996: 17)

Let us leave option (b), movement, aside, and focus on agreement, granting (at least for the moment) that ‘morpheme in the word containing Y’ is a coherent notion. (10a) ensures that a DP, if it is to receive a θ -role from a verb, must be coindexed with an agreement morpheme on the verb, as follows (we use ‘+’ to denote Baker’s notion ‘in the same word as’):

(11) [TP ... Agr_i+V DP_i]

However, this is not enough to generate the right structure, as it will merely force rich agreement without preventing DP arguments from appearing in the specifier of vP, TP, or other projections. So, Baker introduces an auxiliary assumption:

(12) An agreement morpheme adjoined to a head X receives that head’s Case at S-structure/PF. (Baker 1996: 86)

If Agr on V absorbs V’s Case, then the DP object cannot be overt, since an overt element must have Case. However, Baker makes the assumption that covert pronouns (that is, pronouns without phonological content) do not need Case, so the following structure is legitimate:¹

(13) [TP ... Agr_i+V pro_i]

This gives us a case of object pro-drop. Much the same structure is motivated for the subject argument. (Baker assumes the specifier of TP to be the universal position for subject licensing. Consequently, for him, the verb must raise to T so that the Agr morpheme adjoined to T is in the same word as the θ -assigner.) This successfully prevents DPs from occurring in argument positions.

However, languages have overt DPs as well as null pronominals. Since the null pronominals fill the argument positions in the clause, the overt DPs cannot be in

¹Baker’s assumptions about Case are rather non-standard. In classical Government and Binding theory, empty referential pronominals (‘little pro’) are usually thought to need structural Case. Baker seems to assume that the Case that is actually relevant is morphological, so that null elements in general, which have no morphological form, require no Case checking. He makes this same assumption for the traces of *wh*-moved elements, as we will see below.

these positions (for the Case-theoretic reasons just mentioned). Baker argues that overt DPs in nonconfigurational languages are in the same basic construction as overt DPs in the familiar Clitic Left Dislocation (CLLD) constructions found in Italian and many other languages (see, *e.g.*, Rizzi 1997, Cinque 1990).

CLLD is a construction found in many languages where a referential element in the left periphery of the clause is ‘resumed’ by a clitic pronoun internal to the clause. It is distinct from Focus Movement constructions (14), where the left peripheral element is connected to a trace, and from Left Dislocation constructions (15), where the left peripheral element is connected to a full pronoun (examples from Alexopoulou and Kolliakou 2002):

(14) **Fish** I never eat.

(15) **A man like that**, I’d run a mile before I trusted **him** with a secret.

Languages like Italian have both Focus Movement constructions—

(16) **Il tuo libro** ho letto (non il suo)
 the your book AUX.1S read not the his
 ‘I read **your book** (not his)’ (Rizzi 1997: 286)

—and also Left Dislocation/Hanging Topic constructions:

(17) **Quella città**, non sono mai stato là
 that city NEG AUX.1S never been there
 ‘That town, I’ve never been there’ (Cinque 1990: 59)

However, in addition to these, they also have Clitic Left Dislocation constructions, where the resumptive element in the clause is a clitic in place of a full pronoun.

(18) **In quella città**, non **ci** sono mai stato
 in that city NEG there AUX.1S never been
 ‘In that town, I’ve never been’ (Cinque 1990: 59, our translation)

Greek too has a contrast between Focus Movement constructions and CLLD (Alexopoulou and Kolliakou 2002):

- (19) a. **tin parastasi** skinothetise o karolos kun
 the.ACC show directed.3S the.NOM Karolos Kun
 ‘Karolos Kun directed the show.’
 b. **tetia paputsia** de tha foruse pote i maria
 such shoes not would wear.3S never the.NOM Maria
 ‘Maria would never wear such shoes.’
- (20) **ta klidia ta** stilame sti maria
 the keys them sent to the Maria
 ‘We sent the keys to Maria.’

We return to the properties of CLLD in more detail below.

Baker proposes that the specific CLLD properties in nonconfigurational languages derive from a licensing condition for DP adjuncts, which he states as follows:

(21) **Adjunct Licensing Condition**

An argument-type phrase XP generated in an adjoined position is licensed if and only if it forms a chain with a unique null pronominal in an argument position. (Baker 1996: 112)

The effect of this condition is to allow the adjunction structure illustrated in (8), repeated below as (22). Combining the adjunction and agreement structures, the overall structure for an argument DP in a polysynthetic language is tripartite, consisting of a CLLD DP coindexed with an *in situ pro*, coindexed, in turn, with an agreement morpheme on the verb:

$$(22) \quad [_{TP} \dots Agr_i + V \text{ } pro_i] \text{ } DP_i$$

In the next section, we show how this approach fairly successfully captures the basic phenomena of free ordering, omission and also, to a certain extent, the splitting of (apparent) arguments. However, we will see in subsequent sections that Baker's theory faces a number of empirical and theoretical problems.

2.4.1. Derivation of nonconfigurational properties

Free omission of arguments

The most straightforward nonconfigurational property to illustrate and explain is free omission of arguments. Since the overt DPs in Baker's system are simply adjuncts, they may be omitted without violating the θ -criterion—none of his conditions demands their occurrence. This gives us a straightforward analysis of a Kiowa example like the following, where all three arguments (agent, patient and malefactive) are encoded in the agreement morphology, but there are no overt DPs:

$$(23) \quad \begin{array}{l} M\acute{o}\acute{o} \text{ } ts\acute{o}q\acute{u} \text{ } \acute{o}- \quad \quad \acute{o}mh\acute{e}l \\ \text{like } awl \text{ } 3S:3S:3I\text{-make.EVID} \\ \text{'He [Sende] made it [his nose] awl-like [to the coyote's ill effect]'} \end{array}$$

Under the CLLD analysis, a ditransitive with no overt arguments simply contains three *in situ* instances of *pro*, each coindexed with agreement morphemes on the verb (we have positioned the verb after its arguments, but this is not crucial):

$$(24) \quad [_{TP} \text{ } pro_x \text{ } pro_y \text{ } pro_z \text{ } Agr_x:Agr_y:Agr_z + V]$$

The example above occurs midway through a story, at a point at which all three entities—Sende, the coyote, and the coyote's nose—are familiar and, so, freely omitted. It is instructive to contrast this with a sentence such as (25), which occurs at

the end of the same story. By this stage, the storyteller has reached the moral of the story and so mentions all three entities explicitly. Observe, however, that the agreement on the verb is identical whether argument DPs are present or not.

- (25) Séndé məʔthəxóúhij mək!ŋ ɔ– sóúhəl
 Sende.AG coyote.IO nose.DO 3S:3S:3I–file.EVID
 ‘Sende filed the coyote’s nose’

A sentence such as (25) simply involves adjunction of the DPs to (24):

- (26) Sende_x coyote_y nose_z [TP *pro_x pro_y pro_z* Agr_x:Agr_y:Agr_z+V]

Free ordering of arguments

Given that DP arguments are, in Baker’s system, structurally adjoined, free ordering and omission of arguments amounts to free ordering and omission of adjuncts. These properties of adjuncts are widely accepted as basic: Baker illustrates them with free ordering and omission of temporal clausal modifiers in English:

- (27) a. I will go to the store
 b. I will go to the store in the afternoon
 c. In the afternoon I will go to the store

To provide an exhaustive illustration of free argument ordering—examining all argument types in all positions relative to each other, to the verb and to the verbal particles discussed at length in the next chapter—would be a waste, not merely of space, but of the reader’s patience. Therefore, we confine attention to some representative examples. In particular, we restrict ourselves to the three types of morphosyntactically distinguishable arguments: agents, indirect objects and direct objects.

The previous example sentence (25) illustrates the possibility of preverbal occurrence for arguments. This is the overwhelmingly common position for overt arguments. However, postverbal placement is possible. We provide two examples each, all unsolicited, for agents:

- (28) Hegó kí- thap t!ǵǵba an et– ǵǵmei xéguyudo
 then meat-dry bare HAB 3I:3A:3P–do.IMPF.EVID dogs
 ‘The dogs would clean out their dried meat’
- (29) Hét bat- ǵi- ɔm, nə dá hón em- tháá- *houguutɔɔ* nɔ́ɔ
 INJ 2S:3P–again-do.IMP CONJ OBLIG NEG 1S:2S–whip-kill.NEG.MOD I
 ‘You do it again and see if I don’t whip you’

—indirect objects:

- (30) Món hétó hón xláii á- **dḡmḡw áxwde**
 INFER still NEG calf :3S:3S-be.NEG its mother
 ‘The calf probably still hadn’t been born its mother’
- (31) T!ókhóík!yááhyóp ɔy éítḡ éḡi- **setto Segyâi-do**
 white men um corn 1EX.P:3S:3P-pick.IMPF uncle- because
 ‘[We were there] to help uncle pick some white men’s corn’

—and direct objects:

- (32) Negó dḡw- **ḡḡhel thót!ólḡḡḡw** ḡw...
 then 3A:3S:3I-gave.EVID oranges and
 ‘When they gave her the oranges...’
- (33) Hegó món á- **hḡḡgya ólhḡḡgya**
 then INFER 3A:3S-got money
 ‘So they got their money’

A second range of freedom of placement available to arguments is their relative order. The basic, default, order is Agent \gg Indirect Object \gg Direct Object, as in (25). However, such examples are extremely rare in natural discourse, owing, amongst other things, to the prevalence of argument omission (Watkins 1993: 141). Three similar examples (all spontaneous, even though (34) arose in an elicitation session) are:

- (34) Hón **P!óóthópdeklii Paithalíí áádḡ** ó- **thēm- ḡḡmḡw**
 NEG Daniel.AG Vincent.IO stick.DO 3S:3S:3I-break-make.NEG
 ‘Daniel didn’t make Vincent break the stick’
- (35) Hét [nóḡ ḡw ám] **xégun thóḡse** bédēi- ḡḡ
 HORT [1 CONJ 2].AG dog.IO bones.DO 1IN.D:3S:3D-give.IMP
 ‘Let’s you and I give two bones to the dog’
- (36) **Ám háátêl** [hóndé-kwi- maa Ø- dḡḡ-kyá] **-dḡ á-dóm-**
 ANAPH someone some- Kiowa-woman 3S-be SURM-D.AG 3-son-in-law-
de hóndé-aadḡ ó- **thâl- ɔm- ḡḡ- hel**
 D.IO some- board.I.DO 3S:3S:3I-bore.NV-make-give?-EVID
 ‘Someone, whatever Kiowa woman it was, asked her son-in-law to bore a hole in some kind of board’

The default argument order is more readily gleaned on the basis of pairwise comparisons. The following examples illustrate Agent \gg Indirect Object (the deprivées; 3P agreement is for an unspecified direct object):

- (37) Béthəw **óhəde** [k!yááhi̯ gə maayí ɛ- kíidəi]-**de**
 MIR that same.AG man CONJ woman 3D-live.IMPF.EVID -D.**IO**
 béthəw mén- khyáhôn-hel
 MIR 3S:3D:3P-deprive- EVID
 ‘Unbeknown, that same [man] had deprived the man and woman who lived [there]’

—Indirect Object » Direct Object:

- (38) [Kóígú gə [háote hǵǵk!yagə á- dǵǵ]-gə] ólhǵǵhya gya-
 [Kiowas CONJ several foreigners 3A-be -D.I].**IO** money.**DO** 1S:3A:3S-
 gúttə
 write.IMPF
 ‘I was writing cheques for Kiowas and a number of other Indian tribes’

—and Agent » Direct Object:

- (39) Yal **k!yááhi̯igə k!ôn** á- pəttə!
 OPT man-eaters.AG tomatoes.**DO** 3A:3S-eat.IMPF
 ‘Let’s hope man-eaters eat tomatoes!’

However, this basic argument order is subject to variation, such as Indirect Object before Agent:

- (40) **Khəute Haitsiki T!óúkút** k!əək!əutə édəw- ǵǵhel
 Grandfather Haitsiki.**IO** Wichitas.AG pumpkin 3I:3S:3I-give.EVID
 ‘The Wichitas gave a pumpkin to Grandfather Haitsiki’

—Direct Object before Agent:

- (41) Hétó **thén Séndé** á- góúbəi
 still heart.**DO** Sende.AG 3S:3S:3S-miss.IMPF.EVID
 ‘Still, Sende kept missing [the monster’s] heart’

Finally, a third way in which arguments display freedom of position is with respect to particles. We argue, in subsequent chapters, that at least some preverbal particles in Kiowa, like the adverbs of Cinque’s hierarchy (Cinque 1999), occupy fixed clausal positions and, so, serve as diagnostics of noun phrase position. Consequently, it is correct to view the facts below—that preverbal arguments may be either pre- or postparticular—as demonstrating freedom of argument position, rather than freedom of the particles with respect to immobile arguments. This freedom is not dependent on argument type (nor on particular particles). It occurs for agents and subjects of unaccusatives (here, with an evidential particle):

- (42) **Béthəw T!áík!op** ɛ- példoudei
 MIR Laurel 3S:1S-think about.IMPF.EVID

‘I didn’t realize Laurel was still thinking about me’

- (43) **Thalii-kíúgya béthɔɔ** hétó yá- t!óóđêi
 boy- fear MIR still :1S:3P-stay.IMPF.EVID
 ‘Apparently, my boyhood fears were still with me’

—with indirect objects (here, with an aspectual particle):

- (44) **Hón an êlk!yoi** gyát- sém- hǒǒnô- de
 NEG HAB old men :1P:3P-longing-give up.NEG-NOM
 ‘[We] old men don’t give up our desires’

- (45) **Né Thaate an** téi â- ǒǒ ɔt
 but Grandmother HAB all 3A:3S:3S-give.PF yet
 ‘But they would give it all to Grandmother’

—and with direct objects (here, with a negative particle):

- (46) **Hón** hábé ɔnk!li é!hɔde tóúgya bát- guudɔɔ
 NEG sometime past this word 1IN.D:3P-write.NEG
 ‘We never wrote this word in the past’

- (47) **Ólhǒǒgya hón** é- ǒǒmô
 money NEG 3S:1S:3S-give.NEG
 ‘He hasn’t given me the money’

This freedom with respect to particle position extends even to interparticle placement, of which we can distinguish two types. In the first, arguments appear between different particles:

- (48) **Béthɔɔ** kɔɔgɔ- al k!óúǒb xɔɔ **an** á- hotǒúyǒjǐ
 MIR others-too elders thus HAB 3A-run around.IMPF.EVID
 ‘We didn’t realize that other old people ran around like that’

- (49) **Hétó** Kóítɔgya étté **hón** gyát- háígɔɔ
 still Kiowa language much NEG :1D:3P-know.NEG
 ‘We still do not know much of the Kiowa language’

In the second, arguments or other phrases appear between iterated instances of a single particle:²

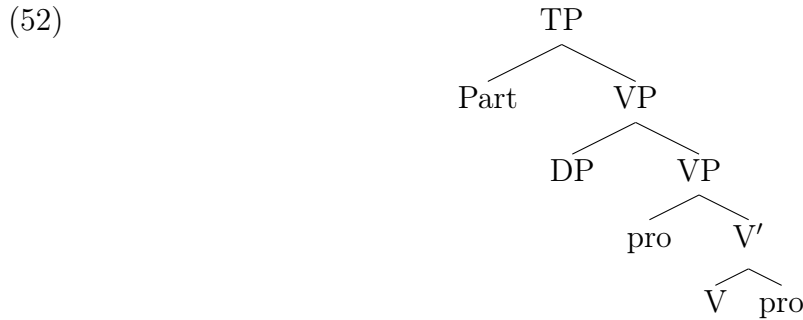
²Harrington gives an example with iteration of the negative particle. The example is, however, rejected by our consultants. Thus, the negative particle is somewhat different from the others. See chapter 4 for some discussion of other differences.

- (i) ***Hón** [gya- hóltɔɔ]-do **hón** a- áámô
 NEG 1S:3S-kill.MOD -because NEG 1S-come.NEG
 ‘I have not come here to kill him’

(Harrington 1928: 56)

- (50) **Béthoo** ʒʒpahoo plʒsót **béthoo** Ø- kíidèi
 MIR there thunder MIR 3S-live.IMPF.EVID
 ‘Unbeknownst, Thunder dwelt there’
- (51) **Hétʒ** éhoo-al **hétʒ** xôo Ø- dʒʒ
 still now- also still thus 3S-be
 ‘She’s still that way now’

To capture all these positional freedoms—preverbal and postverbal, preparticular, interparticular and postparticular—within a CLLD-based account, we must assume the possibility of variable adjunction sites and variable directionality of adjunction. In Baker’s system, DP arguments are usually represented as adjoined to the sentence (that is, at TP level). This will nicely capture the cases where DPs may be at the left or right extremities of sentences. However, if the particles do mark positions in the Cinque Hierarchy, then the DPs that appear after particles but before the verb will best be analysed as adjoining to VP, with the *pro* subject in the specifier of VP:



Interparticular placement of DPs can then be seen as adjunction to higher functional projections in the clausal structure. In fact, at this stage, it would appear to be a strength of Baker’s analysis that Kiowa exploits all the types of adjunction that one can imagine (but see the next chapter for detailed analysis of such approaches to Kiowa clausal structure, showing that they are ultimately untenable).

Free splitting of arguments

According to Baker there are only three types of discontinuous constituents permitted in Mohawk: certain quantificational expressions, demonstratives and *wh*-expressions.

- (53) Akwéku wa’- e- tshá’ri-’ ne onhúhsa’
 all FACT-3FS-find- PUNC NE egg
 ‘She found all the eggs’ (Baker 1996: 138)
- (54) Ka níkáya_Λ wá- hse- nut- e’ ne kwéskwes?
 which FACT-2S:3ZS-feed-PUNC NE pig

- ‘Which pig did you feed?’ (Baker 1996: 138)
- (55) Kíkλ wa- hi- yéna- ’ ne kwéskwes
 this FACT-1S:3MS-catch-PUNC NE pig
 ‘I caught this pig’ (Baker 1996: 138)

Moreover, the elements of the split constituent must be in the order just given. (The judgments ‘*?’, ‘?*’ are as reported by Baker. We were unable to find a sentence bearing the same relationship to (54) as (55) bears to (57).)

- (56) *?Onhúhsa’ wa’- e- tshári-’ akwéku
 eggs FACT-3FS-find- PUNC all
 ‘She found all the eggs’ (Baker 1996: 140)
- (57) ?*Kwéskwes wa- hi- yéna- ’ kíkλ
 pig FACT-1S:3MS-catch-PUNC this
 ‘I caught this pig’ (Baker 1996: 140)

Baker points out that these sentences become grammatical when either the preverbal or the postverbal element is dropped. What this suggests is that Mohawk in fact does not allow two different adjoined expressions to both be linked interpretatively to the same argument position. That is, we cannot have the following structure:

- (58) *XP_{*i*} [pro_{*i*} Agr-V] ZP_{*i*}

Baker proposes to capture this constraint that by building a uniqueness condition into the Adjunct Licensing Condition introduced above:

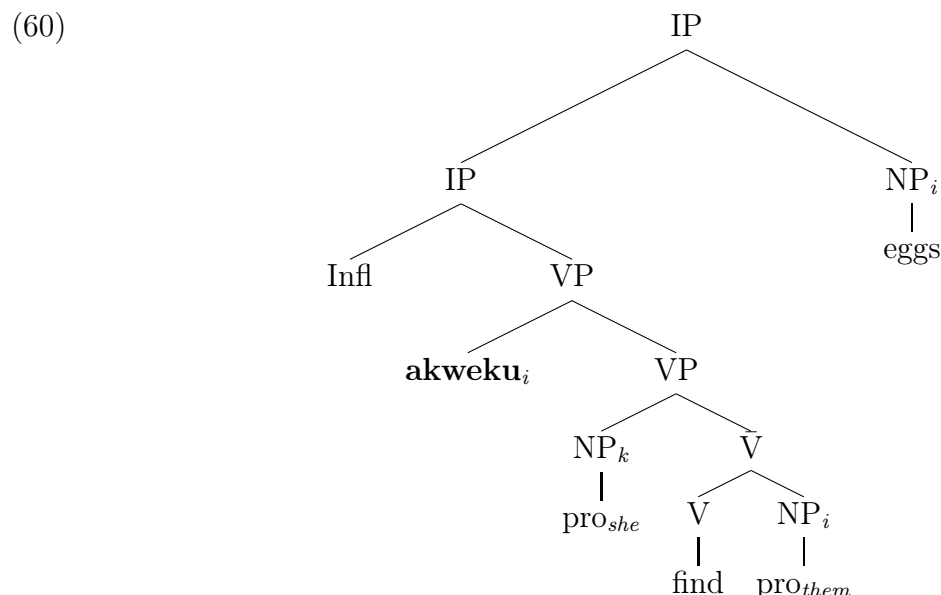
- (59) **Adjunct Licensing Condition** (revised)
 An argument type XP generated in adjoined position is licensed if and only if:
- a. it forms a chain with a unique null pronominal Y in an argument position, and
 - b. For each integer *i* contained in the index sets of both XP and Y, there is no phrase ZP distinct from XP that forms a chain with Y by virtue of sharing *i*. (Baker 1996: 142)

The effect of this condition is to allow each adjoined XP to be licensed as long as it is coindexed with a *pro* (59a), and to ensure that only one XP is coindexed with each *pro* (59b). To see how the second clause works, consider the structure in (58) above. Here XP bears the index *i* in its index set, and, in accord with (59a), so does *pro*. However, (59b) requires there to be no ZP, distinct from XP, which also forms a chain with *pro* by virtue of having the index *i*. Yet, in this structure, there is such a ZP, so the structure is ruled out. In sum, then, the Adjunct Licensing Condition bars analyses of discontinuous constituents as involving two separate chains.

From this, it follows that the apparent discontinuous DPs in (53)–(55) cannot be analyzed as reflexes of the Morphological Visibility Condition (that is, as CLLD structures). Instead, Baker argues that the various different kinds of discontinuous constituent found in Mohawk arise from the different syntactic behaviours of quantifiers, demonstratives and *wh*-expressions.

This approach predicts, then, that languages which allow discontinuous constituents may have subtly different syntaxes for these constructions, since there is no single deep underlying factor. For example, in Mohawk, the only quantifiers that freely and naturally appear separated from their NPs are **akwéku** ‘all’ and **éso** ‘a lot’. Baker argues that the syntax of these is similar to that of the quantifiers **tous** and **beaucoup** in French.

The idea behind the analysis is that these quantifiers are adjoined either to the noun, giving a ‘non-split’ construction, or to VP, giving a split construction. In the former situation, **akwéku** ‘all’ can be adjoined to a full DP, and it is this lower DP that enters into a binding relation with the agreement element. For the split constructions, Baker proposes a configuration like the following:



In this structure, the apparent quantifier is treated as an adverbial adjunct, leading to an apparent split between the quantifier and the noun. This makes the split cases parallel to a quantificational adverbial analysis of a French example like (61):

- (61) Ces livres, elle les a tous lus
these books she them has all read
‘These books, she’s read all of them.’

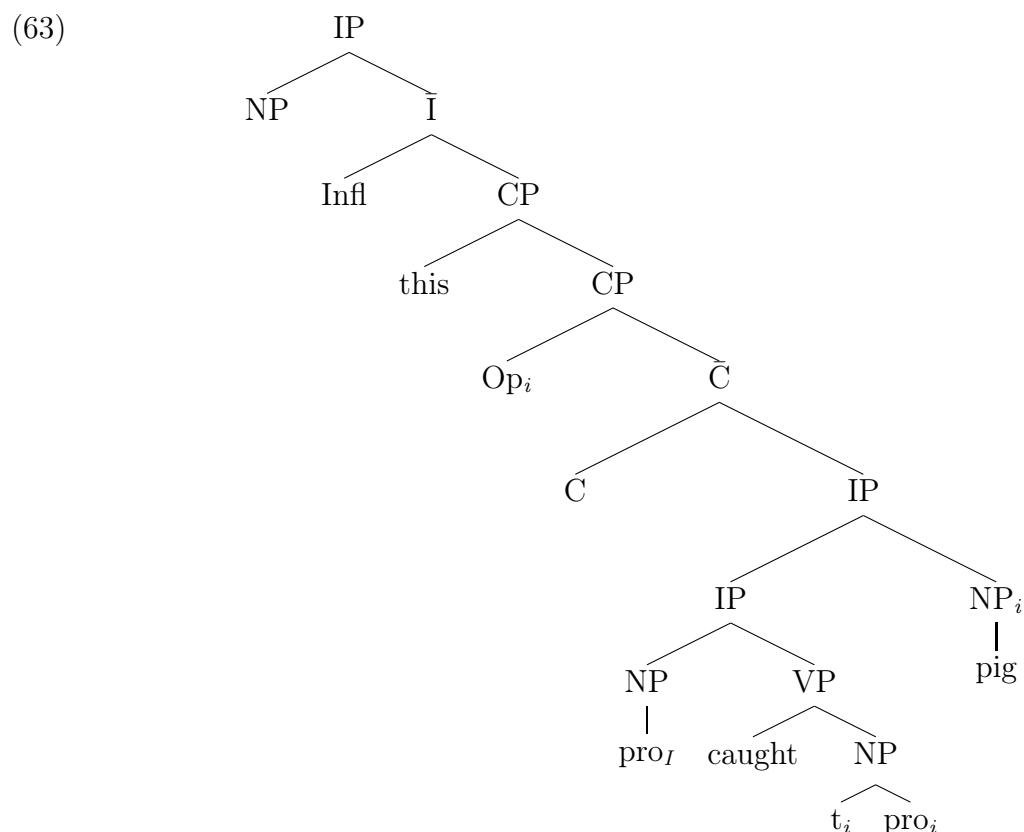
Note that, since **akwéku** ‘all’ in this structure is treated as a true adverb, the Adjunct Licensing Condition, which controls ‘argument-type phrases’, does not apply, allowing both the apparent quantifier and its apparent restriction to appear in the

same clause. Baker’s analysis of **éso** ‘a lot’ goes along similar, although not identical, lines.

Mohawk further allows demonstratives to split from their NPs (although Baker notes that this phenomenon appears to be rare).

- (62) KíkΛ wa- hi- yéna- ’ ne kwéskwes
 this FACT-1S:3MS-catch-PUNC NE pig
 ‘I caught this pig’

Baker argues that this construction in Mohawk is something rather different from the constructions with quantifiers, proposing analysis as a kind of internally headed cleft. Intuitively, a split demonstrative in Mohawk is a little like a cleft such as English *It is this pig that I caught* except that the head of the relative clause part of the cleft is in its canonical position (hence, approximately, *It is this that I caught pig*):

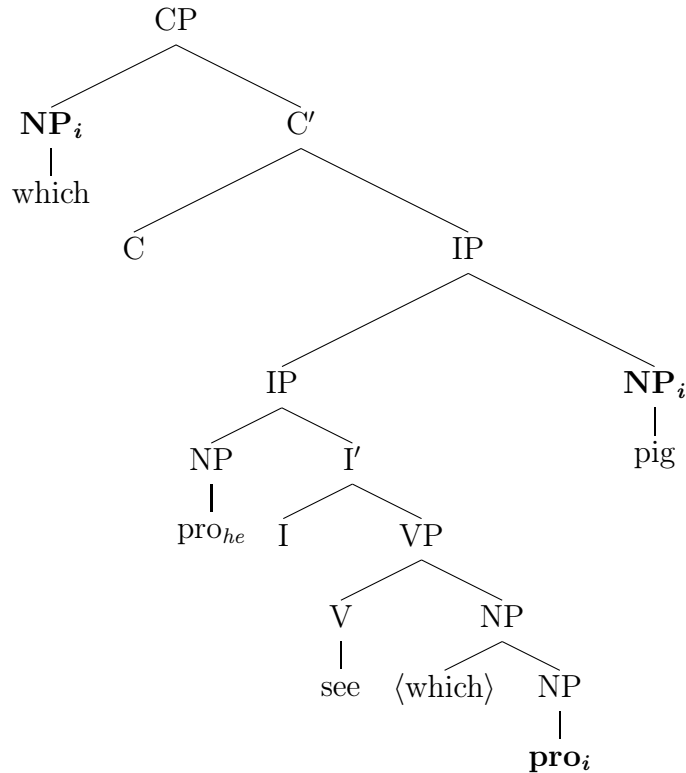


This approach makes the (correct) prediction for Mohawk that the split demonstrative element must precede its nominal. We will see that this is not true of Kiowa split demonstrative constructions.

For *wh*-splitting, Baker suggests that **ka níkáyaΛ** ‘which’ has a demonstrative like syntax, adjoined to NP. In the cases under discussion, it adjoins to the null pronominal and then raises to the specifier of CP, without pied-piping the pronominal, as

follows:

(64)



When we turn to Kiowa, we see that it is rather different from Mohawk in the kinds of splitting it allows; this is consistent with the kind of variation that Baker's approach is forced to admit. Kiowa is a language extremely comfortable with split nominal constituents.

Like many languages, Kiowa permits an externally headed relative clause to split from its head nominal. However, this is rare to the extent that the following sentence may be unique in our non-elicited corpus:

- (65) **Kóígú** món á- dós [ósǵǵ á- kíidêi]-ǵǵ
 Kiowas INFER 3A-be REL 3A-live.IMPF.EVID -D.I
 'It was probably Kiowas who were living there'

Kiowa also permits quantifiers to split from their complement nominals. As with relative clauses, these splits may cross particles:

- (66) **Páá** hón **kóítǵǵya** yǵ- pèide- haigǵǵ
 some NEG Kiowa words :1S:3P-straight-know.NEG
 'There are some Kiowa words I don't really understand'
- (67) **Kôl** món **nós-thalii-kut** gyá- dou hǵya
 some INFER 1- boy- picture 3A:3P-hold perhaps
 'Maybe they have some pictures of me as a boy'

- (68) Éíḡḡ áádḡ **étté** an **áḡḡḡ** e- dḡḡ
 this tree many HAB apples 3I-be
 ‘This tree produces a lot of apples’
- (69) Hó **kḡl** **xóígúl** Ø- tḡp? Heg’ an **kḡl** Ø- obóí- top **xóígúl**
 Q some tea 3S-left then HAB some 3S-really-left tea
 ‘Is there some tea left?’ ‘There’s always some tea left’
- (70) **Háote** úupkḡḡ á- t!ḡḡdèi **Kóígú** émgḡḡ Arizona
 several way over 3A-live.IMPF.EVID Kiowas LOC Arizona
 ‘There are several Kiowas [reportedly] living way over in Arizona’
- (71) **Páá** **maayí** Ø- bóúhèl... **Páá**- al ḡḡkḡ Ø- p!éidehel **maayí**
 some woman 3S:3S-see.EVID some-too there 3S-appear.EVID woman
 ‘A woman saw him... Another woman appeared there’

The same freedoms are afforded to demonstratives (recall that the language lacks definite articles):

- (72) **Éíde** an **p!ḡḡ** Ø- téígya-ḡḡma
 this HAB river 3S-ice- make.DETR.IMPF
 ‘This river usually freezes’
- (73) Poi **éíde** gya-dḡḡ **thḡḡtégya**
 again this 3P- be story
 ‘Here is another account’

—and to some *wh*-elements:³

³This freedom does not extend to other *wh*-elements, however, for possibly extraneous reasons. In ‘which X’ and ‘what type of X’, the complement, X, is compounded with, and tonally subordinate to, the *wh*-element. For instance, in **háagyâik!yāāhij** ‘which man’ and **hḡndék!yāāhij** ‘what type of man’, the complement, **k!yāāhij** ‘man’, is deprived of its usual tones, **k!yāāhij**. These are unsplittable:

- (i) *Hḡndé a- bóú k!yāāhij?
 what (type of) 2S:3S-see.PF man
for ‘What type of man did you see?’

In this, these words resemble possessives, which also subordinate the complement possessee and are unsplittable:

- (ii) a. Laurel-té- xegun a- bóú
 Laurel-POSS-dog 2S:3S-see.PF
 ‘You saw Laurel’s dog’
 b. *Laurel-té a-bóú xegun / Laurel a-bóú té-xegun

Presumably, these are to be treated on a par with other compounds in their unsplittability.

- (74) **Háote** bé- bǫ́ú kúútogo?
 how many 2S:3I-see.PF birds
 ‘How many birds did you see?’
- (75) **Án-** píí- óm- phátkyá- ot, **háote** an **óóthát!ǎi** gya-
 :3S:3P-food-make-finish.DETR.PF-when how much HAB salt 3P-
 tóp?
 left
 ‘How much salt is usually left, when she’s done cooking?’

In the splitting of quantificational and deictic modifiers just exemplified, Kiowa resembles the Mohawk data discussed by Baker. However, Kiowa is more permissive than Mohawk in a number of regards.

First, the nominal may precede the modifier from which it is split, something which Baker reports as ungrammatical in Mohawk, as we saw above. This may arise with a numeral (76) or other quantifier, such as a demonstrative (77), and the inversely split constituent may precede (76) or straddle (77) the verb (though the latter possibility is more restricted as discussed in chapter 5):

- (76) **Éígútk!ó** hâatêl **yíí** ǵ- hân?
 biscuit who two 2S:3D-devour.PF
 ‘Who ate two biscuits?’
- (77) **Hêitegya** gya-dóó **éíhóde**
 story 3P- be this
 ‘This is the story’

Kiowa and Mohawk differ also in terms of the internal order of DP constituents, in a way that reflects the order constraints on these same subparts when split. Mohawk does not allow the nominal to precede its modifiers. In Kiowa, this order is fully possible:⁴

- (78) éíde thalíí ~ thalíí éíde
 this boy boy this
 ‘this boy’
- (79) yíí xáádó ~ xáádó yíí
 two prairie dog prairie dog two
 ‘two prairie dogs’
- (80) tóú étté ~ étté tóú
 house many many house
 ‘many houses’

⁴Nonetheless, the Kiowa DP is clearly configurational, as we will see in chapter 6.

The covariation between acceptability of the split and unsplit order *noun* (...) *modifier* in Kiowa, and the unacceptability of both in Mohawk suggests that there are further microparametric differences between the two.

One final issue in split constituency worth pointing out here is noted by Baker in a footnote (his footnote 26 to chapter 3). Mohawk and Kiowa freely split numerals from nominals. We give Kiowa examples here. Again, both splits may appear before the verb (81), or they may straddle it (82):

- (81) **Yíikya** hegó **sâqado** dót– dóó
 four then children :1D:3I-be
 ‘We had four children’
- (82) Hegó **yíí** yá– xán **kút** xóxo
 already two :1S:3P-arrive letters thus
 ‘Two letters have already come in reply’

Baker notes that none of the approaches to split constituency he adumbrates straightforwardly predict such splits.

In Baker’s system, one obvious approach for dealing with split constituency is unavailable. This is the approach where the splits arise through movement of some subpart of the DP to a position external to that DP. In Baker’s approach, where the arguments are in adjoined positions, such movements would be ruled out, given the general bar on extraction from adjoined constituents (Huang 1982). However, in an approach where the arguments are in specifiers, we might expect to see subextraction of the sort familiar from European languages which allow violations of the Left Branch Condition. For example, Polish allows *wh*-extraction from DP arguments:

- (83) Jakich Adam otworzył [NP pudeko [NP t_i czekoladek]]?
 what kind of Adam opened box.ACC chocolates.GEN
 ‘What kind of chocolates did Adam open a box of?’

We return to this option in chapter 5.

Baker’s suggestion that discontinuous constituency should be treated differently from order and omission is necessitated by the tight connection his system draws between the structure of overt DPs in polysynthetic/nonconfigurational languages and CLLD. CLLD constructions are, in general, incompatible with split constituents, as can be seen from the following Spanish examples:

- (84) a. **Este hombre**, lo ví en la fiesta
 that man him see.1S.PAST in the party
 ‘That man, I saw him at the party’
- b. ***Este**, lo ví en la fiesta, (el) **hombre**
 that him see.1S.PAST in the party the man
 ‘That man, I saw him at the party’

Since, under Baker’s approach, a CLLD language like Spanish lacks split constructions, and one like Mohawk has them, the presence of split constructions cannot be deeply connected to the Polysynthesis Parameter, but must involve a different parametric option.

In fact, the difficulty of making split constituents emerge as the automatic reflex of the more general parameter setting for free omission and free ordering of arguments is a long standing problem in this area: it affected also Hale’s and Jelinek’s systems. The crucial issue is how to interpret the split constituents together. Hale offers certain suggestions for this—essentially appealing to a version of secondary predication—but they do not follow from his system. Jelinek also proposes a separate principle of interpretation to allow two (or more) different adjuncts to be linked to the same agreement morpheme.

The retreat from a macroparametric explanation of this aspect of nonconfigurational syntax opens the possibility that different nonconfigurational languages will display different kinds of splitting. This is, of course, what we have just seen for Kiowa, which permits orders that Mohawk does not tolerate (for instance, *nominal (...) demonstrative*). We concur with Baker that there is no macroparameter involved determining what is a legitimate split constituent in Kiowa. We return to the analysis of splits in Kiowa in chapters 5–6.

2.4.2. Problems

The previous section illustrates that Kiowa has the three core properties associated with nonconfigurationality. Whilst reviewing these, we have demonstrated that the most ambitious account of nonconfigurationality, Baker’s, naturally accounts for free omission and free ordering of arguments. It also correctly predicts that Kiowa and Mohawk may differ in terms of discontinuous constituency. However, the CLLD approach to Kiowa nonconfigurationality in the end turns out not to be tenable.

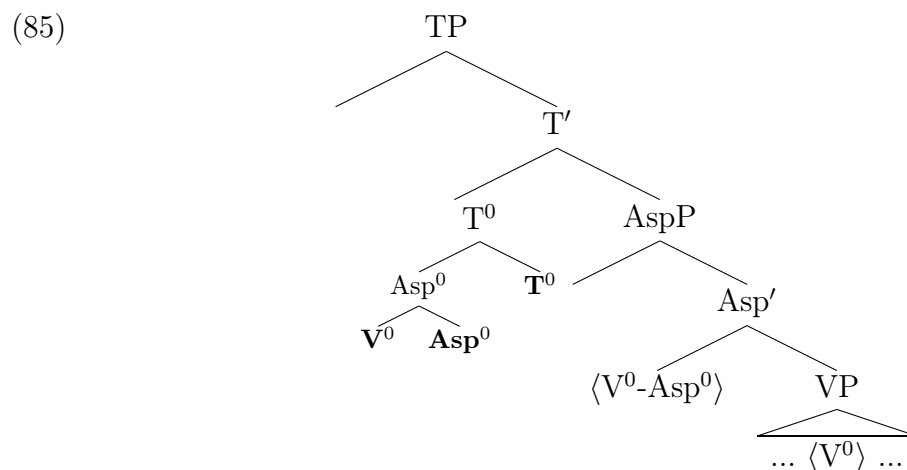
The Definition of Word

The Kiowa agreement prefix, as discussed in the introductory chapter (pp. 22–24), is semi-dependent on the verb. It is unclear, beyond stipulation, that it forms a word with the verb, as is required by the Morphological Visibility Condition. For some phonological processes, it does (tone lowering, for example), for others, it does not (high tone spreading, for example). In a certain sense, it is obligatorily adjacent to the verb, but it may be separated from the verb root itself by many different types of incorporated elements, including whole VPs (see appendix). It follows that there is no easy characterization of the notion word in Kiowa that independently lets us know that the agreement prefixes with which the overt DPs are coindexed under a CLLD analysis are truly ‘inside the word containing the verb’.

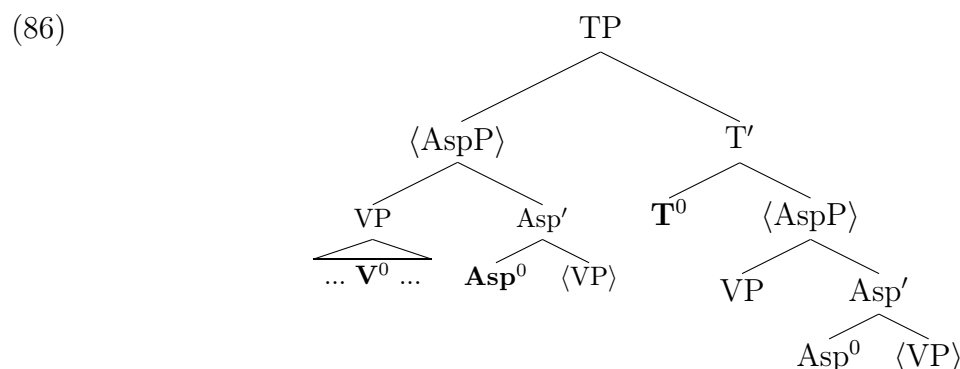
The theoretical question comes down to what the definition of ‘word’ is and whether it includes or excludes elements connected to the verb only by linearity

and a tonal property. This problem is not restricted to Kiowa, however, as the theoretical coherence of wordhood has been sharply questioned by the rise of syntactic approaches to morphology (*e.g.*, Anderson 1982, Halle and Marantz 1993) and, especially, in the work of Julien (2002).

Julien makes a variety of points of relevance here. The first is that different syntactic structures can underlie what we pretheoretically regard as words. For instance, a verb form such as V-Asp-T would arise via head-to-head movement in a head-initial language, like Italian:



—but via complement-to-specifier movement in a head-final language, like Japanese:



We argue in the next chapter that Julien's treatment of head-final languages does not extend to Kiowa. However, that does not undermine her general point: that the syntactic structures that underlie 'the word containing the verb' in Italian are radically different from those of Japanese, a head in the former, a phrase in the latter. (As Julien ties these differences to other syntactic and morphological properties of the language types, there is considerable evidence in favor of her account.)

Facing this difference, Julien concludes that what we take to be words are simply syntactically autonomous units (the individual terminal nodes) that consistently end up in fixed linear relations: for instance, if T^0 is always placed after the verb, it is regarded as part of the verb; if a variety of elements may intervene between T^0 and

the verb, we regard them as separate. However, it is the syntax that drives the illusion of wordhood. Phonological factors, such as reduction and allomorphy, may feed off the regular adjacency and reinforce the sense that certain morphemes form a word, but this does not alter the fact that words are epiphenomena. In consequence, the notion of ‘word’ cannot be the syntactic domain for statement of an argument licensing condition such as Baker’s.

Semantics of Clitic Left Dislocation

A second set of problems arises for Baker’s account owing to its reliance on Clitic Left Dislocation as the mechanism that links DPs to the argument positions and verbal morphology. We begin with discussion of the construction and those of its properties that Baker’s account exploits.

CLLD is a construction in which a left-peripheral XP is ‘resumed’ in the clause by a clitic pronoun, rather than a tonic one, as in the following examples from Alexopoulou and Kolliakou (2002):

- (87) a. **In quella città**, non **ci** sono mai stato
 in that town not there am ever been
 ‘I have never been in that town’
- b. **Au pape**, personne n’oserait **lui** parler ainsi
 to the pope no one NEG would dare to him speak thus
 ‘No one would dare to speak to the pope like that’
- c. **Ta klidia**, **ta** stilame sti maria
 the keys them sent to the Maria
 ‘We sent the keys to Maria’
- d. Fakart ‘inno **naadya** šeef-**a** Kariim mbeerih
 thought that Nadia saw-her Kerim yesterday
 ‘I thought that Kerim saw Nadia yesterday’

As already mentioned above, CLLD needs to be distinguished from two other closely related constructions. The first is simple Left Dislocation (sometimes known as Hanging Topic Dislocation); we repeat our previous example here:

- (88) **A man like that**, I’d run a mile before I trusted **him** with a secret.

Left Dislocation is restricted to root clauses, requires the dislocated element to be a DP, rejects multiple dislocated elements and violates Islands. As Cinque (1990) shows, CLLD is not restricted to root clauses, allows multiple dislocated elements and respects islands.

CLLD must be distinguished from Topicalization/Focus Movement. Both of these constructions lack a clitic or tonic pronoun resuming the dislocated phrase. They are primarily distinguished by prosodic and information-structural properties:

- (89) **Fish** I never eat.
- (90) a. **Tin** **parastasi** skinothetise o Karolos Kun
the.ACC show directed.3S the.NOM Karolos Kun
‘Karolos Kun directed the show’
- b. **Tetia** **paputsia** de tha foruse pote i maria
such shoes not would wear.3S never the.NOM maria
‘Maria would never wear such shoes’

The standard view of CLLD (Cinque 1990) is that it involves base generation of the left dislocated constructions (thus distinguishing it from Topicalization/Focus Movement), with a syntactic binding relation between the dislocated element and the clitic.

One of the crucial facts about CLLD that Baker builds on is that the dislocated XP is restricted to being non-quantificational (Cinque 1990, Rizzi 1997, Iatridou 1990, Anagnostopoulou 1994):

- (91) a. ***Nessuno**, **l’** ho visto
no one him AUX.1S seen
‘No one, I saw him’
- b. ***Tutto**, **l’** ho fatto
everything it AUX.1S done
‘Everything, I did it’
- c. ***Kanena** den **ton** ida
nobody.ACC not him saw.1S
‘No one, I saw him’

A widely accepted approach to this is Rizzi’s (1986, 1997) suggestion that quantifiers must bind a variable, but that clitics in a CLLD construction do not qualify as such. The link between the dislocated element in a CLLD construction and a clitic is not an operator-variable structure; it is rather akin to an anaphoric relationship involving referential features. In (91), the quantifiers cannot be correctly interpreted. Evidence that this is correct comes from the fact that these structures are all well formed if the clitic is removed, so that we have Focus Movement constructions:

- (92) a. **Nessuno** ho visto
no one AUX.1S seen
‘No one, I saw’
- b. **Tutto** ho fatto
everything AUX.1S done
‘Everything, I did’
- c. **Kanena** den ida
nobody.ACC not saw.1S

‘No one, I saw’

Both Cinque and Rizzi note that quantifiers which have an NP restriction are significantly better in CLLD constructions.

- (93) Tutti i tuoi libri, li ho rimessi a posto
 all the your books them AUX.1S put.3MP back
 ‘I put all your books back’

Rizzi’s suggestion here is that the quantifier itself raises out of the NP, binding a variable there. The relationship between the dislocated NP and the clitic is then one of A’ anaphoric binding.

- (94) Tutti [(tutti) i tuoi libri]_i, li_i ho rimessi a posto

In the case of a bare quantifier, further movement of the quantifier will not help, as its trace will be in an A’- rather than an A-position, and hence cannot qualify as an appropriate variable.

However, this latter part of Rizzi’s account will not extend to negative quantifiers, which do not seem to exhibit the same behaviour (as noted by Alexopoulou, Doron, and Heycock 2004):

- (95) a. ***Nessuno**, l’ ho visto
 no one him AUX.1S seen
 ‘No one, I saw him’
 b. ***Nessun uomo**, l’ ho visto
 no man him AUX.1S seen
 ‘No man, I saw him’

The same is true of Greek:

- (96) a. ***Kanena**, den **ton** ida
 nobody.ACC not him saw.1S
 ‘No one, I saw him’
 b. ?***Kanena anthropo** den **ton** ida
 nobody.ACC man not him saw.1S
 ‘No man, I saw him’

Furthermore, it is not clear how the semantics can interpret Rizzi’s structure. If the quantifier *tutti* is the same in both the bare quantifier case, and the case where the quantifier has a restriction, then in the former it must bind a trace of type <e>. However, this is the wrong type for the trace in the latter case. We return to the question of bare versus restricted quantifiers in chapter 6.

Returning to Baker’s proposal, we have an interesting consequence: given that the only way for a nonconfigurational language to have an overt DP is to use the

CLLD strategy, it follows that such overt DPs cannot be quantificational. The prediction that Baker draws from this is that such languages will lack quantificational DPs completely.

We believe that there are three problems with a CLLD-type analysis as applied to Kiowa. First, as we will show below, CLLD structures are incompatible with focus marking, which wrongly predicts that focus-marked elements should be impossible in Kiowa. Second, Kiowa has quantificational elements which behave in just the way that they should, if Clitic Left Dislocated. Third, if we extend Baker’s system to allow these types of DP to exist in Kiowa, we predict ordering restrictions that do not hold.

Focus

The incompatibility of Clitic Left Dislocation with focus has been demonstrated by several researchers, such as Cinque (1990: 63), Rizzi (1997: 289), Alexopoulou and Kolliakou (2002: 2–3).

- (97) a. ***GIANNI**, I’ ho cercato, non Piero.
Gianni(FOCUS) him AUX.1S sought not Piero
‘I looked for JOHN, not Peter’
- b. *Chi hai cercato? **GIANNI**, I’ ho cercato.
who AUX.2S sought Gianni(FOCUS) him AUX.1S sought
‘Who did you look for? I looked for John.’
- (98) a. Pion apelise i maria?
who.ACC fired.3S the Maria.NOM
‘Who did Maria fire?’
- b. **To YANI** (***ton**) apelise i maria
the Yanis(FOCUS) him fired the Maria.NOM
‘Maria fired YANIS’

However, it is perfectly acceptable to focus DPs in Kiowa. We can distinguish information focus, as in question-answer pairs:

- (99) Hàatêl yán– thááǰǰmei? Óúelmaa yá– thááǰǰmei
who.Q 3S:2S:3P–help.PF Carrie 3S:1S:3P–help.PF
‘Who helped you? Carrie helped me.’
- (100) Hôndé a– gúttǵ? Xêi gya– gúttǵ.
what.Q 2S:3S–draw.IMPF horse 1S:3S–draw.IMPF
‘What are you drawing? I’m drawing a horse.’

—identification focus:

- (101) T!ókhóík!íí Ø- tóúnêi, “Hó ám em-dóó an be- x!aanhóúlêi- de?”
 white man 3S-said Q 2 2S- be HAB 2S:3A-trick.IMPF.EVID-D
 Séndé Ø- tóúnêi, “Hó, nóó a- dóó,” Ø- tóúnêi.
 Sende 3S-said yes 1 1S-be 3S-said
 ‘The white man said, “Is it you that is always cheating people?” Sende
 said, “Yes, that’s me.”’

—and contrastive focus:

- (102) Nóó yá- háígyádó, nó ám hón bét- kón- haigóó
 I :1S:3P-know and you NEG :2P:3P-PERM-know.NEG
 ‘I know, but you all don’t need to know’
- (103) Ábóbó ém- dóópop, né ôngó ɔ́kúei étî- ɔ́ɔ
 apple.I 3S:3A-requested but instead pecans 3I:3S:3P-give.PF
 ‘He asked them for an apple but they gave him pecans instead’

This is in direct contradiction to the claim that Kiowa DPs are Clitic Left Dislocated.

Furthermore, elements such as ‘only’ and ‘also’ are also focus-like, in terms of their formal semantics (Rooth 1996). Consistent with this, they are CLLD-incompatible (Vieri Samek-Ludovici, p.c.)

- (104) a. *Solo (i) bambini, li ho incontrati
 only (the) children, them AUX.1S met.MP
 ‘I’ve met only the children’
 b. *(I) bambini solo, li ho incontrati
 c. *Soltanto (i) bambini, li ho incontrati
 d. ?*I bambini soltanto, li ho incontrati
- (105) a. *Anche (i) bambini, li ho incontrati
 also the children them AUX.1S met.MP
 ‘I’ve met the children too’
 b. *(I) bambini anche, li ho incontrati

However, they may be used unproblematically in Kiowa:

- (106) a. Áádó-**gɔ́ki** dé- bóú
 tree.I-only 1S:3I-saw
 ‘I only saw a tree’
 b. Háote ɔ́píídó bé- têt? Yíí- **kóó** ɔ́píí nen- têt
 how many fish.I 2S:3I-catch two-only fish 1S:3D-catch
 ‘How many fish did you catch?’ ‘I only caught two fish’
- (107) a. Béthóó kôogó- **al** klóúbó xôo an á- hotgûuyîi
 MIR other.I-also elder.I thus HAB 3A-run around.IMPF.EVID
 ‘We didn’t realize that other old people ran around like that’

- b. Hó ám- **al** a- bóú?
Q you-also 2S:3S-saw
'Did you see him too?'
- c. Hágô- **al** xô an ét- gij- sôtetô
other.I-too thus HAB 3I:3P-night-work
'Some of the other people occasionally work at night'

Again, the acceptability of such examples is incompatible with the claim that they are licensed by CLLD.

Quantifiers

Let us now turn to quantifiers. Kiowa has a number of words with quantificational force: **háote** 'several', **páá** 'some/one', **kôl** 'some/any', **téí** 'all', **té-** 'each, every'. Since quantificational elements are ruled out in CLLD constructions, Baker suggests treating apparent quantifiers as either simple cardinality markers, or as adverbial quantifiers. Without going into the detail of these suggestions here, it is possible to note that there is some strong evidence that all apparent quantifiers are actually something else in Kiowa.

First, a classic sign of quantification is singular agreement for multiple referents (Vendler 1967):

- (108) **Each** well behaved boy **was** rewarded.

Here, the subject, *boy*, and verb, *was*, are both singular, but the meaning concerns several boys, rather than a single boy or a group of boys.

Baker argues that the translations of such English quantifiers into Mohawk do not have this syntax. More specifically, we find plural, rather than singular, NPs, and plural, rather than singular, agreement:

- (109) Wa'- e- nóhare-' akwéku ka'sere-shú'a
FACT-3FS-wash- PUNC all car- P
'She washed all the cars' (Baker 1996: 55)
- (110) Akwékuwa- hoti- yéshu-' (*wa- ho- yéshu-')
all FACT-:3MP-laugh-PUNC FACT-:3MS-laugh-PUNC
'Everybody laughed' (Baker 1996: 55)

Baker also points out that **akwéku** 'all' and **skátshu** 'each' can only antecede plural pronouns (although he does not give ungrammatical examples of the quantifier with singular pronouns):

- (111) Akwéku wa'- ti- shakoti- noru'kwányu-' ne raotí- skare'
all FACT-DUP-3MP:3P-kiss- PUNC NE MP.POSS-friend
'All of them kissed their girlfriends' (Baker 1996: 55)

- (112) Skátshu ne ron-úkwe' ne raotí- 'sere' wa- hati- 'sereht-óhare-'
 each NE MP-person NE MP.POSS-car FACT-3MP-car- wash- PUNC
 'Each of the men washed their car' (Baker 1996: 58)

However, the argument from agreement that these are non-quantificational is rather weak: the English example given shows that *every* must be quantificational, but that does not preclude a quantificational reading for plural *all*, nor for plural **akwéku**. Moreover, as pointed out by Bruening (2001), following an observation by Irene Heim, examples like (111) and (112) have a bound-variable translation, which would suggest that **akwéku** does behave like a true quantifier: presumably, (111) does not mean that a group of people kissed a group of girlfriends with no one-to-one association between each individual and that individual's girlfriend.

Matters are even more difficult in Kiowa, where we find quantifiers that take singular agreement like English *every*. **Té-** 'each, every' (likely, a reduced form of **téí** 'all') may occur with a singular noun and, when it does, triggers singular agreement, as in the (a) examples below:⁵

- (113) a. Té-san é- háígyádoo
 TE-child :1S:3S-know
 'I know each child'
 b. Té-saado né- háígyádoo
 TE-children :1S:3A-know
 'I know each child'
- (114) a. Té-san gyá- ǵǵ k!ódálsyan
 TE-child 1S:3S:3S-gave toy car
 'I gave each child a car'
 b. Té-saado bé- ǵǵ k!ódálsyan
 TE-children 1S:3I:3S-gave toy car
 'I gave all the children a car'

What is particularly interesting here is that the quantifier is here compounded with the noun, leaving no scope for an adverbial analysis. Moreover, since the quantifier appears with a singular noun, and triggers singular agreement, and has a distributive reading, it seems unlikely that it can be analysed as a cardinality marker.

So, again, we find that a CLLD analysis is too restrictive, ruling out quantifiers that the languages such as Kiowa, and maybe Mohawk, actually attest.

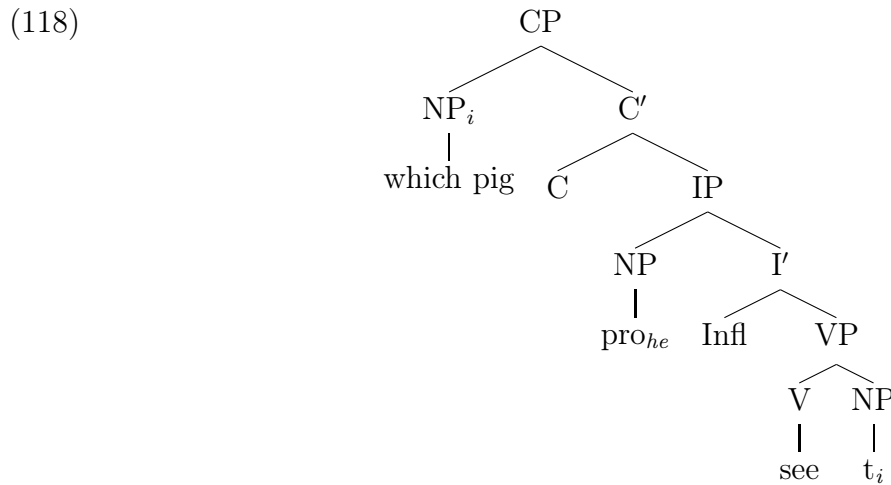
⁵It should be noted that not all speakers like such sentences. For some speakers, **té-** has a more restricted usage, confined perhaps to a few fixed expressions: **tédomthai** 'on all earth', **ték!yaaḡhijj/ték!yaaḡhijjhyop** 'all men', and the more common **té(p)hɔi** 'everyone', **téhɔnde** 'everything', **tékhɔp** 'everywhere', and **té-** plus temporal expressions, such as **tékhiida** 'every day', **tép!oo** 'every month'. However, the facts reported below are solid for at least one speaker.

Wh-movement

A generalized CLLD system is also too restrictive in that, without further restrictions, it rules out *wh*-elements in nonconfigurational language, as such elements are, by their nature, quantificational. However, Kiowa (like Mohawk) has *wh*-words, as in (99)–(100) and the following:

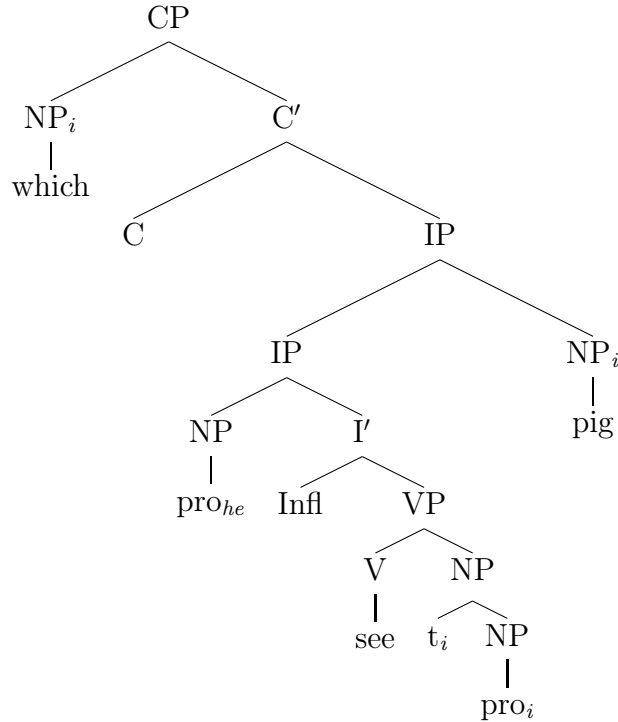
- (115) Hâgyâi- k!yããhij gyá- háígyádoo?
 which.Q-man :2S:3S-know
 ‘Which man do you know?’
- (116) Hááxo em-khóó?
 how.Q 2S- be called
 ‘What is your name?’
- (117) Hôndó hón khíidêl em-xáãnôo?
 why.Q NEG yesterday 2S- arrive.NEG
 ‘Why didn’t you come yesterday?’

However, Baker analyzes *wh*-elements differently from other argument DPs. He claims that they are actually generated in argument positions. In order that the Morphological Visibility Condition and the Case Filter be satisfied, *wh*-elements cannot remain in this position, however. Instead, they obligatorily move, leaving a *wh*-trace behind.



Split constructions work in just the same way, with the *wh*-determiner generated adjoined to a *pro*:

(119)



The reasons that *wh*-expressions must move to the specifier of CP are (i) that they cannot remain in their base position, as they would violate the requirement that overt DPs in argument positions need Case, which, under the Polysynthesis Parameter analysis, is not available in argument positions; and (ii) that they cannot be adjoined in a CLLD construction, as they are quantificational and CLLD constructions resist quantificational DPs. The only possibility is that they move from their base position to some other position, leaving a trace which does not require Case. Of course, this is the familiar behavior of *wh*-expressions and is usually assumed to be triggered by a *wh*-feature in C.

The *wh*-trace, like *pro* is null, and under Baker's assumptions about Case, such a null element is Caseless. He concludes that "the theory predicts that question phrases can exist in a language like Mohawk after all, *as long as they appear in Comp by S-structure*" (Baker 1996: 68, emphasis in original).

The question then is why, of all the elements incompatible with CLLD, *wh*-elements alone may undergo this derivation. Baker's answer is that *wh*-elements have a [+wh] feature and that this feature distinguishes them from other CLLD-incompatible items:

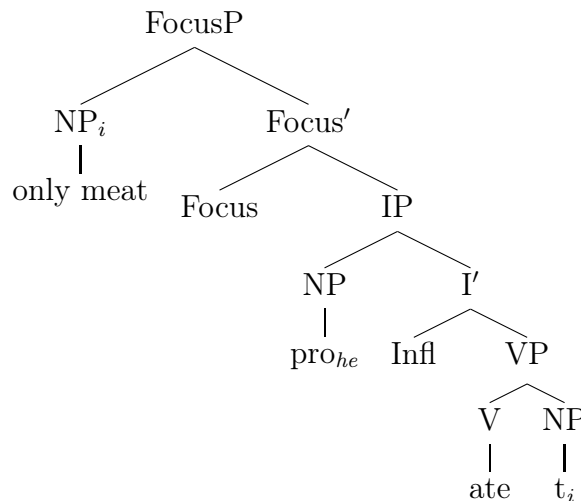
Questions, in particular, will have a [+wh] feature on C ... This feature will then draw a [+wh] phrase into the specifier of C in many languages, so that a legitimate agreement relationship is established between the two [+wh] elements. ... However, there is no reason to think that C will ever have a special [+every] feature, since the illocutionary force of universal statements is not significantly different from that of other

statements. Therefore, there will not be anything to draw universally quantified phrases to the specifier of CP. The economy principles of Chomsky 1992 imply that overt movement never happens unless it is triggered by the morphosyntactic features of some morpheme. Hence it is impossible for most quantified phrases to move to the specifier of CP in the syntax. (Baker 1996: 67–68)

Now, if Baker we grant this much, it may be possible to return to some of the apparent counterexamples we saw above and to attempt a similar explanation of their well-formedness along the following lines:

Much recent work has suggested that there are positions in clausal structure associated with particular interpretations: precisely focus and quantificational interpretations (Brody 1990, Beghelli and Stowell 1997, Rizzi 1997, amongst others). These positions are precisely endowed with features which trigger movement of arguments bearing matching features. So, for example, a DP bearing a focus feature can be thought of as moving to a clausal focus position. If it does so, then we could extend Baker’s argument about *wh*-elements to this class of focused elements, predicting that these can exist in the language. Schematically, we would have something like the following:

(120)



The focus-marked DP is directly Merged in its base position and is then moved to its checking position. Given this, it is never linked to a *pro* and, so, is never in a CLLD-type structure. It follows that the incompatibility of focus marking with CLLD is irrelevant: if languages have such projections, then they have alternate means by which to allow focus marking. The same story can be told, *mutatis mutandis*, for quantified DPs.

However, if the existence of focused and quantified phrases is tied to particular functional projections that they are required to occupy, then we make robust, and false predictions about ordering, predictions.

For instance, suppose a sentence contains a focus-marked element and a universal quantifier. If the height of each projection is fixed, then either the focused element will be first, or the quantifier will be. However, this is not so:

- (121) Téphəi kíi- deki gyá- pəɣya
 everyone meat-only 3A:3S-eat.PF
 ‘Everyone ate only meat’
- (122) Kíi- deki téphəi gyá- pəɣya
 meat-only everyone 3A:3S-eat.PF
 ‘Everyone ate only meat’

A similar point can be made about *wh*-elements and quantifiers:⁶

- (123) Téi tʃlthən hōndé gya- hən?
 all beans who.Q 1S:3P-devour.PF
 ‘Who ate all the beans up?’
- (124) Hōndé téi tʃlthən gya- hən?
 who.Q all beans 1S:3P-devour.PF
 ‘Who ate all the beans up?’

The quantified phrase may appear to the left or to the right of the *wh*-expression. Given this, we cannot say that focus-marked expressions and quantificational DPs obligatorily move to specific positions.⁷

To maintain a CLLD analysis, we could allow iteration of the quantifier hosting projection, as follows:

- (125) Q WH Q Foc Q

Movement to Q, to WH and to Foc would have to be obligatory (but see chapter 5 for counterevidence), but the iteration of the Q projection would allow variability of order. The difference between Kiowa and Mohawk could then perhaps be tied to the presence or absence of the Q-hosting projections.

However, such an analysis loosens the intuition behind the macroparametric perspective to such an extent that the core of the account is gone. There is no

⁶Bare quantifiers behave differently here; see chapter 6 for data and analysis.

⁷It is true, however that focus-marked elements are not permitted to the left of *wh*-elements:

- (i) Hâatêl phítthóŷ-deki an Ø- thónmɔ?
 who.Q beer- only HAB 3S:3S-drink.IMPF
 ‘Who only drinks beer?’
- (ii) *Phítthóŷ-deki hâatêl an Ø- thónmɔ?
 beer- only who.Q HAB 3S:3S-drink.IMPF
 ‘Who only drinks beer?’

We argue in chapter 6 that there is indeed CLLD in this one configuration in Kiowa.

macroparametric explanation of the apparent absence of quantifiers in Mohawk: the difference between Kiowa and Mohawk is that Mohawk lacks a particular functional projection that can host quantifiers, while Kiowa allows that projection to appear at three different points in clausal structure. We have no information about focus-marked elements in Mohawk, but this analysis would predict that they are either absent, or obligatorily move in this language, another microparametric difference. Moreover, the proposal in (125) essentially stipulates the possible linear orderings, since there is no other motivation for the different quantifier positions.

2.5. Conclusion

From the discussion above, we have seen that Kiowa bears the hallmarks of a non-configurational language. However, an approach to the syntax of Kiowa that treats the arguments as being in adjoined positions associated with clitic elements (or null pronominals) internal to the clause runs into problems. Conceptually, Baker’s notion of ‘word’ gives us little analytical traction on the question of whether the agreement prefix is ‘in the word containing’ the verb. Empirically, serious arise when the DP argument does not have a simple referential semantic type, but is a quantified or focus-marked element.

For these reasons, we are somewhat skeptical of a macroparametric account to Kiowa which ties down its properties to a wholesale difference in argument licensing from more familiar languages. Instead, it seems to us that a more ‘microparametric’ approach is likely to be successful. Such an approach involves looking carefully at the syntax of the language on its own terms and attempting to draw out where the commonalities with and differences from other languages are. The theoretical background to such an investigation takes the commonalities to be broad universal principles of clause structure, of the core syntactic operations of Merge and Move, and of the syntax–semantics interface. These interact with language-particular specifications of functional heads and of the syntax–morphology and syntax–phonology interfaces.

With this perspective in mind, we turn afresh to the clause structure of Kiowa.

Chapter 3

The Clausal Spine

3.1. Introduction

In this chapter, we examine two striking configurational aspects of Kiowa morphology: a mirror effect that obtains between preverbal particles and postverbal suffixes, and a second that obtains between a putatively universal hierarchy of arguments and multiple postverbal constituents.

The first, the *clausal mirror*, involves two aspects of the Kiowa language: preverbal particles and postverbal suffixes. The latter, and a well-defined subset of the former, occur in a fixed order reminiscent of the Cinque Hierarchy (Cinque 1999). Strikingly, the order of the particles is the reverse of that of the suffixes, so that the functional structure of the clause is mirrored around the ‘axis’ of the verb.

For example, the mirative particle **béthɔɔ** marks that the speaker bears a particular epistemic relation to the proposition, while the particle **hón** marks negation.¹ These occur in the order **béthɔɔ** before **hón** (we have marked them with different fonts, for clarity):

- (1) **Béthɔɔ** **hón** yá- háíg- ɔɔ- hel- do nóó de- ɔ́gyákhɔnmə
MIR NEG :1S:3P-know-NEG-EVID-because 1 1S:REFL-hold back.IMPF
‘I was holding back because I didn’t know’ (Anquoe 1962)
- (2) ***Hón** **béthɔɔ** ám em-dʒɔ-**mɔɔ**-hel
NEG MIR you 2S-be- NEG-EVID
‘I didn’t realize it wasn’t you’

The negative particle is accompanied by a negative suffix on the verb (in the current case **-mɔɔ**). The mirative particle is accompanied by what we term evidential marking on the verb (in the current case **-hel**). The suffixes are rigidly ordered, **-mɔɔ** before **-hel**:

¹We adopt the term ‘mirative’ from DeLancey, whose description of mirativity, as ‘information which is new or unexpected to the speaker’ (2001: 370), strikes us as a good characterization of the properties of **béthɔɔ**.

- (3) ***Béthəw hón** ám em-dǝǝ-hel- **məw**
MIR NEG you 2S-be- NEG-EVID
'I didn't realize it wasn't you'

yields wholly grammatical sentences (for probably orthogonal reasons). Yet, these differences notwithstanding, the effects are strikingly similar, as both involve rigidity of order in isomorphism to the functional hierarchy of the clause. Derivation of the clausal mirror and the inverse based effect is, we therefore contend, one of the chief tasks of an account of basic Kiowa clause structure.

In the following sections, we examine the morphosyntax of the various suffixal inflectional categories, identifying restrictions on occurrence and order, and on different classes of particles, showing that while some particles obey strict ordering effects, others are mobile. With this in hand, we isolate and illustrate the clausal mirror. We then show that those XPs that are flexible in their order relative to the verb, permitting both pre- and postverbal placement, nonetheless show rigidity of order, as per the inverse base effect, when more than one occurs postverbally.

3.2. The clausal mirror

In the following subsections, we lay the background requisite for explaining and illustrating the clausal mirror. This concerns suffixal morphology (section 3.2.1) and the behavior of selective versus non-selective particles (section 3.2.2). The clausal mirror is then illustrated and explained (section 3.2.3) and then connected to Cinque’s work on the hierarchy of functional heads (section 3.2.4). Finally, we discuss two more minor points: the first (section 3.2.5) argues against a simplistic analysis of the clausal mirror, and the second (section 3.2.6) discusses the imperative.

3.2.1. Suffixal morphology

The Kiowa verb consists of two obligatory parts: the agreement prefix and the root. The agreement prefix was discussed in the introductory chapter, and detailed analyses can be found in Merrifield (1959), Watkins (1984), Harbour (2007). However, the root rarely occurs in its simplest form. Rather, it is accompanied by a variety of suffixes, encoding stativity, transitivity, distributivity, aspect, negation, modality (realis and irrealis), and evidentiality. It is the last four of these—aspect, negation, modality and evidentiality—that concern us here: these are the suffixes that correlate with preverbal particles.

As an example, consider the verb **hâape** ‘pick up’. It may take suffixes for aspect (perfective **hâapɔ**, imperfective **hâapop**), negation (**háápôɔ**), modal (**hâapetɔɔ**), and evidential (**hâapehel**). Crucially, when suffixes combine they (more or less)² agglutinate in strict sequence:

²The parenthetic ‘more or less’ in the previous sentence is intended to cover morphological complications, such as allomorphy (see Watkins 1984, Harbour 2004 for detailed discussion). Another minor morphological wrinkle concerns the imperfective evidential. When adjacent, these morphemes are expressed by a portmanteau suffix:

- (i) **hâap-** **ei**
 pick up-IMPF.EVID

- (7) **Order of suffixes**
 Aspect Negation Modality Evidentiality

So, for example, an imperfective modal combines the **-ii** allomorph of the imperfective with the modal **-tɔɔ**. Moreover, this can be further elaborated by addition of the evidential, in its **-dei** allomorph:

- (8) hâap- ii- tɔɔ- (dei)
 pick up-IMPF-MOD-EVID
 ‘(apparently) will continually pick up’

Two further similar examples are a negative combined with a modal and a negative combined with an evidential:

- (9) a. hááp- ôɔ- tɔɔ
 pick up-NEG-MOD
 ‘will not pick up’
 b. hááp- ôɔ- hel
 pick up-NEG-EVID
 ‘apparently did not pick up’

Alternative orderings of the suffixes, even with appropriate allomorphs, are all unacceptable.

- (10) a. *hâap- tɔɔ- yii- (dei)
 pick up-MOD-IMPF-EVID
 ‘(apparently) will continually pick up’
 b. *hááp- tɔɔ- guu
 pick up-MOD-NEG
 ‘will not pick up’
 c. *hááp- hel- ôɔ
 pick up-EVID-NEG
 ‘apparently did not pick up’

One combination of suffixes is not illustrated above, namely, aspect and negation. These are, in fact, in complementary distribution. That is, despite the demands of the semantics, negative suffixes do not cooccur with aspectual ones. In the vast

‘would apparently pick up’

- (ii) *hâap- op- hel
 pick up-IMPF-EVID
 ‘would apparently pick up’

Such “errors of refraction” in the morphology should not distract from the syntactic reality of the clausal mirror. We note them for the sake of completeness.

majority of cases, it is aspect that is unexpressed. Consequently, **háápôo** (pick up.NEG) is ambiguous with respect to aspect, meaning ‘didn’t pick up’, ‘doesn’t pick up’, ‘wasn’t picking up’, *etc.* In just two cases, the reverse pattern, retention of aspect and loss of negation, has been observed, as in (11), where the rare pattern may be attributable to clausal parallelism:

- (11) Páá á- bán**ma** nɔ nóó **hón** a- bán**ma**
 some 3A-go.IMPF but I NEG 1S-go.IMPF
 ‘Some are going, but I’m not going’

It is unclear what the source of this restriction is; we take it to be an oddity that arises in the morphology, meaning that both categories are properly represented in the syntax.³

Nonetheless, there is evidence for the order Aspect \gg Negation proposed in (7)—evidence that, at the same time, supports relegating the -ASP-NEG cooccurrence restriction to the postsyntactic component. The evidence concerns combinations of non-verbal roots with light verbs, which are used to express a variety of verbal notions, such as ‘sing’, ‘whistle’, ‘watch over’, ‘act pretentiously’. Such verbs differ from the majority in that their aspectual variants are not formed by suffixation directly to the root. Rather, ‘act’, ‘fight’, and ‘quit’, which exist as independent verbs, are attached to the root as auxiliaries with an aspectual function, encoding, respectively, imperfectivity, inceptive perfectivity, and completive perfectivity. For these verbs, the expression of aspect cooccurs with suffixal negation:

- (12) a. Hón em- dód- tód-gôo
 NEG 3S:REFL-sing-act-NEG
 ‘He isn’t/wasn’t singing / doesn’t sing’
 b. Hón em- dód- pláig-ôo
 NEG 3S:REFL-sing-fight-NEG
 ‘He didn’t sing’

Similar behavior is observed for the verb ‘cry’, which is not quite in the same class as ‘sing’ *etc.* Its basic form is only imperfective; hence, negated, it means ‘doesn’t cry’ or ‘isn’t/wasn’t crying’. The perfective is formed by incorporating the root ‘cry’ into ‘(let out a) shout’; hence, negated, it means ‘didn’t cry (out)’.

- (13) Iip!ógyá tóoba an án- dód, ...
 baby quiet HAB :3S:3P-be
 a. hón an em- óól- yôo
 NEG HAB 3S:REFL-cry.(IMPF)-NEG

³Note that there is no phonological problem in suffixing negation to aspect. In the current case, if one used the **-kôo** allomorph of negation, the result, ***háap-op-kôo** (get up-IMPF-NEG), would be phonologically identical, in the relevant portions, to the negative of ‘be lying.P’, **kóp-kôo** (be lying.P-NEG), which is licit.

- b. ?hón an em- ót- **háád-** ôo
 NEG HAB 3S:REFL-cry-shout.(PF)-NEG
 ‘He’s a quiet baby, he doesn’t cry’
- (14) lip!óógyá gya- kí- hol ot, ...
 baby 1S:3S-fright-kill.PF though
- a. hón em- ót- **háád-** ôo
 NEG 3S:REFL-cry-shout.(PF)-NEG
- b. *hón em- **óól-** yôo
 NEG 3S:REFL-cry.(IMPF)-NEG
 ‘Though I frightened the baby, it didn’t cry’

Again, then, with aspect being encoded by root/auxiliary rather than by suffix, aspectual distinctions are retained under negation. We therefore regard complementarity between aspectual and negative suffixes as being a postsyntactic idiosyncrasy of the suffixes themselves. This quirk should not, then, distract from the main point that the suffixes occur, and agglomerate, in a fixed order.

Before continuing on to particle syntax, we return to the three suffix types not discussed above, namely stativity, transitivity and distributivity, as these permit us to clarify what it means for a suffix not to correlate with preverbal particles or other material.

The first point is that, when we talk about transitivity suffixes, we are referring, in fact, to detransitive morphology. Such suffixes, concatenated with transitive roots, yield intransitives without agentive arguments or agreement. (On the lack of passives in Kiowa and for comparison with the Tanoan languages, see Watkins 1996.) For example, using uninflected forms to illustrate:⁴

- (15) a. óm- ‘make’ ~ ómdé- ‘make.DETR’
 b. póŭ- ‘make sound’ ~ póŭdé- ‘sound.DETR’
 c. thém- ‘break’ ~ thémde- ‘break.DETR’

⁴Note that this detransitive attaches only to roots that end in a vowel or resonant (**l**, **m**, **n**). Roots with other terminal consonants do not take **-dé** but none the less exhibit the same tonal alternations: observe that falling tone (i) is raised to high, as in (15a):

- (i) a. hâape- ‘pick up’ ~ háápé- ‘pick up.DETR’
 b. dôige- ‘rip’ ~ dóígé- ‘rip.DETR’

A second, apparently small, class of verbs with roots of the phonological form (CVVC’, C’ ≠ m, n, l) exhibits a different tonal transitivity alternation. In contrast to (15b)–(15c), the second syllable has high tone only if transitive:

- (ii) a. héíbé- ‘bring in’ ~ héíbe- ‘come in’
 b. bóódé- ‘cause to emerge’ ~ bóóde- ‘emerge, appear’

No evidence forces one to take the intransitive rather than the transitive form as basic for the forms in (ii).

Therefore, none of the suffixes in question, stative, detransitive, or distributive, introduce other material, such as arguments, into the clause. Their function is rather to reduce the arity of the verb or change its aspectual class. This strongly suggests that they should not be straightforwardly identified with argument introducing heads like *v*.

As mentioned above, the other suffixes correlate tightly with certain particles: when the particle is present, the suffix is forced to occur. This is not the case for these three suffixes. There is no strict grammatical correlation between these and preverbal particles.

However, it is worth noting that one can introduce elements into the sentence that semantically ‘coerce’, for want of a better word, occurrence of these suffixes. This is most easily illustrated for the distributive. For example, **hát** ‘different’ sometimes coerces the stative distributive **-yó**:

- (16) Hát bé- sáá- dóó-**yó**
different :3I:3S-winter-be- STAT.DISTR
‘They have different ages’

A similar example arises in the active distributive in the story *Sende and the Mountain Monsters*. The monsters have removed their hearts for safety, but Sende has snuck back and is attempting to spear them. The hearts, however, ‘jump about all over’, so he keeps on ‘missing.ACT.DISTR’ them:

- (17) Thේido é- góúbe-**guy**- yji. Hágyá- al ét-
hearts 3S:3I-miss- ACT.DISTR-IMP.F.EVID somewhere-also 3I:REFL-
khyái- gųun-ei
stretch-jump-IMP.F.EVID
‘He kept missing the hearts. They were jumping all over.’

Nonetheless, such cases differ from the particle-suffix relations examined above. First, in the case of (17), the semantic coercion relies on a separate sentence, not a cosentential particle. Second, in both cases, the distributive suffixes are omissible. In contrast to (16), we have (18):

- (18) Téi hát dó- sáá- dóó
all different :1P:1S-winter-be
‘All us have different ages’

And immediately following (17) in the story we have (19) without distributive and then, a few sentences later, a very similar sentence, (20) with distributive:

- (19) “Gó! gó!” Ø- tóúnèi k!ot é- góúb-èi dé-xo
gó gó 3S-say.IMP.F.EVID CONJ 3S:3I-miss- IMP.F.EVID D- as
“‘Gó! gó!’ he said as he was missing them’

- (20) “Gó! gó!” Ø- tóúnêi Sende k!ɔt é- góúbe-gúu-
 gó gó 3S-say.IMPF.EVID Sende CONJ 3S:3I-miss- ACT.DISTR-
 yî dé-xo
 IMPF.EVID D-as
 “‘Gó! gó!’ said Sende as he was missing the hearts all over the place’

We will see below that such coercion is entirely different from the relationship between particles and the other suffixes. It is the latter type of relationship that is relevant to the clausal mirror.

3.2.2. Particle syntax

The second aspect of Kiowa grammar involved in the clausal mirror is the system of particles (a term that we use theory-neutrally, without commitment to a syntactic category of ‘particles’). These particles encode more fine grained aspectual, modal, epistemic and evidential distinctions than the suffixal series of the verb alone permits. For instance, **gya-hân** by itself means ‘he ate it up’ and implies speaker certainty due to direct experience. It is possible to attenuate this certainty by addition, for instance, of the inferential particle **món**, to indicate that the eating is surmised by the speaker, or of the mirative particle **béthɔɔ**, to indicate that the eating is the speaker’s own realization:

- (21) a. **Món** gya- hân
 INFER 3S:3P-eat up
 ‘I guess he ate it up’
 b. **Béthɔɔ** gya- hân- hel
 MIR 3S:3P-eat up-EVID
 ‘I hadn’t realized he ate it up’

The preceding examples illustrate an important difference between particles. Whereas some, like the inferential **món**, may be used without morphological ramification, others, like the mirative **béthɔɔ**, must occur with specific verbal suffixes, in this case, the evidential. We term **béthɔɔ**, and particles like it, *selective particles* and **món**, and its like, *non-selective particles*. (Note: the term *selective* is not to be interpreted as relating to any theoretical notions of selection, syntactic, semantic, or morphological; it merely describes a subset of the particles that interact with suffixes of the verb.)

Non-selective particles may occur with any suffix with which they are semantically compatible (22a).⁵ Selective particles without their selected suffixes are, by contrast, ungrammatical (22b).

⁵We are forced to use **hegó** ‘then’ to show the optionality of evidential marking with non-selective particles, because inferential **món** presents an epistemic stance incompatible with evidential semantics. In all our texts, even those where nearly all verbs are evidential marked, this marking is suspended when **món** occurs. The example below represents this graphically by high-

- (22) a. K!yááħġi **hegó** Ø– koudó-tǝǝ- ǝǝdei- (**hel**) maayí
 man then 3S–very- sibling.OPPSEX-cherished-EVID woman
 ‘The man was then cherished as a brother by the woman’
- b. *Béthǝǝ gya– hân
 MIR 3S:3P–eat up
 ‘I hadn’t realized he ate it up’

The effect of omitting the evidential marking in (22a) is to convey that the speaker has direct experience of the event.

Selective particles differ from non-selective ones, in addition to the nomenclatural distinction just illustrated, with regard to ordering. Selective particles are in a strict ordering both with respect to the verb and with respect to one another: in short, they are preverbal and occur in the order in which the table in (23) presents them: evidential particles leftmost, aspectual particles rightmost (modulo some complications; see the discussion of selective particle ordering on pp. 74ff). By contrast, non-selective particles are more flexible in their positioning: they may be postverbal and do not observe strict ordering relations with respect to each or to the selective particles. The facts are illustrated in turn in the subsections that follow. These are tied together in section 3.2.3. Subsequent subsections draw out some empirical and theoretical consequences.

Selective particles

Selective particles occur in selective relations with one of four suffix types: evidential, modal, negative, aspectual. A selection is illustrated below (see section 3.2.4 for more fine-grained semantic description).

(23) **Selective particles**

lighting the evidential suffixes, but placing a lacuna in the clause containing **món**:

- (i) Éí- tháí Ø– k!úúl-**êi**, x!ehâa- ei án– dǝǝ-**mêi**. Gigó
 bread-on 3S:3S–lay.P- IMPF.EVID Dutch oven-bread :3S:3P–be- IMPF.EVID CONJ
 ém– sǝǝ-**hel** negó món án– ǝǝ- pġi- phatkya- __ gǝ Ø– tǝǝ-
 3A:REFL–sit- EVID CONJ INFER :3S:3P–temporarily-eat.NV-stop.DETR.PF CONJ 3S–say-
nêi, dém- ba hégó em– gǝu-**yii**, ...
 IMPF.EVID chest-against just 3S:REFL–hit- IMPF.EVID
 ‘He was putting it [mentholatum] on bread, he had some Dutch-oven bread, and they [the others] sat down, and he probably stopped eating for a bit, and said, just as he was hitting his chest, ...’

Evidential		
bêl	so much for	EVID
bêlhóndé	so much for	EVID
béthɔɔ	unknown (MIR)	EVID
hótôm	is it so that (Q.EVID)	EVID
Modal		
bethênde, bothênde	unlikely	MOD
háyátto	probably, likely	MOD
poi	don't (PROH)	MOD
Negation		
hón	not (NEG)	NEG
hónhênde	merely	NEG
Aspect		
míí	nearly	PF
sót	just recently	PF
an	usually (HAB)	IMPF
mîn	about to	IMPF

The sentences that follow illustrate two particles for each of the suffixal categories.

- (24) a. **Bêl** ma-zélbé- **hêl** gɔ ma-kɔét-khoigya
 so much for 2D-terrible-EVID CONJ 2D-fear- turn back.PF
 ‘So much for your bravery, you turned back in fear’
 b. **Hótôm** an be- kí- hou-lei?
 Q.EVID HAB 2S:3A-fear-kill- IMPF.EVID
 ‘Is it true you’re always frightening people?’
- (25) a. **Bethênde** mén- xáá- ómdé- **t!ɔɔ**
 unlikely :3D:3P-move-do.DETR-MOD
 ‘It is unlikely they will get to go’
 b. **Poi** óphɔɔ ba-báá-**t!ɔɔ**
 PROH there 2P-go- MOD
 ‘Do not go there’
- (26) a. **Hón** nóó a- xóúáá- **môɔ**
 NEG 1 1S-believe-NEG
 ‘I didn’t believe it’
 b. **Hónhênde** an ∅- hotgúú- **môɔ**
 merely HAB 3S-travel.DISTR-NEG
 ‘He just went about calmly’
- (27) a. **Sót** yá- háí- **gyá**
 just :1S:3P-inform-DETR.PF

- ‘I just learned about it’ (Watkins 1984: 248–249)
- b. Khodêide **míí** a- deḷ- hê- **m**
 suddenly almost 1S-sleep-die-PF
 ‘I almost fell asleep suddenly’
- (28) a. ám **an** T!ókhôî e- tóú-**gyaa** dé-xo
 ANAPH HAB white people 3I-say-IMPF D- as
 ‘as white people say’
- b. Hegó páí **mîn** Ø- yîi- **ya**
 then sun about to 3S-disappear-IMPF
 ‘The sun is about to set’

Selective particle ordering

Selective particles are characterized by two ordering restrictions: that they must be preverbal and that their pairwise orders are fixed. We present representative examples of each (there are too many particles for illustration of all ordering restrictions).

The preverbal requirement is easily demonstrated:

- (29) a. **Háyátto** éḡî- k!iikɔm- tɔɔ
 probably 3I:3S:3P-indicate-MOD
 ‘They’ll probably show him how’
- b. *Éḡî- k!iikɔm- tɔɔ **háyátto**
 3I:3S:3P-indicate-MOD probably
 ‘They’ll probably show him how’
- (30) a. **Hón** (an) yǎ- deḷ- ǵón- ôɔ
 NEG HAB :1S:3P-sleep-want-NEG
 ‘I don’t (ever) want to sleep’
- b. *(An) yǎ- deḷ- ǵón- ôɔ **hón** (an)
 HAB :1S:3P-sleep-want-NEG NEG HAB
 ‘I don’t (ever) want to sleep’
- (31) a. **An** xóí gya- thó- nmɔ
 HAB coffee 1S:3S-drink-IMPF
 ‘I drink coffee’
- b. *Xóí gya- thó- **nmɔ an**
 coffee 1S:3S-drink-IMPF HAB
 ‘I drink coffee’

The four categories of particles (evidential, modal, negative, aspectual) generate six types of pairs. However, as evidential and modal particles both express the speaker’s epistemic stance, they cannot cooccur without contradiction. We offer

some typical examples of the five remaining types (see also (30)). These illustrate that the order of particles is evidential before modal before negative before aspectual:

- (32) **Béthɔɔ hɔ́n** yǎ- háíg- ôɔ- hel- do nɔ́ɔ de- ógyákhɔnmɔ
 MIR NEG :1S:3P-know-NEG-EVID-because 1 1S:REFL-hold back.IMPF
 ‘I was holding back because I didn’t know’ (Anquoe 1962)
- (33) **Béthɔɔ an** ɔ- bôu- hɔnx!ou- yii- t!ɔɔ- dei
 MIR HAB :3S:3I-always-come late-IMPF-MOD-EVID
 ‘I didn’t realize he was going to keep on coming late’
 (Adger and Harbour 2007: 17)
- (34) **Háyátto hɔ́n** Ø- deɣ- héɣ-môɔ- t!ɔɔ
 probably NEG 3S-sleep-die-NEG-MOD
 ‘Probably he won’t fall asleep’ (Adger and Harbour 2007: 17)
- (35) **Bethênde an** gúgɔ́ɔ be- hâa- yii- tɔɔ
 unlikely HAB early 2S:REFL-get up-IMPF-MOD
 ‘It’s unlikely you’ll [regularly] get up early’
- (36) **Hónhênde an** Ø- hotgúú- môɔ
 merely HAB 3S-travel.DISTR-NEG
 ‘He just went about calmly’

The inverse orders, such as those below, are, again, unacceptable:

- (37) ***An béthɔɔ** án- deɣ- ɔ́ɔnêi
 HAB MIR :3S:3P-sleep-sound.IMPF.EVID
 ‘I didn’t realize she snores’
- (38) ***Hɔ́n háyátto** Ø- deɣ- héɣ-môɔ- t!ɔɔ
 NEG probably 3S-sleep-die-NEG-MOD
 ‘Probably he won’t fall asleep’

Non-selective particle ordering

In contrast to selective particles, non-selective particles are of freer order. We illustrate this, first, with respect to the inferential particle **món**. It can occur postverbally:

- (39) Óúde món énédáákho-kya édôɔ- ɔɔ **món**
 there INFER Anadarko- LOC 3I:3S:3I-give.PF INFER
 ‘They probably gave it to him there at Anadarko’

Moreover, when preverbal, it can occur before or after selective particles:

- (40) Háya bát- pel- dou- de óide ʔɔnya **an món** gya-
 somehow 1IN.PL:3P-thought-hold-D that differently HAB INFER 3S:3P-
 pél- dou k!ɔt háya ʔ- ón- dé-xo gya- k!ííkʔɔmɔ
 thought-hold yet somehow 3S-think-D- instead 3S:3P-determine.IMPF
 ‘Whatever we may have on our minds, he thinks differently and determines
 things as he thinks’
- (41) Gya-mɔ́ɔ́íbé- do **món an** e- tóú- xó- dɔ́ɔ́
 3P- difficult-because INFER HAB 3I-talk-reticent-be
 ‘They are probably reticent to talk [Kiowa] because it is difficult’

One might think of this mobility as similar to focusing uses of *probably* in English (Cinque 1999: 31). However, the same triple of distributional facts holds also for the non-focusing particle **xɔɔ** ‘thus’:

- (42) Poi ʔ- thóttéhel **xɔɔ**
 again 3S:3S-shoot.EVID thus
 ‘Again, he shot at him in that way’
- (43) **An xɔɔ** páá ét- gji- sɔɔte-tɔɔ
 HAB thus some 3I:3P-night-work-AUX
 ‘Some people are wont to work at night’
- (44) Háɔɔ-al **xɔɔ an** ét- gji- sɔɔte-tɔɔ
 which-also thus HAB 3I:3P-night-work-AUX
 ‘Some of the others also occasionally worked at night’

Furthermore, and unsurprisingly, non-selective particles may be freely ordered with respect to each other:

- (45) Án- khɔ́n- haigyadɔɔ-do **món xɔɔ** gya- mɔ́khógûu-ʔɔmei
 :3S:3P-pitiful-know- because INFER thus 3S:3P-block- make.PF
 ‘She knows how pitiful they are so she tried to block them’
- (46) Gígó **xɔɔ** páágûigɔ **món** é- xéí
 CONJ thus as a whole INFER 3S:3I-place.S/D.PF
 ‘So, she placed it whole into the oven’

However, we do not wish to give the impression that the placement of non-selective particles is totally free. For instance, **hétɔ́** ‘still’ may also occur postverbally:

- (47) E-syân **hétɔ́**
 3I-small.P still
 ‘They were still small’

However, when preverbal, its order relative to negative and aspectual particles is nearly always fixed:

- (48) **Hétó hón** pai- al Ø- bódô
 still NEG sun-also 3S-appear.NEG
 ‘The sun wasn’t even up yet’
- (49) Óóhó gya-dómmêi- eì **hétó an** ólhót!àì é- ɔɔmɔ
 there 3P- be.IMPF.EVID-LOC still HAB silver 3I:3A:3S-give.IMPF
 ‘At that time they must have still been paying out in silver’

Moreover, the possibility of postverbal positioning appears to vanish when the positionally fixed negative particle is present:

- (50) (**Hétó**) hón Laurel é- háígô (***hétó**)
 still NEG Laurel :1S:3S-know.NEG still
 ‘I don’t know Laurel (yet)’

We do not explore such restrictions here. Our point is merely that there are restrictions on the placement on non-selective particles but, whatever these are, they are clearly looser than those affecting selective particles.

3.2.3. Statement and illustration

Having introduced the suffixal categories for which Kiowa verbs may inflect and the particles that are in selective relations with such suffixes, we are now in a position to illustrate the mirror property of Kiowa clauses:

- (51) **Clausal mirror**
 Selective particles occur in an order inverse to their associated suffixes

To illustrate this, consider cooccurrence of an evidential and a negative particle. As previously stated, these occur in the order Part_{Evid} Part_{Neg}. If we examine such a sentence, for instance, (52), repeated from earlier, we find the inverse order amongst the verbal suffixes: negation (NEG) before evidential (EVID). It is this reversal of order, a mirroring around the axis of the verb, that (51) captures.

Many of the biparticular sentences given above illustrate this. We repeat some of these with the particles and suffixes highlighted:

- (52) **Béthó hón** yá- háíg- ô- **hel-** do nóó de- óógyákhonmɔ
 MIR NEG :1S:3P-know-NEG-EVID-because 1 1S:REFL-hold back.IMPF
 ‘I was holding back because I didn’t know’
- (53) **Béthó an** ó- bôu- hɔnx!ou- **yii-** t!ó- **dei**
 MIR HAB :3S:3I-always-come late-IMPF-MOD-EVID
 ‘I didn’t realize he was going to keep on coming late’

- (54) **Háyátto hón** Ø- deḡ- héḡ-**môṵ-t!ṵṵ**
 probably NEG 3S-sleep-die-NEG- MOD
 ‘Probably he won’t fall asleep’
- (55) **Bethênde mîn** x!álii á- dóóp- **îi- t!ṵṵ**
 unlikely about to calf :3S:3S-birth-IMPF-MOD
 ‘The calf is unlikely to be about to be born’

The morphological vicissitudes affecting aspectual and negative suffixes, discussed above, make illustration of their cooccurrence impossible. Recall, however, that, for some verbs, semi-suppletive forms are used for different aspects and these aspectual distinctions are retained under negation. The order of aspect and negation is as expected under the clausal mirror:

- (56) **lip!óógyá** **tóoba** **an** án- dóó, **hón an** em- **óól-** **yôṵ**
 baby quiet HAB :3S:3P-be NEG HAB 3S:REFL-cry.(IMPF)-NEG
 ‘He’s a quiet baby, he doesn’t cry’

If we assume that suppletion is subject to locality (so that, in the configuration [[[X]Y]Z], Y, but not Z, can condition suppletion of X; see, *e.g.*, Adger, Béjar, and Harbour 2003), then (56) is an instance of the clausal mirror: suppletion of the verb for aspect means that aspect is closer to the verb than negation, this would be the case if the linear order of suffixes V-ASP-NEG, were it ever permitted to surface.

To conclude then, the two aspects of Kiowa grammar presented above—the system of verbal suffixes and the system of selective preverbal particles—come together in a striking fashion: the order of the one is the mirror image of the other (when interfering factors are held at bay). Naturally, many readers will have been struck by the relation these ordering and mirroring phenomena bear to Cinque’s (1999) investigation of adverbs and clausal structure and also to Rice’s (2000) study of scope and morpheme order. The interpretation of these results in the light of such work has major ramifications for understanding Kiowa clause structure. As Cinque’s proposal deals more closely with the syntactic mechanisms that generate these ordering phenomena, we focus here on his proposals.

3.2.4. The Cinque Hierarchy

There are three principal aspects to the Cinque (1999) Hierarchy: the first is that there is a universal hierarchy of adverbial projections; the second is that these projections serve as landing sites for peregrinating XPs or peripatetic verbs; and the third is that the hierarchy has two possible realizations crosslinguistically, either as adverbs or as bound suffixes on the verb. In this section, we argue that Kiowa’s clausal mirror, and hence the particle system and verbal suffixes, instantiate part of the Cinque hierarchy. Indeed, they constitute an especially interesting instantiation of it, as both crosslinguistic manifestations—preverbal particles and postverbal

affixes—are, apparently, present at once. (The attenuating ‘apparently’ is included because one might take the suffixes to be the syntactically secondary and semantically vacuous reflexes of the particles themselves; against which, see section 3.2.5.) The identification of Kiowa clausal organization with a well understood functional skeleton provides a powerful tool for further exploration of the Kiowa clause, particularly as concerns the placement of arguments, to which we turn in the subsequent sections.

If we confine attention to selective particles and take all naturally occurring pairs and triples, we find that there are no ordering paradoxes (*i.e.*, there are no particles x, y, z , such that the naturally occurring orderings are xy, yz but zx). Naturally, not all pairwise orderings are attested, so an exhaustive hierarchy is not deducible. However, a (necessarily underdetermined) unified linear order can be surmised. Indeed, this is possible even if we introduce all but the most mobile of the non-selective particles (recall, from section (38), that some non-selective particles, such as **hétó** ‘still’ are more positionally fixed when preverbal than is, say, the inferential particle **món**) and this order is reminiscent of Cinque’s. Rather than digress into the semantics of the individual particles, which would take us too far afield, we present a subset of the more frequent ones, embedded, together with the negative, in various of Cinque’s projections. Only selective particles are underlined:

- (57) ... [*evidential* béthoo MIR [*epistemic* háyátto ‘probably’ [*possibility* **hagya** ‘maybe’ [*repetitive* **poi** ‘again’ [*anterior* hégó just as [*continuative* **hétó** ‘still’ [*negation* hón NEG [*retrospective* **sót** ‘just’ [*proximative* **hólde** ‘soon’ [*generic/progressive* an HAB [*prospective* míí ‘almost’ ...

Naturally, the suffixes constitute a more modest version of the hierarchy, though in inverse order.

- (58) ... V-ASP-NEG-MOD-EVID

Therefore, the language simultaneously attests what Cinque recognizes as two distinct instantiations of the hierarchy: independent adverbs and bound verbal suffixes. Given its centrality to Kiowa clause structure, and also its status as an instance of a more general linguistic pattern, we regard its derivation as a minimal condition that any analysis of Kiowa clause structure must meet.

3.2.5. Against a simplistic explanation

In order for the claim just stated to stand, we must forestall an alternative explanation of the clausal mirror, namely, that the suffixes are mere morphosyntactic reflexes of the particles. That is, one might consider the suffixes to be agreement triggered by the particles on C, T, Neg, and v. If this were the case, then there would be no more to deriving the clausal mirror than positing a variety of agreeing heads along the clausal spine that register the presence of preverbal particles. In

this section, we briefly review some properties of the suffixes that argue for their syntactic autonomy and semantic reality.

The most obvious reason not to regard verbal suffixes as mere secondary exponents is that suffixes can generally occur without particles. Hence, the verb forms of the following sentences are all licit without the parenthetical particles. The only exception is that the negative suffix does not occur without a negative particle.⁶

- (59) (Béthɔɔ) Ø- xán- hel
MIR 3S-arrive-EVID
'(I hadn't realized) he [apparently] arrived'
- (60) (Háyátto) Ø- xán- t!ɔɔ
probably 3S-arrive-MOD
'He'll (probably) arrive'
- (61) Gúgúɔɔ (an) Ø- xán- ma
early HAB 3S-arrive-IMPF
'He (usually) arrives early'
- (62) *(Hón) Ø- xáán- ôɔ
NEG 3S-arrive-NEG
'He isn't arriving'

A second reason not to regard suffixes as mere morphosyntactic reflexes of the particles is the behavior of the particles that may occur in isolation, as exclamations. A reasonable expectation is that, if particles are semantically and syntactically primary and the selected suffixes mere secondary reflexes, then the particles will be usable in isolation with a semantics predictable from their sentential uses. However, although this is so in some cases—*e.g.*:

- (63) Hó Ø- xánt!ɔɔ? Háyátto (Ø- xánt!ɔɔ).
Q 3S-arrive.MOD probably 3S-arrive.MOD
'Will he come? Probably (he'll come).'

—for most particles, it is not. For some, use in isolation is simply unacceptable:⁷

⁶The reverse situation, the occurrence of particles without suffixes does arise, but only in morphologically well-defined contexts, such as the prohibition on cooccurrence of aspectual and negative suffixes, which generally results in omission of aspect, or the optional omission of the negative suffix in modally inflected detransitives:

- (i) Hón Ø- óm-g- ôɔ- t!ɔɔ ~ Hón Ø- óm-dé- t!ɔɔ
NEG 3S-do- DETR-NEG-MOD NEG 3S-do- DETR-MOD
'It won't get done'

(Phonological differences between the two forms in (i) follow automatically from omission of the negative suffix, assuming the underlying concatenation /-gé-ôɔ/.) We regard such cases as arising from Kiowa-specific postsyntactic processes.

⁷The negative particle **hón** is, however, clearly related to the word 'no', **hóóné**, and its emphatic

(64) *An
HAB
'Usually'

(65) *Hón
NEG
'No(t)'

For others, the meaning of use as an independent exclamation, '(Not) again!', 'Wait!', is not predictable from the sentential semantics, 'MIR/I didn't realize', 'still' (though this unpredictability may be an artifact of our as yet incomplete understanding of the lexical semantics of these particles):

(66) Béthɔɔ!
MIR
'(Not) again!'

(67) Hétó!
still
'Wait!'

This suggests that selective particles are in a syntactic and, in some cases, semantic, dependent relation to their suffixes, rather than the reverse.

The centrality of suffixes over particles is perhaps reinforced by disparities of iterability. One finds single particles corresponding to multiple suffixes but not the converse. The following sentences illustrate iterated particles:

(68) **Béthɔɔ** t!ópte- pai gya-dǒǒmêi dé-ɛ̀ **béthɔɔ** ɔ́hɔde
MIR previous-summer 3P- be.IMP.F.EVID D- LOC MIR that same
k!yááhh̃ gɔ maayí ɛ- kíidêi- de **béthɔɔ** mén- khyáhôn-
man and woman 3D-live.IMP.F.EVID-D MIR 3S:3D:3P-deprive of-
hel
EVID
'Unbeknown, that same [man] had deprived the man and woman who lived [there] just the previous year'

(69) **An** [Khɔ̀te gɔ Thə̀ate]- ɛ̀ **an** á- bou- thoudegom-
HAB Grandfather and Grandmother-LOC HAB 3S:1S-always-leave- DISTR-
do
because
'Because I was always left with Grandfather and Grandmother'

Despite such iteration, the suffix occurs in all cases just once. For instance, one

counterpart, **hǒǒnêi**.

cannot stack the suffix **-hel** in (68) (***mén-khyáhônhelhel(hel)**).⁸

In light of these facts, we conclude that the suffixes are not the mere reflexes of the particles. (If anything, the suffixes seem to be syntactically and semantically core, with the particles offering semantic refinement.) We, therefore, reiterate our claim of the previous section that both preverbal particles and postverbal affixes comprise hierarchies and that the clausal mirror is a central fact that an explanation of Kiowa clause structure must derive.

3.2.6. Digression: the imperative

In addition to the evidential, modal, negative and aspectual particles and suffixes reviewed above, Kiowa possesses a fifth suffix, with allied particles: the imperative. We chose not to address the imperative above because the suffix is subject to so many morphological idiosyncrasies as to distract from the clausal mirror. However, if care is exercised, some properties nonetheless emerge that are consistent with the clausal mirror.

There are three particles that regularly occur with the imperative (the second, politer than the first, is derived from it, by addition of **-al** ‘also’):

(70)

Imperative particles			
dá	must (OBLIG)	IMP/MOD	
dáal	should (OBLIG)	IMP/MOD	
hét	let’s (INJ)	IMP/MOD	

The imperative itself, illustrated below with two of the particles, is rather difficult to discern morphologically:

⁸The nearest one comes to suffix iteration in the verbal domain are cases like the following, in which a single particle appears to take scope of two clauses, one embedded in the other. In (i), the evidential particle appears to scope over two clauses, and similarly with negation in (ii):

- (i) De- kii- kolbɔ, né **béthɔɔ** [[xɔɔ hɔndé khodéide gya- ómdé- **hel**- xɛɪ]
 1S:REFL-fear-fight.PF but MIR thus something suddenly :3A:3P-happen-EVID-when
 hegɔ an á- óbóí- kii- thɛɛ-**yɪɪ**]
 then HAB 3A-really-fear-feel- IMPF.EVID
 ‘I tried not to be afraid, but when something like this happens to you, it can really get you scared’
- (ii) **Hɔn** [[a- óódéí- **gɔɔ** depeido] égi- ɔɔm-**ɔɔ**]
 NEG 1S-favored-NEG because 3I:1S:3P-give-NEG
 ‘They didn’t give it to me because I was favored’ / ‘It wasn’t because I was favored that they gave it to me’

Clearly, this is not akin to suffix stacking, but it does indicate the possibility of multiple suffixes in a relation with a single particle. We leave the elucidation of this relationship to future research.

- (71) Da bat- ôm
OBLIG 2S:3P-do.IMP
'You must do it'
- (72) Hét yǎ- kôm
HORT 2S:1S:3P-indicate.IMP
'Do inform me'

First, it is expressed only for some roots (as a falling tone). For instance, the roots **óm** 'do' and **óú** 'pour' (evident in the evidential, **ómhêl**, **óúhel**) have perfective imperatives **ôm** 'do.IMP' and **ôu** 'pour.IMP'. (Other roots are invariant, as in **bóúhêl** 'see.EVID' ~ **bóú** 'see.IMP', **héíbehel** 'come in.EVID' ~ **héíbe** 'come in.IMP'.)

Second, it does not combine with any other suffixes. For evidential and modal particles which express an epistemic stance incompatible with issuing imperatives, this incompatibility is unsurprising (*cp.* in English, the impossibility of **I didn't realize that Go home!*). However, for negative and aspectual suffixes, there are extraneous reasons. For the negative, a separate particle, **poi**, is used, which only ever occurs with a modal suffix (Watkins 1984: 214; see Zanuttini 1997: 145ff for theoretical discussion):

- (73) Poi thóóxo be- t!ópkhya-klii- tóó
PROH here 2S:REFL-spittle- throw-MOD
'Don't spit at me'
- (74) Poi ǎǎgǎ-then- gya bat- k!ǎǎde-om-tóó
PROH self- heart-LOC 2S:3P-bad- do- MOD
'Don't bring evil into your heart'

For aspectual suffixes, the imperative does not combine with perfective suffixes because it is itself, properly speaking, a perfective imperative. For the imperfective imperative, a different form is used:

- (75) ǎǎmii / téílii / hôǎgii
do.IMP.F.IMP tell.IMP.F.IMP strip off.IMP.F.IMP
'keep on doing / telling / stripping'

However, **-îi** (**-ii** in some phonological contexts) cannot be analyzed as the imperfective imperative suffix, as it also appears in modal forms such as **ǎǎmiitóó** (do.IMP.F.MOD) and **ǎǎmikkya** (do.IMP.F.DUB), which have no imperative semantics. Rather, **-îi** is better analyzed as an allomorph of the imperfective (used, perhaps, in irrealis scenarios, such as imperatives and modals). This leaves room for a suffix in the examples above (*e.g.*, **téíîi-Ø**/[^] = tell-IMP.F-IMP) but uninterestingly so, as the imperative does not survive in the surface phonology.⁹

⁹More precisely, if there is an imperative morpheme, then, from the point of view of the clausal mirror, we would be interested in whether it comes before or after the aspectual suffix (*i.e.*, which

Despite these complications, the imperative is nonetheless relevant to the clausal mirror. This is because imperative particles can occur also with a modal suffix (hence the notation ‘IMP/MOD’ in (70)):

- (76) Dá gya- dām-təə
OBLIG 1S:3S-tire- MOD
‘I *will* tire him’ (Harrington 1928: 51)
- (77) Hét hāgya éide kút yán- háidé- t!əə
HORT perhaps this letter :2S:3P-understand-MOD
‘Let’s see if you can understand this letter’

Modal suffixes, unlike the imperative, can combine with others, and, so, they permit us to test whether the particles in (70) conform to the clausal mirror. We have not investigated the relevant particles in depth (owing to the complications noted above); however, Harrington (1928) presents some sentences that we may tentatively take as evidence that they behave consistently with the clausal mirror:

- (78) Dá **hón** em- thǎǎ- hou-**guu-təə** nóó
OBLIG NEG 1S:2S-whip-kill- NEG-MOD 1
‘See if I don’t whip you’ (Harrington 1928: 51)
- (79) Hét **poi** ba- ɔnt!óthǎǎ-t!əə
HORT PROH 1IN.P-forgive- MOD
‘Let’s not forgive him’ (Harrington 1928: 79)

This concludes our digression into the imperative and our illustration of the clausal mirror generally.

3.3. The inverse base effect

We have demonstrated that selective particles and suffixes appear in the expected Cinque order, with a mirroring effect around the axis of the verb. In addition to this, there is a second set of mirror-like effects concerning the ordering of non-affixal elements in the postverbal domain. The XPs in question are verbal arguments and temporal adjuncts. In the postverbal domain, these conform to strict ordering restrictions that are the inverse of the order posited for the relevant function heads in standard views of argument structure and the hierarchy of functional heads (Cinque 1999). This rigidity of order affects only the postverbal domain, however; in the preverbal domain, there is considerable freedom of word order. So, the notion of *mirror* is more abstract in these cases than in the particle-suffix relations explored above: it does not obtain between pairs of pre- and postverbal elements, but between

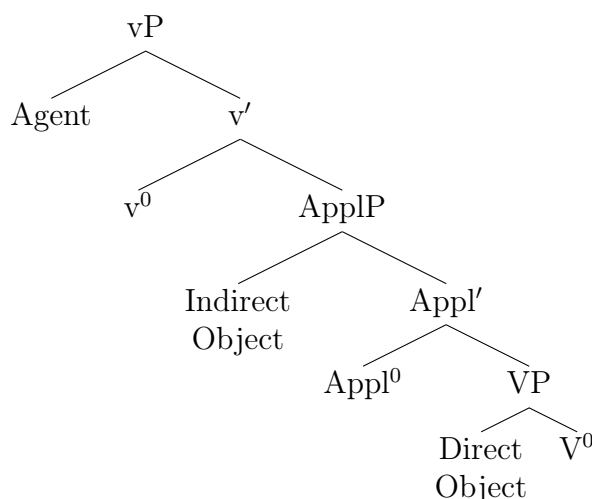
of **téil-ñi-Ø**/ˆ = tell-IMP-IMP and **téil-Ø**/ˆ-ñi = tell-IMP-IMP (is the correct decomposition). However, given that the imperative is so slight, any debate about its position would be too assumption-laden to be of interest.

the functional hierarchy in a language that is, by default, verb final, and specifiers of function heads in that hierarchy when, despite default verb-finality, they are postverbal. We call this mirror-like property the *inverse base effect*. Like the clausal mirror proper, it constitutes a property that an adequate account of Kiowa clause structure must derive.

3.3.1. Argument structure and adjuncts

As a preliminary to stating the inverse base effect, we briefly present a theory of argument structure in Kiowa. A well-supported view of argument structure is that the verb introduces at most its internal argument and that higher arguments, such as agents and applicatives, are introduced by functional heads, respectively *v* (*e.g.*, Hale and Keyser 1993, Kratzer 1996) and Appl (*e.g.*, Marantz 1993, Pylkkänen 2002, Cuervo 2003). In Adger and Harbour (2007), it was shown that the application of this view to Kiowa permits one to explain several facts about the language, including its instantiation of the Person-Case Constraint and a number of systematic syncretisms in the agreement prefix. Therefore, we adopt the same view here:

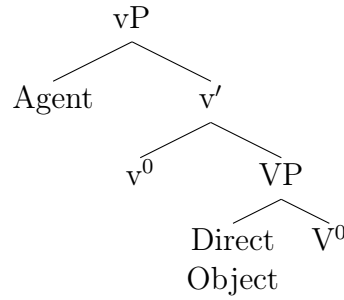
(80)



The structure above represents a ditransitive (*e.g.*, ‘the girl gave the boy the toy’) or transitive with applicative (*e.g.*, ‘the girl broke the boy’s toy’). These are the structures involving prefixes of the form *x:y:z-* (see the table on p. 21).

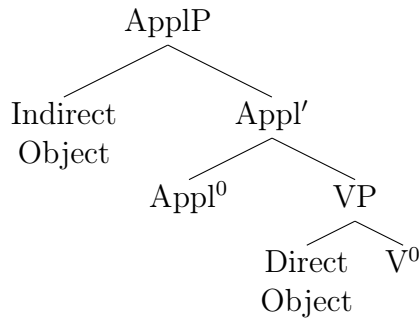
Structurally, however, neither *v* / the agent, nor Appl / the indirect object are obligatory for all clauses. So, a simple transitive (*e.g.*, ‘the girl broke the toy’) has the structure in (81). These are the structures involving *x:z-* prefixes (recall, from chapter 1, that unergatives are overtly transitive in Kiowa).

(81)



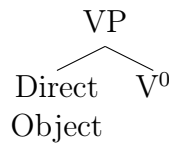
Similarly, unaccusatives with applicatives (*e.g.*, ‘the boy’s toy broke’), which have the prefixes of the form *:y:z-*, are a structurally reduced version of (80):

(82)



Finally, the simplest structures are plain unaccusatives, which have prefixes of the form *z-*:

(83)



The preceding three trees merely represent substructures of the first one given (80).

Therefore, the basic functional structure underlying the domain of argument introduction is $v \gg \text{Appl} \gg V$. Naturally, this induces the argument order Agent \gg Indirect Object \gg Direct Object. Readers may recall that this was identified in chapter 1 as the informationally unmarked order of arguments (p. 10) and the order of constituents of the agreement prefix (pp. 21f). (A point to which we will return at the end of the next chapter is the role that *v* and *Appl* play in Case assignment and how they subsequently contribute to formation of the agreement prefix.)

A second functional domain that will be important below is tense. As tense is not one of the categories for which Kiowa verbs inflect, we have not discussed it above. More generally, aspectual, rather than temporal, distinctions predominate in the language (Watkins 1984: 217), and it was suggested, in Adger and Harbour 2007, that *Asp*, not *T*, is the highest Case assigning head in the language. Nonetheless, we assume that temporal adjuncts, such as **tékhiiidappa** ‘every day’ and **hópko** ‘often’, are located at *T*. If we accept the argument of section 3.2.4 that the Cinque Hierarchy is broadly instantiated in Kiowa, then we can assume that *T*, and temporal

adverbials, are located just below the epistemic and modal projections of **béthoo** ‘MIR ’ and **háyátto** ‘probably’ and above the repetitive and anterior heads: Evid \gg Mod \gg T \gg Rep \gg Ant (cf (57)). Naturally, this yields a simple corollary that T is higher than the argument introducing heads, T \gg v \gg Appl \gg V.

Supporting evidence for this phrase structure comes from Watkins’ (1984: 209) observation that, in most cases, such adverbials precede other particles and arguments (though, of course, one has to allow for other factors affecting word order):

- (84) Hópko món an em-k!yóó- ǵǵdep
often INFER HAB 2S-romance-dream.IMPF
‘You probably dream frequently about romance’ (Watkins 1984: 209)
- (85) Khíidél pái Ø- yâi mósó-yoo
yesterday sun 3S-disappear.PF six- LOC
‘The sun set at six, yesterday’ (Watkins 1984: 210)

This functional hierarchy, and the constituent order it induces, Temporal Adjuncts \gg Agent \gg Indirect Object \gg Direct Object, will be important in section 3.3.3.

3.3.2. Argument-argument combinations

We now establish the following generalization:

- (86) **Ordering constraint on postverbal arguments**
The least deviant order for multiple postverbal arguments is the reverse of the order of the hierarchy of heads that introduces them.

It has already been demonstrated (pp. 38ff) that Kiowa permits any argument, whether introduced by v, Appl, or the verb, to occur either pre- or postverbally. A representative example of this mobility is repeated below:

- (87) **Xéguyudo** e- **zélbé-** do ... ótko á- bóúq̣hel- gɔ hegó kí- thap
dogs 3I-terrible-because those 3A-lazy.EVID-D.I then meat-dry
t!ǵǵba an et- **ǵǵmei** **xéguyudo**
bare HAB 3I:3A:3P-do.IMPF.EVID dogs
‘Because dogs are terrible ... the dogs would clean out the dried meat of those who were lazy’

In naturalistic usage, multiple arguments do not occur postverbally and, when presented under elicitation, it is evident that such structures are not wholly acceptable. However, there is a clear contrast in pairwise reorderings of postverbal arguments: if the internal argument is not first and/or the external argument last, then the sentences are significantly worse:

- (88) a. ?Hegó Ø– ðəmə xóí Carrie
 then 3S:3S–make.IMPF coffee.DO Carrie.AG
 ‘Carrie is making coffee’
 b. *Hegó Ø– ðəmə Carrie xóí
 then 3S:3S–make.IMPF Carrie.AG coffee.DO
 ‘Carrie is making coffee’
- (89) a. ?Gyá– ðəmə ólhógya Carrie
 1S:3S:3S–give.IMPF money.DO Carrie.IO
 ‘I’m going to give Carrie the money’
 b. *Gyá– ðəmə Carrie ólhógya
 1S:3S:3S–give.IMPF Carrie.IO money.DO
 ‘I’m going to give Carrie the money’
- (90) a. ??Hón bét– məhəimə Kóí– təgya sâado Óúelmaa
 NEG 3S:3I:3P–teach.NEG Kiowa-language.DO children.IO Carrie.AG
 ‘Carrie isn’t teaching Kiowa to the children’
 b. *Hón bét– məhəimə Kóí– təgya Óúelmaa sâado
 NEG 3S:3I:3P–teach.NEG Kiowa-language.DO Carrie.AG children.IO
 ‘Carrie isn’t teaching Kiowa to the children’
 c. *Bét– məhəimə Carrie Kóí– təgya sâado
 3S:3I:3P–teach.IMPF Carrie.AG Kiowa-language.DO children.IO
 ‘Carrie is teaching Kiowa to the children’
 d. *Bét– məhəimə Carrie sâado Kóí– təgya
 3S:3I:3P–teach.IMPF Carrie.AG children.IO Kiowa-language.DO
 ‘Carrie is teaching Kiowa to the children’

We take the difference between ‘?(?)’ and ‘*’ as being more than a mere matter of degree of degradation. Rather, we take it to represent a difference in grammatical kind. The *-sentences are ungrammatical in the sense of not being generated by the narrow syntax. The ?(?)–sentences, by contrast, are syntactically well formed, but have deviant interpretations at the PF or LF interfaces. In this case, we tentatively attribute this degradation to the interaction between syntax and prosody in Kiowa, which is the topic of ongoing research.¹⁰

The generalization that emerges from such comparisons is that the least deviant order for the postverbal arguments is internal argument before indirect object before external argument. (On the behaviour of relative clauses postverbally, see p. 98.) It will, of course, be immediately noted that this postverbal order is the reverse of the hierarchical orders established in the previous subsection: *v* » Appl » V, and

¹⁰The overly astute reader may recall the occurrence of multiple postverbal constituents in example (70) on p. 47. It is to be noted that this example was uttered with pauses suggestive of afterthoughts.

Agent » Indirect Object » Direct Object. We have, therefore, established that the least deviant order postverbally is the inverse of the default order preverbally.

3.3.3. Argument-adjunct combinations

Next, we establish the following generalization:

(91) **Ordering constraint on postverbal argument/adjunct combinations**

The least deviant order for postverbal combinations of an argument and an adjunct is the reverse of the hierarchy heads that introduces them.

We begin with temporal adjuncts. These may occur on either side of the verb:

- (92) a. **Tékhiidappa** xóí an gya- **thónmɔ**
 every day coffee HAB 1S:3S-drink.IMPF
 ‘I drink coffee everyday’
 b. Xóí an gya- **thónmɔ tékhiidappa**
 coffee HAB 1S:3S-drink.IMPF every day
 ‘I drink coffee everyday’
- (93) a. Tóúkút **hópko** gyat- **khêḡmɔ**
 books often 1S:3P-read.IMPF
 ‘I often read books’
 b. Tóúkút gyat- **khêḡmɔ hópko**
 books 1S:3P-read.IMPF often
 ‘I often read books’

When these cooccur with an argument and both are postverbal, there is a preference for the argument to occur immediately after the verb:

- (94) a. ?Óya- holda an gya- êḡmɔ **Vanessa tékhiidappa**
 fringe-dress HAB 3S:3P-make.IMPF Vanessa every day
 ‘Vanessa works on her fringe dress every day’
 b. *Óya- holda an gya- êḡmɔ **tékhiidappa Vanessa**
 fringe-dress HAB 3S:3P-make.IMPF every day Vanessa
 ‘Vanessa works on her fringe dress every day’
- (95) a. ?Hón gyat- khêḡmôḡ **tókút hópko**
 NEG 1S:3P-read.NEG books often
 ‘I don’t read books often’
 b. *Hón gyat- khêḡmôḡ **hópko tókút**
 NEG 1S:3P-read.NEG often books
 ‘I don’t read books often’

Given the functional hierarchy $T \gg v \gg \text{Appl} \gg V$ motivated above, we have a result similar to that for postverbal argument combinations: the functional head that introduces the adjuncts is structurally higher than those that introduce arguments, and in the postverbal domain, the arguments precede the adjuncts.

Although it is temporal adverbials that we have investigated most extensively, the same ordering effects have also been observed with locatives (which are most commonly in clause-initial position; Watkins 1984: 217) and a quantificational temporal adverbial **ꯏ꯳ꯪ** ‘constantly’:

- (96) a. ?An gya- bôu- thonmɔ **thóú éhɔɔ**
 HAB 1S:3S-always-drink.IMPF water here
 ‘I always drink the water here’
 b. *An gya- bôu- thonmɔ **éhɔɔ thóú**
 HAB 1S:3S-always-drink.IMPF here water
 ‘I always drink the water here’
- (97) a. ?Kút gya- khôɔmɔ **Carl ꯏ꯳ꯪ**
 books 3S:3S-read.IMPF Carl constantly
 ‘Carl is constantly reading books’
 b. *Kút gya- khôɔmɔ **ꯏ꯳ꯪ Carl**
 books 3S:3S-read.IMPF constantly Carl
 ‘Carl is constantly reading books’

Assuming that such adverbials are also to be associated with vP-external heads, the above cases establish the generalization at the start of this section.

3.3.4. Statement

As the ordering constraint on multiple postverbal arguments and adjuncts (91) is identical, *mutatis mutandis*, to the ordering constraint on multiple postverbal arguments (86), we can combine these into a single generalization:

- (98) **Inverse base effect**
 If XP and YP are introduced by functional heads A and B, where $A \gg B$, then the preferred postverbal order is the inverse base order $V \text{ YP } XP$

As the inverse base effect affects multiple classes of elements and is correlate of the functional hierarchy, we regard it, like the clausal mirror, to be a minimal condition that accounts of Kiowa clause structure must derive. The derivation of these two mirrorings around the axis of the verb is the focus of the next chapter.

Chapter 4

Making Mirrors

4.1. Introduction

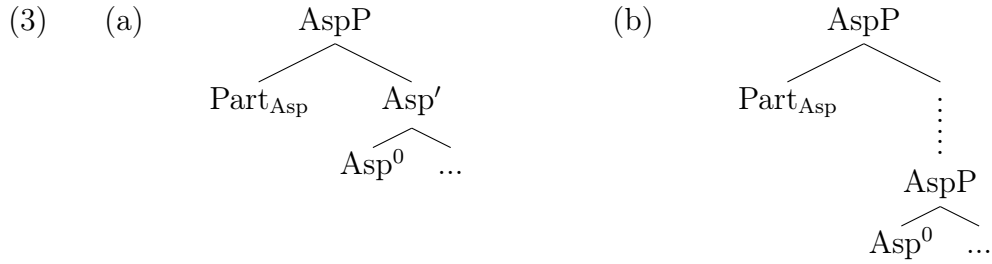
Two chapters ago, we saw that Kiowa has the hallmarks of a nonconfigurational language: its arguments may be freely omitted, freely ordered, and freely split. Nonetheless, in the last chapter, we presented two aspects of Kiowa syntax that are configurational in the sense that the order of elements (in some cases XPs, in others, X^0 s) is isomorphic to the hierarchy of functional heads:

- (1) **Kiowa clausal mirror**
Selective particles occur in an order inverse to their associated suffixes
- (2) **Inverse base effect**
If XP and YP are introduced by functional heads A and B, where $A \gg B$, then the preferred postverbal order is the inverse base order V YP XP

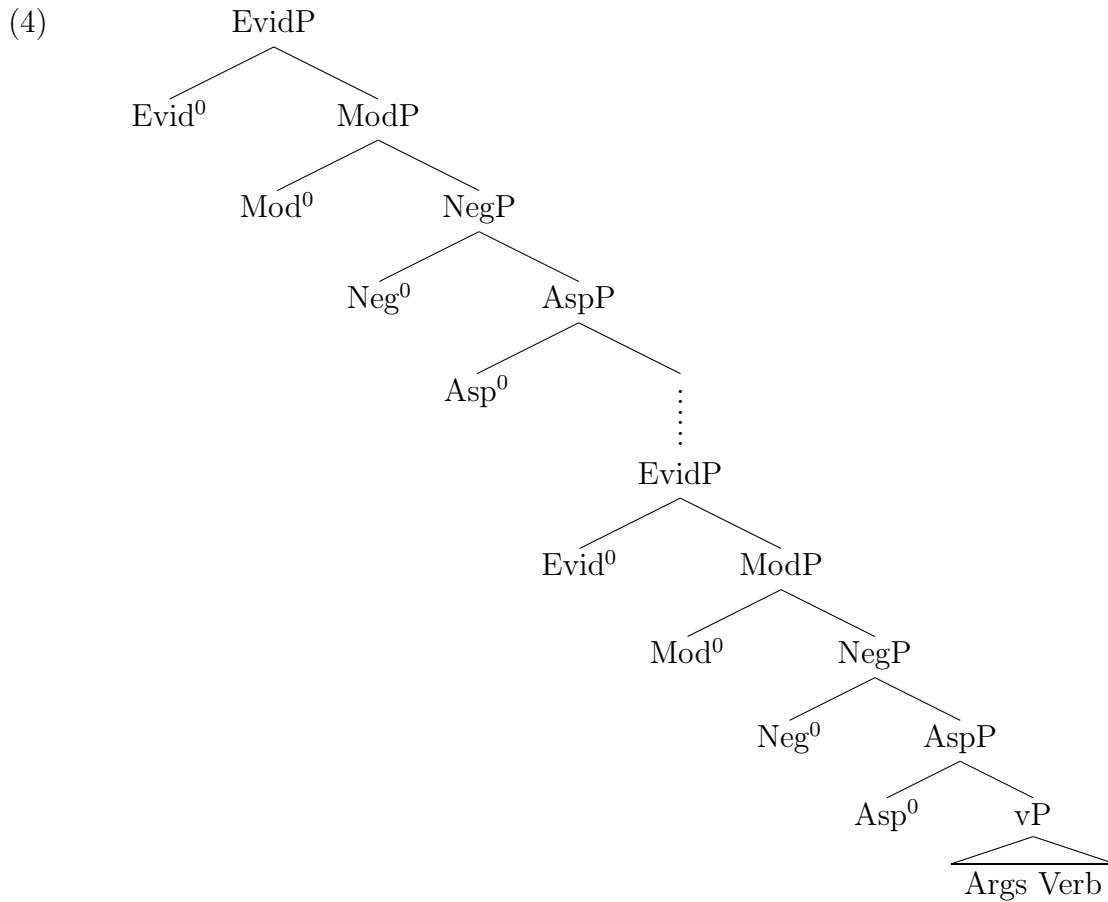
In this chapter, we compare three different theories of phrase structure, a head-final approach, an antisymmetry approach with roll-up movement, and a Mirror-Theoretic approach. Only the last can capture both generalizations.

4.2. Preliminary: against functional iteration

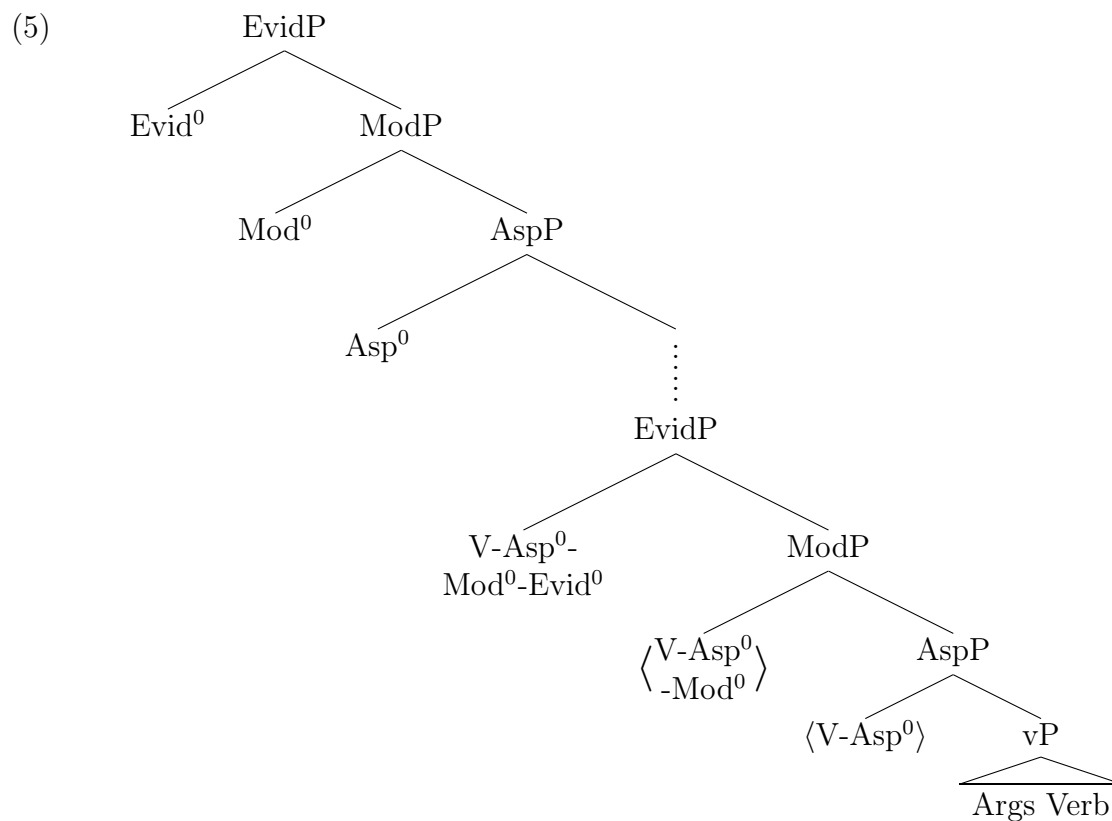
In addition to explaining the clausal mirror and the inverse base effect, a theory of Kiowa clause structure must capture the modificational relation between the particles and the suffixes and the fact that selective particles are preverbal but their associate affixes postverbal. In this preliminary section, we argue that the relationship between particles and suffixes must be local, as in (3a), because the non-local alternative, as in (3b), will not work.



As (3b) suggests, the alternative to positing a local relationship between particles and suffixes entails positing a long distance agreement relationship. This in turn would involve iteration of sequences of functional structure. Given that the clausal mirror affects evidential, modal, aspectual and negative heads, the iterated structure would have to be:

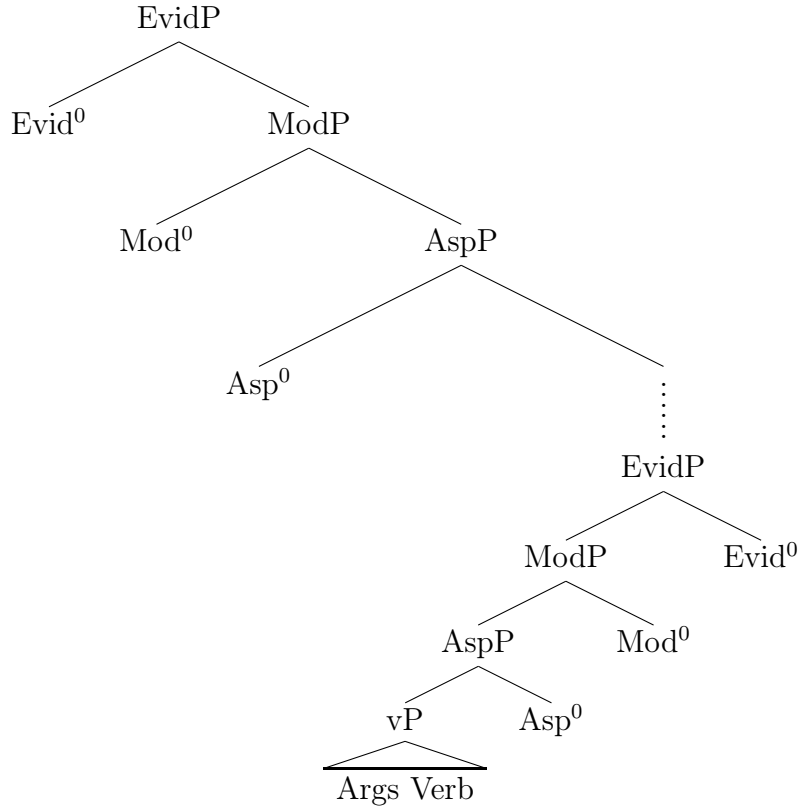


It would then be possible to capture the clausal mirror in one of two ways (for reasons of space, we omit negative heads from the following trees). Either one would assume (roll-up)head movement:



Or one would assume the lower sequence of functional projections to be head final, with the verb either remaining *in situ* (as shown), or raising as high as the lower Evid⁰:

(6)



However, neither of these derivations is whole satisfactory. In both, the preverbal position of the particles and the postverbal position of the affixes is stipulated by generating the particles in the higher sequence, and by either base generating the suffixes to the right, or ensuring rightwards placement via roll-up head movement. To yield the clausal mirror, two further assumptions are needed: that the order of the categories is identical in both sequences; and that there is a mechanism to enforce the presence of the appropriate suffix when a particle occurs (perhaps endowing the particles with some feature that can only be checked by the suffixes), while allowing suffixes to occur without particles.

Even so, these constellations of assumptions merely implement the mirror effect; they do not explain it. For instance, on the roll-up account, head movement must start and stop in the right place. Nothing in the theory prevents roll-up from affecting only the sequence of functional projections where the particles are located, resulting in postverbal particles and preverbal affixes. (Similar points apply to the mixed left-headed/right-headed account.)

Returning to the core mechanism of these approaches, the hypothesized iteration of this subsequence of functional structure is, to our minds, also problematic. Since both suffixes and particles are semantically contentful, both sequences must be interpreted. But this would lead to a situation where the modal or aspectual particles are interpreted as scoping over the evidential suffix. However, this is clearly

incorrect.¹ For example, the aspectual particle **an** ‘usually’ does not semantically scope over the evidential suffix, which has a meaning that the speaker’s information about the proposition is not first hand. If it did, we would have a meaning which would approximate to: usually it is the case that I am not in first hand possession of the information that P. However, when this aspectual particle cooccurs with the evidential suffix, the meaning is: I’m not in first hand possession of the information that usually P.

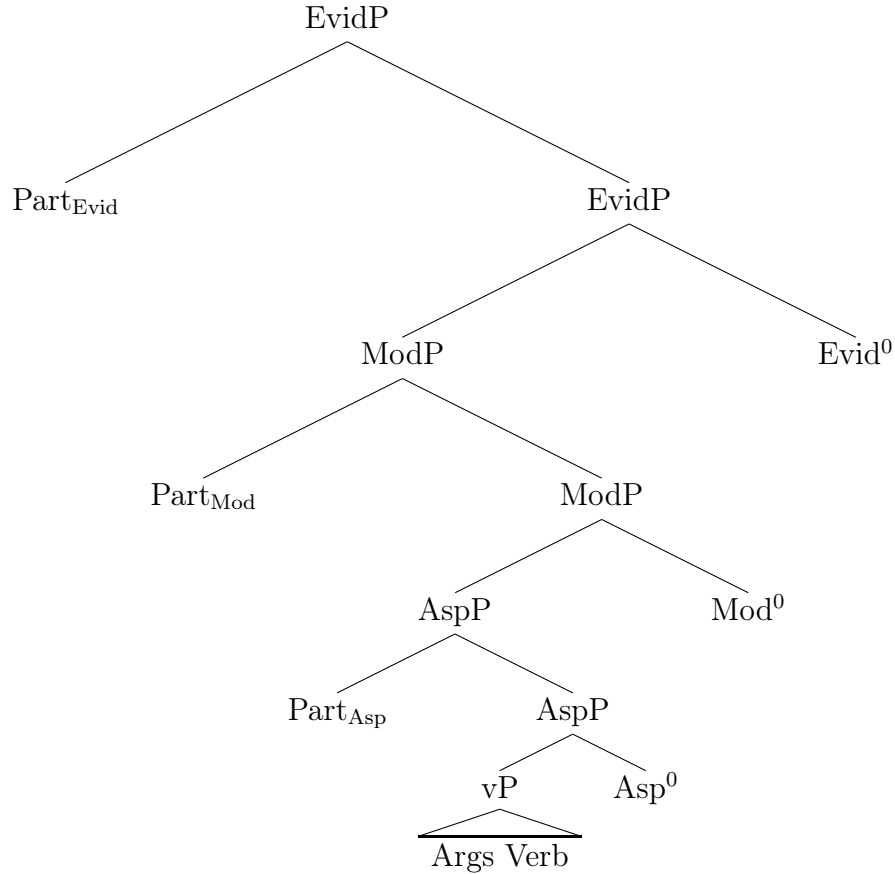
For these reasons, we reject such iterated analyses and assume, below, a local relation between suffixes and particles. This then leaves us with a number of analytical options under standard theories of clause structure: a head-final or a head-initial approach, or one of these combined with various movement operations.

4.3. A head-final approach

One straightforward approach is simply to claim that Kiowa clauses are head final. This was the assumption in Adger and Harbour (2007), where the focus was on Case relations and agreement, rather than the issues under scrutiny now; for this reason a rather conservative clause structure, classical X-bar theory together with a headedness parameter, was sufficient (again, negation is omitted for reasons of space):

¹Brody and Szabolcsi (2003), following Szabolcsi (1997:147), permit iteration of functional structure precisely in those cases where scopal ambiguities demand it. Clearly, functional iteration is not to be ruled out in principle (since, for example, CPs can be embedded). However, iteration will predict certain scopal interactions, and the lack of the relevant interactions in the Kiowa clause tells us that iteration is not involved here. The broader issues of which parts of the functional structure iterate and of when they do so lie beyond the scope of this study.

(7)

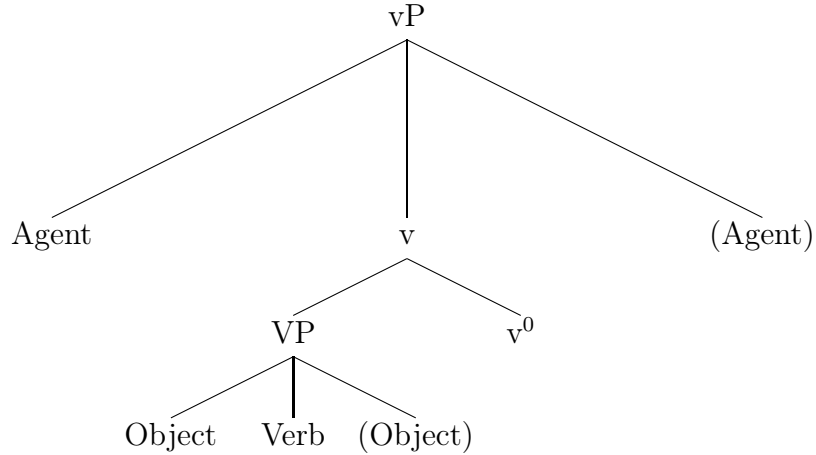


This approach is consistent with the head-final nature of Kiowa categories, and it also rather neatly captures the general agglutinative patterns seen in Kiowa suffixal morphology (see the introductory chapter). The locality relation between the particles and the suffixes is treated as one of modification: the particles are more semantically honed modifiers of the broader meanings introduced by the X^0 suffixes. The clausal mirror follows directly.

The major question that arises on this approach is the positioning of DP arguments; that is, how does this account fare in dealing with postverbal orders of arguments and the inverse base effect? This theory takes the order *particles arguments verb* as basic, and then derives other orderings via movement to, or base generation in, more peripheral positions. Arguments that occur between or before particles are straightforwardly treatable as leftwards scrambled or in a CLLD configuration. However, postverbal arguments present problems. There are two mechanisms that we might use for this: one assumes underspecification of the head parameter, the other exploits right adjunction. We explore each in turn.

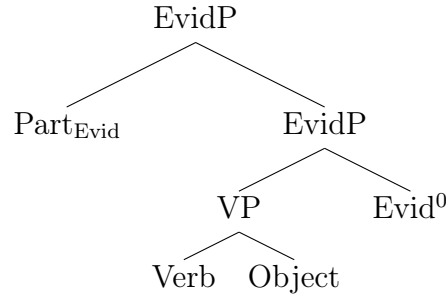
If the head parameter is unset for the specifiers of heads that introduce arguments, then we immediately derive the following variability in structures (note that the rightward branch represents simply an optional directional placement of the corresponding leftward branch):

(8)



This approach actually captures the inverse base effect rather neatly, since the postverbal order is the mirror of the preverbal one, given the hierarchy of argument introducing projections. However, it also predicts that postverbal arguments should occur between the verb root and its suffixes. For instance, a postverbal object in a sentence with evidential particles and suffixes would be derived as follows (with irrelevant details removed):

(9)

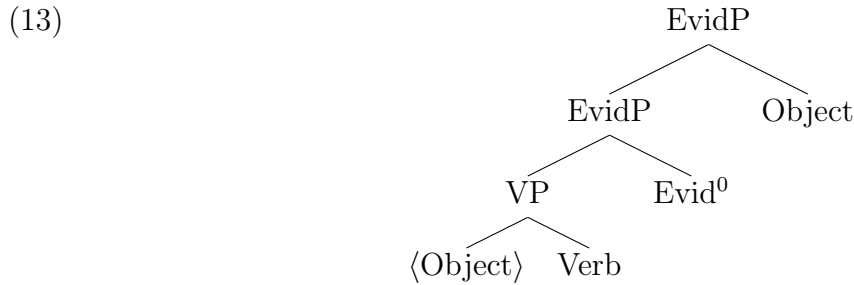


Such structures are crashingly ungrammatical; (10) instantiates (9), the subsequent sentences show analogous structures with different particles and suffixes.

- (10) a. ***Hótôm** Ø– **thóú** phítthóú–**hêl**?
 Q.EVID 3S–drink beer– EVID
 ‘Is it true that he drank the beer?’
 b. **Hótôm** Ø– **thóú–hêl** phítthóú?
 Q.EVID 3S–drink-EVID beer
 ‘Is it true that he drank the beer?’
- (11) a. ***Hón** Ø– **thóú** phítthóú–**mô**?
 NEG 3S–drink beer– NEG
 ‘Is it true that he drank the beer?’
 b. **Hón** Ø– **thóú–mô** phítthóú?
 NEG 3S–drink-NEG beer
 ‘Is it true that he drank the beer?’

- (12) a. ***An** Ø– **thóú** phítthó–**nmə**?
 HAB 3S–drink beer– IMPF
 ‘Is it true that he drank the beer?’
 b. **An** Ø– **thó**– **nmə** phítthóú?
 HAB 3S–drink–IMPF beer
 ‘Is it true that he drank the beer?’

Given this problem, the alternative approach to postverbal arguments, that they are extraposed, is *prima facie* more plausible. Adjoining them to, or base generating them in, a position above the highest suffix, the evidential, avoids the problem just discussed. We present a simplified tree, which correctly derives (10b):



However, structures such as (13) create new problems. During the exposition of the inverse base effect (section 3.3), we showed that postverbal arguments precede temporal adverbials:

- (14) a. ?Óya– holda an gya– ômə **Vanessa tékhiidappa**
 fringe-dress HAB 3S:3P–make.IMPF Vanessa every day
 ‘Vanessa works on her fringe dress every day’
 b. *Óya– holda an gya– ômə **tékhiidappa Vanessa**
 fringe-dress HAB 3S:3P–make.IMPF every day Vanessa
 ‘Vanessa works on her fringe dress every day’

If temporal adjuncts are below evidentials, that is, if Evid \gg T (Cinque 1999), then the object in (14) must be below the projection of evidentiality, contrary to (13). It follows that the representation above is inadequate.

A further argument against an extraposition analysis comes from the contrast between DP arguments and relative clauses. Whereas the former appear to the left of postverbal temporal modifiers, the latter appear to the right:

- (15) a. Tógúl gya– bónmə tékhiidappa [ógə a– ómtə-de]
 young man 1S:3S–see.IMPF every day.**T** REL 2S:3S–like– D.**DO**
 ‘I see the guy you like every day’
 b. ??Tógúl gya– bónmə [ógə a– ómtə-de] tékhiidappa
 young man 1S:3S–see.IMPF REL 2S:3S–like– D.**DO** every day.**T**
 ‘I see the guy you like every day’

- (16) a. Hólda gya- póú- k!uttə tékhiidappa [ógə gyat- kóótəhəttə-
dress 3S:3P-bead-lay.P.IMPF every day.T REL 1S:3P-buy.IMPF-
de]
D.DO
‘Everyday she beads the dress that I’m going to buy’
- b. ??Hólda gya- póú- k!uttə [ógə gyat- kóótəhəttə-de]
dress 3S:3P-bead-lay.P.IMPF REL 1S:3P-buy.IMPF- D.DO
tékhiidappa
every day.T
‘Everyday she beads the dress that I’m going to buy’

These sentences show that Kiowa does indeed have a process of extraposition and that it is syntactically distinct from postverbal placement of (sub)arguments that are simple DPs as opposed to relative clauses.

The failure of these two approaches places proponents of a head-final approach in a bind. On the one hand, evidence from the relative order of postverbal affixes and arguments forces the arguments to be above Evid⁰ and, so, above TP. On the other hand, evidence from the relative order of postverbal arguments and temporal adjuncts (the inverse base effect) forces the arguments to be below TP. Faced with this contradiction, we do not pursue this approach further.

4.4. Head initiality and roll-up phrasal movement

As head-final structures will not work, we turn now to accounts that derive suffixation by movement. There are two analytic possibilities: head movement and roll-up movement. Both involve iterated leftward movement, of X⁰s in one case and of XPs in the other. We show this schematically for a verb with two suffixes:

- (17) Head movement
- a. [suffix₁ [suffix₂ [H]]]
b. [suffix₁ [H-suffix₂ [⟨H⟩]]]
c. [H-suffix₂-suffix₁ [⟨H-suffix₂⟩ [⟨H⟩]]]

We do not see any difference between classical head movement (Travis 1984) and more recent variants (*e.g.*, Matushansky 2006) here.

- (18) Roll-up movement
- a. [suffix₁ [suffix₂ [HP]]]
b. [suffix₁ [[HP ... H ...] suffix₂ [⟨HP⟩]]]
c. [[Suffix₂P ... [HP ... H ...] suffix₂ [⟨HP⟩]] suffix₁ [⟨Suffix₂P⟩]]

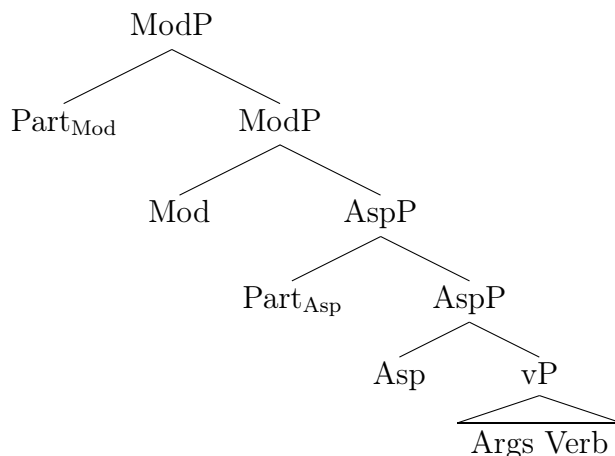
There are three crucial differences between the two analyses. First, the roll-up analysis allows Merge of phrasal material (represented above by ‘...’) to intersperse with the movement that creates the suffixed verb. Second, no analogue of the

Head Movement Constraint (Travis 1984) applies to roll-up derivations: whereas X^0 cannot move to Z^0 skipping an intervening Y^0 , XP can move to the specifier of ZP skipping an intervening specifier of YP . Third, no analogue of the ban on excorporation (Baker 1988: 73) from complex heads applies to roll-up movement, so it is possible for XP to land in and then vacate the specifier of ZP without piedpiping ZP . (See, however, Roberts 1991 for an attempt to unify the constraints on head and phrasal movement.)

These three differences permit accounts based on roll-up movement to derive a greater range of constituent and affix orders than ones based on head movement. We will show that the first of these counts in favor of a roll-up analysis of the Kiowa clausal mirror. However, the second two differences cause such accounts to generate unattested orders, for the following general reason. Cinque (1996, 2006) has demonstrated that it is a general property of (antisymmetric) roll-up derivations that there is greater freedom of order to the right of the embedded head H in (18) than there is to the left. This follows from the fact that phrasal movement may or may not reverse the order of elements of the functional structure (*cf.* the third point of the preceding paragraph); however, in the absence of movement, only the basic functional order is possible. This is precisely the opposite distribution of free versus rigid order stated in the inverse base effect.

Before proceeding to these aspects of roll-up movement, we briefly outline why a head movement approach is insufficient. To see this, consider the local modificational relation between the particles and suffixes. A structure with two particle–suffix pairs illustrates the point:

(19)

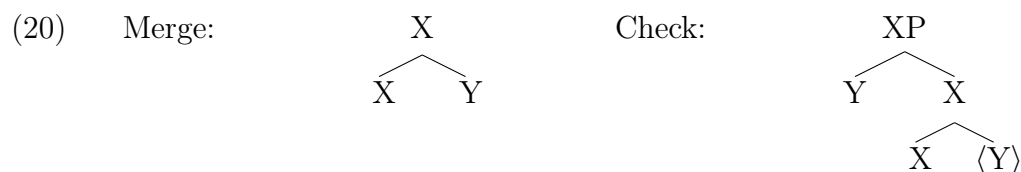


In order to create the agglutinative complex of verb plus suffixes, one could suppose that the verb raises successively through the respective heads, left adjoining to each. This derivation has the advantage of predicting, correctly, that, in any such complex head, the verb will be initial and the highest head final (as in **gúúl-îi-tɔɔ** write-IMPF-MOD ‘will be writing’). However, in such a derivation, all particles, except perhaps the highest, will be postverbal: in the above tree, the verb must move over Part_{Asp} to reach Mod^0 , creating Part_{Mod} V- Asp^0 - Mod^0 Part_{Asp} . This is incorrect, as selective

particles cannot appear postverbally. It is clear, then, that a more sophisticated derivation is required.

One of the most impressive theories—in terms of breadth of typological coverage and minimality of theoretical apparatus—of clausal typology to have emerged recently is that of Julien (2002), which adopts the general roll-up framework (see, especially, Kayne 1994 section 5.5, Cinque 1999 section 3.1). Julien devotes an entire chapter to languages that, like Kiowa, have relatively free word order and are by default verb final. We now show that such a roll-up system captures the clausal mirror, but that problems arise with regard to the inverse base effect.

Following Kayne (1994), Julien assumes that there is no head parameter and that all languages are underlyingly head initial. Robustly head-final languages, such as Lezgian, Japanese, Turkish, and Hindi (Julien’s primary case studies), differ from other languages in how they check selectional features: they do so by movement of the complement to the specifier position of the selecting head (exploiting ideas of Holmberg 2000). So, if X selects Y , Merger and Checking proceed as shown below:



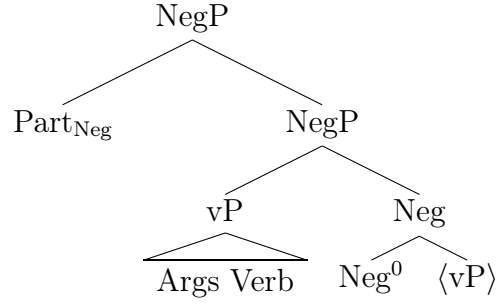
The structure is pronounced as $Y\ X$. So, generally, heads, X , follow their complements, Y , giving head finality.

Consider how this kind of approach could be extended to give an analysis of the clausal mirror in Kiowa. For concreteness, we will use negative and evidential particle–suffix pairs. First, since Neg selects the vP , vP moves to the specifier of $NegP$:



If we assume that particles do not select, but are simply merged (perhaps adjoined) in the semantically appropriate region of the tree, then nothing moves to their specifier. Merger of a negative particle yields simply:

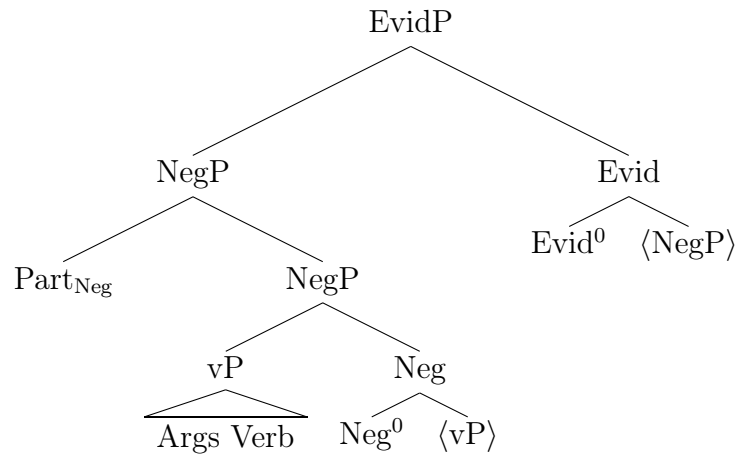
(22)



This is linearized as: Part_{Neg} Verb-Neg⁰. This correctly derives the particle-left suffix-right effect.

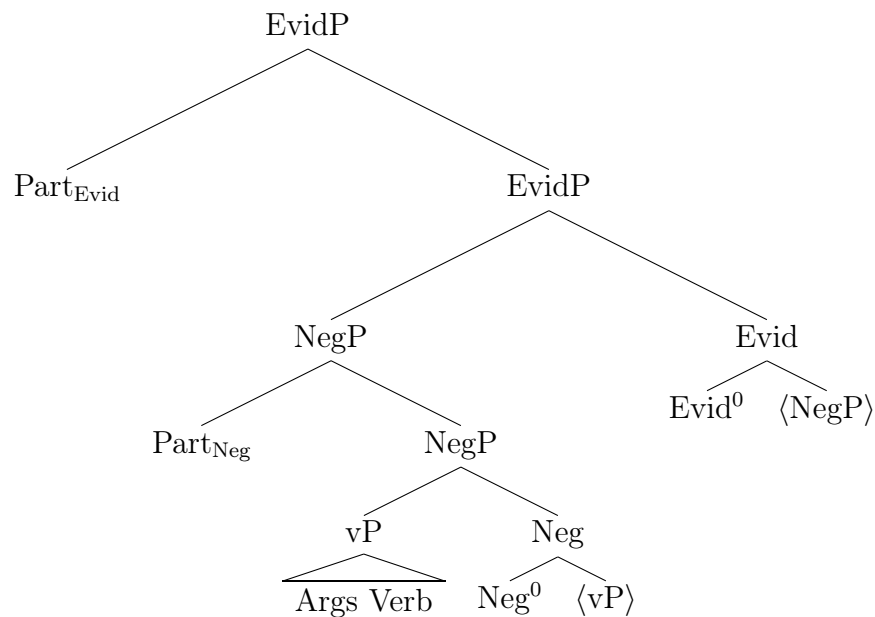
If we iterate with a further functional projection, we correctly derive the clausal mirror. For instance, Evid⁰ selects NegP, which moves to the specifier of EvidP:

(23)



Again, the particle is merged in the semantically appropriate part of the clause, without selecting the relevant head. So, it does not trigger complement-to-specifier movement.

(24)



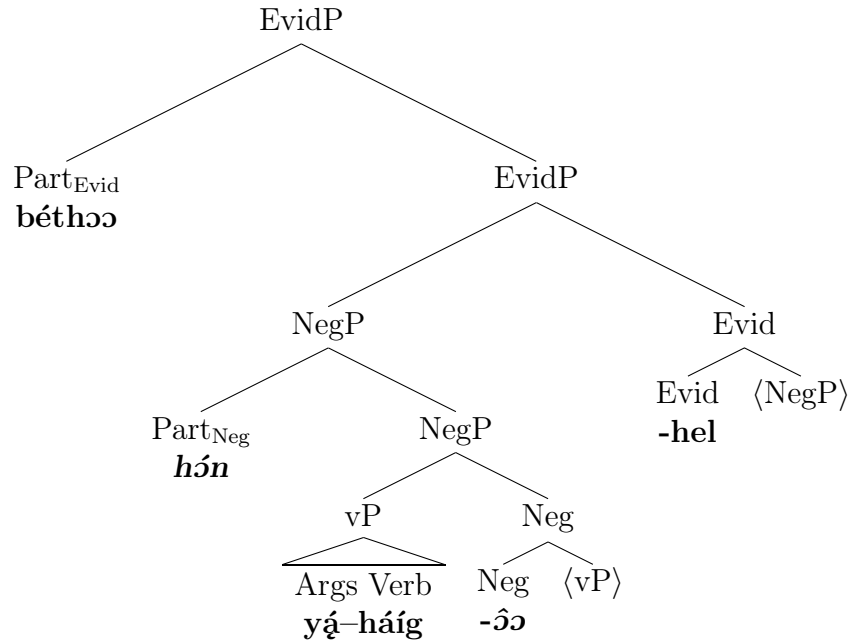
This is linearized as: Part_{Evid} Part_{Neg} Verb-Neg⁰-Evid⁰. Observe that, as desired, the modal particle and suffix are outermost, the aspectual particle and suffix, inner.

A concrete example of such a sentence is:

- (25) **Béthɔɔ hɔn yá- háíg- ɔɔ- hel**
 MIR NEG :1S:3P-write-NEG-EVID
 ‘I didn’t know’

The tree for this sentence is shown below. The derivation is parallel to that just discussed.

(26)



Just as with the head-right setting of the head parameter, this account captures the agglutinativity of the language, since the suffixes are kept syntactically distinct from each other, rather than merging into a single head.

However, this approach raises a number of questions concerning argument licensing and the placement of DPs more generally. Some are answered by Julien and others can be given answers in her system. Others, however, prove insoluble.

An immediate issue concerns the treatment of vP. If v selects VP, then VP should move to the specifier of vP. Initially, this seems attractive as it derives the VOS postverbal order that we have seen is available. However, for Kiowa, it incorrectly predicts that verbal suffixes accrete on postverbal arguments, not on the verb itself (*cf.* the same problem for a head parameter analysis, section 4.3). Furthermore, roll-up inside vP raises a theoretical problem. If v also licenses the external argument, then the specifier of vP must remain available for merger of the DP. As Julien (p. 122) notes, “it is not clear whether there would be enough specifier positions available inside [vP] ... or, if there were, what would be the relative ordering of the lower VP and the subject.” Julien sketches two solutions:

My proposal is that a head cannot attract its complement to its Spec if another phrase can be merged in the Spec. That is, I assume that the need to accommodate all relevant items into the phrase marker overrides overt checking of c-features. In other words, merge is preferred over move (see Chomsky 1995). Another possible reason is that all projections of the extended VP are ultimately projections of the verb. It is therefore conceivable that the relation between a v head and its VP complement is not really a complement selection relation and that c-features are not involved. If the higher heads of VP have no c-features to check, there is

no trigger for phrasal movement inside a VP. (Julien 2002, p. 122)

The second suggestion is somewhat stipulative as there is no robust criterion of when c-features are to be posited.

The first suggestion is more readily implementable. As it stands, it raises the question of why the derivation does not simply crash, as demands of c-selection and merger cannot both be met. However, we can avoid this problem if we conceive of complement-to-specifier movement as a last resort. The simplest (possibly only) implementation of this last resort strategy involves positing a EPP specification on the selecting head. If satisfied by external merge, the result is [ZP [X YP]]. If no external merge can occur, then internal merge (move) is forced, giving [YP [X ⟨YP⟩]]. Although this is the desired result, observe that it constitutes a departure from Julien’s (Holmberg’s) view of what parametrically differentiates a head-final language from others: it is not how c-selectional features are checked that ultimately matters, but the distribution of EPP features over all selecting heads. Of course, if this is the case, then there is no reason why some heads might not be endowed with the EPP feature, with others lacking it, and the typological predictions can no longer be tied down to a macroparametric account based on the formal system of feature checking.²

²Whatever the details of the implementation, some readers may spot that a second issue arises on this approach: if all arguments of the verb remain *in situ*, and if, in any event, the specifier of TP and the specifier of vP (or specifiers of other potential Case checking heads) are occupied by their complements and, so, are unavailable for other purposes, then there must be mechanisms for Case licensing of *in situ* arguments. For Julien’s account to be plausible, these must be spelled out. It would take us too far afield to evaluate Julien’s response to this challenge. Instead, we merely note that the mechanisms of Case and agreement argued for in Adger and Harbour (2007) obviate this problem. Moreover, by folding Appl and applicatives into the system of Case and agreement, these mechanisms avoid Julien’s (false) prediction that “Indirect objects have the same realization as directional PPs” in head-final languages: in Kiowa, indirect objects are bare, just like agents and direct objects, and are clearly distinct from PPs. A representative triplet of examples is given below. The point to observe is that **Thąąte** ‘grandmother’ is invariant for case in (i) and (ii), despite being applicative in the former; in both cases, ‘grandmother’ is clearly distinct from the PP in (iii).

- (i) **Thąąte** gə Khəute gə mən tətəi- al ɛ- dós gə á- ɔlhǫǫ-
Grandmother and Grandfather and probably father-also 3D-be CONJ 3A:3S-money-
khə- baahel Éínédáákhə-kya...
get.NV-go.EVID Anadarko- at
‘Grandmother and Grandfather, and maybe my parents too, went to get their money at Anadarko...’
- (ii) ... né **Thąąte** an téi aa- ǫǫ- Ø ɔt
but Grandmother HAB all 3A:3S:3S-give-ASP.Ø yet
‘... but they gave Grandmother all [the money]’
- (iii) An [Khəute gə **Thąąte**]- ɛǫ an á- bou- thəude-gom- do
HAB Grandfather and Grandmother-LOC HAB 3A:1S-always-leave- DISTR-because

Putting these worries aside, it appears that the roll-up theory can account both for the clausal mirror of Kiowa clauses and for the more basic shape of the vP. This, then, derives the following word order:

- (27) Part_{Evid} ... Part_{Asp} Agent Indirect-Object Direct-Object Verb.ASP...EVID

A second appealing aspect of Julien’s account is the ease with which it extends to freedom of word order in the preverbal domain, which is attributed (on p. 143) to “massive phrasal movement to the CP-domain”. Julien adopts the CP structure of Rizzi (1997):

- (28) Force > Topic* > Focus > Topic* > Finiteness > IP

From this alternative word orders are derived by moving vP-internal arguments to C positions. For instance, if the subject remains *in situ* and the object is in the specifier of FocP, then the order Object Agent Verb results. A Kiowa example, with an indirect object, is:

- (29) **Gúú an Thąąte** á- bôu- satk!ul ɔt
 ribs HAB grandmother :3S:3S-always-barbecue.P yet
 ‘Grandmother always had ribs barbecuing’

The syntactic structure for (29) is (30):

- (30)
-
- ```

graph TD
 FocP --> Gúú
 FocP --> Foc
 Foc --> Foc0[Foc⁰]
 Foc --> AspP1[AspP]
 AspP1 --> an
 AspP1 --> AspP2[AspP]
 AspP2 --> vP
 AspP2 --> Asp
 vP --> Thąąte
 vP --> gúú["<gúú>"]
 Asp --> Asp0[Asp⁰]
 Asp --> vP2["<vP>"]
 Thąąte --- ábôusatk!ul["á-bôusatk!ul"]
 gúú --- ábôusatk!ul

```

Julien observes, however, that this derivation is possible only if roll up movement does not take place in CP.

Notably, the movements just illustrated cannot have been triggered by c-features: the constituents in Spec-TopP and Spec-FocP are not the

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‘Because I was always left with Grandfather and Grandmother’

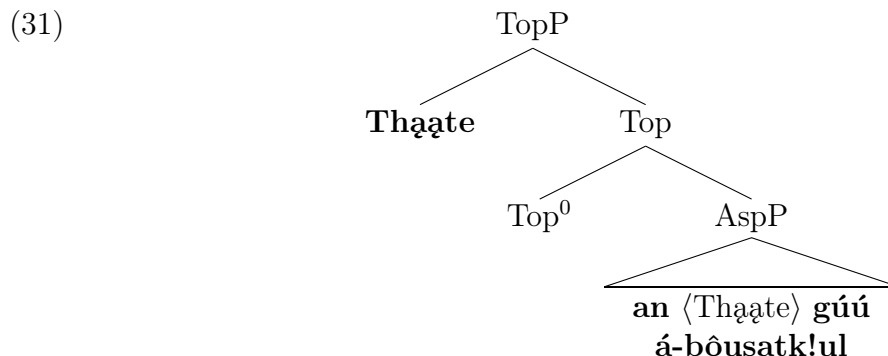
complements on the respective heads. I will hypothesize that in head-final languages, a head will not attract its complement to its the specifier of for c-checking if some other constituent is required to appear in the specifier of position. Thus, in the CP-domain the c-features are normally overridden by the topic and focus features, so that only a constituent marked as topic can be attracted to Spec-TopP, and only a constituent marked as focus can be attracted to Spec-FocP. C-checking must then presumably be done by feature movement. (Julien 2002: 144)

Although the mechanisms of overriding, and, hence, the theoretical basis for the hypothesis are not specified, we can again appeal to EPP specifications—the same explanation as was invoked to explain absence of roll up in the vP—but, in this instance, on heads in the C-domain.

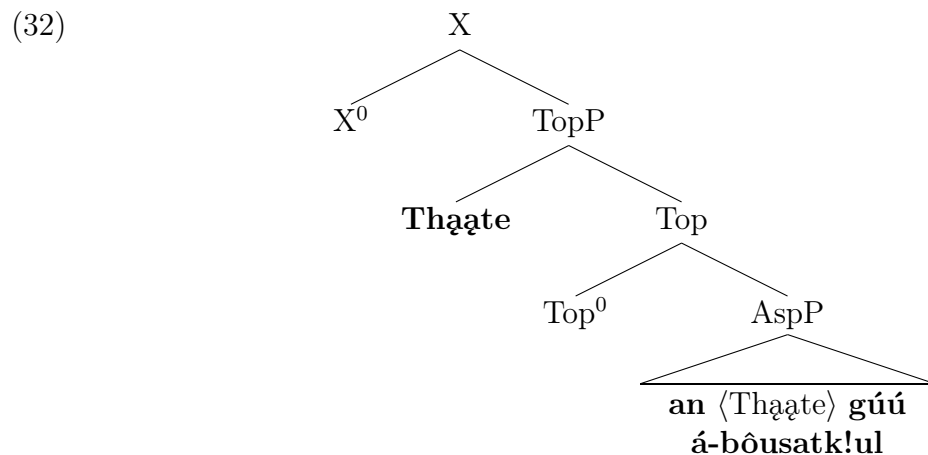
However, a further theoretical problem emerges here: elements in the CP domain are not placed there by Merge, but by Move. In the vP domain, the roll-up theory must appeal to a general economy preference for Merge over Move to ensure that arguments are preferentially Merged, rather than complements being rolled up. However, in the CP domain, it must now appeal a difference in economy between Move of an XP specifier into a position versus roll-up movement of the complement. But there does not seem to be any way to state this economy preference in the system, necessitating stipulation of an extrinsic ordering.

In addition to this theoretical problem, when we come to consider postverbal elements in Kiowa, the account encounters substantial analytical difficulties with the inverse base effect and with the analysis of *wh*-movement.

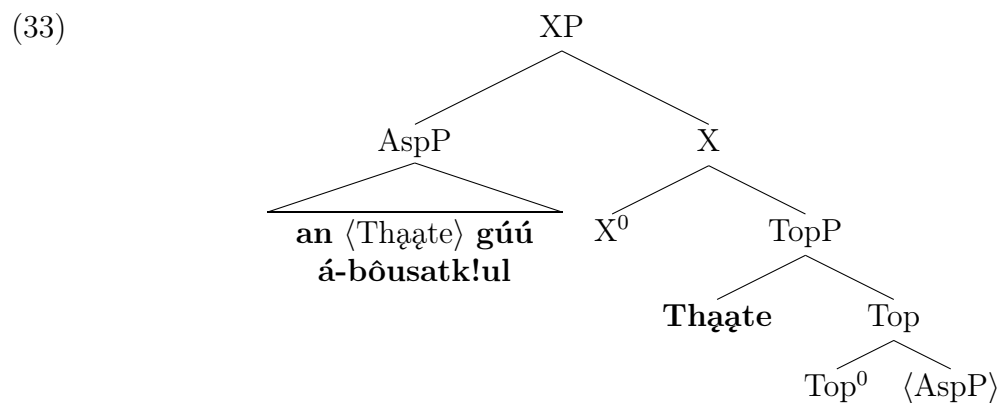
Consider how a roll-up account derives postverbal orders. As mentioned, the precise CP structure Julien adopts is that of Rizzi (1997) and postverbal elements are analyzed as being in the lower TopP. Naturally, however, this will only yield postverbal elements if vP, or the rolled up constituent of which it is part, moves around the lower TopP, into a projection that we will temporarily label XP. The process is shown stagewise below. First, the vP rolls up to just below TopP and then a DP, in this case the applicative **Thạate** ‘grandmother’, moves to the specifier of TopP:



Next, X projects above TopP:



And, lastly, AspP moves to the specifier of XP.



This yields a sentence with a postverbal argument:

- (34) An gúú á- bôu- saṭk!ul **Thə̌ʔte**  
 HAB ribs :3S:3S-always-barbecue.P grandmother  
 ‘She always had ribs barbecuing, Grandmother’

To fill out this sketch of an analysis we need to identify X in such a way that the analysis is sufficient to derive the attested word orders.

An initial desideratum for our account is given by the syntax of *wh*-movement. We saw in chapter 1 that Kiowa is an obligatory *wh*-movement language. We adopt Rizzi’s (1997) analysis which takes FocP to be the target of obligatory *wh*-movement. This gives us three options to consider for the position of the remnant or equivalently, the identity of X: X is above Foc, X is Foc, or X is below Foc.

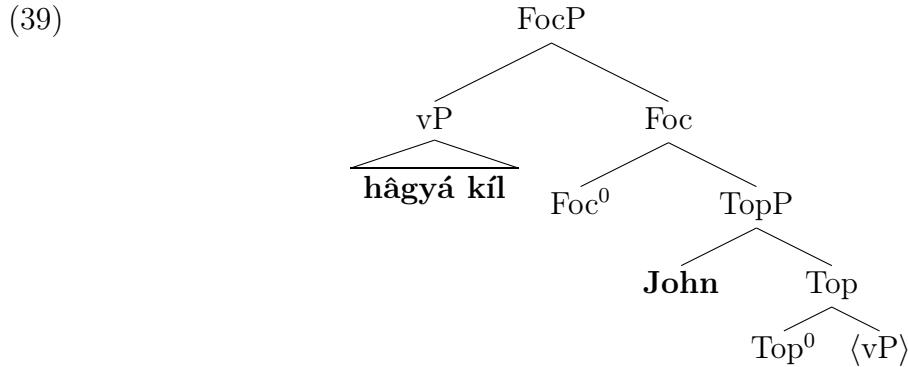
If X is above Foc, then any *wh*-element would be postverbal, as the locus of the remnant containing the verb dominates FocP, the locus of the *wh*-element. However, postverbal *wh*-elements are ungrammatical:

- (35) \*A– pótto hândé?  
 2S:3S–eat.IMPF what.Q  
 ‘What are you eating?’
- (36) \*Gya– pógya hâgyâi- kii?  
 3S:3P–eat.PF which.Q-meat  
 ‘Which meat did he eat?’
- (37) \*∅– Kíl hâgyá John?  
 3S–live where.Q John  
 ‘Where does John live?’

Suppose instead that X is Foc. In its most simplistic form, this predicts the incompatibility of *wh*-elements with postverbal elements, which is straightforwardly false:

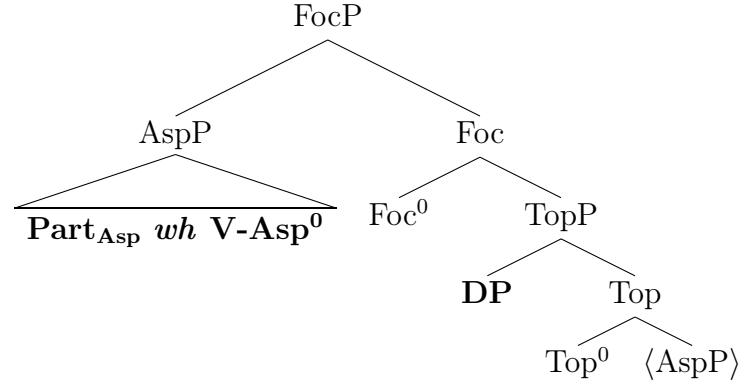
- (38) Nɔ hâgyá ∅– kíl John?  
 CONJ where.Q 3S–live John  
 ‘Where does John live?’

However, there is another option. Suppose that movement to FocP of the entire phrase containing the interrogative is sufficient for checking *wh*-features. This will give the following structure for (38):



As is evident, such structures do permit postverbal arguments to cooccur with *wh*-elements. However, they raise problems for particle placement. If we change vP to AspP and insert an aspectual particle, the problem becomes apparent:

(40)



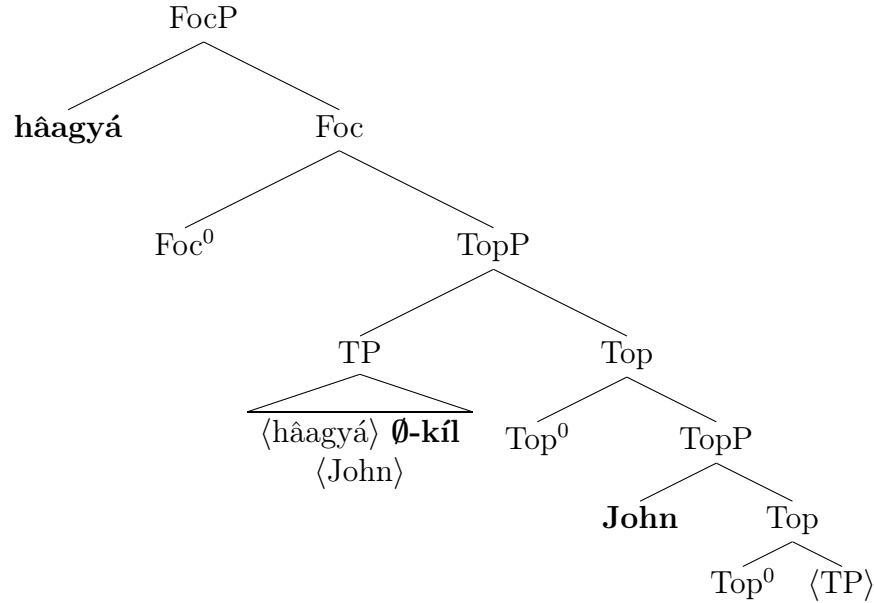
In (40), because the *wh*-phrase remains vP-internal, it does not become preparticular. However, Kiowa displays obligatory *wh*-movement:

- (41) a. Hôndé an bét- píí- klúttɔ?  
 what.Q HAB 2S:3I:3P-food-lay.P.IMPF  
 ‘What do you feed them [horses]?’  
 b. \*An hôndé bét- píí- klúttɔ?  
 HAB what.Q 2S:3I:3P-food-lay.P.IMPF  
 ‘What do you feed them [horses]?’
- (42) a. Hâagyâi-xɛi an án- píí- klúttɔ?  
 which- horse HAB :3S:3P-food-lay.P.IMPF  
 ‘Which horse do you feed?’  
 b. \*An hâagyâi-xɛi án- píí- klúttɔ?  
 HAB which- horse :3S:3P-food-lay.P.IMPF  
 ‘Which horse do you feed?’

If the *wh*-feature is checked by movement of the whole remnant XP, then there is no reason for the *wh*-element to move to a preparticular position. Preparticularity forces onto the analysis an extra step of movement. This movement would have to target the specifier of FocP, since it affects all and only *wh*-elements. But then there is no motivation for any higher movement to a focus projection, since there is no higher focus projection. It follows that the analysis is untenable for Kiowa.

The only remaining possibility is that the remnant is lower than Foc. We could take it to be in the lower TopP, profiting from the fact that topic positions are recursive Rizzi 1997. Thus, in a sentence such as (38), both **John** and **kíl** would be in separate instances of the lower specifier of TopP, thus leaving the specifier of FocP free for the interrogative.

(43)

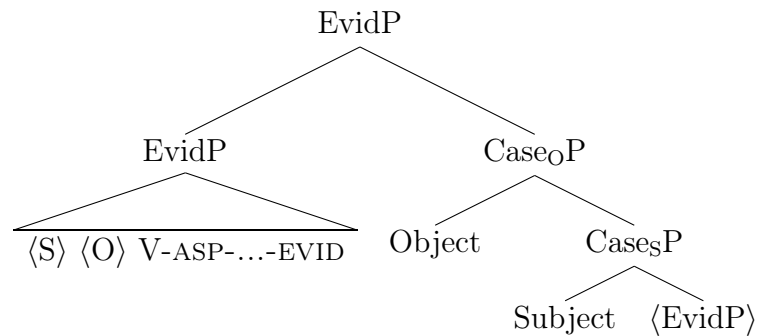


This, at last, successfully derives the desired word order of *wh*-phrase, verb, and postverbal element.

The challenge for the account now is to capture the inverse base effect. This involves, at the most basic level, explaining why order is rigid after the verb but flexible before it. Order rigidity after a head is generally problematic for roll-up accounts, which, as already mentioned, predict rigidity before the head and flexibility after it. However, the literature provides the germ of two solutions. Neither, we will argue, bears fruit.

First, one can deny that the postverbal elements actually are Topics. For instance, Cinque, in his (2006) analysis of complement and adverbial PP orders, proposes a set of rigidly ordered licensing projections to the right of the surface position of the verb. Adapting this to the case at hand, we might propose that, in Kiowa, there are Case positions for subject, indirect object and direct object and that these are rigidly ordered and below the position that attracts the verb. For a transitive verb:

(44)



For this to work, however, the Case projections must be in the reverse order, not only of the base order of arguments in Kiowa, but of the licensing positions of subjects



and objects in other non-ergative languages (see Watkins 1996 on the distribution of ergativity in Kiowa-Tanoan). This divergence from the expected order of projections is required purely to capture the inverse base effect, which is, therefore, stipulated, not explained.

Second, we might attempt to capture these effects by assuming that the hierarchy given by the base order is preserved under topicalization. More concretely, we can posit a Top projection that attracts the various elements to its specifier in hierarchical order: given that the subject is higher than the object in the base order, the subject will be closer to the Top projection, and, if both bear the relevant features, the subject will be attracted first. When the object is subsequently attracted, it lands in a higher specifier of TopP, then we have the obligatory order Object Subject. In this way, we might derive the inverse base effect for grammatical functions. (This approach must assume that movement does not tuck in, contra Richards 2001.)

A similar analysis can be given for the postverbal ordering of arguments and adjuncts. Given that the adjuncts are hierarchically higher than the arguments, they are attracted first, and the arguments are then attracted to a superior position, resulting in the order Argument Adjunct.

However, such an account also needs to be able to capture the fact that when topics are preverbal, there are no analogous ordering restrictions. Consider an example where two arguments are located between a *wh*-word and a particle. Under the roll-up analysis, these arguments will be in a topic position (as the *wh*-word occupies Focus). However, in such cases, the order of the arguments is free:

- (45) Hâgyá **Daniel** *maayóp* an é– k!óótétəw?  
 where.Q Daniel women HAB 3S:3I-meet  
 ‘Where does Daniel usually meet the women?’
- (46) Hâgyá *maayóp* **Daniel** an é– k!óótétəw?  
 where.Q women Daniel HAB 3S:3I-meet  
 ‘Where does Daniel usually meet the women?’

Thus, without further enrichment, the roll-up account does not capture the postverbal ordering restrictions whilst deriving the preverbal ordering flexibility.

A natural enrichment of the approach is to elaborate the functional structure above the final landing site of the verb, along the lines of Frascarelli and Hinterhölzl (2007), who propose projections for three kinds of topics: AboutnessP encoding Reinhart’s (1981) sentence topics, ContrastP encoding contrastive topics, and FamiliarP encoding old or given information.

- (47) [AboutnessP [ContrastP [FocusP [FamiliarP\* [EvidP ... ]]]]]

The \* signifies that familiar topics may iterate; aboutness and contrastive topics may not. FocusP, as before, is the landing site for *wh*-elements. To capture preverbal flexibility, one can, for instance, move the subject to AboutnessP and the object to

ContrastP, or vice versa. To capture postverbal rigidity, we must adopt, as above, the mechanism of hierarchy-based attraction without Tucking In: in a transitive sentence, Fam attracts first the subject, then the object, then EvidP:<sup>3</sup>

(48) [AboutP [ContrP [FocP [FamP\* [EvidP ... ] Object Subject <EvidP>]]]]

However, in order to generate examples like (45)–(46), we must first assume that EvidP does not raise over FamP. The object-subject order in (46) then follows if both arguments move to FamP in hierarchical order. However, the subject-object order of (45) requires that the object be lower than FamP, in yet another landing site, which we label YP:

(49) ... [FamP Subject [YP Object [EvidP ... <S> <O> V-ASP-...-EVID ]]] ...

However, what we have now posited loosens the account to the extent that we are able to generate the ungrammatical V S O order. The structure in (49) involves movement of the object over the base position of the subject prior to Merge of Fam<sup>0</sup>:

(50) ... [YP Object [EvidP ... Subject <O> V-ASP-...-EVID ]]] ...

When Fam<sup>0</sup> is Merged, it attracts the closest argument, which is the object. It then attracts the subject:

(51) ... [FamP Subject [FamP Object [YP <O> [EvidP ... <S> <O> V-ASP-...-EVID ]]] ...

Subsequent remnant movement of EvidP yields the final order V S O.

(52) ... [EvidP ... <S> <O> V-ASP-...-EVID ] [FamP S [FamP O [YP <O> <EvidP> ]]] ...

The only analytical option remaining is to posit some layer of projections ZP\* between FocP and the highest segment of FamP:

(53) [AboutP [ContrP [FocP [ZP\* [FamP\* EvidP ]]]]]

The purpose of ZP\* is two-fold: it is the projection targeted by EvidP, and it may also host moved arguments, that have been further extracted from FamP. Crucially, it must be claimed that movement from FamP is not subject to the hierarchical attraction constraint. We can then derive (45)–(46):

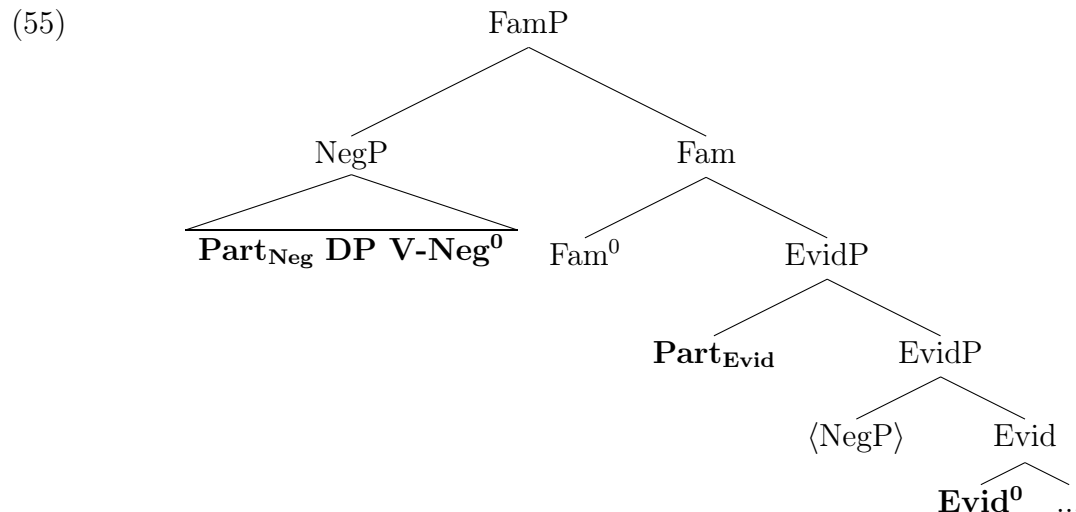
(54) ... [ZP S (or O) [ZP O (or S) [ZP [EvidP ... <S> <O> V-ASP-...-EVID ]  
[FamP <S> [FamP <O> <EvidP> ]]]]] ...

Two final problems afflict this solution: one empirical, one theoretical.

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<sup>3</sup>There is a problem of ordering of movement in this derivation, to which we return below. Strictly hierarchical attraction predicts that EvidP should move before either of the arguments. However, this rules out postverbal arguments entirely. See below for on the possibility of including a projection, ZP\*, between FocP and FamP\*, as a landing site for EvidP.

On the empirical side, this account requires it to be possible for a head to attract the complement of its complement (this is how ZP attracts EvidP from within FamP). If this mechanism is generalized, then we predict such aberrant structures as:



However, (55) clearly violates several conditions on clause structure in Kiowa: it interrupts the string of postverbal affixes with a non-affix and that non-affix is a selective particle which, in any event, must be preverbal.

Graver yet is the theoretical issue. The analysis just presented posits ZP\* purely to derive desired word orders. Moreover, it draws a crucial distinction between the properties of ZP\* and FamP\*: only the latter is subject to the hierarchical attraction constraint. It barely needs saying that this amounts to simply stipulating that postverbal arguments are rigidly ordered but preverbal ones are not, the very generalization that was to be explained.

#### 4.5. A Mirror-Theoretic approach

Before proceeding, it is worth taking stock of the nature of the generalizations we wish to derive and of the problems that arose in the previous section. Both the clausal mirror and the inverse base effect concern order isomorphisms of functional structure around the axis of the verb. In this light, we can regard the verb as a constituting a fixed point in the Kiowa clause. Of the problems encountered above, the majority arose because, as we shifted the verb, or the remnant containing the verb, into higher positions, we found that constituents that had been in a legitimate clausal position would suddenly become postverbal and illegitimate. Essentially, the verb on these accounts is highly mobile, making one and the same position preverbal on some occasions, postverbal on other. The task of accounting for properties of the preverbal and postverbal elements could well be substantially easier if pre- and postverbal domains were more easily syntactically characterizable.

Now, there is an overarching generalization about the kinds of elements that can occur postverbally in Kiowa. For the clausal mirror, we saw that when a particle is associated with a suffix, not only do they mirror each other around the verb, but that it is always the particle that occurs preverbally. When the particle has no associated suffix, it may occur both preverbally and postverbally. For the inverse base effects, the same conclusion can be drawn: the arguments do not co-occur with suffixes, and they are free to occur preverbally or postverbally. The overarching generalization is that suffixes force their associated specifiers to occur preverbally. we state this ordering constraint on the outcomes of the clausal mirror and inverse base effect as the overttness ordering relation:

(56) **Overttness Ordering Relation**

- a. If  $x$  is a suffix to a verb, then its associated specifier  $X$  is obligatorily preverbal.
- b. If a specifier  $Z$  has no associated verbal suffix  $z$ , then it may occur preverbally or postverbally.

So phrased, the generalizations in (56) are reminiscent of Mirror Theory, the approach to phrase structure and the morphology–syntax interface developed by Michael Brody in a series of works (2000a, 2000b, 2002) and more specifically in Brody and Szabolcsi’s (2003) work on inverse scope effects in Hungarian.

#### 4.5.1. Mirror Theory

To introduce the theory, let us begin with one of the problems addressed by Brody and Szabolcsi. They show that quantifiers in Hungarian fall into syntactically distinct classes. When these quantifiers occur preverbally, the classes line up with distinct syntactic positions which match the scope of the quantifiers. In such cases, scope is unambiguously given by the syntax:

- (57) Minden ember      kevés filmet      nézett meg  
 every    man.NOM few    film.ACC viewed PRT  
 ‘For every man, there were few films that he viewed’  
 \*‘There were few films such that every man viewed them’  
(Brody and Szabolcsi 2003: 20)

Hungarian further permits the same scope relation but with a different linear order, namely, one in which the universal is postverbal:<sup>4</sup>

- (58) Kevés filmet      látott minden ember  
 few    film.ACC saw    every    man.NOM

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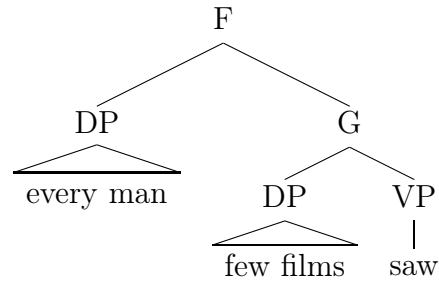
<sup>4</sup>This example, if the postverbal quantifier is destressed, also allows the opposite scope reading ‘There were few films such that every man saw them’. We leave this aside, as the point relevant here is what makes wide scope of the postverbal quantifier possible.

‘For every man, there were few films that he saw’

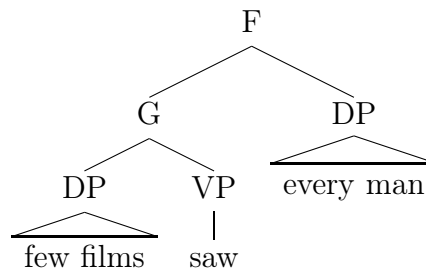
(Brody and Szabolcsi 2003: 22)

Brody and Szabolcsi show that this reordering is best accounted for by regarding the hierarchical structure of (57) as identical to that of (58) as well, differences in linear ordering notwithstanding. Intuitively, it is just as though we have the two following structures:

(59)



(60)



However, Brody and Szabolcsi argue that the different linearizations cannot be tied down to any plausible syntactic movement or phonological reorganization. Moreover, they note that such reorderings are available only to scopal elements. It is the attempt to account for this pair of characteristics that motivates a Mirror-Theoretic analysis.

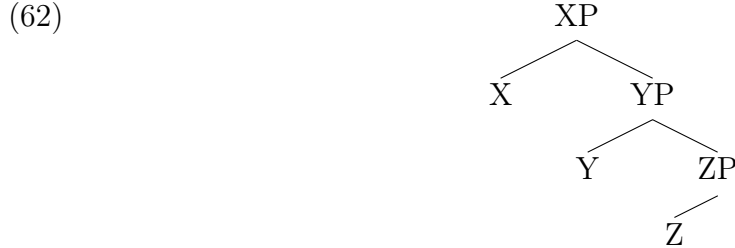
Mirror Theory solves these problems in the following fashion (we explain immediately below why the theory works in this way). In Mirror Theory, some heads force their specifiers into a precise linear configuration. Specifically, the specifier of a morphologically active (usually overt) head obligatorily linearizes to the head’s left. By morphologically active, here, Brody and Szabolcsi mean a head which has a morphological exponent (which could, in certain circumstances, be zero). Morphologically inactive heads, however, do not have this property and, more generally, do not enforce linearization constraints on their specifiers. Below, we notate contentful zeroes versus absence of content as ‘ $\emptyset$ ’ versus ‘—’. Now, scopal categories are not introduced by morphologically active heads. Therefore, they allow two syntactic structures which have the same interpretative effects (essentially Mirror-Theoretic versions of the trees in (59) and (60)).

With this motivation in hand, we now explain precisely how Mirror Theory system works. Brody argues that the kind of mirroring effect discussed here, which he terms *Mirror*, is a basic organizing principle of the morphology–syntax interface:

(61) **Mirror**

The syntactic relation ‘X complement of Y’ is identical to an inverse-order morphological relation ‘X specifier of Y’. (Brody 2000a: 42)

To illustrate how (61) works, consider the following abstract syntactic complement structure:

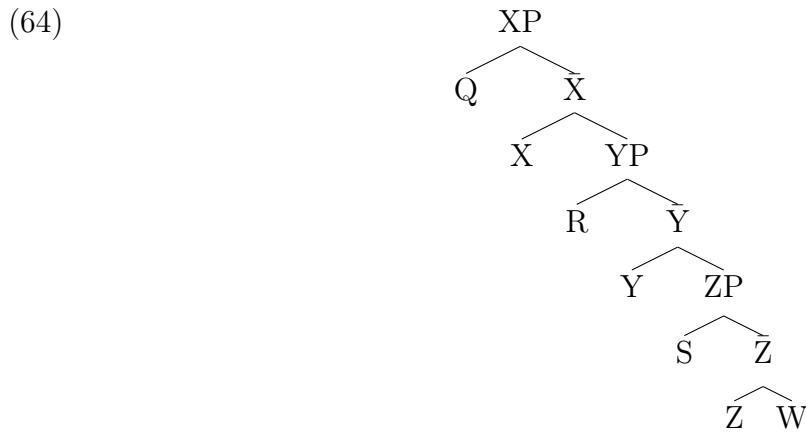


According to Mirror, at the morphology–syntax interface, this syntactic structure is interpreted as the morphological structure below:

(63)  $[[[Z]-Y]-X]$

Here, Z is the morphological specifier of Y, which is the morphological specifier of X. Thus, the syntactic complement structure is mirrored, inversely, in the morphological structure.

The syntactic structure in (62) consists only of heads and complements. However, usually, we assume that there are syntactic specifiers too. This seems to raise a problem for the Mirror-Theoretic approach. If the abstract syntactic structure has specifiers, then there is an issue about the pronunciation of the various elements of the structure. Standardly, specifiers are assumed to involve the projection of a bar-level of the head:



If we blindly apply Mirror, then the morphological word associated with (64) is:

(65)  $[[[[Z-\bar{Z}]-Y]-\bar{Y}]-X]-\bar{X}]$

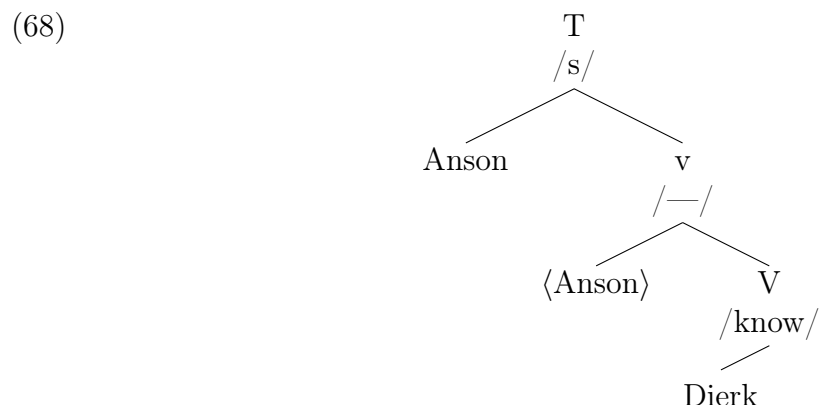
This is odd, however, as there seems never to be any morphological expression of bar-level syntactic categories. Instead, Brody (2000a) suggests that there are no bar level projections in the syntax at all. Rather, he assumes that a single copy of a lexical item can serve as both head and as phrase (a principle which he refers to as *Telescope*). This means that the proper representation of (64) is (66) and the corresponding morphological word is once again (63):



To see these assumptions in action, consider a simple sentence like:

(67) Anson knows Dierk

In a Mirror-Theoretic representation, *Anson* is Merged as the specifier of *v* and moves to the specifier of *T*, for EPP-checking. *Dierk* is the specifier of *V*:



One of the basic principles of Mirror Theory is that, when structures like (68) are linearized, specifiers precede their heads and heads precede their complements. It follows that *Anson* precedes *T*, which precedes *v*; and *v* precedes its complement *V* (including *Dierk* which is dominated by *V*); *Dierk*, as *V*'s specifier, precedes *V*. The morphological word associated with the syntactic complement structure is just:

(69) V-v-T = know — - s

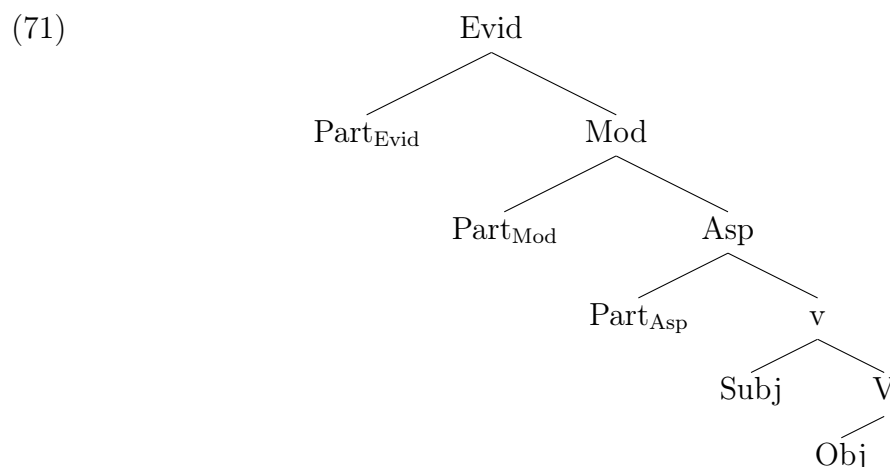
One of the parameters of linguistic variation that Mirror Theory allows is the position of spell out (*V*, *v*, or *T*) of a morphological word such as V-v-T. If this morphological word is spelled out in *V*, we have a head-final OV order, but, if it is spelled out in *v*, we will have a head-initial VO order. We assume the latter for

English, following Chomsky (1995) among many others. This gives us the correct English order:

(70) Anson know - - - s Dierk

Crosslinguistic parametric variation in the spell out of morphological words can be expressed in the familiar way via a specification of the strength of a functional category. For example, T in French will be strong, and hence the morphological word containing the verb in French will be higher than in English.

The way that this system captures the clausal mirror in Kiowa is immediately obvious. If we take the particles to be specifiers of the complement projection line, we have:



The particles, as specifiers, precede their heads. Similarly, arguments precede the heads that introduce them. Assuming that the verb is spelled out in V, we have the following order:<sup>5</sup>

(72) Part<sub>Evid</sub> Part<sub>Mod</sub> Part<sub>Asp</sub> Subject Object V-v-Asp-Mod-Prt

Since the verb forms a single morphological word, it is impossible to interrupt the suffix sequence. The mirror order is trivially captured, as is the base ordering of Subject and Object in their information-structurally neutral low position (preparticular placement can be captured by leftwards movement operations, such as those affecting *Anson* above; see chapter 5).

Mirror Theory appears almost to be designed to capture effects like the clausal mirror, so easily is it derived. However, thus far, the system is little different in coverage from the head-final or roll-up systems explored above. So, we now turn to derivation of the inverse base effect.

<sup>5</sup>The structure ignores the agreement prefix, which we take to be a clitic cluster attracted to the position before the verb. Its ordering relative to other elements of the sentence proceeds according to other principles. See section 4.5.3 below.



In Brody and Szabolcsi (2003: 36–37), the following corollary of Mirror Theory is investigated:

(73) **Mirror Corollary**

If the morphological relation is unspecified (*e.g.*, for an abstract head), then the syntactic relation could be specifier or complement

That is, whereas an affix that is morphologically specified as a suffix forces a specifier syntax, if an affix is unspecified as to its morphological status, it is possible to correlate it with either a syntactic specifier, or a syntactic complement structure.

To see how this follows from Mirror Theory, let us return to the Hungarian examples above (57)–(58):

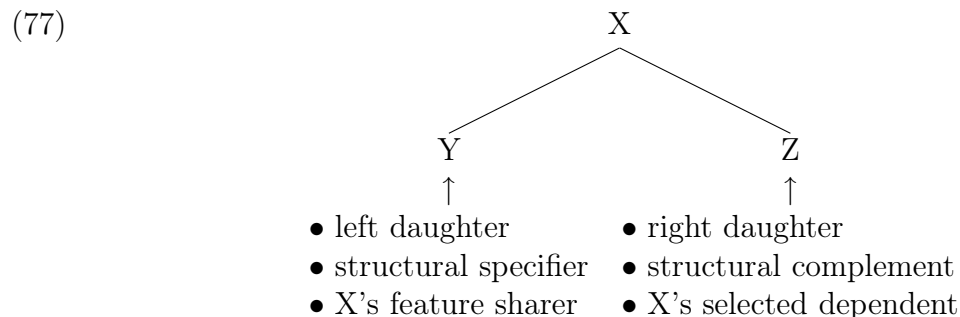
(74) Minden ember    kevés filmet    nézett meg  
 every    man.NOM    few    film.ACC    viewed PRT  
 ‘For every man, there were few films that he viewed’

(75) Kevés filmet    látott minden ember  
 few    film.ACC    saw    every    man.NOM  
 ‘For every man, there were few films that he saw’

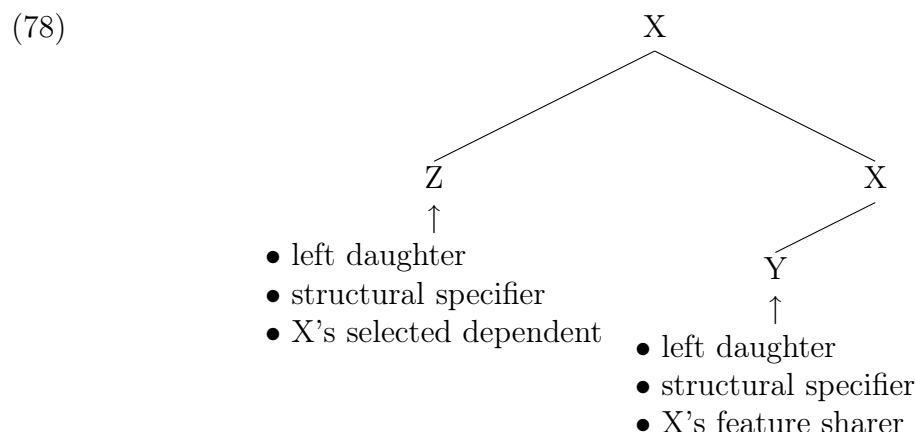
Brody and Szabolcsi argue that universal quantifiers appear in the specifier of a head they term Dist, while quantifiers like ‘few’ or ‘exactly six’ appear as specifiers of a head they notate as F. Dist is hierarchically superior to F, so (74) has the representation below:



A crucial notion in Mirror Theory is the separation of *structural* and *interpretive* notions of complement and specifier. The structural notions of ‘specifier’ and ‘complement’ are simply left daughter versus right daughter. The interpretive notion of a specifier is as a feature sharer with its head, while the interpretive notion of complement is as the selected dependent of the head:



The structural and interpretive notions of specifier always go hand in hand: the left daughter of a head is always a feature sharer with that head. However, for complements, the two notions may come apart, as there is a second Mirror-Theoretic representation with the same syntactic and hierarchical properties, but which induces a different linearization:



In Brody's system, a general constraint on feature sharing is that a category must be dominated by the category with which it shares features. Z, the higher left daughter in (78), is not so dominated, as only a single segment of X contains it. Thus, only Y, the lower of the specifiers is an interpretive specifier. Z is, therefore, interpreted as the selected dependent. Importantly, though, it is not a right daughter, so here the notions of structural complement and selected dependent come apart in (78)—they do, of course, coincide in (77).

The structures above are not in free alternation. Recall that Mirror (61) states a homomorphism between the structural complement relation in the syntax and the specifier relation in the morphology: if Y is a morphological specifier of X, then Y is a syntactic complement of X. Thus, whenever X is 'morphologically active' (*i.e.*, has a morphological exponent), only the structure in (77) is available. Matters are different, however, when X is not morphologically active (*i.e.*, lacks a morphological exponent). In this case, X has no morphological specifier and so Mirror does not impose a structural complement relation on the syntax (it applies only vacuously). So, both (77) and (78) are available, as both satisfy all other conditions, such as syntactic selection and syntactic feature sharing.

Let us now apply this to (76). A necessary condition for being a structural specifier is to share features with the projecting head. In the case of Dist and 'every', this relation is straightforward, since 'every' is a distributive quantifier and Dist is the distributive head. The representation in (76) yields the correct scope relations on the assumption that scope follows syntactic dominance: F is contained within the Dist node and 'every' c-commands F, and hence 'few', correctly capturing the scope. Moreover, the corresponding linearization is also predicted: since 'every' is the specifier of Dist, F is the complement of Dist, and 'few' is the specifier of F,

it follows that ‘every’ precedes ‘few’ as well as scoping over it.

However, the alternative Mirror-Theoretic representation is also available as Dist, like all scopal heads in Hungarian, is morphologically inactive. This representation has the same syntactic and hierarchical properties but induces a different linearization:



In this tree, ‘every’ is still the specifier of Dist, as it shares features with Dist. Yet this structure has a second specifier of Dist, namely F. Both *every* and F are left daughters of segments of Dist. In terms of linearization, then, we have the opposite order from the case where structural complementhood and interpretive complementhood line up. In terms of scope, however, as there is no command relation between the two quantifiers, the sentence is scope ambiguous.<sup>6</sup>

With this in hand, we turn to derivation of the overttness ordering relation (56) in Kiowa.

#### 4.5.2. Deriving the generalizations

There is a clear connection between the scope and order facts of quantifiers in Hungarian and the overttness ordering relation in Kiowa. In Hungarian, the morphological inactivity of F and Dist permits quantifiers to be linearized on either side of the verb. In Kiowa, morphological inactivity of the argument introducing heads permits arguments to be linearized pre- or postverbally, and similarly for non-selective particles. Selective particles, by contrast, are specifiers of morphologically active heads (their suffixes) and so must precede them. We show how this analysis works below and turn, in section 4.5.3, to the agreement prefix, which might at first blush be taken as evidence that the argument introducing heads are morphologically active.

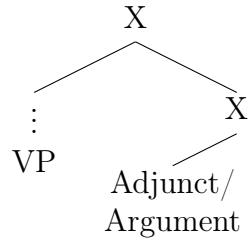
We begin with arguments, temporal and other adjuncts, and non-selective particles. All these elements introduced as the specifiers of heads that are morphologically inactive (have no exponent). For these, the following pairs of structures are generated:




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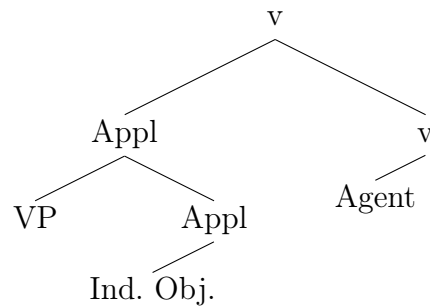
<sup>6</sup>The notion of command that Brody and Szabolcsi develop is actually one of feature-command rather than structural c-command; this is irrelevant for our purposes.

(81)



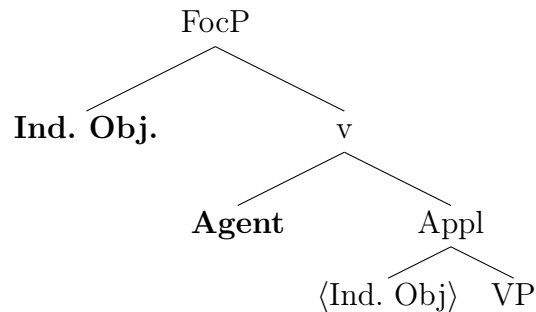
As is apparent, these structures allow optional preverbal or postverbal ordering for arguments and adjuncts. If there are multiple postverbal elements, say an agent, introduced by *v*, and an indirect object, introduced by *Appl*, then the hierarchical organization  $v \gg \text{Appl}$  is preserved, but the linear order reversed:

(82)



On the standard assumption that movement is upwards and leftwards, preverbal ordering will be able to be disrupted by movement, to some higher focus or topic position, say:

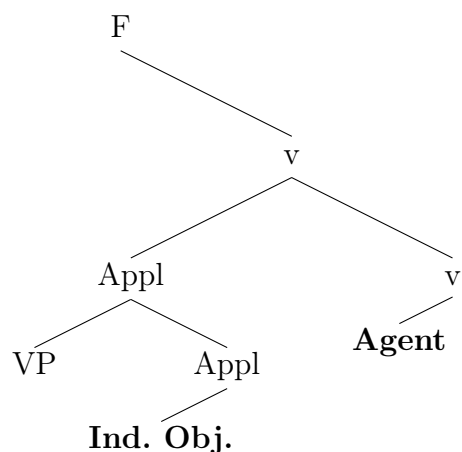
(83)



However, there is no way to reorder postverbal elements without making them preverbal. The upwards-and-leftwards nature of movement means that there are no postverbal landing sites.

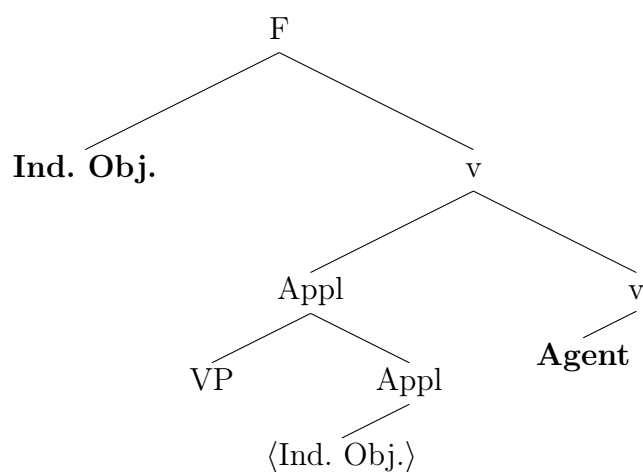
To make this clearer, consider the following derivation. First, an attracting category is Merged with (82)—

(84)



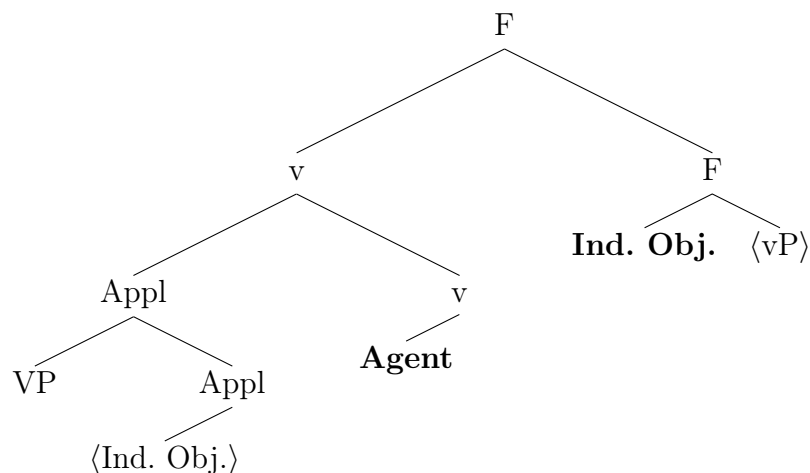
—and we suppose that the category attracts the lower argument:

(85)



Now, the only way to create an order where the Indirect Object is postverbal, and follows the Agent, would be to attract the remnant vP to some higher position. To create this structure, we could try to Merge in another segment of F, thus recreating the structure that allows postverbal elements. Doing this involves Merging a second instance of F and moving the remnant vP to the specifier of F:

(86)



However, this second movement is impossible under Mirror Theory: attraction requires feature sharing, but the higher left daughter is not dominated by F (since only one segment of F dominates the remnant vP). More generally, Mirror Theory will only allow the reversal of specifier and complement discussed above in base-generated constructions. It follows that all of the postverbal elements in Kiowa are base generated. This idea will be important in the next chapters.

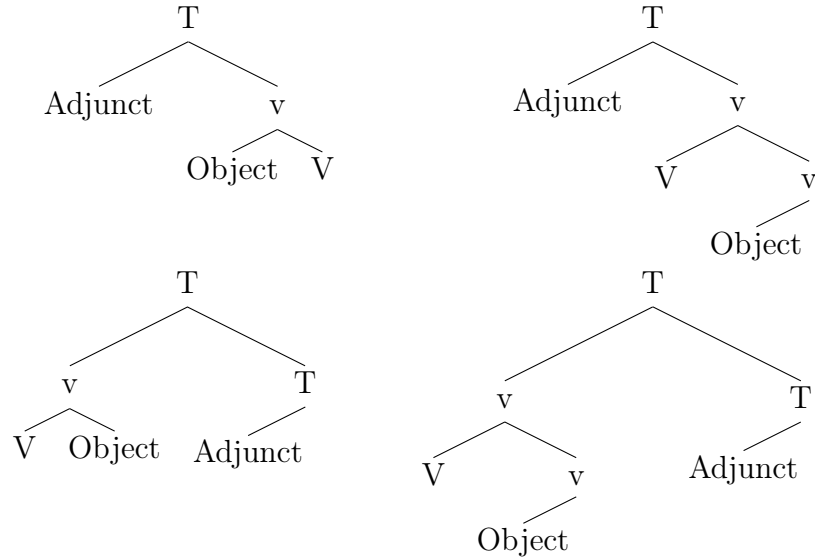
To complete the account of the inverse base effect, observe that the same mechanisms account for restrictions on argument–adjunct ordering in the postverbal domain. We illustrate with a direct object and a temporal adjunct. Merger of the object yields the following possibilities:

(87)



Subsequent Merger of the temporal adjunct yields:

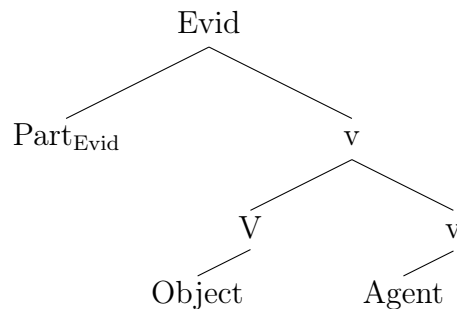
(88)



Note that these trees are not derived via movement on Brody's system (although they bear a marked resemblance to remnant-moved structures): they are base generated structures which are available precisely because there is no suffix to force a mirroring effect. Once again, postverbal reordering is impossible, for the reasons as given above.

These structures can themselves be embedded in higher functional structures. The verb root will still form a morphological word with the higher categories, as the higher specifier functions as the structural complement, which is the domain of morphological word formation. In other words, because the morphological structure of the complex verb is read off the functional spine, postverbal elements, just like preverbal ones, do not intervene. For concreteness, consider a sentence with a selective particle and a postverbal subject:

(89)



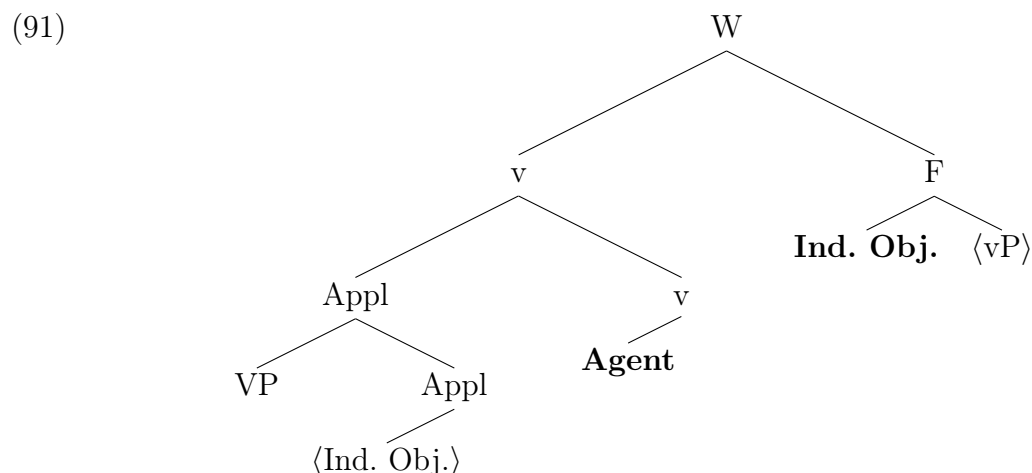
This induces the linearization:

(90) Part<sub>Evid</sub> Object V-v-Evid Agent

More complex orders and suffix combinations are produced analogously.

An important question is whether, on this approach, we should afford a role to roll-up heads in addition to the Mirror-Theoretic mechanisms. An alternative

derivation for (86), allowing violation of the inverse base effect, would be to Merge some new head *W*, distinct from *F*. *W*, here, has the roll-up property, that is, it attracts to its specifier some part of the sequence of functional projections that it belongs to. *W* could then attract the remnant *vP* allowing reversal of the ordering of elements postverbally:



This resurrects the problem that we encountered in the roll-up movement analysis: extra heads permit extra, unattested word orders. So, there is clearly no *W* head in Kiowa.

The question is whether *W* is unavailable as a matter of Kiowa-specific parametrization, or whether such heads are absent from UG *tout court*. This question can be understood in two ways: either *W* has semantic content, or it is there purely for reasons of word order (Kayne 1998: 150). Clearly, semantically contentful *W* is not to be ruled out, as it is exploited in some languages (as in VP topicalization in English, where *W* is a kind of topic projection). However, the role that semantically vacuous *W* plays in roll-up analyses is replaced by the more restrictive Mirror-Theoretic apparatus. This allows us to dispense with roll-up movement as the driving force behind clause structure and word order variation. If we accept the force of Chomsky's (1995: 349ff) arguments against the existence of semantically vacuous heads, we are not merely allowed, but forced, to do so.

### 4.5.3. The agreement prefix

A subject that we have not addressed in any of the theories examined above is the formation of the agreement prefix. In the previous chapter, we adopted a view of argument structure that depends on the argument introducing heads *v* and *Appl*, following Adger and Harbour (2007). In that paper, it was argued, first, that, in addition to a verb-phrase-external Case assigning head (*Asp*), the verb-phrase-internal argument introducing heads are also Case assigners, and, second, that Case assigning heads receive the  $\varphi$ -features of the arguments to which they assign Case.



Following Chomsky (2000, 2001), we term the  $\varphi$ -features of the Case assigners *uninterpretable* and notate them as  $u\varphi$  (Pesetsky and Torrego 2001). It is the spelling out of these copied  $\varphi$ -features that was argued to create the agreement prefix. If we attempt to implement this blindly in Mirror Theory, several problems arise: we wrongly predict that the agreement prefix should be suffixal and arguments, immobile. However, these problems can be simply resolved by treating the agreement prefix as a clitic cluster, as explained below.

To begin with, consider the Case and agreement relations. For simplicity, we confine attention to a simple transitive sentence:

- (92) Nóó dóí            g: ya-thó- m  
       1    medicine 1s:3s-drink-PF  
       ‘I drank the medicine’

Initially, Verb and Object are merged, followed by  $v$ , which has uninterpretable  $\varphi$ -features. For convenience, we do not analyze the feature structure of these bundles (see Adger and Harbour 2007, Harbour 2007), but use the same abbreviations as in the glosses:

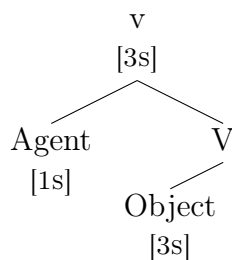
- (93)
- $$\begin{array}{c}
 v \\
 [u\varphi] \\
 \swarrow \quad \searrow \\
 \quad V \\
 \swarrow \quad \searrow \\
 \text{Object} \\
 [3s]
 \end{array}$$

Immediately on Merger of  $v$  into the structure,  $v$ 's uninterpretable  $\varphi$ -features are valued as those of the Object:

- (94)
- $$\begin{array}{c}
 v \\
 [3s] \\
 \swarrow \quad \searrow \\
 \quad V \\
 \swarrow \quad \searrow \\
 \text{Object} \\
 [3s]
 \end{array}$$

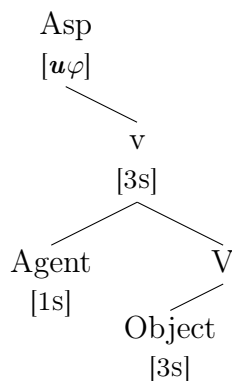
Next, the specifier of  $v$  is Merged:

(95)



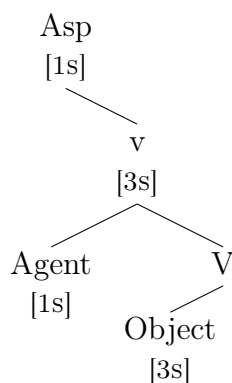
And last, Asp is Merged with its uninterpretable  $\varphi$ -features:

(96)



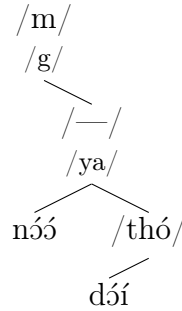
Again, immediately on Merger, the uninterpretable  $\varphi$ -features of Asp are valued. We assume that such valuation targets the nearest source of  $\varphi$ -features, which (excluding the uninterpretable features on v), are provided by the Agent.

(97)



Ignoring higher clause structure, irrelevant to the current example, let us consider how this tree would be pronounced. We take as vocabulary items the segmentation in (92). Inserted into (97), this yields:

(98)



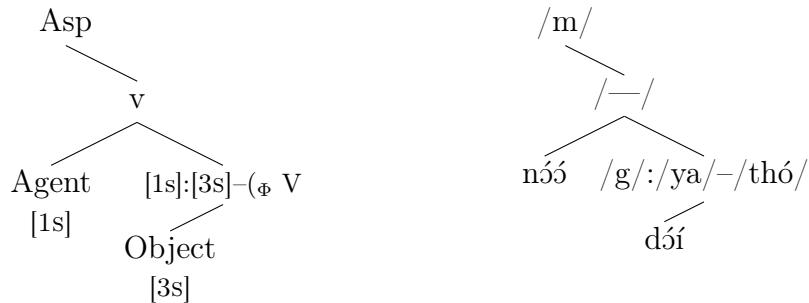
Linearizing this yields the correct constituent order (Agent Object Verb), but the incorrect structure for the verb:

- (99)    nóó dóí            **thó-** *ya*—*-g-* **m**  
          1    medicine drink-1S-v-    3S-pf

The problem with (99) is that the constituents that should comprise the agreement prefix (in italics) are interspersed with the verbal suffixes (in bold). Not only does this mean that they are on the wrong side of the verb, but also that they are wholly integrated into it. Both results are wrong.

The starting point for a solution is the observation, established in chapter 1, that the prefix and verb are only partially phonologically integrated (pp. 22–24). We suggest that the left edge of the verb defines a phonological boundary and that the phonological realization of the  $\varphi$ -features are attracted to this boundary. That is, we suppose that the morphemes that realize the  $\varphi$ -features are akin to prosodic clitics (*cf.* Harbour 2003) in being attracted to a phonological domain (Halpern 1995). This then gives us the following representations, where the phonological boundary is represented by ‘( $\Phi$ )’:

(100)



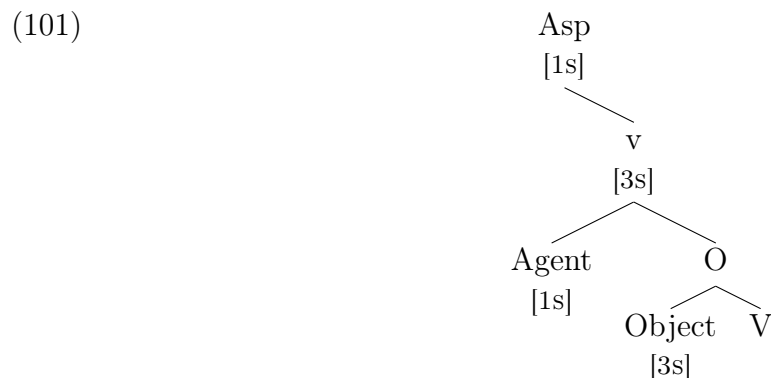
This linearizes correctly as (92). Observe that we assume that the the clitic cluster in front of the verb preserves the order of the functional heads that introduce them. We believe that this as the default position and that one would have to present arguments for the view that such processes should transform the hierarchically imposed order (*cf.* also Hale’s 2001 analysis of the Navajo preverb).

This analysis raises a question. If the  $\varphi$ -features count as realizations of the argument introducing heads, then we might take these heads to be morphologically

active, which would no longer allow variation between preverbal and postverbal linearization of their specifiers. However, we are forced away from conclusion by two factors. On the syntactic side, the  $\varphi$ -features do not constitute the semantic content of the argument introducing heads, and, crucially, the  $\varphi$ -features are not included in the feature sharing relationship between the specifier and the head: the  $\varphi$ -features of  $v$ , say, are valued, not by the specifier of  $v$ , but by the specifier of its complement, that is, by the indirect or direct object (see Adger and Harbour 2007 for detailed discussion of how this works). Therefore, these  $\varphi$ -features do not have syntactic specifiers. Additionally, they are neither syntactic selectors nor dependents. As a result, they are never in structural complement relations and so they are things to which the syntactic side of Mirror never applies.

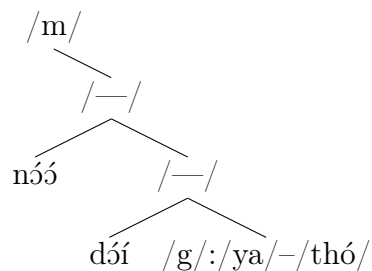
On the morphological side, the  $\varphi$ -features are prosodic clitics, rather than morphological affixes (specifiers). The morphological side of Mirror is therefore also inapplicable. It follows that the constituents of the agreement prefix escape the effects of Mirror altogether. This means that these  $\varphi$ -features cannot affect the linearization of the arguments that appear as specifiers of the argument introducing heads. So, the argument introducing heads are indeed morphologically inactive.

However, a new, but easily remedied, problem arises with respect to linearization of the object. In contrast to  $v$  and Appl, the head that introduces the direct object,  $V$ , is indeed morphologically active, since  $V$  hosts suffixes. This entails that the the object should be linearized preverbally and that postverbal objects should be unacceptable. If, however, we adopt the idea that the object, like the other arguments, is introduced by a functional head (Marantz 2001, Borer 2005, Ramchand 2008), which, just like the other argument introducing heads, is never realized, then the preverbal/postverbal linearization of the object follows. If we call the object introducing head  $O$ , the resultant phrase structure for a transitive sentence is:



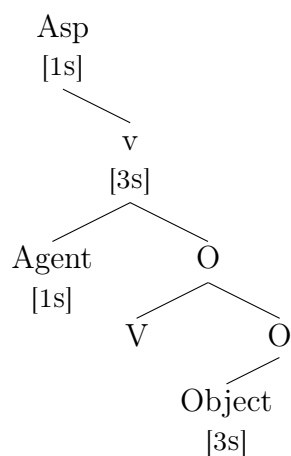
Instantiating this structure for (92), we have:

(102)



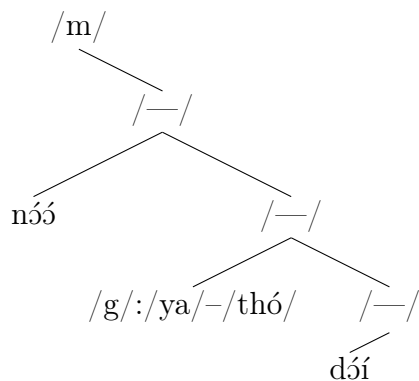
Since neither *v* and *O* are ever morphologically active, the structural relations can be instantiated so as to yield a postverbal subject or object. For instance, if *V* is the left daughter (*i.e.*, structural specifier of the higher segment) of *O*, we have the following structure:

(103)



Instantiated for (92), after clitic movement, we have:

(104)



This linearizes to yield a postverbal object:

- (105) Nɔ́ɔ g: ya-thó- m dɔ́í  
 1 1s:3s-drink-PF medicine  
 ‘I drank the medicine’

#### 4.6. Conclusion

Mirror Theory provides an understanding of Kiowa clause structure that is a considerable improvement on the other approaches considered above: head finality, and head initiality with and without roll-up. It readily accounts both for the clausal mirror and the inverse base effect, and, correctly, permits reordering in the preverbal domain whilst forbidding it in the postverbal domain. Moreover, it explains why the possibility of postverbal occurrence is confined to those elements that are excluded from the clausal mirror: the heads that introduce them are not morphologically active and so do not determine linearization.

Classically nonconfigurationality, according to which arguments (and many adjuncts) may be freely ordered, omitted or split, may seem to make Kiowa too lissom a language for specific clausal positions to be pinned down. However, in light of the analysis offered above, we have now afforded it a well-constrained syntactic analysis, according to which it shares much clausal architecture with other, better studied languages, and this gives us considerable traction with which to proceed in subsequent chapters.

# Chapter 5

## Interface Properties of Clausal Domains

### 5.1. Introduction

In the previous chapters, we established a functional hierarchy and a theory of phrase structure that explains many facts about constituent and morpheme order in Kiowa. Amongst these was an account of rigidity of order in the postverbal domain. What we have not explained so far is the freedom of word order in the preverbal domain (*i.e.*, the entire stretch of the sentence before the verb, including material which occurs before and after the particles). We suggest in this chapter that this freedom arises via movement (from the site of base generation inside the verb phrase) and that such movement is broadly motivated by information-structural considerations. We will see that, in contrast to postverbal elements, some preverbal DPs can be construed as being moved to their surface position. For those that are so moved, that position correlates with special information-structural status.

However, closer inspection of one of these apparent targets of movement (the *wh* position) reveals a semantically consistent set of constraints. Curiously, exactly the same set of constraints holds of postverbal elements, a fact which is surprising given the deep syntactic differences between these positions. Their explanation is the topic of the next chapter.

In section 5.2, we apply the theory of the last chapter to show how selective particles and *wh*-movement permit the identification of the higher functional domain of the clause. We further show that preparticular elements have special information status, while postparticular but preverbal elements appear to be informationally neutral. Completing our information-theoretic map of the clause, we also show that postverbal elements are ‘evoked’, in Prince’s (1992) sense and that they cannot be contrastive or informationally new. However, we show, more significantly, that elements in this position play a discourse-structural role of rounding off a segment of the discourse. Finally, in section 5.3, we motivate the generalization that one and the same class of semantic elements, which includes focus-marked elements and

bare quantifiers, is forbidden both from the extreme left and right peripheries of the Kiowa clause.

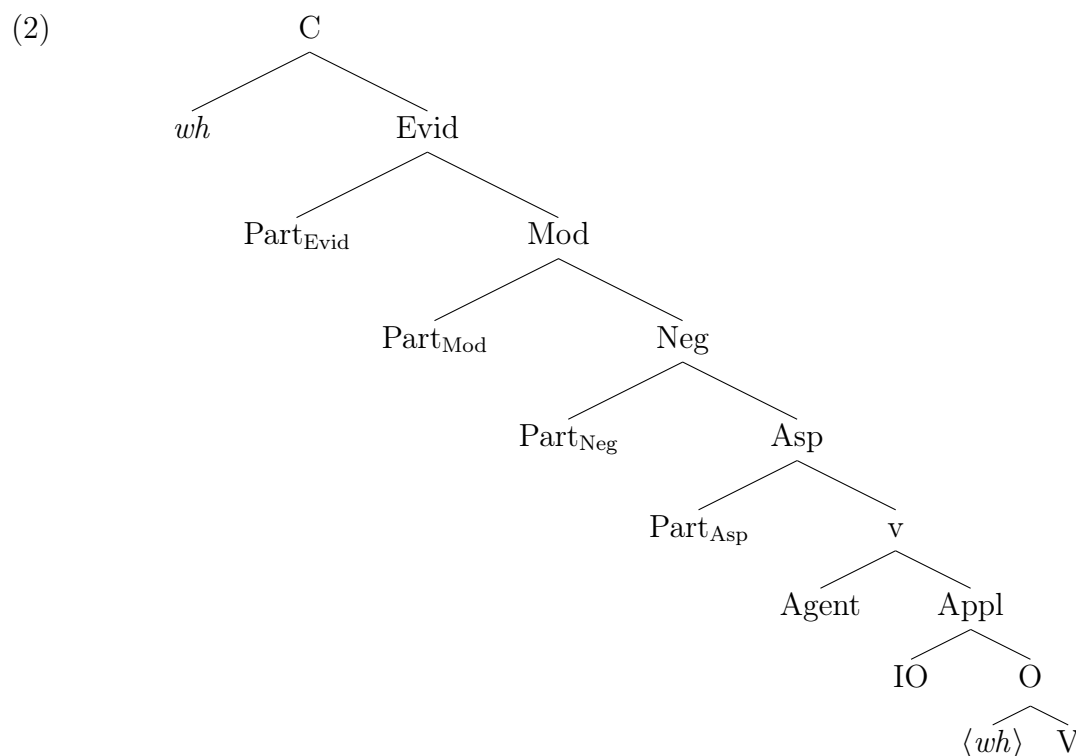
## 5.2. Higher clause structure

We have shown that selective particles, such as the mirative **béthɔɔ** and habitual **an**, occupy fixed clausal positions and we have identified these positions with functional heads in the Cinque Hierarchy. If we take stock of the heads that have been so identified, we realize that they stretch from the upper reaches of the T domain (*e.g.*, **béthɔɔ**) down to the lower aspectual domain (*e.g.*, **an**). This entails that elements positioned to the left of **béthɔɔ** and other evidential particles are in the C domain, while elements to the right of **an** and other aspectual particles are in the argument domain.

### (1) Clausal domains

*C Domain*   **Particles**   *Argument Domain*   **Verb**

Structurally (and momentarily ignoring issues of semantic felicity of categorial cooccurrence), we can represent this as (2), assuming, for concreteness, that the *wh*-element is the internal argument of the verb:



In languages like English, it is usual to posit also a T domain, the locus of EPP checking and the target of obligatory argumental A-movement. However, Adger and



Harbour (2007) argue that Case licensing of arguments in Kiowa occurs inside the vP, in tandem with agreement, an approach that makes it possible to derive a number of properties of the agreement prefix. Under this analysis, the T domain is, essentially, inactive in Kiowa and is not the target of A-movement: T<sup>0</sup> is morphologically null and serves only as the locus of temporal adverbials. It follows that movement targeting positions outside the vP cannot be A-movement, but must be some kind of A'-movement, either adjunction to higher phrasal projections or movement to operator-related positions in the C domain. We will argue below that obligatory movement of *wh*-elements is to an operator position, as shown in (2). We will show, further, that optional movements of arguments correlate with information-structural status. However, we remain neutral on the implementational question of whether such movement is feature-driven. That is, we do not take a position on whether information-structural properties are directly encoded via syntactic heads (to which arguments are attracted by specific features; Rizzi 1997), or whether such properties arise via general interface conditions (applying to structures in which arguments have been freely adjoined to functional projections; Neeleman and van de Koot 2008).

Consider first *wh*-movement. Ideally, we would show that this targets a position above the mirative, or, failing that, the modal particles. However, this is not semantically possible, as these particles represent epistemic stances incompatible with *wh*-questions: the particles express speaker attitude to propositions, but *wh*-questions are non-propositional. The highest particle usable in this regard, then, is negation (which is truth-conditional, rather than expressive of an epistemic stance). As expected given (2), *wh*-elements obligatorily precede negation. A representative example is given below (see chapter 2 for further examples):

- (3) Hôndó hón bat– pódô?  
 why.Q NEG 2S:3P-eat.NEG  
 'Why aren't you eating?'  
 (4) \*Hón hôndó bat– pódô?  
 NEG why.Q 2S:3P-eat.NEG  
 'Why aren't you eating?'

Given this, the obligatory nature of *wh*-movement can be understood, as in numerous more familiar languages, as feature-driven movement to the C domain.



Consider now optional argument reorderings. We already showed in chapter 2 that Kiowa displayed a great deal of freedom in preverbal argument order. The information neutral order is one where the agent precedes the indirect object, which itself precedes the object:

- (5) Séndé mæthoxóúhij mæklôn é– sôúhêl  
 Sende.AG coyote.IO nose.DO 3S:3S:3I-file.EVID  
 'Sende filed the coyote's nose'

However, as we also showed, this argument order can be disrupted. We give an example here where the object occurs before the agent; for other cases see chapter 2:

- (6) Hétó **thén**      **Séndé**      á–              góúbèi  
 still heart.**DO** Sende.**AG** 3S:3S:3S–miss.IMPF.EVID  
 ‘Still, Sende kept missing [the ogre’s] heart’

Recall, as we have argued at length, that Kiowa arguments cannot, in general, be Clitic Left Dislocated, so an analysis like Baker’s, which simply says that the freedom of argument ordering is to be attributed to the freedom one sees with adjunction, cannot be correct. Instead, the view adopted here is that arguments move to a higher position for information-structural reasons, an approach that is not open to Baker without predicting a rigidity of argument order that is not actually found, as argued in chapter 2. The way we will establish this is by using selective particles as clausal signposts: we will see that elements which occur before the particles have special informational status, while those that appear postparticularly, are informationally neutral. We will see, furthermore, that postverbal placement of arguments correlates with a specific discourse structure. In section 5.2.1, we develop the following descriptive generalizations concerning the relationship between clausal positions and information/discourse structure (see Harbour, Watkins, and Adger 2008 for more extensive discussion):

| (7) | <i>Preparticular<br/>Domain</i>                                                     | <b>Particles</b> | <i>Postparticular<br/>Domain</i> | <b>Verb</b> | <i>Postverbal<br/>Domain</i>                                                         |
|-----|-------------------------------------------------------------------------------------|------------------|----------------------------------|-------------|--------------------------------------------------------------------------------------|
|     |                                                                                     |                  |                                  |             |                                                                                      |
|     | contrast                                                                            |                  | neutral                          |             | discourse-old                                                                        |
|     | topic/focus                                                                         |                  |                                  |             | non-focus                                                                            |
|     |  |                  |                                  |             |  |
|     | <i>information-structural constraints</i>                                           |                  |                                  |             | <i>discourse-str.<br/>constraints</i>                                                |

Given that Kiowa has obligatory *wh*-movement to a preparticular position, *wh*-elements themselves further partition preparticular elements into two domains, pre-*wh* and post-*wh*. In section 5.3, we show that the pre-*wh* domain is subject to a variety of semantic restrictions, reminiscent of those that apply to Clitic Left Dislocated elements in Romance, and that the same restrictions apply also to the postverbal domain. Given the analysis of the previous chapter, according to which preparticular (and, hence, pre-*wh*) elements and postverbal elements are in distinct syntactic positions, this raises the question of why the same restrictions apply to different clausal domains. We argue in the next chapter that the commonality between these two domains is that elements cannot be moved into such positions and that this imposes semantic restrictions.

### 5.2.1. Information structure, discourse structure

As is well known, answers to *wh*-questions have a particular information-structure status: they are treated, essentially, as new information (see, *e.g.*, Vallduví 1994). In Kiowa, there is a marked preference for putting such answers before particles. However, postparticular placement is also possible as in the (b) example; what is not possible is postverbal placement:

- (8) Hâatêl an gɔ- gûugu?  
 who.Q HAB 3S:2S-hit.IMPF  
 ‘Who hits you?’
- a. Carl an é- gûugu.  
 Carl HAB 3S:1S-hit.IMPF  
 ‘Carl hits me.’
- b. An Carl é- gûugu.  
 HAB Carl 3S:1S-hit.IMPF  
 ‘Carl hits me.’
- c. \*An é- gûugu Carl.  
 HAB 3S:1S-hit.IMPF Carl  
 ‘Carl hits me.’

Similar observations hold for other varieties of focus. For instance, corrections have the same distribution:

- (9) Bethênde Laurel Ø- xánt!ɔɔ  
 unlikely Laurel 3S-arrive.MOD  
 ‘It’s unlikely that Laurel will come’
- a. Hóǵné, Daniel bethênde Ø- xánt!ɔɔ  
 no Daniel unlikely 3S-arrive.MOD  
 ‘No, it’s unlikely that *Daniel* will come’
- b. Hóǵné, bethênde Daniel Ø- xánt!ɔɔ  
 no unlikely Daniel 3S-arrive.MOD  
 ‘No, it’s unlikely that *Daniel* will come’
- c. \*Hóǵné, bethênde Ø- xánt!ɔɔ Daniel  
 no unlikely 3S-arrive.MOD Daniel  
 ‘No, it’s unlikely that *Daniel* will come’

Example (9c) shows that the only position in which the corrective element is unacceptable is the postverbal domain. Speakers readily assent to postparticular placement under elicitation. However, the preparticular domain is always the position of preference.

This constitutes the first piece of evidence that shows that the preparticular position is the position preferentially associated with new information status. The

availability of the postparticular domain would follow from its being neutral: it accepts elements with a special information status, but does not require them. The grammar affords two options to the speaker: a preparticular position which unambiguously signals a special information-theoretic status, or a postparticular position which is merely compatible with such a status.

Further evidence of this pattern comes from contrastive foci:<sup>1</sup>

- (10) K!yááhî gɔ maayĩ ɛ- héiba, ...  
 man CONJ woman 3D-enter.PF  
 ‘A man and a woman came in, ...’
- a. ... nɔ maayĩ hétó hón Ø- khiígôɔ  
 CONJ woman still NEG 3S-exit.NEG  
 ‘... and the woman still hasn’t left’
- b. ... nɔ hétó hón maayĩ Ø- khiígôɔ  
 CONJ still NEG woman 3S-exit.NEG  
 ‘... and the woman still hasn’t left’
- c. \*... nɔ hétó hón Ø- khiígôɔ maayĩ  
 CONJ still NEG 3S-exit.NEG woman  
 ‘... and the woman still hasn’t left’

Speakers regularly place such focused elements preparticularly in elicitation. However, as in (9), they readily assent to postparticular placement when presented with such examples, but postverbal placement is rejected.

A second kind of information-structural property of preparticular arguments is topicality, in the ‘aboutness’ sense discussed by Reinhart (1981). We found it difficult to apply Reinhart’s tests directly, because speakers felt such dialogues or questions to be culturally unnatural. However, it is possible to see the functioning of aboutness topics in discourse, and once again they tend to appear preparticularly. One such example occurs in a retort to someone’s overplaying the poverty of Jesus’ parents, making his mother sound more disorganized than impoverished. By the time of the retort, Jesus’ mother has already been mentioned in the discourse but was not the main topic. The retort, however, makes her the topic and so we find ‘his mother’ preparticularly:

- (11) Á-xɔɔ- de béthɔɔ hégó án- dôi-hî- khyakɔnhel  
 3- mother-D MIR just :3S:3P-too-REAL-incompetent.EVID  
 ‘I had no idea his mother was totally incompetent’

---

<sup>1</sup>The negative allomorph expected on the basis of Watkins (1984) is the intransitive non-stative **-yôɔ**, rather than **-gôɔ**, which is generally restricted to statives. There is a generational gap between the speakers with whom we worked and those, most particularly Dr McKenzie, with whom Watkins originally worked. It is possible that this allomorphic distinction has been neutralized for some speakers since then.

It is particularly interesting that the topic in this example precedes the mirative, the highest of the particles.

Generic statements provide further exemplification of preparticular aboutness, and, moreover, demonstrate postparticular neutrality. Generics are formed, in Kiowa, by use of the habitual selective particle **an**:

- (12) An mənkhóí Ø- ǵǵma dé-xo mós gya-dós  
 HAB tornado 3S-make.DETR.IMPF D-as like 3P-be  
 ‘It was like when tornados form’

As observed by Carlson (1977), generic sentences are ambiguous in ways related to the scope of the generic operator: for instance, *Hurricanes arise in this part of the Atlantic* can be taken as a statement that asserts the genericity of an entire situation (for the most part, hurricanes’ origins lie in the part of the Atlantic in question) or of a constituent of the sentence (if in the part of the Atlantic in question, you are likely to experience hurricane genesis). In Kiowa, this difference correlates with distinct syntactic configurations: in cases where the whole event lies in the scope of the generic operator, arguments of the verb stay low in the structure, in the neutral postparticular domain. (Such sentences are plausibly analyzed as having the spatiotemporal situation as the topic; see Erteschik-Shir 2007.) However, when an element is a discourse topic and operates as the subject of the generic predication, it occurs preparticularly, in the domain for topics.

Two examples of the correlation between low syntactic position of the arguments and wide scope of the generic operator are:

- (13) bôt an xô páá ét- gǵ- sôte-tô  
 because HAB thus some 3I:3P-night-work-act  
 ‘as some people are wont to work at night’
- (14) Yǵ- háígyádô xós an êlxq̣hyop gya- ɔn- pǵgyaa tóoba  
 :1S:3P-know thus HAB old women :3A:3P-foot-sound.IMPF quiet  
 gya-dós-ǵǵ  
 3P-be- when  
 ‘I know elderly women sound like that walking in moccasins when it is silent’

In their context of use, both sentences merely describe situations: how some people work, how moccasined old women sound. The context makes clear that neither of these is a sentence topic in Reinhart’s sense (see Harbour, Watkins, and Adger 2008 for further discussion).

By contrast, consider the following, which illustrate the correlation between high syntactic position of the arguments and narrower scope of the generic operator:

- (15) Hón gôm de— gúyñôw bôt khomtogó an ét—  
 NEG back 1S:REFL-throw.NEG because ghosts HAB 3I:3A—  
 photk!ûñei  
 cause facial distortion.IMPF.EVID  
 ‘I did not look back because ghosts can supposedly cause facial distortions’
- (16) ... xát an hábé phắk!u- heị dố— dố  
 door HAB sometimes lock- lay.P-PRIV :1D/P:3S-be  
 ‘... our doors were sometimes unlocked’

Both of these sentences were used in contexts where, respectively, ghosts and doors had received previous mention and are ongoing topics (again see Harbour, Watkins, and Adger 2008 for details of contextualization.)

Putting this information together, it appears that distortion of argument order from an informationally neutral Agent » Indirect Object » Direct Object involves movement of the informationally marked argument to some high position in the clause, generally to the left of the particles.<sup>2</sup>

The one area of the clause that we have not discussed as yet is the postverbal domain, which, as we saw in the last chapter, hosts base-generated arguments. As we have already shown, this part of clause structure does not allow new or contrastive information. Harbour, Watkins, and Adger (2008) argue that the postverbal domain is exploited primarily for discourse-structural effect. A typical example is the following:

I saw **a young woman** in the wagon. She was moving around and she must have seen me scalp **the white man** and so must have picked up an axe and charged at me, but I didn’t see her [coming]. She was coming from behind, I guess, and someone somewhere spoke up and said “Watch out!” I turned around and I saw *the young woman* and she hit me across the face, but I dodged and [the blow] grazed me and the blood came pouring down and I was blinded with blood and I let *the white*

---

<sup>2</sup> Leftward movement of the object is apparently degraded when it targets a position after the lowest selective particle **an**:

- (i) ?An xóí Carrie Ø— thónmɔ  
 HAB coffee.DO Carrie.AG 3S:3S-drink.IMPF  
 ‘Carrie usually drinks coffee’
- (ii) Xóí an Carrie Ø— thónmɔ  
 coffee.DO HAB Carrie.AG 3S:3S-drink.IMPF  
 ‘Carrie usually drinks coffee’

This is a somewhat inconstant effect but suggests that optional argumental movement preferably targets vP-external positions. This vP-external placement may sometimes be interparticular (see pp. 41f.). Such examples are not numerous enough for us to be able to comment on their information structure. However, they present no properties that lead us to question a movement-based account of their derivation.

*man* go and jumped up and the girl saw me and cried out in fear and she ran for the wagon and I managed to catch her and I stabbed her under the ribs and disemboweled her.

In this passage, the narrator relates an attack consisting of three phases: he scalps the white man and the young woman attacks him, catching him unawares; he describes the attack and its effects; he regains the upper hand and kills her. Each of these phases of the narrative is marked by a postverbal argument, indicated in the quotation by bold italics. In Kiowa, these are:

- (17) Gôm de- gún gɔ gya- **bóú yókóí**  
 back 1S:REFL-jump.PF CONJ 3S:3S-see.PF young woman  
 ‘I turned around and I saw the young woman’
- (18) Yǎ- óú- toigya nɔ gya- **móógúú t!ókhoók!íí** gɔ  
 :1S:3P-blood-blind.DETR.PF CONJ 1S:3S-release.PF white man CONJ  
 de- khîipɔ  
 1S:REFL-jump up.PF  
 ‘I was blinded with blood and I let the white man go and jumped up’

(Observe that the information-structural points hold: the postverbal arguments are not new information; the non-italic boldfacing indicates their prior occurrence.) Clearly, discussion of discourse analysis would divert us into a very different domain of data than has featured above. We therefore leave the reader with this brief exemplification and refer interested parties, once again, to Harbour, Watkins, and Adger (2008).

In addition to the information- and discourse-structural constraints above, we will see in the next section that significant restrictions, stemming from the syntax-semantics interface, are also operative in the postverbal domain.

We have thus shown that, in the absence of A-movement, the information- and discourse-structural properties summarized in (7) are the major factors in the surface placement of arguments in Kiowa. Preverbal placement, and other distortions of basic orders that result from Merge alone, can be straightforwardly accounted for by movement. We conclude this section by noting that this approach gives us, furthermore, a simple account of the derivation of split constituents: given that the Left Branch Condition is parametrized (see the discussion of Polish in chapter 2), we need only claim that Kiowa shares the same parameter setting as Polish in order to derive such spontaneous examples as splitting across a *wh*-expression:

- (19) **Éíde** hâatêl **k!ódál** á- dóó?  
 that who.Q car :3S:3S-be  
 ‘Whose car is that?’

—splitting across a verb:

- (20) **Páá-** al 3ókò Ø- p!éídehel **maayí**  
 some-too there 3S-appear.EVID woman  
 ‘Another woman appeared there’

—splitting across a particle:

- (21) **Éígo** áádò **étté** an **áboogo** e- d33  
 this tree many HAB apples 3I-be  
 ‘This tree produces a lot of apples’

—and splitting across an indefinite (observe that, in this example, the root noun precedes the quantifier):

- (22) **Kólbél** gya- m33khol- d33 háyá á- hóú- banma- xei, b3t  
 securely :3A:3P-ready.NV-be somewhere 3A-drive-go.IMPF-when because  
**kh33go** hábá **páá** an e- s33h33dép  
 cars somewhere some HAB 3I-ruin.DETR.IMPF  
 ‘When going to drive somewhere, be well prepared, because cars do at some point, some of them, go wrong’

The ease with which a movement analysis accommodates split constituents stands in contrast to the considerable difficulties faced by a CLLD-based analysis, such as that discussed in chapter 2. Since the apparent arguments in a CLLD-based account are in adjoined positions, further movement out of them is ruled out by the Condition on Extraction Domains (Huang 1982); in such an account, the subparts of the ‘split constituent’ must be linked by means other than mere Merge and Move. The varied and specialized mechanisms entertained by Baker may be warranted for Mohawk, where splits are, apparently, far less natural than in Kiowa. CED, however, does not bar movement from the specifier of arguments in their base positions and so such specialized mechanisms are superfluous here.

### 5.3. Semantic restrictions on clausal position

Recall that *wh*-elements are attracted to a specific functional projection. We can therefore treat *wh*-elements as yet another clausal signpost. This divides the preparticular domain into what we will term pre-*wh* and post-*wh* domains. Arguments rarely occur spontaneously in this position, but when they do occur spontaneously, as in (23), or under elicitation, as in (24), they appear to require clear ostension or prior establishment of the pre-*wh* element, suggesting a topic interpretation:

- (23) **Éíde** h3at3l **k!33d3l** á- d33?  
 that who.Q car :3S:3S-be  
 ‘Whose car is that?’



- (24) Éígútk!o hâatêl yí ɛ- hân?  
 biscuit who.Q two 3S:3D-devour.PF  
 ‘Who ate two biscuits?’

In this section, we establish that there is a class of elements that is excluded from the pre-*wh* domain. This comprises focus-marked elements, bare quantifiers and *wh*-elements themselves. We will also show that the same class is excluded from postverbal placement. We call this the *anti-quantification effect* and it is a striking result given our Mirror-Theoretic account of Kiowa, as this entails that the two domains correspond to distinct and distant portions of clause structure. In the remainder of the chapter, we illustrate this effect, beginning with focus-marked elements and proceeding to bare adnominal modifiers, such as quantifiers, numerals and demonstratives. We conclude with a discussion of *wh*-elements themselves. Explanation of the effect is left until the next chapter.

### 5.3.1. Focus marking

By focus-marked, we mean nouns suffixed with **-deki**, **-gɔki**, **-kɔ́** ‘only’ and **-al**, **-x!al** ‘too’. In the following two paragraphs, we briefly describe the categorial restrictions of these suffixes, before turning to the positional possibilities and, then, the positional restrictions of noun phrases in which they occur.

Of the focus markers meaning ‘only’, **-kɔ́** is restricted to nominal modifiers:

- (25) háote- kɔ́ / yí- kɔ́  
 several-only two-only  
 ‘only a few/two’

The other two forms of ‘only’ are used for nouns, with **-deki** usable on any noun (whether inverse marked or not) and **-gɔki** being restricted to nouns with inverse marking. This means that use of **-gɔki**, if possible, is always optional:

- (26) áá- deki/\*gɔki / k!áál- deki/\*gɔki  
 sticks-only only.I dishes-only only.I  
 ‘only sticks/dishes’
- (27) áádɔ- deki/gɔki / k!ááttɔ- deki/gɔki  
 sticks.I-only only.I dishes.I-only only.I  
 ‘only a stick/dish’

The ‘also’ focus particles also exhibit overlapping distributional patterns, though the restrictions are different from those affecting ‘only’: **-al** may occur on any noun phrase, **-x!al** on any except deictics, interrogatives and bare quantifiers:

- (28) nɔ́-(x!)al / ám-(x!)al / óíde-(x!)al  
 1- also 2- also that-also  
 ‘me/us too, you too, he/she/it/them too’

- (29) Hàatêl-(\*x!)al a- khûu-k!yaltô?  
 who.Q- also 2S:3S—meal-invite.MOD  
 ‘Who else will you invite to eat?’
- (30) Hó kôl- (\*x!)al?  
 Q some-also  
 ‘Some more?’

There is no obligatory movement of focus-marked DPs in Kiowa (as there is for *wh*-elements):

- (31) Béthôo nóó-deki bá- ôotôobei  
 MIR 1- only 2P:1S—wait.IMPF.EVID  
 ‘I didn’t realize you were all waiting for me’
- (32) An thóú- deki gya- thónmô  
 HAB water-only 1S:3S—drink.IMPF  
 ‘Usually, I only drink water’
- (33) Hétó hón pái- al ∅- bódôô  
 still NEG sun-also 3S—appear.NEG  
 ‘The sun wasn’t even up yet’
- (34) Háýátto ám-al gô- k!yáltóó  
 maybe 2- also 3A:2S—invite.MOD  
 ‘You might be invited too’

In the preceding examples, focus-marked expressions occur to the right of particles. However, leftwards movement across particles is also possible:

- (35) Thóígôxan hón an Kyâigu é- bôúmmô. Kóígu- deki an dó-  
 Daniel NEG HAB Comanches 3S:3I—see.NEG Kiowas-only HAB 3S:1P-  
 bónmô.  
 see.IMPF  
 ‘Daniel doesn’t usually see the Comanches, he usually sees only us Kiowas’
- (36) “Nóó-al an k!yááhyóp de- hânmmô, óógô ám-al an bé-  
 1- also HAB man.I 1S:3A—devour.IMPF REL 2- also HAB 2I:3A-  
 hâaneí dé-xo.”  
 devour.IMPF.EVID D- as  
 ‘‘I too devour humans, just as you do.’’

Indeed, constructions with multiple focus marking are possible (though, during the elicitation process, these were set up so that one element was secondary focus, *i.e.*, repeated from an earlier utterance):

- (37) (An) John-deki (an) óópíídó-al (an) é- pótto  
 HAB John-only HAB fish- also HAB 3S:3I-eat.IMPF  
 ‘Only John also eats fish’

Furthermore, it is possible to combine a focus marked DP with a *wh*-question. In such cases, the *wh*-word itself may be focus marked, as in (29)–(30), or some other constituent may be:

- (38) Hàatêl phítthóú-deki an Ø- thónmɔ?  
 who.Q beer- only HAB 3S:3S-drink.IMPF  
 ‘Who drinks only beer?’
- (39) Hôndé Carrie-deki án- háígyádɔɔ?  
 what.Q Carrie-only :3S:3P-know  
 ‘What does only Carrie know?’
- (40) Hàatêl kí- al bat- ôɔmɔ?  
 who.Q meat-also 2S:3A:3P-give.IMPF  
 ‘Who will you also give meat to?’

However, in sentences containing both a *wh*-expression and a focus-marked element, the focus-marked element cannot come first:<sup>3</sup>

- (41) \*Phítthóú-deki hàatêl an Ø- thónmɔ?  
 beer- only who.Q HAB 3S:3S-drink.IMPF  
 ‘Who only drinks beer?’
- (42) \*Carrie-deki hôndé án- háígyádɔɔ?  
 Carrie-only what.Q :3S:3P-know  
 ‘What does only Carrie know?’
- (43) \*Kí- al hàatêl bat- ôɔmɔ?  
 meat-also who.Q 2S:3A:3P-give.IMPF  
 ‘Who will you also give meat too?’

The postverbal domain is, similarly, an unacceptable position for focus-marked

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<sup>3</sup>For reasons of documentary completeness, we note that focus-marked elements may precede either of the particles that mark polarity questions.

- (i) Phítthóú-deki hó Ø- hóggya?  
 beer- only Q 3S:3S-get.PF  
 ‘Did he get only beer?’
- (ii) Phítthóú-deki hó-tôm Ø- hógghel?  
 beer- only Q- EVID 3S:3S-get.EVID  
 ‘Did he reportedly get only beer?’

From our perspective, the marker of polarity must then be lower in the clause than the position to which *wh*-expressions move.

elements:<sup>4</sup>

- (44) \*Khíidêl Ø- xán John-deki  
yesterday 3S-arrive.PF John-only  
'Only John arrived yesterday'
- (45) \*Klyááhyóp gyá- pɔɔgya kíí- deki  
men 3A:3P-eat.PF meat-only  
'The men ate only meat'
- (46) \*Khíidêl Ø- xán John-al  
yesterday 3S-arrive.PF John-also  
'John too arrived yesterday'
- (47) \*An gyat- pótto kíí- al  
HAB 1S:3P-eat.IMPF meat-also  
'I eat meat too'

We have, therefore, established the generalization that focus-marked DPs are barred from pre-*wh* and postverbal positions.

### 5.3.2. Adnominal elements

The second set of elements barred from pre-*wh* and postverbal positions are bare adnominal modifiers. In the subsection immediately below, we first look briefly at the inventory of adnominal elements in Kiowa, and, in the subsequent subsection, examine their distribution in clause-peripheral positions.

#### *Adnominal inventory*

The inventory of (potentially bare) adnominal elements includes quantifiers (**téí** 'all', **étté** 'many', **háote** 'several', **páá** 'some/one', **kôl** 'some/any'), numerals (**páágɔ**,

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<sup>4</sup>One text contains a potential counterexample, a postverbal DP-**x!al**:

- (i) Mɔɔsɔ Ø- dʒɔmêi- de poi Ø- kíidêi gɔ yííkyá ɔ- ii-  
crow 3S-be.IMPF.EVID-NOM again 3S-live.IMPF.EVID CONJ four :3S:3I-child-  
dʒɔmêi ɔ́íhɔ-x!al  
be.IMPF.EVID that-also  
'A crow also lived [there] and he also had four sons'

In the absence of a voice recording of this text (which was transcribed by Dr McKenzie in the 1940's), it is hard to be sure that **ɔ́íhɔx!al** is a genuine postverbal constituent, rather than an extrasentential afterthought. If it is genuinely postverbal, we might hypothesize that the generalization below concerns only **-al** and that **-x!al** has a subtly different semantics, connected with its more restricted distribution, that exempts it. Alternatively, **-x!al** is in a high position where it scopes over the entire clause (*cf.* example (72) on p. 24). We have not investigated the distribution of **-al** versus **-x!al** on clauses. We leave this for future research.

yí, phááo, ‘one’, ‘two’, ‘three’ and so on) and demonstratives (éí(hə)de/gə ‘this, these’, óide/gə ‘that, those’, íí(hə)de/gə ‘that, those’).

Note that there are no negative quantifiers. Rather, the effect of negative quantification is achieved via (i) the negative particle **hón**, (ii) often, though not obligatorily, the indefinite quantifier **kól**, and (iii) an appropriate *wh*-indefinite, such as **hóndé** ‘something/someone’, **hágyá** ‘when/where’, or a normal nominal:

- (48) Háoi            Ø- ñi-    ʔaniikya-            de hón (kól) háátèl    é-  
when.INDEF 3S-again-come.IMPF.MOD-D NEG some someone 3S:1S-  
tédôô  
tell.NEG  
‘No one has told me when he’s coming back’
- (49) Hón kól k!ʔɔdɔ hágyá dé- mãa- hʔanɔɔ  
NEG some tomatoes sometime 1S:3I-indeed-devour.NEG  
‘I certainly didn’t ever eat any tomatoes’
- (50) Hón hágyá    hóndé    gɔ-    hóúgûutɔɔ  
NEG sometime someone 3S:2S-kill.NEG.MOD  
‘No one will ever kill you’

Observe, incidentally, that the verbs in the previous sentences bear negative suffixes, so that the particle **hón** behaves as in non-quantificational examples.

### *Quantifiers*

The generalizations previously established for focus-marked elements hold equally for bare quantifiers. That is, they are acceptable preverbally (pre- and postparticulary):

- (51) Béthɔɔ téi gyát-    pəkhɔɔ-    dʔɔmèi  
MIR    all :1P:3P-provided-be.IMPF.EVID  
‘I didn’t realize we got everything we want’
- (52) Étté an    gyá-    məheɨmɔ  
many HAB 3A:3P-teach.IMPF  
‘Many are teaching it’
- (53) Hó kól    bat-    póltɔɔ?  
Q    some 2S:3P-eat.MOD  
‘Will you eat some?’

But unacceptable postverbally:

- (54) \*An    gyat-    bôu-    kʔɔtɔɔmɔ téi  
HAB 1S:3P-always-sell.IMPF    all

- ‘I always sell everything’
- (55) \*Kóí- tɔgya gyá- məhêĩmə étté  
Kiowa-language 3A:3P-teach.IMPF many  
‘Many are teaching Kiowa’
- (56) \*Hón dé- ôi- pɔdɔɔtɔɔ kôl  
NEG 1S:3P-again-eat.NEG.MOD some  
‘I won’t eat any again’

However, even if preverbal, they are not always acceptable. If they appear in a sentence with a *wh*-expression, they are ungrammatical before the interrogative:

- (57) \*Téi hàatêl gya- hàn?  
all who.Q 1S:3P-devour.PF  
‘Who ate them all up?’
- (58) \*Étté hàagyá á- kíł?  
many where.Q 3A-live  
‘Where do a lot of people live?’
- (59) \*Páá hōndó hétó gya- tózánma?  
some why.Q still :3A:3P-speak.IMPF  
‘Why are some people still talking?’

—but acceptable after it:

- (60) Hàatêl téi gya- hàn?  
who.Q all 1S:3P-devour.PF  
‘Who ate them all up?’
- (61) Hàagyá étté á- kíł?  
where.Q many 3A-live  
‘Where do a lot of people live?’
- (62) Hōndó hétó páá gya- tózánma?  
why.Q still some :3A:3P-speak.IMPF  
‘Why are some people still talking?’

It must be emphasized that these restrictions affect only bare quantifiers. If accompanied by overt nominal restrictions, quantifiers become licit in all domains: pre-*wh*:

- (63) Téi t!ólthɔn hōndé gya- hàn?  
all beans who.Q 3S:3P-devour.PF  
‘Who ate all the beans up?’
- (64) Dôi-ette kíí hàatêl gya- hóógya?  
too-much meat who.Q 3S:3P-buy.PF

‘Who bought too much meat?’

—preparticular and postparticular:

- (65) Páá k!yákôubɔ xɔɔ an ét- tɔɔyii  
some people thus HAB 3I:3P-behave.IMPF.EVID  
‘That’s how some people behaved’
- (66) Hón étté Kóí- tɔgya gyát- háígɔɔ  
NEG much Kiowa-language :1P:3P-know.NEG  
‘We don’t know much of the Kiowa language’

—and postverbal:

- (67) Món Séndé bét- piithótkɔ téi théíɔɔ  
INFER Sende 3S:3I:3I-spear.PF all hearts  
‘Sende speared all their hearts’
- (68) Kóí- tɔgya gyá- mɔhêimɔ étté Kóígú  
Kiowa-language 3A:3P-teach.IMPF many Kiowas  
‘Many Kiowas are teaching Kiowa’

Interestingly, it is not the mere presence in the sentence of a nominal that makes (63)–(64) and (67)–(68) acceptable. Rather, it is the fact that both nominal and quantifier occur in the same domain, presumably as a single constituent. If the nominal is split from the quantifier, the same pattern of positional restrictions on the quantifier reemerges:

- (69) \*Téi hôndó t!ólthɔn gya- hân?  
all why.Q beans 1S:3P-devour.PF  
‘Why did he eat all the beans up?’
- (70) \*Dôi-ette hâatêl kí gya- hóógya?  
too-much who.Q meat 3S:3P-buy.PF  
‘Who bought too much meat?’
- (71) \*Món Séndé théíɔɔ bét- piithótkɔ téi  
INFER Sende hearts 3S:3I:3I-spear.PF all  
‘Sende speared all their hearts’
- (72) \*Kóí- tɔgya Kóígú gyá- mɔhêimɔ étté  
Kiowa-language Kiowas 3A:3P-teach.IMPF many  
‘Many Kiowas are teaching Kiowa’

This restriction is not about splits directly, as the same configurations are grammatical if the nominal occupies the pre-*wh* or postverbal domains and the quantifier is in an intermediate position:

- (73) T!ólthøn hōndó téi gya– hân?  
 beans why.Q all 3S:3P–devour.PF  
 ‘Why did he eat all the beans up?’
- (74) Étté gya– dōu ólhógya  
 much 1S:3S–hold money  
 ‘I have a lot of money’

We conclude, therefore, that the same generalization governs both these splits and the distribution of quantifiers in sentences without nominal restrictions. In what follows, we understand ‘bare quantifiers’ as including those split away from their overt nominal.

We have thus established the generalization that bare quantifiers are barred from pre-*wh* and postverbal positions, but are acceptable elsewhere.

#### *numerals*

Exactly the same patterns are replicated for numerals. Bare numerals are unacceptable pre-*wh* and postverbally, whether or not there is a nominal elsewhere in the sentence:

- (75) \*Yíi hâatêl (k!ódál) én– dóó?  
 two who.Q car :3S:3D–be  
 ‘Who has two (cars)?’
- (76) \*Nō nōó (álōō) an (álōō) nen– pótto yíi  
 CONJ 1 apple HAB apple 1S:3D–eat.IMPF two  
 ‘I usually eat two (apples)’

However, if numeral and nominal are unsplit, then the numeral may occur pre-*wh* or postverbally:

- (77) Yíi k!ódál hâatêl én– dóó?  
 two car who.Q :3S:3D–be  
 ‘Who has two cars?’
- (78) Nō nōó nen– hân yíi álōō  
 CONJ 1 1S:3D–devour.IMPF two apple  
 ‘I ate up two apples’

Of course, bare numerals may occur unproblematically between a *wh*-expression and the verb.

- (79) Hâatêl yíi (phólááyij) ẹ– hól?  
 who.Q two rabbit 3S:3D–kill.PF  
 ‘Who killed two (rabbits)?’



- (80) ... gə yíkyá á- ii- dǒǒmèi  
 CONJ four :3S:3I-child-be.IMPF.EVID  
 ‘... and he had four sons’
- (81) Nə nǒǒ yíí an nen- pǒtto  
 CONJ 1 two HAB 1S:3D-eat.IMPF  
 ‘I usually eat two’
- (82) Nə nǒǒ an yíí nen- pǒtto  
 CONJ 1 HAB two 1S:3D-eat.IMPF  
 ‘I usually eat two’

This establishes the generalization that bare quantifiers, like bare numerals, are barred from pre-*wh* and postverbal positions, but are acceptable elsewhere.

### *Demonstratives*

Finally, we turn to demonstratives. These differ from other adnominal elements in being acceptable in pre-*wh* and postverbal positions.

- (83) Éǵde hâatêl k!ódál á- dǒǒ?  
 this who.Q car :3S:3S-be  
 ‘Whose car is this?’
- (84) Hêǵtegya gya-dǒǒ éǵhǒde  
 story 3P- be this  
 ‘This is the story’

Naturally, they may occupy all other clausal domains as well. A representative sample of sentences is shown below:

- (85) Hó óide gyá- háígyádǒǒ  
 Q that :1S:3S-know  
 ‘Do you know that one’
- (86) Óide hón é- háíǵǒǒ  
 that NEG :1S:3S-know.NEG  
 ‘I don’t know that one’
- (87) Hón óide é- háíǵǒǒ  
 that NEG :1S:3S-know.NEG  
 ‘I don’t know that one’

This means that demonstratives are not subject to the positional restrictions that affect bare quantifiers, bare numerals and focus-marked elements.

### 5.3.3. Statement

The three sets of elements just mentioned share the properties of being illicit in pre-*wh* and postverbal position:

(88) *Anti-quantification effect*

Bare quantifiers, bare numerals, and focused-marked elements are unacceptable in pre-*wh* position and in postverbal position.

This constitutes the empirical generalization that we set out to analyse in the next chapter.

### Appendix: *Wh*-expressions

Before concluding this chapter, we point out that *wh*-elements are subject to the distributional restriction in (88). We exclude *wh*-elements from the generalization, however, as there are plausibly independent factors that conspire to produce the same surface effect.

Let us begin by reiterating the data from chapter 1, concerning *wh*-placement. *Wh*-expressions are acceptable in a left-peripheral position:

- (89) Hôndé an bét– píj- klúttɔ  
 what.Q HAB 2S:3I:3P–food-lay.P.IMPF  
 ‘What do you feed them [horses]?’
- (90) Hàagyâi-xɛi an án– píj- klúttɔ?  
 which- horse HAB :3S:3P–food-lay.P.IMPF  
 ‘Which horse do you feed?’
- (91) Hôndó hón bat– pódôɔ?  
 what.Q NEG 2S:3P–eat.NEG  
 ‘Why aren’t you eating’

They are, however, unacceptable if postparticular:<sup>5</sup>

- (92) \*An hôndé bét– píj- klúttɔ?  
 HAB what.Q 2S:3I:3P–food-lay.P.IMPF  
 ‘What do you feed them [horses]?’
- (93) \*An hàagyâi-xɛi án– píj- klúttɔ?  
 HAB which- horse :3S:3P–food-lay.P.IMPF

---

<sup>5</sup>Postparticular *wh*-expressions are, possibly, slightly more acceptable than postverbal ones. Indeed, on some occasions, some particle+*wh* combinations, particularly **hón hôndó** ‘NEG why.Q’, appear genuinely to be acceptable. However, there is always a confounding factor that such combinations are phonetically very near to *wh*-indefinites (e.g., **hón hódó** ‘NEG some-reason’) for which it is at times surprisingly difficult to control. Such exceptions, if they exist, appear to be marginal and do not undermine the generalization to be established below.

- ‘Which horse do you feed?’  
 (94) \*Hón hōndó bat– pódô?   
 NEG what.Q 2S:3P–eat.NEG  
 ‘Why aren’t you eating’

—or postverbal:

- (95) \*An bét– píí- k!úttō hōndé?   
 HAB 2S:3I:3P–food-lay.P.IMPF what.Q  
 ‘What do you feed them [horses]?’  
 (96) \*An án– píí- k!úttō hāgyâi-xej?   
 HAB :3S:3P–food-lay.P.IMPF which- horse  
 ‘Which horse do you feed?’  
 (97) \*Hón bat– pódô hōndó?   
 NEG 2S:3P–eat.NEG what.Q  
 ‘Why aren’t you eating’

Kiowa, furthermore, does not allow multiple *wh*-questions, whether the second *wh*-element is left in situ—as in:

- (98) \*Hâatêl an hōndé gya– píí- ôḡmō?   
 who.Q HAB what.Q 3S:3P–food-make.IMPF  
 ‘Who usually cooks what?’  
 (99) \*Hōndé an hâatêl gya– píí- ôḡmō?   
 what.Q HAB who.Q 3S:3P–food-make.IMPF  
 ‘Who usually cooks what?’  
 (100) \*Hōndó gō– t!éniithemgō hâatêl?   
 why.Q 3S:2S–beat up.PF who.Q  
 ‘Who beat you up why?’  
 (101) \*Hâatêl gō– t!éniithemgō hōndó?   
 who.Q 3S:2S–beat up.PF why.Q  
 ‘Who beat you up why?’

—or moved:

- (102) \*Hâatêl hōndé (an) gya– píí- ôḡmō?   
 who.Q what.Q HAB 3S:3P–food-make.IMPF  
 ‘Who usually cooks what?’  
 (103) \*Hâatêl hōndó gō– t!éniithemgō?   
 who.Q why.Q 3S:2S–beat up.PF  
 ‘Who beat you up why?’

Thus *wh*-expressions too are ruled out in both pre-*wh* position and in postverbal position. However, in this case, there may be independent principles that explain this behaviour. If *wh*-movement is obligatory, then it is unsurprising that in situ *wh*-expressions are ungrammatical. This much is consonant with the anti-quantification effect. The ban on multiple *wh*-questions, however, is an independent matter. Consider a scenario where there are two *wh*-expressions, both of which have targeted separate specifiers of C. In such a case, neither is in the pre-*wh* domain that the anti-quantification effect is concerned with. Therefore a separate ban, on multiple specifiers perhaps, must be invoked to rule out such structures. It thus appears plausible that the reasons why *wh*-phrases are not found in postverbal or pre-*wh*-positions are to be found in the theory of *wh*-movement.

## Chapter 6

# Anti-Quantification and the Syntax–Semantics Interface

### 6.1. Introduction

In the last chapter, we outlined a generalization about the kinds of elements that can appear in various clausal positions: focus-marked elements, bare quantifiers and *wh*-phrases are unacceptable when in pre-*wh*-position and in postverbal position. While this is perhaps unsurprising for *wh*-elements, which obligatorily move to CP in Kiowa, no such explanation is forthcoming for focus-marked elements and bare quantifiers. These are not required to move to any specific position, and so it is unclear why they should be unacceptable in the postverbal domain or the pre-*wh*-domain.

A further challenge arises from our having demonstrated that DPs in the postverbal domain are in their Merged base position; this does not seem plausible for DPs in the pre-*wh* domain, which are separated from their argument structure by (at least) the *wh*-element, which we know has moved. Given this, we need to explain why the same kinds of restriction apply to elements in such syntactically distinct regions of clause structure.

In this chapter, we lay out an explanation for these effects, which is connected to Rizzi's (1997) explanation for the impossibility of quantifiers in Clitic Left Dislocation constructions, but which develops the ideas in a slightly different way. The core of the analysis lies in the kinds of syntactic structure that must be delivered to the interface in order for quantificational elements to have an appropriate interpretation. We look first at focus marking in the postverbal domain, before turning to the behavior of quantifiers in the same position and the question of why bare quantifiers behave differently from quantifiers with an NP restriction. With an analysis of these in hand, we return to the pre-*wh* position, and explain why it behaves similarly to the postverbal position, and we connect this to the literature on Clitic Left Dislocation.

## 6.2. *Wh*-elements and focus

Recall that elements in the postverbal domain are necessarily base generated there. There is no way for a DP argument to move to a position after the verb, as we showed in chapter 4. However, whenever a DP occurs before the verb, it is always possible to analyse it as having moved there. The nature of some of these movements was detailed in the first part of chapter 5, where it was tied to information structure.

A useful way to characterize the difference between syntactic elements that have been Merged then Moved versus those that have been Merged only once is in terms of the notion of *syntactic chains*. A chain is a sequence of syntactic positions where each position is linked to the next via a movement or agreement relation. For example, a *wh*-movement sentence in English would involve a chain with (at least) two links, the trace and the overt *wh*-phrase:

- (1) a. Who did you see ⟨who⟩?
- b. (who, ⟨who⟩)

The links of the chains are identified by their syntactic contexts (*i.e.*, their sisters, in X-bar terms, or their feature-sharers (mothers), in Mirror-Theoretic terms). In the case of the chain above, assuming a Mirror-Theoretic syntax, the contexts for the chain would be as follows (recall that we assumed objects are introduced by a head O) :

- (2) (C<sub>[+wh]</sub>, O)

We can now see that postverbal arguments and preverbal ones have distinct chain types. A postverbal argument in Kiowa is always a trivial chain, with no links beyond the argument itself. A preverbal argument, however, is in a position where it is always possible to parse it as the head of a movement chain with the lower link in argument position. Schematically, we can represent (a) different Verb-Object orders in terms of (b) their argument chains and (c) the contexts for these chains:

- (3) a. Verb DP
- b. (DP)
- c. (O)
- (4) a. DP Verb
- b. (DP)
- c. (O)
- (5) a. DP ... Verb ⟨DP⟩
- b. (DP, ⟨DP⟩)
- c. (F, O)
- (6) a. DP ... ⟨DP⟩ Verb
- b. (DP, ⟨DP⟩)
- c. (F, O)

In the first two cases, even though the verb is linearized differently with respect to its object, the chains and their syntactic contexts are identical. In the last two cases, F is the attractor of the DP (as discussed in the previous chapter, it might be a Focus or Topic position). Although the object originates in a different configuration with respect to the verb, the surface strings are identical, as are the argument chains and their chain contexts. This may appear to be a spurious analytic ambiguity. However, we will show below that these different options are exploited to crucial effect.

These two representations, trivial versus non-trivial chains, partition verbal arguments into two semantic classes. For referential DP arguments, there will be no difference in interpretation between trivial and non-trivial chains: such arguments may be semantically composed, in their base position, with the head that selects them. However, for quantificational elements, only a non-trivial chain is possible. The reason for this is that quantificational elements, such as focus-marked DPs, must syntactically bind a trace which is semantically interpreted as a variable. For example, for (7), we must construct a semantic representation that looks roughly like (8):

(7) Only John departed

(8) Only  $x$ :  $x = \text{John}$ . departed( $x$ )

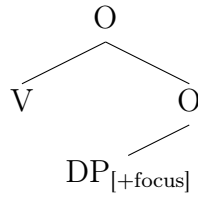
In (8), we need a variable to capture the correct meaning, which requires inspecting the individuals in the domain of discourse and for each one ensuring that that individual is not a non-John departee. This is not necessary for (9), where we just need to inspect the individual John and see if he is in the set of departees:

(9) John departed

This difference between the two types of chain allows us to capture part of the correlation we are interested in, on the assumption that there is a tight isomorphism between the syntax and the required interpretation: a non-trivial chain with two positions is required to give rise to an interpretation as an operator variable structure. If a focus-marked element needs to bind a trace in order for it to map to the right kind of semantic object, then it will not be viable in postverbal position, since only trivial chains are possible in such positions. A referential DP in postverbal position, however, is predicted to be acceptable.

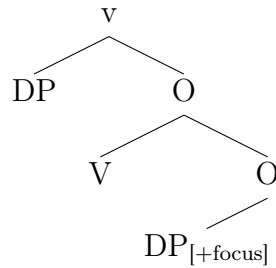
Consider how this applies to a transitive Kiowa sentence with a focus-marked DP that appears in postverbal position. First, the focus-marked DP is Merged as specifier of the head that introduces the internal argument and the selected complement (the verb) is Merged as the daughter of a higher segment of the structure, as was discussed in Chapter 4.

(10)



Further functional structure adds other arguments:

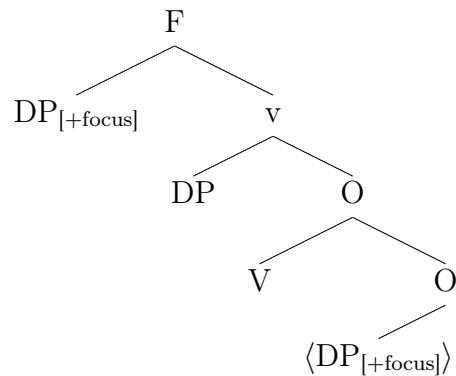
(11)



Now, if  $DP_{[+focus]}$  remains in situ, then the verb, which requires an argument of type  $\langle e \rangle$ , is confronted instead with an element of type  $\langle et, t \rangle$ . For this to be interpretable,  $DP_{[+focus]}$  must move, leaving behind a trace, interpreted as a variable of type  $\langle e \rangle$ . Without this movement, however, interpretation is not possible. As postverbal DPs are always unmoved, they cannot, in consequence, be focus-marked.

When movement applies to (11), the result is a preverbal focused DP. (We take F below to be some head to which focused DPs may move):

(12)

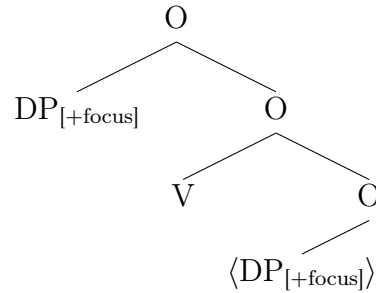


We reiterate that it is not possible to derive a structure where an element is moved to a postverbal position, for the reasons discussed in chapter 4.

There is, interestingly, and crucially for what follows, an alternative to moving the DP to a higher information-structural head; namely, movement and adjunction to the projection of O itself:



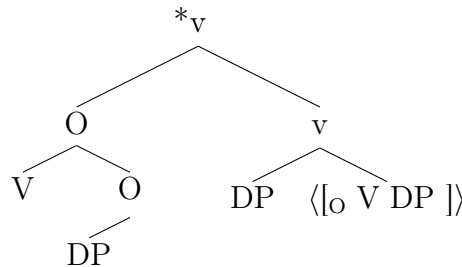
(13)



We can see the chain here as being in a feature sharing configuration with O by virtue of the lower element being straightforwardly dominated by all segments of O. That is, it is a mistake to think that, because V and the higher DP<sub>[+focus]</sub> both ‘look like’ traditional specifiers that both are interpretive specifiers; only DP<sub>[+focus]</sub> is, by virtue of its being chain-linked to the lower <DP<sub>[+focus]</sub>>, which shares the features of O, its selector. V, by contrast, is structural specifier, that is, left daughter, but an interpretive complement. Such projection-internal movement is legitimate in this system precisely because it preserves all feature-sharing relations (*cf.* Ackema, Neeleman, and Weerman 1993).

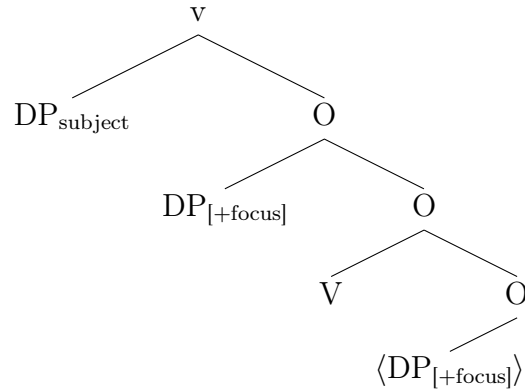
It is important to note that (13) is distinct from the Mirror-Theoretic XP movement configuration in (14). This kind of derivation, ruled out in chapter 4 (pp. 123f), would permit reordering of postverbal DPs, in violation of the inverse base effect. In (14), the subtree headed by O is never in a feature sharing relationship with its putative attractor v. This contrasts with (13), where DP<sub>[+focus]</sub>, *qua* interpretive specifier, is always in a feature-sharing relationship with its attractor O.

(14)



The idea that DPs can move from postverbal position adjoining to the projection of the head that introduces them allows us to explain why we can have a focused object appearing after an unfocused subject. We can embed (13) under the subject introducing head as follows:

(15)



- (16) An Carrie thóú- gúl-deki ∅- thónmə  
 HAB Carrie water-red-only 3S:3S-drink.IMPF  
 ‘Carrie only drinks pop’

This is important for our explanation of these effects, since we would otherwise have to propose unmotivated heads internal to the vP, or alternatively extra movements of other arguments (for example, moving the object to some higher position in the vP, and then moving the subject over it). Evidence that this is the right direction to pursue comes from the difficulty of distorting argument orders below the lowest particle, aspectual **an**, which we discussed in the last chapter (note 2).

Similarly, the theory developed here allows a focus-marked indirect object to appear apparently in situ, between the preverbal subject and object, although in reality it has moved to this position leaving a postverbal trace.

- (17) An Daniel Carrie-deki kút án- ǵǵmə  
 HAB Daniel Carrie-only books 3S:3S:3P-give.IMPF  
 ‘Daniel gives books only to Carrie’

Like remarks cover cases with focus-marked preverbal subjects appearing below particles:

- (18) Béthəə nóú-deki bá- ǵǵtəbei  
 MIR 1- only 2P:1S-wait.IMPF.EVID  
 ‘I didn’t realize you were all waiting for me’
- (19) An thóú- deki gya- thónmə  
 HAB water-only 1S:3S-drink.IMPF  
 ‘Usually, I only drink water’

The picture of Kiowa clause structure we now have is one where postverbal DPs are only parsable as being in their base position, while preverbal DPs always have a parse where they have been moved from a postverbal position to their apparent base position, as well as a parse where they are simply directly Merged in that position. The difficulty of reordering arguments in Kiowa below the lowest of the

fixed particles follows if there are no ‘scrambling’ heads inside the argument domain, a standard assumption. Moreover, this view allows us to maintain a maximally isomorphic syntax–semantics interface, where operators, to be interpreted, always need to bind a variable and hence always need a bipartite, non-trivial chain structure in the syntax. (On this proposal, we need to assume that Kiowa lacks LF movement of focus-marked elements. If DPs could LF move, then there would be no reason for the unacceptability of focus-marked DPs in the postverbal domain.)

### 6.3. Bare quantifiers

This approach, however, is so far insufficient to account for the distribution of adnominal elements such as numerals and cardinality quantifiers in postverbal position. Recall that these were impossible postverbally if they occur without their NP:

- (20) \*Kóí- tɔgya gyá- məhɛjɪmə étté  
 Kiowa-language 3A:3P-teach.IMPF many  
 ‘Many are teaching Kiowa’

In contrast, these same adnominals are well formed if they occur with an overt nominal complement:

- (21) Kóí- tɔgya gyá- məhɛjɪmə étté Kóígú  
 Kiowa-language 3A:3P-teach.IMPF many Kiowas  
 ‘Many Kiowas are teaching Kiowa’

Moreover, not all bare adnominals are barred from these positions: demonstratives are well-formed irrespective of the presence of their nominal complement:

- (22) Kóí- tɔgya gya- məhɛjɪmə éíhəde  
 Kiowa-language 3S:3P-teach.IMPF this  
 ‘This one is teaching Kiowa’

The approach we develop to this phenomenon is based on three core ideas. Most basically, we distinguish purely quantificational elements from those elements that vary between purely quantificational and cardinality interpretations. Next, we argue that purely quantificational elements are barred from postverbal positions because their semantics is incompatible the syntax–semantics mapping restrictions on these positions. By contrast, adnominals that can have a cardinality semantics are, we argue, syntactically ambiguous, occurring either in Num<sup>0</sup> or in D<sup>0</sup>. The latter position forces a purely quantificational reading but the former allows a non-quantificational one. Last, we establish that bare adnominals involve ellipsis of NumP, and so entail that the bare adnominal must be D<sup>0</sup> and, so, quantificational. This therefore subjects bare adnominals to the same distributional constraints as affect purely quantificational elements.

### 6.3.1. Quantificational and cardinal determiners

As is well known, natural language determiners split into (at least) two classes, which Milsark (1974) termed *strong* and *weak*. Intuitively, weak determiners act as pure cardinality predicates, stating the number of elements in the intersection of the sets denoted by the determiner's complement noun (phrase) and the rest of the sentence. For example, *three* in (23) has the semantics in (24):

(23) Three owls hooted

(24)  $\text{card}(\{x: \text{owl}(x)\} \cap \{x: \text{hooted}(x)\}) = 3$ —the cardinality of the intersection of the set of owls and hooting things is three

Strong determiners, by contrast, quantify over their complement noun (phrase), sorting each individual in the set into those to which the predicate applies and those to which it does not. The quantifier itself can be seen as an instruction about the nature of the sorting operation (technically, this is achieved by considering the quantifier to operate over variable assignment functions, rather than individuals). So (25) has the semantics in (26):

(25) Every owl hooted

(26)  $[\forall x: \text{owl}(x)](\text{hooted}(x))$ —take each individual and see whether it is in the set of owls; if it is, ensure that it is in the set of hooting things

Milsark argued that certain English determiners, such as *every*, *most*, and *the*, are only ever strong/quantificational, while others, such as *some*, *three*, and *many*, may be either weak/cardinal or strong/quantificational.

This ambiguity can be seen clearly with a weak determiner like *some*:

(27) Some owls are hooting

In an example like (27), there are two quite distinct meanings: either the speaker is just asserting the existence of some hooting owls, or is saying that, of some salient set of owls, a subset is hooting (implying that some other subset is not).

Milsark noted that the second reading vanishes in existential constructions:

(28) There are some owls hooting

Obligatorily strong determiners like *every*, *most*, and *the* are, by contrast, simply ungrammatical in existential sentences:

(29) \*There is every owl/the owl hooting

(30) \*There are the owls/most owls hooting

The assumption that *some*, and other weak determiners, are ambiguous between strong and weak readings permits a straightforward explanation of the lack of am-

biguity of (28). Strong determiners are impossible in existential constructions, so only the weak reading of weak determiners survives.

Developing this idea, Partee (1989) argues that vague quantifiers like *many* in (31) are also ambiguous between a cardinal and a quantificational reading:

(31) Many owls were hooting

This, according to Partee, is ambiguous between a proposition that says that the number of owls hooting is contextually large, and one that says that the proportion of owls hooting is contextually large. Partee calls the first interpretation *cardinal*, and the second *proportional* (rather than quantificational), and argues that they are truth conditionally distinct. The cardinal interpretation involves a contextually determined number (say 20 in this case) while the proportional reading involves some fraction or percentage (say 75%):

(32)  $\text{card}(\{x: \text{owl}(x)\} \cap \{x: \text{hooted}(x)\}) > n$ , where  $n$  is contextually determined

(33)  $[\text{many } x: \text{owl}(x)](\text{hooted}(x))$ , where the percentage of the assignments of values to  $x$ , where  $x$  ranges over owls, that make  $\text{hooted}(x)$  true is above a contextually determined (high) threshold

The distinction between the numerical and proportional interpretations was illustrated very neatly in a report aired shortly before this book went into production (*The Today Programme*, BBC Radio 4, 19 August 2008, 07:23–07:30). The topic of the discussion was whether pedigree breeding causes suffering. A critic of the practice argued that many dogs, including cavalier King Charles spaniels, bulldogs, pugs and basset hounds, live in suffering because they are bred for looks that make them both dysfunctional and dysgenic. A defender of the practice countered that over 90% of the UK pedigree canine population is free of health problems. Needless to say, the proponent intended to refute the critic, but she failed to do so, as both statements can be simultaneously true: the critic asserted that numerically many suffered health problems, the proponent, that proportionately many do not.

While weak determiners always seem to allow a quantificational interpretation, the converse does not appear to be true. Strong determiners like *every*, *most* and *each* cannot be formalized with a purely cardinal semantics. In order to return the issues of Kiowa syntax, we must first determine the syntactic character of these two classes of determiners.

### 6.3.2. A syntax–semantics mapping conjecture

Strength versus weakness appears to correlate with syntactic distinctions, with strong determiners appearing higher in DP structure than weak ones (see Jackendoff 1977, among many others):

(34) a. every three days

- b. \*three every days
- (35) a. the many owls  
b. \*many the owls

A natural hypothesis, then, is that the semantic ambiguity of weak determiners arises from a syntactic ambiguity, with the cardinality reading arising when the determiner is in a low position, and the quantificational reading being associated with a higher position.

This general idea has received a number of quite different syntactic implementations (Cardinaletti and Giusti 1991, Zamparelli 2000). We will assume, for concreteness, that the quantificational reading arises when the determiner is in D, and the cardinality interpretation arises when it is in Num. As an example, consider:

- (36) Three owls were hooting

The subject DP may have two different structures:

- (37) [ [D three ] owls ]  
(38) [ [D  $\emptyset$  ] [Num three ] owls ]

Compare this with an example with *every* which only has one structure:

- (39) Every owl hooted  
(40) [ [D every ] owl ] hooted

In particular, the structure in (41) is ruled out:

- (41) \*[ [D  $\emptyset$  ] [Num every ] owl ]

The traditional view of the semantics of a determiner like *every* is that it introduces a quantifier into the logical representation as follows:

- (42)  $\llbracket \text{every} \rrbracket = \lambda P \lambda Q. [\forall x](P(x) \rightarrow Q(x))$

This is roughly equivalent to the restrictor notation we presented above, with the antecedent of the conditional restricting the domain of the quantifier:

- (43)  $\llbracket \text{every} \rrbracket = \lambda P \lambda Q. [\forall x: P(x)](Q(x))$

The analysis of determiners like *some* and *a*, on the other hand is more contentious. The traditional logical literature assumed that these also introduce a quantifier, though an existential, rather than a universal one:

- (44)  $\llbracket \text{some} \rrbracket = \lambda P \lambda Q. [\exists x](P(x) \wedge Q(x))$

This traditional analysis treats the common noun and the verb phrase as essentially contributing to the semantics in a symmetrical fashion so that the semantics of the

determiner is intersective rather than restrictive. It is not equivalent to a restrictor-based semantics like the following:

$$(45) \quad \llbracket \text{some} \rrbracket = \lambda P \lambda Q. [\exists x: P(x)](Q(x))$$

However, there are well known problems with the traditional execution of this intuition, not least the fact that NPs containing weak determiners appear to be able to scope outside their c-command domain unlike NPs that contain a strong determiner. For example, consider the contrast between the following sentences:

- (46)    a. I met every man. \*He was nice.  
           b. I met a man. He was nice.

If NPs like *a man* introduce a quantifier into the semantic representation just as *every man* does, then they are not expected to display such different behaviour in terms of pronominal anaphora. In fact, as often noted, they appear to function like non-quantificational NPs:

$$(47) \quad \text{I met Anson. He was nice.}$$

One wide-spread approach to the different semantics of such weak determiners is that they introduce only a predicate over an unbound variable (Kamp 1981, Heim 1982). From this perspective, an indefinite NP like *a man* is just represented as:

$$(48) \quad \llbracket \text{a man} \rrbracket = \lambda x. \text{man}(x)$$

Following Higginbotham (1987), we can treat the meaning of the indefinite article, of *many*, *some* or of numerals, as simple predicates which combine with their nominal via predicate modification. So, if we assume an interpretation like (48) for *many* and *three*, say<sup>1</sup>—

$$(49) \quad \lambda x. \text{many}(x)$$

$$(50) \quad \lambda x. \text{three}(x)$$

—then the DPs *an/man/many/three owl(s)* have the following interpretations:

$$(51) \quad \llbracket \text{an owl} \rrbracket = \lambda x. \text{owl}(x)^2$$

$$(52) \quad \llbracket \text{many owls} \rrbracket = \lambda x. \text{many}(x) \wedge \text{owl}(x)$$

$$(53) \quad \llbracket \text{three owls} \rrbracket = \lambda x. \text{three}(x) \wedge \text{owl}(x)$$

Consequently, a miniature discourse like those above can be represented roughly as follows:

---

<sup>1</sup>We assume that the variables here range over both singular and plural individuals (Link 1983).

<sup>2</sup>Higginbotham actually treats the determiner *a* as a predicate true of sets of entities which have cardinality one; we abstract away from this here.

$$(54) \quad \begin{array}{l} \lambda x. \text{met}(\text{I}, x) \wedge \text{man}(x). \\ \lambda x. \text{nice}(x). \end{array}$$

We can then apply an operation which existentially interprets the  $\lambda$ -bound variables (either by explicitly prefixing an existential quantifier, or by folding the existential meaning into the definition of the interpretation function.) Higginbotham develops this kind of ‘adjectival’ approach to weak quantifiers and shows how it also explains a number of definiteness effects in English.

Higginbotham’s analysis does not, however, tackle the question of what occurs syntactically when these weak determiners have apparently strong readings. On the assumptions motivated above, we took strong quantificational readings to be associated with D, while weak cardinal ones are associated with Num. If we maintain this position, then we can capture the ambiguity of weak determiners by saying that, when they appear in D, they introduce a restricted quantifier rather than a cardinality predicate. This means that their semantics is roughly as follows:

$$(55) \quad \llbracket \text{many owls} \rrbracket = \lambda P. [\text{many}x: \text{owl}(x)](P(x))$$

$$(56) \quad \llbracket \text{three owls} \rrbracket = \lambda P. [\text{three}x: \text{owl}(x)](P(x))$$

Note the notational difference between quantificational ‘many $x$ ’, which, like ‘ $\forall x$ ’, binds a variable, and weak ‘many( $x$ )’, which, like ‘man( $x$ )’, is a formula with a variable that is to be bound.

This semantics entails that a sentence like (31) can be composed in two ways: either (55) is used, in which case a strong meaning is derived, or (49) is used, in which case existential closure will apply:

$$(57) \quad \text{Many owls hooted}$$

$$(58) \quad [\text{many}x: \text{owl}(x)](\text{hoot}(x))$$

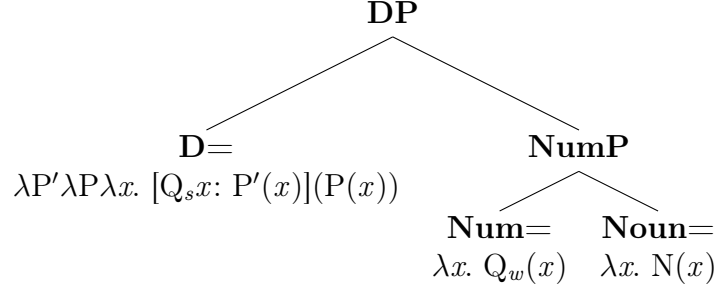
$$(59) \quad \lambda x. \text{many}(x) \wedge \text{owl}(x) \wedge \text{hoot}(x)$$

There is an important difference between these two representations. In (58), the variable introduced by the NP is bound locally by the quantifier, while in (59), it is unbound.

The basic structure we will assume for DPs is then the following, where  $Q_s$  and  $Q_w$  represent strong and weak determiners respectively (we present these trees in non-Mirror-Theoretic format, so as to highlight the denotation of functional heads versus, as in (65), composed nodes):



(60)



This approach has a number of apparently correct consequences besides the hierarchical ordering of strong versus weak determiners. We begin with some obvious predictions about cooccurrence restrictions between determiners, but quickly move onto the readings available to quantifiers when their complement noun undergoes ellipsis. The properties of bare quantifiers will crucially lead us back to an explanation of the Kiowa generalizations with which this chapter began.

The first consequence concerns cases where the higher D position is filled. If we are right in saying that the cardinality interpretation arises whenever the weak determiner occupies a low position, then we should be able to force this interpretation by filling the D position with an overt determiner:

(61) The many owls were hooting

This means that there is a set of owls which are hooting, and the cardinality of that set is specified to be large, given the context. Here, *many* clearly has an interpretation akin to a numeral like *five*, in the same structure (it is possible that vague versus numeral quantifiers occupy distinct DP-internal projections, however we abstract away this fine structure here):

(62) The five owls were hooting

Recall that this theory gives the DP in (61) the following representation:

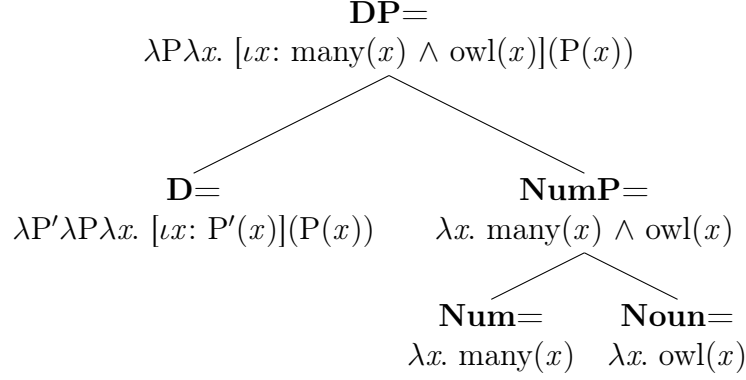
(63) [ [D the] [Num many] owls ]

Our semantics will now only allow the non-quantificational version of *many*, since *many* is in Num, and will derive the following interpretation for the DP:

(64)  $\iota x. \text{many}(x) \wedge \text{owl}(x)$

So, for a DP such as *the many owls*, we have:

(65)

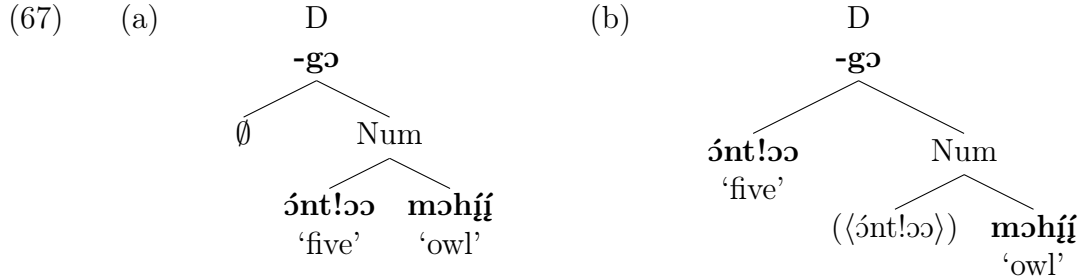


Here *many* can only be a cardinality predicate, and so no quantifier is introduced internally to the DP. (The semantic composition will not go through on a quantificational interpretation of *many* because this creates something of type  $\langle \text{et}, \text{t} \rangle$ , while the definite determiner requires its complement to be of type  $\langle \text{e}, \text{t} \rangle$ .) Since *many* is in Num, the proportional interpretation is correctly predicted not to be available.

### 6.3.3. Kiowa quantifiers

With this much in place we are now ready to tackle the Kiowa bar on bare quantifiers in postverbal positions. The basic intuition behind the analysis is that a quantifier which occurs with its NP may syntactically be in Num, while a bare quantifier must be in D. So, for the Kiowa nominal in (66), we have the structures in (67) (these are Mirror-Theoretic versions of the DP structures given in chapter 1, but abstracting away from irrelevant functional projections):

(66)     $\acute{\text{ont!}\acute{\text{w}}}$   $\text{m}\acute{\text{oh}}\acute{\text{í}}\text{g}\acute{\text{w}}$   
           five    owl.I



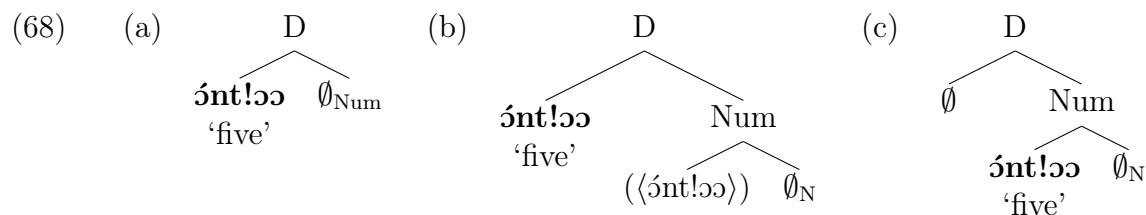
In these structures, the whole projection line of the noun is spelled out low, yielding **m**ohí-gw ‘owl-I’, just like the pronunciation of the inflected verb in the clausal trees of the previous chapters.

In (67a), the numeral  $\acute{\text{ont!}\acute{\text{w}}}$  ‘five’ is Merged as the specifier of the projection Num, with which it shares number features. The specifier of D is a null determiner. In (67b), the numeral itself occupies the specifier of D (we leave open whether it is directly Merged there, or whether it moves from the specifier of Num; hence the

parenthetical trace).

As discussed in the previous section, (67b) has only a quantificational reading and so must move for interpretation. The question is then what the interpretative properties of the zero in (67a) are. If it is quantificational, then the whole DP must move for interpretation, incorrectly ruling out all postverbal occurrences of nouns with numeral. We therefore take it to be definite, or of some similar semantic nature permitting referential interpretation. (The only major alternative that occurs to us is that the zero D lacks an interpretation so that the whole ‘DP’ is interpreted as a Heimian indefinite. However, as these may occur postverbally, and as the postverbal domain is not available for discourse-new entities (see the previous chapter), we reject this alternative.) Thus, of the two possible structures for (66), only (67a) is permitted postverbally.

To explain the bar on bare postverbal quantifiers, consider the effect of ellipsis the structures in (67). Bare quantifiers might be derived in three ways: (a) by locating the numeral in D and eliding Num, (b) by locating the numeral in D and eliding the noun, or (c) by locating the numeral in Num and eliding the noun. (Note: we do not represent the pronunciation of D because the locus of its pronunciation, N, is absent in all cases.)



However, there are independent grounds for ruling out (68c). Given that the zero D must be definite (or in some other way compatible with referential interpretation), (68c) predicts that the bare numeral ʒnt!ɔɔ can have the interpretation ‘the five’. This, however, is impossible. Kiowa achieves such interpretations by use of a seemingly vacuous relative clause:

- (69) a. [(ʒgɔ) ʒnt!ɔɔ e- dɔɔ]-gɔ et- khîipɔ  
REL five 3I-be- D.I 3I:REFL-jump up.PF  
‘The five that there are/were jumped up’  
b. ʒnt!ɔɔ [(ʒgɔ) e- dɔɔ]-gɔ et- khîipɔ  
five REL 3I-be- D.I 3I:REFL-jump up.PF  
‘The five that there are/were jumped up’

The bare numeral in (70) cannot have this interpretation:

- (70) ʒnt!ɔɔ et- khîipɔ  
five 3I:REFL-jump up.PF  
‘Five jumped up’

It follows straightforwardly that bare quantifiers are in D. This means that they must move for interpretation, and, as emphasized above, moved elements cannot be postverbal. This therefore explains both why bare and non-bare quantifiers have different distributions, and why only the latter may occur postverbally.

This approach also allows us to understand why demonstratives alone can appear bare in postverbal position:

- (71) Kóí- tɔgya gya- mɔhêĩmɔ éĩhɔde  
 Kiowa-language 3S:3P-teach.IMPF this  
 ‘This one is teaching Kiowa’

Demonstratives are the one kind of adnominal that clearly converts their NP to something of type  $\langle e \rangle$ . As such, they do not require movement for interpretation and so are at liberty to appear postverbally.

We noted, in chapter 5, that the restrictions on bare postverbal quantifiers is not mitigated by inclusion of a preverbal nominal, as in:

- (72) \*Kóí- tɔgya Kóígú gyá- mɔhêĩmɔ étté  
 Kiowa-language Kiowas 3A:3P-teach.IMPF many  
 ‘Many Kiowas are teaching Kiowa’

In the same chapter, we suggested freedom of argument placement in Kiowa derives, in large part, from movement operations and that this is what derives split constituents. The account of nominal ellipsis extends easily to cases of movement. Of the structures in (68), on (c) is capable of yielding a postverbal nominal: if the quantifier were in the specifier of D, as in (a) and (b), then the whole DP would have to move for interpretability. The derivation we are interested in, therefore, is:

- (73) a. Verb [<sub>D</sub>  $\emptyset$  [<sub>Num</sub> five owl]]  $\mapsto$   
 b. owl (...) Verb [<sub>D</sub>  $\emptyset$  [<sub>Num</sub> five  $\langle$ owl $\rangle$ ]]

However, the crucial step in this derivation is extraction of the noun from Num and this, we claim, is illegitimate. The problem becomes apparent when we consider how (73b) is to be pronounced. Mirror requires that morphological specifiers be syntactic complements. In (73b), there is no syntactic complement relation between Num and the noun, so it is impossible to apply Mirror: the movement operation disrupts the morphological integrity of the projection line. A concrete manifestation of this problem is that the inverse ‘suffix’ in D in (73b) is not in a configuration in which it can be pronounced on the noun.<sup>3</sup> The approach that must be pursued in this framework to splits of the form *noun ... numeral* is that the numeral extracts and then the remaining constituent moves yet higher:

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<sup>3</sup>This applies equally to contentful zero affixes (such as zero allomorphs of inverse), as opposed to heads, like Num, that simply lack morphological exponents. The problem applies not just to inverse marking, but to affixed adjectives (see chapter 1) and focus marking as well.

- (74) a. five ... [<sub>D</sub> ∅ [<sub>Num</sub> ⟨five⟩ owl]] ↦  
 b. [<sub>D</sub> ∅ [<sub>Num</sub> ⟨five⟩ owl]] ... five ... ⟨[<sub>D</sub> ∅ [<sub>Num</sub> ⟨five⟩ owl]]⟩

With both constituents having moved, neither can be postverbal, and so the configuration *noun verb quantifier* is not generable.

The general line of thinking behind this treatment of split constituents is consistent with the arguments mounted against roll-up derivations of clause structure. There, we argued that a subpart of a projection line could not move to some higher specifier in that projection line. Here, we have argued that a subpart of a projection line cannot move out from the projection line. Both of these amount to protection of the integrity of projection lines, in a manner consistent with core Mirror-Theoretic principles.

#### 6.4. Clitic Left Dislocation

Of course, this pattern of distribution recalls CLLD in Romance. Most striking is the parallelism between the bar on bare quantifiers in postverbal position in Kiowa and the bar on bare quantifiers with CLLD:

- (75) a. \*Nessuno, l' ho visto  
 nobody, him AUX.1S seen  
 'I didn't see anyone'  
 b. \*Tutto, l' ho fatto  
 everything, it AUX.1S done  
 'I did everything'

—and the fact that, in both languages, quantifiers in these particular positions become well formed when the head noun also appears:

- (76) Món Séndé bét– piithótkə téi théído  
 INFER Sende 3S:3I:3I–spear.PF all hearts  
 'Sende speared all their hearts'  
 (77) Kóí- tōgya gyá– mōhēmō étté Kóígú  
 Kiowa-language 3A:3P–teach.IMPF many Kiowas  
 'Many Kiowas are teaching Kiowa'  
 (78) Molti libri, li ho buttati via  
 many books them AUX.1S thrown.MP away  
 'Many books, I threw them away'

Rizzi (1997) proposes an explanation for this ban on quantificational elements in CLLD constructions, based on the idea that focus, *wh* and other quantificational elements bind a different kind of trace from topics. Inherently quantification elements, that is, the former, bind traces equivalent to semantic variables just as we

saw above; their ultimate reference depends on assignment functions. The clitic in a CLLD construction is akin to a constant: its value is given by the fact that it co-refers with its binder. So, the difference between traces of quantificational elements and clitics in CLLD chains is one of variables versus constants.

Evidence for Rizzi's approach comes from weak crossover in Italian and English. Lasnik and Stowell (1991) showed that, while Focus Movement gives rise to weak crossover effects, Clitic Left Dislocation does not:

- (79) a. ??GIANNI<sub>i</sub> sua<sub>i</sub> madre ha sempre apprezzato t<sub>i</sub> (non Piero)  
 Gianni his mother AUX.3S always appreciated not Peter  
 'GIANNI his mother always appreciate, not Piero'  
 b. Gianni<sub>i</sub>, sua<sub>i</sub> madre l<sub>i</sub>' ha sempre apprezzata  
 Gianni his mother him AUX.3S always appreciated  
 'Gianni, his mother always appreciated him'
- (80) a. ?\*Who<sub>i</sub> does his<sub>i</sub> mother really like t<sub>i</sub>?  
 b. John, who<sub>i</sub> his<sub>i</sub> mother really likes t<sub>i</sub>

On the broadly accepted assumption that weak crossover diagnoses variable binding, this gives us evidence that operators like focus bind a variable and that clitics cannot be variables (only constants). With this in place, we have an explanation for the following paradigm:

- (81) a. Il tuo libro, l' ho comprato  
 the your book it AUX.1S bought  
 'I bought your book'  
 b. \*Il tuo libro, ho comprato  
 the your book AUX.1S bought  
 'I bought your book'
- (82) a. \*IL TUO LIBRO l' ho comprato (non il suo)  
 the your book it AUX.1S bought not the his  
 'I bought your book (not his)'  
 b. IL TUO LIBRO ho comprato (non il suo)  
 the your book AUX.1S bought not the his  
 'I bought your book (not his)'

In the Focus Movement cases, the quantificational operator needs to bind a trace which is interpreted as a variable. A clitic cannot serve this purpose, ruling out (82a), whereas the trace of the quantificational operator itself can. In contrast, a referential DP cannot bind a variable, ruling out (81b), but can bind a clitic (81a).

The same kind of explanation will extend to cases with bare quantifiers, as in the paradigm above. These are core quantificational operators and need to bind variables. Since clitics cannot be variables, a quantifier is ruled out when construed

with a clitic in a CLLD construction. However, these quantifiers are acceptable in focus constructions, where they legitimately bind variables.

This account is somewhat akin to the analysis we laid out above, which sought to explain the difference between preverbal DPs and postverbal DPs in terms of the idea that quantificational elements must bind a variable, but, since postverbal DPs are in their base position, there is no variable to bind. Our approach is different from Rizzi's in that the latter is firmly based on the morphological difference between a trace and a clitic.

Rizzi's account cannot be straightforwardly applied to Kiowa, since, in Kiowa, the clitic is present for *all* arguments, whether they display the anti-quantification effect or not. In fact, as we noted in chapter 2, the fact that Kiowa has *wh*-elements and non-moved focus elements, as well as quantifiers, was good evidence against treating Kiowa arguments in general as Clitic Left Dislocated. We cannot save a Rizzi-style account by proposing that Kiowa clitics are ambiguous between having variable and constant status, as that would predict, wrongly, the absence of the anti-quantification effects.

There is also a theoretical difference between the two accounts. The theory we developed above took the fact that postverbal elements were trivial chains to be crucial, while on Rizzi's approach, the difference between Focus-Moved elements and Clitic Left Dislocated elements is that the former form a movement chain, while the latter involve a base-generated chain terminating in a pronominal:

- (83) a. (Focus, ⟨Focus⟩)  
b. (DP, pronoun)

We will see directly, however, that the Rizzi account appears to be correct for pre-*wh* elements in Kiowa.

Furthermore, there are empirical differences between Kiowa postverbal arguments and CLLD. While in Kiowa bare quantifiers are ruled out in pre-*wh* and postverbal position, it is not strictly true that they are ruled out in CLLD constructions. Rather, as Cinque (1990) notes, they may simply have a different interpretation:

- (84) a. Qualcosa, (la) vedo anch'io.  
something it see.1S also 1S  
'I see something too'  
b. Qualcuno, (l') ho trovato, non preoccupar-ti.  
someone him AUX.1S found NEG worry.INF- 2S  
'I found someone, don't worry'

Cinque observes that the quantifier is interpreted referentially in the presence of a clitic, and non-referentially when the clitic is absent. He then shows that, when the context forces a referential interpretation, the clitic is obligatory:

- (85) a. A: Li      conosci, quelli?  
           them know.2S them  
           ‘Do you know them, those people?’  
       b. B: Sì, qualcuno, \*(l’) ho      già      conosciuto  
           yes someone    him AUX.1S already known  
           ‘Yes, I already know someone’

None of this is true for Kiowa, where bare quantifiers in postverbal position are unacceptable *tout court*.

In general, then, we cannot reduce the restrictions on the postverbal position in Kiowa to Romance CLLD. We have argued that the postverbal elements are not in a position that parallels the CLLD positions in Romance. Furthermore, every NP in Kiowa occurs with an agreement clitic, whether it displays CLLD type-restrictions or not. This was part of the reason that we rejected Baker’s proposal for analyzing nonconfigurational languages for Kiowa.

### 6.5. Pre-*wh* elements

We have seen that DPs in postverbal position cannot be either focus-marked elements or bare quantifiers. The explanation in both cases is the same: the postverbal positions in Kiowa are all base generated; Kiowa does not allow LF movement to create quantifier-variable configurations; focus-marked DPs and bare quantifiers must bind a variable.

As pointed out in the preceding chapter, we find the same kind of effect in one other clausal position: the pre-*wh* position. Focus-marked elements are ruled out in this position:

- (86) \*Phítthóú-deki hâatêl an    Ø–      thónmɔ?  
       beer-      only who.Q HAB 3S:3S–drink.IMPF  
       ‘Who only drinks beer?’  
       (87) \*Carrie-deki hôndé án–      háígyádɔɔ?  
           Carrie-only what.Q :3S:3P–know  
           ‘What does only Carrie know?’  
       (88) \*Kíí- al    hâatêl bat–      ǰɔmɔ?  
           meat-also who.Q 2S:3A:3P–give.IMPF  
           ‘Who will you give also meat to?’

These examples show a focus-marked DP preceding a moved *wh*-phrase. The same effect is found with bare quantifiers:

- (89) \*Étté hôndé gyá–    mɔhɛjɛmɔ?  
       many what.Q 3A:3P–teach.IMPF  
       ‘What are many teaching?’



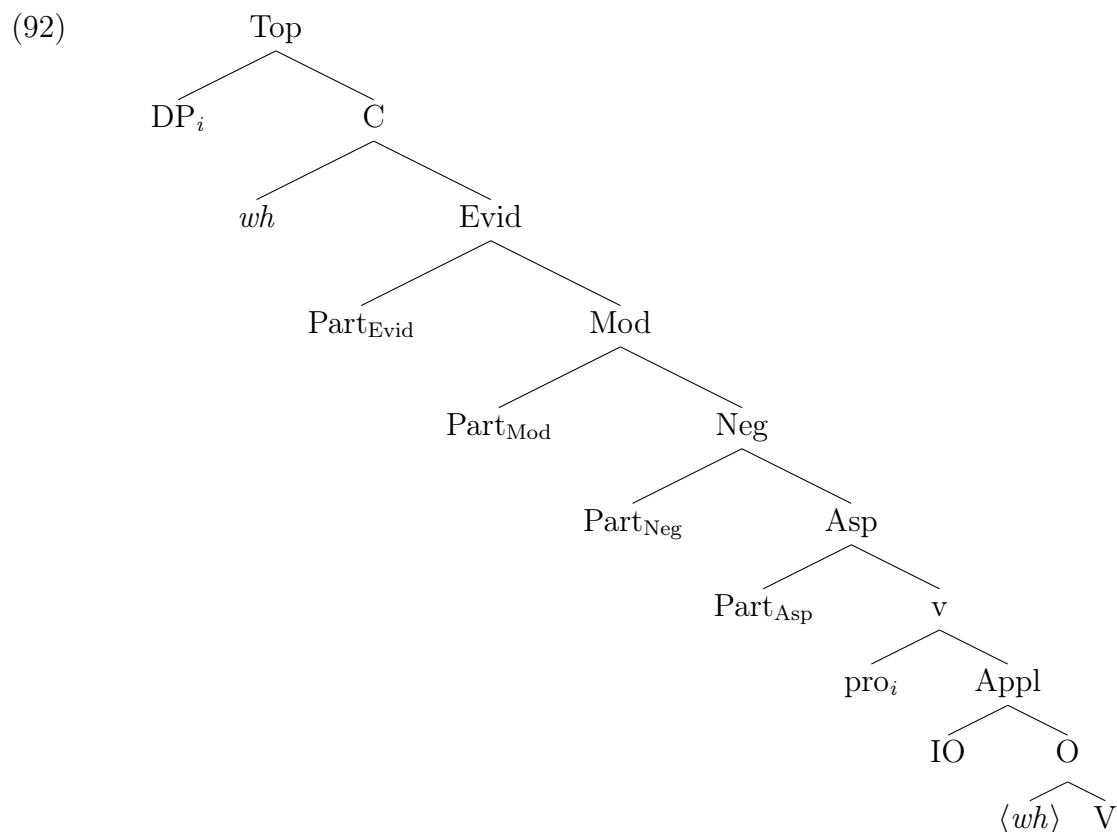
Just as with the postverbal position, the effect disappears when the quantifier occurs with its nominal:

- (90) Étté Kóígú hîndé gyá– mǝhɛ̃ɪmǝ?  
 many Kiowas what.Q 3A:3P–teach.IMPF  
 ‘What are many Kiowas teaching?’

And once again demonstratives are perfectly well-formed in this position:

- (91) É̃hǝde hîndé gya– mǝhɛ̃ɪmǝ?  
 this what.Q 3S:3P–teach.IMPF  
 ‘What is this one teaching?’

Since these DPs precede *wh*-elements, and we know that *wh*-elements have moved to a high clausal position, there is no possibility of an analysis where the pre-*wh* DPs are in their base position. Nor is it open to us to say that these DPs are moved to their final position, since then we would have no account of why they fall under the anti-quantification effect. However, it is, in this case, possible to analyze these DPs as being Clitic Left Dislocated: they are Merged in a high position, and form a chain with a pronominal in the base position:



As we know, Kiowa has generalized pro-drop, so this structure is available to all

arguments. Moreover, since, as Rizzi showed, CLLD is incompatible with quantification, we correctly rule out (bare) quantifiers in this position. Finally, as we ourselves have shown, CLLD is incompatible with focus-marked DPs, for the same reason that it is incompatible with quantifiers: both quantifiers and focus-marked DPs need to bind a trace in Kiowa. If pre-*wh* elements form a chain with a *pro*, this is straightforwardly accounted for.

It appears then, that Kiowa does indeed have a construction that is analysable as CLLD, but it is a rather restricted construction, with the Clitic Left Dislocated element appearing to the left of *wh*-phrases in the periphery of the clause, rather than, as the Polysynthesis Parameter would have it, in all positions where overt DPs are found throughout clause structure. In fact, if we adopt the Polysynthesis Parameter for Kiowa, we would have had no way of identifying this CLLD construction in the language. This is further evidence for a ‘microparametric’ view of language variation, or the sort we have been arguing for throughout the book.

# Chapter 7

## Conclusion

With freedoms come constraints. Kiowa is a free word order language displaying the hallmarks of nonconfigurationality. Nonetheless, speakers of Kiowa are not at liberty to put anything anywhere. On the contrary, they conform to three major constraints on word order:

- (1)    **Clausal mirror**  
Selective particles occur in an order inverse to their associated suffixes
- (2)    **Inverse base effect**  
If XP and YP are introduced by functional heads A and B, where  $A \gg B$ , then the postverbal order is the inverse base order V YP XP
- (3)    **Anti-quantification effect**  
Quantificational elements that obligatorily bind semantic variables cannot occur in pre-*wh* or postverbal position

We believe that such constraints cast a very revealing light on the nature of crosslinguistic parametrization, on the structure of syntactic representations, and on the interfaces of syntax with other modules of the grammar.

We have argued that the distinction between Kiowa and configurational languages, like Italian and English, is not macroparametric but emerges from the confluence of a number of microparametric settings, all familiar from previous work in generative grammar. First, part of the explanation of the inverse base effect and of the clausal mirror centers on whether functional heads have morphological exponents or not. It is, of course, well accepted that a head pronounced in one language can be syntactically active yet unpronounced in another (for example, *pro* or *D*). In the context of Mirror Theory, this difference correlates with how unmoved specifiers may be linearized with respect to their heads. A second parameter connected to the explanation of the mirroring of structure about the axis of the verb concerns the locus of spell out of the verb itself. Mirror Theory allows the verb and the affixes that form its extended projection to be spelled out low in the structure (this is akin to the notion of height of verb movement in, for example, Pollock's 1989 theory of the

parametric differences between French and English). The third parameter setting relevant to the inverse base effect is that there are no EPP-triggered or Case-related movements of arguments. Rather arguments agree with, and are Case-licensed in situ by, functional heads low in the structure. This, combined with the Mirror Theoretic effects of morphologically inactive argument-introducing heads, is what leads to the possibility of postverbal arguments.

These are the core parameters which characterize the basic organization of the Kiowa clause but they are supplemented by further parametric options. We have argued that Kiowa, like German or Japanese, has a movement operation, sensitive to information structure, that is the source of much of the free argument order that the language displays. Furthermore, split constituents arise, as in Polish, via extraction of DP specifiers, that is, via parametric insensitivity to the Left Branch Condition. Finally, Kiowa has Clitic Left Dislocation, exactly parallel to Romance languages and Greek: the dislocated element appears at the far left of the clause, in a Merged rather than Moved position. The familiar properties of these parameters, interacting with the semantics of different chain types, leads to an elegant explanation of the anti-quantification effect.

If we are correct in our analysis, then Kiowa, far from supporting the view that human languages should be distinguished via macroparameters (Baker 1996), argues for a microparametric theory, according to which the diversity of languages arises from the individual properties of independent functional heads (Borer 1984; *cf.* Legate 2001 on Warlpiri).

Parameters must be couched within a theory of invariant syntactic principles. Above, we examined three: traditional X-bar theory, antisymmetric X-bar theory combined with roll-up and remnant movement, and the reduced antisymmetric phrase structure of Mirror Theory. Interestingly, the most parsimonious of these, Mirror Theory, succeeded in providing the most constrained analysis. We argued that it yields an elegant and straightforward account of the behavior of selective particles and their suffixes, and of orderings in the postverbal domain.

Remnant roll-up derivations have proved to be a particularly popular means of implementing the antisymmetry hypothesis, as they permit apparent rightward specifiers and other seemingly non-antisymmetric structures. However, such approaches generally rely on heads posited primarily to produce the full range of attested word orders. Within the context of minimalist theory, these are problematic, as they violate Inclusiveness and Full Interpretation (Chomsky 1995: 225). Furthermore, within the context of Kiowa fact, we have demonstrated that remnant roll-up derivations simply reduce to stipulation of the patterns and thus offer no insight into why the facts are such as they are. This stands in stark contrast to our Mirror-Theoretic analysis, which reduces both the clausal mirror and the inverse base effect to a single, more abstract property, the overttness ordering relation, that emerges directly from the basic principles of the system. We conclude, therefore, that Mirror Theory offers genuine insight into the nature of grammar, but that remnant roll-up derivations gain descriptive power at the cost of explanatory adequacy.

The empirical generalizations we have discovered, in their precise formulations, are possibly unique to Kiowa. However, they bear clear similarities to generalizations about functional hierarchies, mirror-like relations, and syntactic interfaces with information structure and semantics in other languages. Moreover, the devices by which we have explained them call on the same universals and parameters that have been proposed in other work. We hope therefore to have done service to the particularities of the Kiowa language and to the generalities of Universal Grammar.

# Appendix A

## Incorporation

In this appendix, we briefly discuss incorporation in Kiowa. While we have not been concerned with the syntax of such structures in our investigation, Baker (1996: 19), whose proposals we discussed at length above, takes Kiowa to have robust noun incorporation and we believe it would be irresponsible of us not to evaluate this claim in the light of the materials we have at our disposal. While it is true that incorporated nouns in Kiowa are morphologically integrated into the complex verb, and that both noun and verb may occur independently (two of Baker’s criteria), we are not certain as to whether Kiowa noun incorporation meets Baker’s other criteria of robustness, namely, reasonable productivity and referential activity in the discourse.

Incorporates occur between the prefix and root. The class of items that may appear in this domain is large. It includes adverbs:

- (1) Gyat- hón-pól- /t!óm-pól-təə  
1S:3P-last-eat-/first- eat-MOD  
‘I’ll eat last/first’
- (2) Gyá- hágyá- ton  
:2S:3S-already-fat  
‘You’ve already got it fat’ (Watkins 1984, p. 241)

—locatives, both situative and directional:

- (3) Hón T!ókhôî-deki á- thááən-zeiməə; Kóígú- al á- zéíma  
NEG whites- only 3A-town- move.P.NEG Kiowas-also 3A-move.P.IMPF  
‘It wasn’t just white people about town; there were also Kiowas about’
- (4) A- éínédáákhəu-baa  
1S-Anadarko- go.PF  
‘I went to Anadarko’

—verbs, with or without complement nouns:

- (5) Tóódé de- t!óóthâl- dou  
long time 1S:3A-listen.NV-hold  
'I listened for a long time'
- (6) A- hot- kôm- hap- do yǎ- ol- só- mǎǎgǎ  
1S-travel-DISTR-FREQ-because :1S:3P-belongings-lay.P.NV-expert  
'Because I travel so much, I'm expert at packing'

—and nouns alone:

- (7) Khomto-êlxǒhǐjǐ é- xât- dǎǎpe  
ghost- old woman 3S:1S:3S-check-request.PF  
'An old ghost woman asked me for a check'
- (8) P!él- heǐ hétó gya-ol- sól  
drop.P-PRIV still 3P- belongings-lie.P  
'The groceries are still lying [in the car] unloaded'
- (9) Bé- k!ǎǎ- saa  
2S:3I-knife-cut.IMP  
'Cut it with a knife'

Despite the large variety of possible incorporates, Kiowa incorporation is subject to a number of restrictions that make it somewhat distinct from the variety of incorporation familiar from Baker's (1988) discussion of Mohawk.

Object incorporation, when it does occur, is not valence reducing: (7) is overtly transitive. However, such examples are uncommon, being restricted, possibly, to a few intensional verbs like 'request', 'contend for', 'seek' and 'expect'. Examples of these last three are given below. Note that, in (10) and (11), agreement is for a default object, not the incorporate: in (11), for instance, 'man' would occur with s-agreement. (In (7) and (12), the incorporated nouns share agreement class with the agreement default.)

- (10) K!yátáyklǐi én- ǎǎzá- iikhǎǎhel  
chief 3D:REFL-udder-contend for.EVID  
'Two chiefs quarreled over an udder'
- (11) Bát- k!yǎǎhǐ-donmǎ— éǐde bát- kǎm!  
2P:3P-man- seek.IMP this 2P:2S-vote.IMP  
'You're looking for a man—vote for this one!'
- (12) Hétó gyat- ám-kut- bonmǎ  
still 1S:3P-2- letter-look.IMP  
'I'm still expecting your letter'

A case might be made that these examples show referentially active incorporates. However, in most cases, straightforward incorporation of an object is ungrammatical:

- (13) a. \*Belle é- khóó- ḡḡméí  
 Belle 3S:1S:3S-shawl-make.PF  
 ‘Belle made me a shawl’  
 b. Belle khóó é- ḡḡméí  
 Belle shawl 3S:1S:3S-make.PF  
 ‘Belle made me a shawl’
- (14) a. \*Belle an ∅- khóó- ḡḡmṵ  
 Belle HAB 3S:3S-shawl-make.IMPF  
 ‘Belle makes shawls’  
 b. Khóó an ∅- ḡḡmṵ  
 shawl HAB 3S:3S-make.IMPF  
 ‘She makes shawls’

Furthermore, in apparent cases of incorporation, one of several special factors is at work. Besides incorporation into a modal verb, we can discern three.

The first is that the incorporated noun restricts, rather than saturates, the object position (in a manner reminiscent of that discussed by Chung and Ladusaw 2003).

- (15) Góm-táágyá<sub>i</sub> á- dḡḡmêi gṵ pro<sub>i</sub> ∅<sub>i</sub>- bólb- pṵlei  
 wind-grease :3S:3S-be.EVID CONJ 3S:3S-butter-eat.IMPF.EVID  
 ‘He had the mentholatum and was eating it **like butter**’

Such instances seem more like the complex predicate formation illustrated below, which also have a restrictive force, than argument incorporation, however. (The (a) examples in each case are contrasted with the unincorporated (b) examples, which are purely identificational.)

- (16) a. ∅- ṵnhááde-dḡḡmei  
 3S-bear- be.EVID  
 ‘She was (transformed into) a bear’  
 b. ṵnhááde ∅- dḡḡmei  
 bear 3S-be.EVID  
 ‘It’s a bear’
- (17) a. A- maayí- ḡḡgya  
 1S-woman-be seated.S/D  
 ‘I’m sitting like a woman’  
 b. Maayí gya- bónmṵ  
 woman 1S:3S-look.IMPF  
 ‘I’m looking at the/a woman’

The second is that (excepting the objects of intensional verbs) incorporated nouns generally belong to one of two semantic classes: body parts or kin terms.



For these, incorporation is predominant (in non-identificational cases; otherwise, structures like (16b)–(17b) are used):

- (18) a. Be– món- phîl  
2S:REFL–hand-wipe.IMP  
‘Wash your hands!’  
b. A– ólthó-khop-doo  
1S–head-hurt- be  
‘I have a headache’
- (19) a. Hagya hágyâi á– tháá-k!oo  
maybe which.INDEF :3S:3S–wife- be lying.S/D  
‘She might have been the wife of one of them’  
b. JT é– kóm- k!oo  
JT :1S:3S–friend-be lying.S/D  
‘JT is my friend’

The third is that the noun is selected by another verb and that that entire VP incorporates into the matrix verb. The incorporated verbs in these cases occur in the morphologically distinctive form (glossed NV for ‘non-verbal’) found also in nominalization.

- (20) É– étpáthéi-pholaahji-khoo- tot  
3S:1S–forced- rabbit- get.NV-send.PF  
‘She forcibly sent me to get a rabbit’
- (21) Gya– ítháá- pqu- ai  
1S:3P–daughter-see.NV-start out.PF  
‘She set off to see her daughter’
- (22) Ba–hóndé- mothem- xanma  
2P–something-learn.NV-arrive.IMPF  
‘You’re coming to learn something’

This is the means by which control-like structures are standardly accommodated in Kiowa, a language that lacks infinitives.

We, therefore, see that incorporation is a productive process of Kiowa grammar, but that it applies only in well defined syntactic and semantic domains.

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