

Classifying clitics in Sm'alg yax: Approaching theory from the field

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Sm'alg yax (British Columbia and Alaska) is a highly ergative VAO/VS language with an uncommonly wide range of clitics. This chapter has the two-fold function of demonstrating how Anderson's (2005) constraint-based analysis of clitics gives insight into the complex behavior of Sm'alg yax clitics, and how the clitics themselves afford empirical means of testing such a theory. The Sm'alg yax data are drawn from both field research and published texts, reflecting a community-based approach to language documentation that has evolved through a long-term, collaborative relationship with the Tsimshian (Sm'alg yax) communities. Building on Stebbin's (2003) definitions of intermediate word classes in Sm'alg yax and Anderson's Optimality Theoretical approach, we determine that in terms of their varying phonological dependence, Sm'alg yax clitics include internal, phonological word, and affixal clitics. The existence of affixal clitics in Sm'alg yax, however, calls into question the viability of the Strict Layer Hypothesis (Selkirk 1984) as inviolable rules when describing clitics. Furthermore, Sm'alg yax provides strong evidence that the direction of clitic attachment is more clitic specific than language specific. In characterising the behaviour of Sm'alg yax clitics, we find that not only does linguistic theory help sharpen our understanding of the fieldwork data, but also that field linguistics has consequences for linguistic theory.

1. INTRODUCTION. Sm'alg yax (Coast Tsimshian), an endangered member of the Tsimshianic language family, is a highly ergative, mildly polysynthetic VAO/VS language spoken by the Tsimshian people in the northernmost area of coastal British Columbia, Canada and since the late nineteenth century in the neighboring region in Alaska. In Canada there are seven Tsimshian bands, with a total of approximately 7,700 band members. While there is no accurate survey of the total number of fluent speakers, Sm'alg yax is highly endangered with complete speaking command mostly restricted to older age groups. The extent of the shift toward English correlates not only with age but also with the population size and degree of geographic isolation of the community. However, over the last 30 years the Tsimshian people have been actively working to preserve and revitalize their traditional language through a range of activities involving school-based language programs, curriculum development, literacy training, native language teacher training and language documentation. Linguistic description of Sm'alg yax began with fieldwork by Franz Boas (e.g., 1911, 1912) and then most significantly continued from 1969 with the efforts of John

Dunn (e.g., 1978, 1979a), as well as the first author's own fieldwork begun in 1979 (e.g., 1994), and Tonya Stebbins' fieldwork from 1996 (e.g. 1999, 2001a).¹

An area that has been challenging for field linguists has been characterizing the behavior of the uncommonly wide range of clitics in Sm'algyax. Both grammatical and lexical classes of clitics occur and include a large number of proclitics and enclitics, a flexiclitic (attaching variably as a proclitic or an enclitic) and a circumclitic. The clitics vary most notably in terms of their phonological dependence and their direction of attachment. To illustrate, in (1) the 'predicative connective' enclitic =*sga* carries grammatical-semantic information about the following NP, *nliit* 'his fur', but is prosodically attached to its left, whereas the possessive proclitic *n=* also occurs at the left edge of the NP, but attaches to the right.²

- (1) *Ada gyik loogaksga nliit.*
 Ada= gyik loogak[=*sga* n=*lii*-t]
 and= again wet[=*CN.PRED POSS=fur-3POSS*]
 'And his fur was wet again.' (Mulder 1994:195)

This chapter has the two-fold function of demonstrating how Anderson's (2005) constraint-based analysis of clitics gives insight into the complex behavior of Sm'algyax clitics, and how the Sm'algyax clitics themselves afford empirical means of testing such a theory. This is a case where not only does linguistic theory help sharpen our understanding of fieldwork data, but also where field linguistics has consequences for linguistic theory.

The data for this chapter are drawn from texts from field research by the first author, some published (e.g., Mulder 1994), but many unpublished; texts and examples collected from speakers in the field by Boas (1911, 1912), Dunn (1978, 1979a, 1995) and Stebbins (1999, 2001a, 2003); and published texts, written and edited by Sm'algyax speakers (e.g., Bolton et al. 1984; Reeves 1992). With the exception of Boas' materials, the texts specifically drawn on for this study have all been edited by a collective of fluent Sm'algyax speakers who are also proficient writers of their language. The understanding of the data presented here is framed by the five years the first author initially spent full time in the field doing language documentation and developing the Sm'algyax Language Studies Program in School District No. 52 (British Columbia, Canada). The approach to the data and the choice of texts that underpins this chapter reflects a community-based orientation to fieldwork and language documentation that has evolved through a long-term, collaborative relationship by the first author with a number of people in the Tsimshian communities. The motivation for approaching fieldwork and theoretical linguistic analysis in this way is to

¹ For a detailed discussion of linguistic material on Sm'algyax see Mulder (1994) and Stebbins (1999).

² The following abbreviations are used for glosses: A='most agent-like argument of a transitive verb'; CN.ATTR='attributive connective'; CN.PRED='predicative connective'; CN.PREP='prepositional connective'; EVID='evidential'; FUT='future tense'; NEG='negator'; O='most patient-like argument of a transitive verb'; PAST='past tense'; PL='plural'; POSS='possessive'; PREP='preposition'; S='argument of an intransitive verb'; SG='singular'; SUBORD='subordinator'.

work toward enabling knowledge of the language to be constructed not only *for* and *with*, but also *by* community-members. Indeed, the body of texts and curriculum that has and is continuing to be co-produced by fluent speakers and proficient writers of Sm'algyax supports such an approach.

The aim of this chapter is not to give a comprehensive account of all the sets of clitics occurring in Sm'algyax, but to provide a descriptive account and theoretical analysis of a subset representing the range of clitics found in this language. The first major part of the chapter begins with a brief presentation of the six sets of Sm'algyax clitics that are considered here (Section 2.1). Building on Stebbins' (2003) definitions of intermediate word classes in Sm'algyax, we then outline language-specific criteria for distinguishing the varying phonological dependence of Sm'algyax clitics (Section 2.2). It is proposed that Sm'algyax clitics either attach as part of the same phonological word (PWd) as their host (termed an Internal Clitic), have independent status as a PWd and form a phonological phrase (PPh) with their host (a PWd clitic), or even join their host to form a recursive PWd structure (an Affixal Clitic). Turning to the morphosyntactic dimension of cliticization, we characterize the position of Sm'algyax clitics in terms of their association with a syntactic domain, their location within this domain and their direction of attachment to their host (Section 2.3). This part of the chapter concludes with a summary that situates Sm'algyax clitic features within the broader typology of clitics (Section 2.4).

In the second major part of the chapter we focus on the implications of the Sm'algyax data for the theory of clitics. After a brief outline of Anderson's (2005) Optimality Theoretic approach to cliticization (Section 3.1), we consider the evidence from Sm'algyax that the direction of clitic attachment is clitic-specific rather than language-specific (Section 3.2). Following this we demonstrate that unlike K^wak^wala, Sm'algyax allows nominals with left-edge clitics and leftward clitic attachment as clause initial topics, thereby challenging the view that the lack of a host precludes clause initial topics (Section 3.3). In the final section we return to the Affixal Clitics in Sm'algyax and discuss how their presence adds further empirical support to Anderson's constraint-based approach to the theory of clitics.

2. CLASSIFYING SM'ALGYAX CLITICS.

2.1 A SELECTION OF SM'ALGYAX CLITICS. While there are numerous clitics in Sm'algyax, in this chapter we consider only the following sets, which are representative of the range of clitic properties in this language:

- predicative connectives
- attributive connectives
- the possessive clitic
- modifier and locative clitics
- clause initial clitics
- subjective dependent pronouns

Here we introduce each set to give a feel for the data and in Sections 2.2 and 2.3 return to a more detailed discussion of their clitic properties. The first two sets, the predicative and attributive clitics, are part of a larger system of what Boas (1911) originally termed ‘connectives’ in that they mark the functional relationship of the phrase to the larger construction.³ In addition, most of the sets of connectives also mark several other grammatical and semantic distinctions, such as the predicative connectives, which can mark whether the referent of the noun phrase is a common or proper noun, what its deictic status is relative to the speech act, what its grammatical relationship is to the verb and whether it occurs in an indicative or subjunctive clause. As illustrated in (2) (as well as in (1) above), the predicative connective =*sga* occurs at the left edge of the noun phrase and attaches as an enclitic to the preceding word.

- (2) *Ada la dm dzaksga lgu gwe'am awta.*
 ada= la= dm= dzak[=*sga* lgu= [gwe'a=m] awta]
 and= near= FUT= die[=CN.PRED little= [poor=CN.ATTR] porcupine]
 ‘And poor little porcupine was about to die.’ (Mulder 1994:201)

In contrast to the predicative connectives, there are only two attributive connectives: =*a* and =*m*. As is shown in (2) above, an attributive connective occurs at the right edge of the modifier phrase and attaches to the left (see (3) below for an example with =*a* ‘CN.ATTR’). The possessive clitic *na*=/*n*/*na*, which refers to alienable possession, occurs at the left edge of the possessed noun phrase and attaches to the right as *na*= in (3) (and as *n*= in (1) above):

- (3) *Na'yeen na'wiiama galmt'u'utsgu.*
 na'yeen [na='wi=[aam=a] galmt'u'utsk-u]
 rust.spot [POSS=big=[good=CN.ATTR] pot-1SG.POSS]
 ‘My nice big pot has a rust spot.’ (Stebbins 2003:404)

The possessive clitic can also be varied in its orthographic representation, sometimes being written as a separate word, as in (4):

- (4) *Dm gwildm luwansm a na xsoosm.*
 dm= gwildm lu=wan-sm a [na= xsoo-sm]
 FUT= get.ready in=sit.PL-2PL.S PREP [POSS= canoe-2PL.POSS]
 ‘You must be sitting ready in your canoes.’ (Reeves 1992:16)

³ Stebbins (2003) instead uses the term ‘dependency markers’. However, we continue to follow the tradition in the Tsimshianic literature which uses ‘connectives’.

The next set, the modifier and locative clitics, are lexical clitics.⁴ These clitics, which modify nouns and verbs, do not serve any grammatical purpose and instead either provide extra descriptive information (in the case of the modifiers) or give information about location (in the case of the locatives) (Stebbins 1999:189).⁵ This is shown in (5), where the locative lexical proclitic *dzaga* = 'across' occurs with the verbs *yaa* 'walk.SG' and *goo* 'go. to' while *nsmlaxyuuptga* 'his country' begins with the possessive *n*= followed by two lexical clitics, *sm*= 'real' and *lax*= 'top', all attaching as proclitics to the noun *yuup* 'earth'.⁶

- (5) *Ada wil dzagayaasga awtaga adat*
 ada= wil= dzaga=yaa=sga awta=ga ada=t
 and= then= across=walk.SG=CN.PRED porcupine=EVID and=3A

dzagagoo nsmlaxyuuptga.
 dzaga=goo n=sm=lax=yuup-t=ga
 across=go.to POSS=real=top=earth-3POSS=EVID
 'And then porcupine walked across and went across to his country.' (Mulder 1994:189)

In addition to being lexical, the modifier and locative clitics are also atypical in their phonological shape. Unlike the three sets of clitics we have considered so far, which are either non-syllabic or monosyllabic, many of the modifier and locative clitics are disyllabic (as is *dzaga* 'across' in (5)).

The clause initial clitics are grammatical forms which include clausal conjunctions, subordinators, negators, tense/aspect markers and discourse markers. They occur on the left edge of the clause, usually in the order listed, and like the modifier and locative clitics many are disyllabic and a few are even trisyllabic. For example, in (2) the clause begins with the clausal conjunction *ada* 'and', followed by the tense/aspect marker *la dm* 'near FUT', whereas in (5) the first clause begins with the clausal conjunction *ada wil* 'and then' and the second clause begins with the clausal conjunction *ada* 'and'. The clause initial clitics are prosodically dependent on the first lexical word of the clause which is either an adverb (as in (1)) or a predicate (which is commonly a verb, as in (2) and both clauses in (5)).

Now the clause initial clitics have consistently been treated in the Tsimshianic literature as a set since they 'huddle together' within the same accentual—that is, phonological—phrase. However, when we look at the syntactic structure of Sm'algyax clauses, it

⁴ As Stebbins (1999, 2003) notes, there are derivational prefixes which perform a similar descriptive function as the lexical clitics, the crucial difference being however, that the prefixes change the meaning of the stem they attach to whereas the clitics do not. Evidence for these modifiers and locatives being classed as clitics, rather than as words, is that they occur in a fixed order and are prosodically dependent on the following word.

⁵ A complete list of forms along with a detailed discussion of their distribution is given in Stebbins (1999).

⁶ As =*ga* illustrates in (5), there is a small set of clause-final evidential enclitics in Sm'algyax.

appears that while the clausal conjunctions, subordinators and negators are positioned with respect to the left edge of the clause, the tense/aspect and discourse markers are positioned with respect to the left edge of the phrase formed by the predicate and its modifiers rather than the clause. Although fully presenting the evidence for this claim would take us too far afield, we do offer three examples in support of this analysis. In (6) a discourse marker precedes the verb:

- (6) *'Ap libagaythaw gyet da awaan.*
 'ap= libagayt=haw gyet da awaan
 really mixed.up=say person PREP over.there
 'That person is not making sense (talking crazily).' (Stebbins 1999:194)

Here the discourse marker 'ap= 'really', gives emphasis to the predicate and along with the modifier proclitic *libagayt=* 'mixed up' is prosodically dependent on the verb *haw* 'say'. This ordering, which is quite fixed, suggests that the discourse marker 'ap= 'really' and the modifier clitic orient to the head of a 'predicate phrase'. In (7) and (8) the S is a clause initial noun phrase topic:

- (7) *'Nüüyu nah algyagada Sm'algyax.*
 ['nüüyu] nah= algyax-t[=a Sm'algyax]
 [1SG.S] PAST speak-3s[=CN.PREP Sm'algyax]
 'I was the one who was speaking in Sm'algyax.' (Mulder 1994:65)
- (8) *Da wila k'aba hagwil yaatga.*
 da= wila= k'aba hagwil= yaa-t=ga
 and= then= little.one slowly= walk.SG-3S=EVID
 'And then the little one walked along slowly.' (Mulder 1994:202)

As we see in (7), the topic 'nüüyu '1SG' comes before the tense/aspect marker *nah* 'PAST' and the verb while in (8) the topic *k'aba* 'little one' comes after the clausal conjunctions *da wila* 'and then' and before the modifier clitic and verb. The ordering in these examples, which again is quite fixed, suggests that the position for clause initial topics is after any clausal conjunctions, subordinators and negators and before any tense/aspect markers and discourse markers of the predicate phrase.

The clause initial clitics are clearly not prototypical in a number of respects, a matter we return to in the following sections. For the moment the focus is the distinction between clause initial clitics which are positioned with respect to the left edge of the clause—the clausal conjunctions, subordinators and negators—and those which are positioned with respect to the left edge of the predicate phrase—the tense/aspect markers and discourse markers — as this is relevant for the final set of clitics we consider here.

In *Sm'algyax* there are three sets of dependent pronouns, which, following the terminology of Boas (1911) and Dunn (1979b), are the subjective, objective and definite objective dependent pronouns. The choice of dependent pronoun for the A, S and O roles in a clause is conditioned by the tense/aspect and mood of the clause, as well as the person

or semantic nature of the A and O relative to each other. While the objective and definite objective dependent pronouns are suffixes to the verb, the subjective pronouns are clitics (Stebbins 2003:398).⁷

TABLE 1. Subjective dependent pronouns

	SG	PL
1	<i>n=</i>	<i>dp=</i>
2	<i>m=</i> / <i>=m</i>	<i>m=...=sm</i>
3	<i>=t</i>	

In terms of position, the subjective dependent pronouns are probably best analyzed as being located with respect to the leftmost element of the predicate phrase—namely, the tense/aspect marker. With a tense/aspect marker, their preferred host, the first person pronouns *n=* '1SG' and *dp=* '1PL', and the second person singular pronoun *m=* '2SG' (as in (9)) are proclitics, while the second person plural pronoun is a circumclitic *m=...=sm* '2PL' (as in (10)), and the third person pronoun *=t* '3' is an enclitic (as in (5) above).⁸

- (9) *Aam mdm dibaaltga, k'anayis, dm*
 Aam m=dm= di=baal-t=ga k'anayis, dm=
 good 2SG.A=FUT= with=try-3O=EVID friend FUT=

ganaamnt.

gan=aam-n=t

means.of=good-2SG.S=EVID

'It would be good if you tried it too, my friend, you will feel good.' (Mulder 1994:163)

⁷ As the subjective pronouns are used exclusively to mark the ergative (i.e. the A role), Stebbins (2003) refers to them as ergative dependent pronouns. However, we continue to follow the tradition in the Tsimshianic literature and use 'subjective dependent pronoun'.

⁸ Note that *m=...=sm* '2PL' cannot be analyzed as being two separate elements since *=sm* cannot occur on its own and if *m=* occurs on its own it is interpreted as the singular form, *m=* '2SG'.

- (10) *Alga mdmsm gaba ksgoogm googa*
 alga= m=dm=sm gap[=a [ksgoox=m] goo[=ga
 NEG= 2.A=FUT=2.PL.A eat[=CN.PRED [first=CN.ATTR] thing[= CN.PREP

dmt gyiinsm.
 dm=t gyiin-sm]]
 FUT=3A share.food-2o]]
 'Do not eat (the food) they bring you first.' (Stebbins 2003:401)

If there is no preferred tense/aspect clitic host, then a subjective dependent pronoun can stand by itself by being syllabic (as in (11)), or with an epenthetic vowel (as in (12)).⁹ In this situation the subjective dependent pronoun, like any clause initial clitic, is prosodically dependent on the first lexical word of the clause.

- (11) *Ada wil m wayu.*
 ada= wil= m= way-u
 and= then= 2SG.A= find-1SG.O
 'Then you (SG) found me.' (Boas 1911: 384)

- (12) *Gyiloo ma laalaga galaxsn.*
 gyiloo= ma= laalax=a ga-laxs-n
 don't= 2SG.A= bite.PL[=CN.PRED PL-fingernails-2POSS]
 'Don't bite your fingernails.' (Stebbins 2003:403)

Alternately, the second person singular and the third person subjective dependent pronouns can attach as enclitics to a neighboring clause initial clitic. Thus, the second person singular pronoun is a flexiclitic, attaching variably as a proclitic *m* '2SG' as in (9), or an enclitic =*m* '2SG' as in (13) where it cliticizes to *gyiloo* 'don't', a negator (see also (5) above where in the second clause =*t* '3' attaches as an enclitic to the clausal conjunction *ada* 'and').

- (13) *Gyiloom suwanooyu.*
 gyiloo=m suwanoo-u
 don't=2SG.A bother-1SG.O
 'Don't bother me.' (Stebbins 2003:403)

As these examples illustrate, the behavior of the subjective dependent pronouns is anomalous in several respects; first, the pronouns vary across the set in terms of their di-

⁹ Note that the first and second person pronouns occur independently much more readily than the third person pronoun (Stebbins 2003:403).

rection of attachment; second, they cliticize to another clitic¹⁰—namely, one of the clause initial clitics—although they do not form a syntactic or semantic constituent with their host; and third, their preferred host is a tense/aspect marker, but in the absence of one they can attach to another clause initial clitic or to the first lexical word of the clause. These anomalous properties are considered in more detail in the next two sections.

2.2 DISTINGUISHING CLITICS IN SM'ALGYAX. Sm'algyax clitics, as Stebbins (2003) demonstrates, can be positively defined as separate from words and affixes and as dividing into distinct classes. Stebbins concludes that these clitics all 'show some phonological or prosodic dependency and grammatical dependency at the level of the phrase rather than the word' (p. 399) and 'may be treated as phrasal affixes' (p. 414). Minimally, Sm'algyax clitics share a range of typical clitic properties including the morphosyntactic properties of fixed ordering, syntactic dependency described by reference to syntactic elements (e.g. right edge of the modifier phrase, left of the phrasal head, or leftmost element of the predicate phrase), non-selectivity of the syntactic category of the host and syntactic scope over a phrase (following Aikhenvald 2003; Anderson 1992, 2005; Anderson and Zwicky 2003; Klavans 1985; Zwicky 1977, 1985; Zwicky and Pullum 1983).

Where the sets of Sm'algyax clitics differ markedly is in their degree of phonological dependency on an adjacent word. In this section we characterize the differences in dependency by considering stress, the phonological interaction of a clitic with its host, the ability to host other clitics, pausing and orthographic practices in determining word boundaries.

To begin, words typically have independent stress, whereas affixes and clitics do not. In Sm'algyax primary stress is a feature of lexical words only and it usually falls on the final syllable of the stem (Sasama 1995:51). None of the representative sets of clitics presented in the previous section carries primary stress and all are prosodically dependent on their host. However, a clause initial clitic may carry secondary stress, especially for emphasis or pragmatic reasons.

Comparing the phonological interaction of a clitic with its host to that of words and affixes provides another means for distinguishing the degree of phonological dependence of a clitic. In Sm'algyax phonological interaction between a stem and suffix includes stem-final lenition (as in (3) and (17)) and epenthesis (as in (7), (13) and (16)). We find that the predicative and attributive connectives, which are enclitics, trigger these same phonological processes. For example, stem-final lenition occurs with both the predicate connective =*a* and the attributive connective =*m* in (10) above, while in (14) vowel epenthesis occurs between the predicative connective =*sga* and its host '*wiisalaks* 'make great fire':

¹⁰ As Zwicky and Pullum (1983) identify that clitics, but not affixes, can be attached to material already containing clitics as one of the means for differentiating between clitics and affixes, the fact that a subjective dependent pronoun cliticizes to another clitic, albeit a rather non-prototypical clitic, is evidence that the subjective dependent pronouns are themselves clitics. It is relevant to note, however, that Klavans (1979: 71) has found that inflectional affixes can sometimes attach to clitics.

- (14) *Ada wila 'wiisalaksüsga 'wii mediik.*
 ada= wila= 'wii=sa-laks[=sga 'wii= mediik.
 and= then= great=make-fire[=CN.PRED great= grizzly.bear]
 'And then great grizzly bear made a big fire.' (Mulder 1994:196)

Similarly, epenthetic vowels may occur between a subjective dependent pronoun and its preferred host as shown in (15) between the first part of the circumclitic *m=...=sm* '2PL.A' and its tense/aspect clause initial clitic host *dm* 'FUT':¹¹

- (15) *Ada dm düüsm ami midm sm gapt.*
 ada= dm= düü-sm ami mi=dm =sm gap-t
 and= FUT= die.PL-2PL.S if 2PL.A=FUT =2PL.A eat-3O
 'And you will die if you eat it.' (Reeves 1992:12)

Turning to prefixes, there are a small number of derivational prefixes which undergo vowel harmony. While there is individual and dialectal variation, Sasama (1995) has found for Hartley Bay speakers that the derivational prefix *sV* 'make, get' occurs as *sa-* before velar and glottal segments; *si-* before [j] and *sü-* elsewhere. In contrast, the possessive clitic, the modifier and locative clitics and the clause initial clitics do not undergo vowel harmony as is illustrated in (16), where the locative lexical proclitic *sa=* 'off' is followed by a vowel.

- (16) *Siipga t'mbaayu la sa oksu.*
 siipk[=a t'mbaa-u] la= sa= oks-u
 hurt[=CN.PRED hip-1SG.POSS] PAST= off= fall.down-1SG.S
 'My hip hurt when I fell down.' (Stebbins 2001a:164)

This along with the lack of epenthesis (as compared, for example, to the subjective dependent pronoun in (15) above) suggests that these three sets of clitics do not phonologically interact with their host, although they attach to it for their own prosodic realization.

Another marker of phonological independence is the ability to host other clitics. When the clause initial clitics host the subjective dependent pronouns they exhibit morphological complexity, which is a feature that is generally associated with words rather than affixes or clitics.

The occurrence of pausing after an element also points toward phonological independence, as pausing may occur between words, but typically not within an affix/clitic + stem combination. The clause initial clitics, but none of the other sets of clitics, have been observed as being a site for pausing (e.g. *ada...ada...* 'and...and...' from Stebbins 2003:401). This indicates a more word-like quality of this clitic set.

¹¹ Note here that *=sm*, the second part of the circumclitic *m=...=sm* '2PL.A', has been written disjunctively. This seems to have been the convention in the handful of relevant examples in this series of texts, but doesn't occur in any other works by Sm'algyax writers.

Finally, orthographic practice can give an indication as to how native speakers mentally divide up elements, although it certainly cannot be relied upon as the sole criterion for determining word boundaries. Typically, an affix/clitic + stem combination is written conjunctively (as a single word), whereas a word + word combination is written disjunctively (as separate words). With some types of clitics there is variation across native writers as to whether the clitic element and its prosodic host are written conjunctively or disjunctively. In contrast, other types of clitics are consistently written only conjunctively or only disjunctively. While Sm'algyax orthographic conventions are still being codified (cf. Stebbins 2001b), the observed practices of Sm'algyax writers with respect to different sets of clitics can be taken as further evidence of varying phonological dependence. What we find is that, consistently, predicative and attributive connectives are written conjunctively (as in (1)-(3), (5), (10), (12), (14), (16)-(18)), whereas clause initial clitics are written disjunctively (as in (1), (2), (4)-(5), (7)-(18)). The subjective dependent pronouns are written conjunctively when they are prosodically attached to a clause initial clitic (as in (5), (9)-(10), (13), (15), (17))¹² and disjunctively when they stand alone by being syllabic or by adding an epenthetic vowel to create a well-formed syllable and are prosodically dependent on the first lexical word of the clause (as in (11)-(12)). The possessive clitic and the modifier and locative clitics, however, tend to be written either conjunctively or disjunctively. For example, in (3) above the possessive clitic is written conjunctively while in (4) it is written disjunctively. Similarly, in (14) the modifier clitic 'wii 'great' is written conjunctively when it is attached to the verb, but disjunctively when attached to the noun. Stebbins (1999:138) notes that "Beynon, probably the most prolific writer of Sm'algyax, in his manuscripts tends to attach the nearest lexical clitic to the stem and treat the others independently." What is important to observe here is the consistency across writers as to the conjunctive and/or disjunctive treatment of the various sets of clitics.

The observations about differences in phonological dependence can be summarized as shown in Table 2.

As we see here, Sm'algyax clitics appear to have three levels of phonological dependence. The predicative and attributive connectives are prototypical clitics and highly phonologically dependent as they are non-stress bearing, interact phonologically with their host, do not host other clitics, are not a site for pausing and are written conjunctively. The possessive clitic and the modifier and locative clitics are less prototypical and less phonologically dependent in that they do not interact phonologically with their host and are written either conjunctively or disjunctively. Clause initial clitics are the least prototypical and are the most phonologically independent, or word-like, as they can carry secondary stress, can host other clitics, can be a site for pausing, and are written disjunctively. The subjective dependent pronouns appear to pattern like the predicative and attributive connectives as prototypical clitics when they are hosted by a clause initial clitic, but like the clause initial clitics when they are prosodically dependent on the first lexical word of the clause.

¹² With the exception of the second part of the circumclitic $m=...sm$ '2PL.A' which has been written disjunctively as mentioned in the previous footnote.

TABLE 2. Summary of differences in phonological dependence

Sm'algyax Clitics	Location	Stress	Phonological Interaction with Host	Host other Clitics	Pausing	Orthographic Word
Predicative Connectives	enclitic	not stress bearing	epenthesis, stem-final lenition, coalescence	no	no	conjunctive
Attributive Connectives						
Possessive Clitic	proclitic	not stress bearing	none	no	no	conjunctive/disjunctive
Modifier and Locative Clitics						
Clause Initial Clitics	proclitic	not primary stress bearing, but can carry secondary stress	none	yes	yes	disjunctive
Subjective Dependent Pronouns	clause initial clitic host: proclitic, enclitic, flexiclitic, circumclitic first lexical word host: proclitic	not stress bearing	epenthesis (with clause initial clitic host or to form a syllable)	no	no	clause initial clitic host: conjunctive first lexical word host: disjunctive

These three levels of phonological dependence can be taken as reflecting three different types of prosodic arrangements. By arrangement we refer to the manner in which a clitic is incorporated into the accentual structure of its host, since in order to be phonetically realized a word, affix or clitic needs to be part of an accentual unit. Turning to the theory of clitics, as Anderson (2005:46) remarks, “for any given host-plus-clitic combination, there are essentially four formal possibilities as to the prosodic structure that might result from combining them,” whether this is at the level of the Phonological Word (PWd) or the Phonological Phrase (PPh).¹³ These structures are shown in Figure 1:

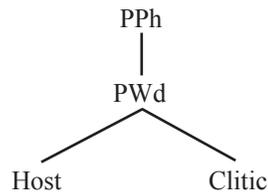
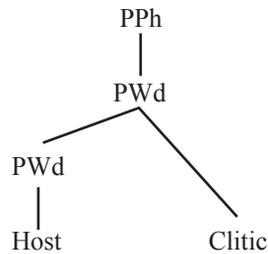
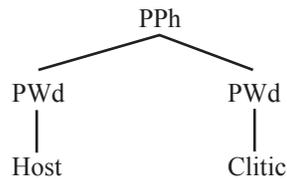
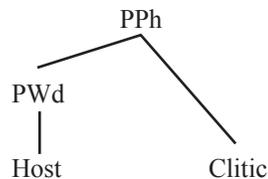
Internal Clitic**Affixal Clitic****PWd Clitic****Free Clitic**

FIGURE 1. Prosodic structures of clitic attachment (Anderson 2005:46)

¹³ Anderson attributes this observation originally to Selkirk (1995).

In the Internal Clitic prosodic structure the clitic becomes part of the same PWd as its host. The high level of phonological dependence of the predicative and attributive connectives on their host as evidenced by phenomena such as stem-final lenition, epenthesis and coalescence, suggests that both of these sets of clitics can be classified as Internal Clitics.

An Affixal Clitic prosodic structure is where the clitic joins its host, forming a recursive PWd structure.¹⁴ The possessive clitic and the modifier and locative clitics are, arguably, Affixal Clitics. Since there is no phonological interaction with the host, such as vowel harmony, there is no phonological motivation for analyzing them as being incorporated into the same PWd as their host, and hence, unlike the predicative and attributive connectives, they cannot be analyzed as Internal Clitics. On the other hand, even though they are syllabic and can stand by themselves orthographically, they are not stress bearing and do not have the degree of phonological independence of the clause initial clitics. Thus, they do not constitute an independent PWd and instead are best analyzed as forming a PWd with their PWd host.

With a PWd Clitic prosodic structure, the clitic attaches to its host at the level of the PPh as an independent PWd. The clause initial clitics are examples of these since they are word-like in being able to host other clitics, carry secondary stress, are a site for pausing, and are written disjunctively. However, they are still clitics in that they have a fixed order and are phonologically dependent on the first lexical word in the clause, which is the head of the phonological phrase.

The subjective dependent pronouns, the remaining set of clitics, appear to be Internal Clitics when they are hosted by a clause initial clitic, but PWd Clitics when they occur independently and, along with any other clause initial clitics, form a prosodic unit with the first lexical word in the clause.

By taking into consideration the different prosodic structures of clitic attachment proposed in the theory of clitics, we are able to gain insight into the varied degrees of phonological dependency observed in the *Sm'algyax* clitics. At the same time, the *Sm'algyax* clitics provide evidence that Affixal, as well as Internal and PWd Clitics, actually occur in natural language and that properties such as stress placement, the phonological interaction of a clitic with its host, the hosting of other clitics, pausing and orthographic practices in determining word boundaries, can be used to distinguish among the various types of clitics.

2.3. POSITIONING CLITICS IN SM'ALGYAX. In classifying clitics in *Sm'algyax* we need to consider not only the phonological dimension, but also the morphosyntactic dimension of cliticization—that is, where the different sets of clitics appear. Following Klavans (1980, 1985) and Anderson (1992, 2005), we can characterize the positioning of *Sm'algyax* clitics in terms of their association with a syntactic domain, their location within this domain and their direction of attachment to their host.

What we have seen so far of the positioning of each of the representative sets of clitics can be summarized as shown in Table 3:

¹⁴ This structure violates the non-recursivity criterion of the Strict Layer Hypothesis (Selkirk 1984), a point we return to in Section 3.4.

TABLE 3. Summary of differences in position

Sm'algyax Clitics	Syntactic Domain	Location within Domain	Direction of Attachment	Examples
Predicative Connectives	noun phrase	left edge	left (= enclitic)	(1), (2), (5), (10), (12), (14), (16)-(18)
Attributive Connectives	modifier phrase	right edge	left (= enclitic)	(2), (3), (10), (17)
Possessive Clitic	noun phrase	left edge	right (= proclitic)	(1), (3), (4), (5)
Modifier and Locative Clitics	noun phrase	left edge	right (= proclitic)	(2)-(6), (8)-(9), (14), (17)-(18)
	predicate phrase	left of head	right (= proclitic)	
Clause Initial Clitics	clause	left edge	right (= proclitic)	(1), (2), (4)-(5), (7)-(18)
Subjective Dependent Pronouns	predicate phrase	left-most element	<ul style="list-style-type: none"> • clause initial clitic host: right (=proclitic), left (=enclitic), left or right (=flexiclitic), both left and right (=circumclitic), • lexical word host: right (=proclitic) 	(5), (9)-(10), (13), (15), (17) (11)-(12)

While the positioning of the predicative connectives, the attributive connectives, the possessive clitic and the clause initial clitics has been amply illustrated, that of the remaining two sets of clitics requires further discussion.

First, when modifying a verb, the modifier and locative clitics occur after any tense/aspect markers, discourse markers and lexical adverbs, and closest to the verb stem (as in (9) above). Consequently, their location within the predicate phrase can be described as to the left of the head. In contrast, when modifying a noun, the modifier and locative clitics occur to the left of the head and before any lexical modifiers that happen to be present (Stebbins 2003:410). As is illustrated in (17) (and in (2) and (3) above), the modifier *lgu*= 'little' attaches to another modifier within the NP to act phrasally on the noun head:

- (17) *Niidzu* *wilt* *dibaada* *duusa*
 niits-u [wil=t di=baa-t[=a duus][=a
 see-1A [SUBORD=3A with=run-3o[=CN.PRED cat][=CN.PRED
- lgudzagm* *wüts'iin.*
 }gu=[dzak=m] wüts'iin]]
 little=[dead=CN.ATTR] mouse]]
- 'I saw a cat running with a dead mouse.' (Stebbins 2003:410)

Accordingly, the modifier and locative clitics are located with respect to the left edge of a noun phrase (following the predicative connective and the possessive marker if present).

In the case of the subjective dependent pronouns what we observed in Section 2.1 is that the direction of attachment is dependent on the availability of a tense/aspect marker as a preferred host and the person and number of the clitic. The first person singular and plural attach as proclitics to the tense/aspect marker whereas the second person plural attaches as a circumclitic. If there is no preferred host then they attach as proclitics to the first lexical word in the clause. The second person singular also attaches as a proclitic to the tense/aspect marker, but in its absence can either attach as an enclitic to another clause initial clitic (and hence is a flexiclitic) or as a proclitic to the first lexical word in the clause. The third person pronoun, on the other hand, attaches as an enclitic to a preferred tense/aspect marker host or another clause initial clitic if one is not present. While it has been observed as attaching as a proclitic to the first lexical word in the clause, this is rare.

In sum, Sm'algyax clitics are located with the syntactic domains of noun, modifier and predicate phrase, and clauses. Within these syntactic domains, the clitic may be located with respect to the left or right edge, the head or the leftmost element. The direction of attachment may be to the left, right, to the left or right, or both left and right.

2.4. THE DIMENSIONS OF SM'ALGYAX CLITICS. Drawing together the properties of the six sets of clitics that we have considered here, we can locate the dimensions of Sm'algyax clitics with respect to the broader typology of clitics. Along the phonological dimension, we observed that Sm'algyax clitics distinguish three different levels of phonological dependence in their attachment to a host which can be reflected in Internal Clitic, Affixal Clitic and PWD Clitic prosodic structure. In Sm'algyax, Internal Clitics are prototypical clitics, while Affixal Clitics are less so, and PWD Clitics are the least prototypical.

Along the morphosyntactic dimension, Sm'algyax clitics are located with respect to a variety of factors within a range of syntactic domains and exhibit a wide range of possibilities for the direction of attachment, as is summarized in Table 4. While there appears to be some preference for left edge proclitics within noun phrases and clauses, overall the syntactic domain, the location of the clitic within the domain and the direction of attachment, do not strongly correlate. In sharp contrast, with the exception of the subjective dependent pronouns, the direction of attachment does correlate with prosodic structure.

TABLE 4. Dimensions of Sm'algyax clitics

Sm'algyax Clitics	Prosodic Structure	Syntactic Domain	Location within Domain	Direction of Attachment
Predicative Connectives	Internal Clitic	noun phrase	left edge	left (= enclitic)
Attributive Connectives		modifier phrase	right edge	
Possessive Clitic	Affixal Clitic	noun phrase	left edge	right (= proclitic)
Modifier and Locative Clitics		noun phrase	left edge	
		predicate phrase	left of head	
Clause Initial Clitics	PWd Clitic	clause	left edge	right (= proclitic)
Subjective Dependent Pronouns	Internal Clitic (clause initial clitic host)	predicate phrase	left-most element	right (= proclitic), left (= enclitic), left or right (= flexiclitic), both left and right (= circumclitic)
	PWd Clitic (lexical word host)			right (=proclitic)

Internal Clitics may be located with respect to the left edge (e.g., the predicative connectives), the right edge (e.g., the attributive connectives) or the left-most element of the phrase (e.g., the subjective dependent pronouns with a clause initial clitic host), but, with the exception of the subjective dependent pronouns, the Internal Clitics attach as enclitics. In contrast, Affixal Clitics (e.g., the possessive clitic and the modifier and locative clitics) and PWd Clitics (e.g., the clause initial clitics and the subjective dependent pronouns with a lexical word host) are located either at the left edge, to the left of the head or with respect of the left-most element of the syntactic domain, but they all attach to the right as proclitics.¹⁵

¹⁵ We return to the significance of this correlation in Section 3.2.

3. IMPLICATIONS FOR THE THEORY OF CLITICS.

3.1. A SKETCH OF ANDERSON'S OPTIMALITY THEORY APPROACH. In addressing the theory of clitics, Anderson (2005) argues that the phonological dimension of cliticization can best be captured in terms of independently motivated prosodic structures, couched within an Optimality Theory (OT) framework. Following traditional accounts, clitics are treated as prosodically deficient forms that in order to be pronounced must, like all phonetic content, be integrated into prosodic structure. This is formalized in the convention of Full Interpretation (Anderson 2005:39). How these prosodically deficient forms are incorporated into prosodic structure is captured through the principle of Stray Adjunction (Anderson 2005:13), while the precise prosodic structures that result from the integration of the deficient forms are independently motivated through the Prosodic Hierarchy of syllable, foot, phonological word, phonological phrase, etc. as developed in Selkirk (1984) and Nespor and Vogel (1986) and codified in the Strict Layer Hypothesis (Selkirk 1984, 1995). Where Anderson departs noticeably from traditional theoretical accounts of clitics is in treating the principles of the Strict Layer Hypothesis as violable constraints rather than inviolable rules on the basis of empirical evidence from a variety of languages.

In regard to the morphosyntactic dimension of cliticization, Anderson outlines a view of phrasal morphology within an OT framework that uses a limited set of constraint types, ranked relative to each other, to arrive at a characterization of the actual positioning of clitics within a language. While we do not give the details here, different constraint rankings can be specified to capture, for example, how some Sm'algyax clitics attach prosodically to the left but belong syntactically to the right while others attach prosodically within their syntactic domain.¹⁶

In the next two sections we look more closely at the principle of Stray Adjunction. In Section 3.2 we consider the evidence from Sm'algyax as to whether Stray Adjunction is language-specific or specific to particular clitics within a language, while in Section 3.3 we consider the interaction of Stray Adjunction and clause initial topics in Sm'algyax. Then in Section 3.4 we explore the further support that the Sm'algyax data provide for Anderson's treatment of the principles of the Strict Layer Hypothesis as violable constraints.

3.2. STRAY ADJUNCTION. In specifying how prosodically deficient forms such as clitics are incorporated into prosodic structure, the principle of Stray Adjunction identifies the direction of attachment of the stray material. An empirical question that arises in formulating this principle is whether the direction of attachment needs to be specified individually as a property of particular clitics, or whether it is a general property of a language. For Klavans (1985) directionality is clitic-specific, while for Anderson, directionality is "a matter that follows from the overall prosodic properties of the language, and which is not available for lexical specification with respect to individual items" (2005:60). He shows how the very few cases of purported clitic-specific attachment that have been identified in the literature

¹⁶ See Sellers (2005) for a detailed elaboration of the relevant constraints and their rankings, including a proposal for an additional type of constraint to account for the subjective dependent pronouns attaching as a PWD Clitic.

can be analyzed as following from more general principles of the language's prosodic organization.

In Sm'algyax, as we saw in Section 2 and as is summarized in Table 5 below, the direction of attachment is specific to sets of clitics, with the exception of one clitic set, the subjective dependent pronouns, which has variable attachment specific to clitics within the set.

TABLE 5. Stray adjunction for Sm'algyax clitics

Sm'algyax Clitics	Prosodic Structure	Stray Adjunction
Predicative Connectives	Internal Clitic	left (= enclitic)
Attributive Connectives		
Possessive Clitic	Affixal Clitic	right (= proclitic)
Modifier and Locative Clitics		
Clause Initial Clitics	PWd Clitic	right (= proclitic)
Subjective Dependent Pronouns	Internal Clitic (clause initial clitic host)	right (= proclitic), left (= enclitic), left or right (= flexiclitic), both left and right (= circumclitic)
	PWd Clitic (lexical word host)	right (=proclitic)

We further observed that, with the exception of when the subjective dependent pronouns attach as Internal Clitics, the direction of attachment correlates with prosodic structure; Internal Clitics all attach to the left as enclitics, while Affixal and PWd Clitics all attach to the right as proclitics.

Though it is beyond the scope of the present chapter to formulate a complete analysis, it is reasonable to assume that for all but the subjective dependent pronoun Internal Clitics, the choice of leftward or rightward attachment can be analyzed as following from more general principles of Sm'algyax's prosodic organization. However, it is not at all clear how any such explanation could account for the behavior of the subjective dependent pronouns which attach as Internal Clitics since here the direction of attachment appears to be truly clitic-specific. As we outlined in Section 2.1, when there is a tense/aspect clitic present as a preferred host, the first person singular ($n=$), the first person plural ($dp=$) and second person singular ($m=$) attach rightward as proclitics, the second person plural ($m=...=sm$) attaches as a circumclitic and the third person ($=t$) attaches leftward as an enclitic.¹⁷ Since these clitics are all introduced into the same syntactic position, it is not clear how any purely pro-

¹⁷ Recall that if there is no preferred tense/aspect clitic host, then the pronouns can stand by themselves as PWd Clitics, while the second person singular and the third person can attach as Internal

sodic explanation nor how any explanation involving the interaction between prosodic and syntactic factors can account for the differences of directionality within this set of clitics. Instead, what it suggests is that this one set of clitics requires a clitic-specific indication of direction of attachment.

Thus, it seems that Sm'alg yax provides empirical evidence in support of Klavans' (1985) view that the direction of attachment needs to be specified individually as a property of particular clitics, if only minimally for some sets of clitics in some languages.

3.3. CLAUSE INITIAL TOPICS. In K^wak^wala and other northern Wakashan languages (two of which are neighbors of Sm'alg yax) the principle of Stray Adjunction initially appears to influence the occurrence of clause initial noun phrase topics. Anderson (2005) finds that while these languages have a principle of Stray Adjunction to the left, languages without left edge clitic determiners allow a construction with a clause initial nominal representing a topic, whereas K^wak^wala, which has left edge clitic determiners, does not. He concludes that: "the correlation between determiner systems and the possibility of clause initial topics make it clear that the absence of this latter construction in K^wak^wala must be due to the impossibility of providing a host for the determiner clitics that appear at the left edges of nominals in this language" (Anderson 2005:22).

Interestingly, clause initial noun phrase topics occur reasonably often in Sm'alg yax narratives, whose word order is otherwise very similar to that of K^wak^wala. Like K^wak^wala determiners the Sm'alg yax predicative connectives, as we illustrated in Section 2.1, occur at the left edge of the noun phrase and attach as an enclitic to the preceding word.¹⁸ However, when an S or A argument occurs as a clause initial topic, any predicative connective associated with it is no longer expressed, as is illustrated with an S topic in (7) and (8) above. When an O occurs as a topic, the predicative connective may either be unexpressed or occur at the right edge of the topic noun phrase (instead of in its usual position at the left edge of a noun phrase), as in (18):

- (18) *Ada txa'nii biyalsa ksagawdit.*
 ada= [txa'nii biyals=a] ksa=gawdi-t
 and [all star=CN.PRED] out.of=be.all-3s
 'And all the stars came out.' (Mulder 1994:204)

The implication for Anderson's analysis of K^wak^wala is that instead of taking a leftwards principle of Stray Attachment as preventing the occurrence of a clause initial topic, there may be other contributing factors to the existence or lack of such topics in a language.

enclitics to a neighbouring clause initial clitic. It is reasonable to assume that this behaviour can also be straightforwardly accounted for within a general prosodic account of Sm'alg yax.

¹⁸ The predicative connectives are not completely analogous with the K^wak^wala determiners, however, as Sm'alg yax also has a separate set of determiners which occur to the right of the nominal and are independent words. The Sm'alg yax determiners have their own associated connective as well (always expressed as =a), which precedes the determiner but phonologically attaches as an enclitic to the preceding word.

3.4. PROSODIC STRUCTURE. The Prosodic Hierarchy provides a fundamental framework for accounting for the prosodic organization of language and as originally conceived by Selkirk (1984) the principles governing the use of the Prosodic Hierarchy within a language are codified as rules in the Strict Layer Hypothesis. Now, as we discussed in Section 2.2, the Prosodic Hierarchy predicts four prosodic structures of clitic attachment. However, of these four, two are ruled out by the Strict Layer Hypothesis; a Free Clitic involves a structure in which the clitic is dominated by a phonological phrase (PPh) without actually being part of a phonological word (PWd), while an Affixal Clitic involves recursion as a clitic joined to its PWd host to form a recursive PWd structure. Since these structures are motivated for a variety of languages, Anderson follows the idea that the principles of the Strict Layer Hypothesis are violable, and hold until there is a more pressing principle which overrides them in a language. It is this violable nature of the principles of the Strict Layer Hypothesis that is a major impetus for Anderson's formulation of a theory of clitics within an OT framework.

In Section 2 we have provided evidence that in Sm'algyax clitics either become part of the same PWd as their host (an Internal Clitic), have independent status as a PWd and form a phonological phrase with their host (a PWd Clitic), or join their host to form a recursive PWd structure (an Affixal Clitic). It is the existence of the last category, Affixal Clitics, in Sm'algyax which further calls into question the viability of conceiving of the Strict Layer Hypothesis as a set of inviolable rules and thus provides additional empirical support to Anderson's arguments for describing the prosodic structure of such clitics via a series of violable constraints within an OT framework.

4. CONCLUSIONS. In this chapter we have considered both the phonological and the morphosyntactic dimensions of cliticization as represented in six sets of clitics in Sm'algyax. In situating the complex behavior of Sm'algyax clitics within the broader typology of clitics, we have drawn on the theory of clitics.

Along the phonological dimension we have shown how the phonology of a language can be used to distinguish among the various types of clitics and by taking into consideration the different prosodic structures of clitic attachment proposed in the theory of clitics, we have been able to gain a clearer perception of the different degrees of phonological dependency observed in the data. At the same time, the existence of Affixal Clitics (alongside Internal and PWd Clitics) in Sm'algyax has implications for clitic theory; Affixal Clitics further call into question the viability of conceiving of the Strict Layer Hypothesis as a set of inviolable rules and provide additional empirical support to Anderson's (2005) arguments for describing the prosodic structure of clitics via a series of violable constraints.

Along the morphosyntactic dimension we have established that Sm'algyax clitics may be located with respect to the left or right edge, the leftmost element or the head within a range of phrasal and clausal syntactic domains. While in the syntactic domain, the location of the clitic within the domain and the direction of attachment do not strongly correlate, with the exception of one clitic set, the direction of attachment does correlate with prosodic structure; Internal Clitics all attach to the left as enclitics, while Affixal and PWd Clitics all attach to the right as proclitics. It is the subjective dependent pronouns, which have variable attachment specific to clitics within the set, that provide empirical evidence in support

of the view that the direction of attachment needs to be specified individually as a property of particular clitics (Klavans 1985), rather than following from more general principles of a language's prosodic structure (Anderson 2005).

In approaching theory from the field we find that not only does the fieldwork data have implications for linguistic theory but also that linguistic theory can provide insight to understanding the fieldwork data.

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