

The Compositionality of Argument Structure in Lummi*

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Introduction. The goal of this paper is to show that argument structure in Lummi is compositional, in the sense that both subject and object arguments are introduced by overt functional heads. These functional heads are morphological suffixes that are distinct from the lexical root that is the head of the clause. The subject is introduced by the functional head VOICE, while the object is introduced by the functional head TRANSITIVE. These overt functional heads are comparable in many respects to auxiliaries; they cannot occur independently of a lexical root, but they are obligatory syntactic components of the clause, and are responsible for assigning case and a thematic role to the argument they introduce. The presence of these functional heads in the overt syntax is the parametric feature that determines argument type, the feature that makes Lummi a Pronominal Argument language (Jelinek 1984, 1995; Jelinek and Demers 1994). This view of the inflectional component of the grammar as determining parametric differences across languages has a long history in linguistics. Roman Jakobson, writing on the problems of translation in 1959, pointed out the following:

"Languages differ essentially in what they *must* convey and not in what they *may* convey."

Chomsky (1991, 1992) restates this insight in the following terms: parametric variation across languages follows from differences in the "strength" of features across languages. "Strong" features receive overt expression in the syntax; they *must* be said, in the sense that they are obligatory grammaticalized features. Examples of strong features include the marking of gender in third person pronouns in Indo-European, or the marking of switch reference across clauses in Muskogean, where pronominal gender is not marked; both these grammatical devices aid in tracking referents across clauses. "Weak" features, in Chomsky's framework, need not be marked in the overt syntax; they will receive expression automatically by the level of Logical Form, since they are determined by universal properties of the grammar. Thus, in some languages Wh- raising is "strong", and receives overt expression in the syntax; in other languages, it is weak, and the movement of Wh- words to operator positions can be delayed until later in the derivation, since the universal principles that determine the interpretation of the sentence insure that it will take place by LF.

If languages differ essentially in what is grammaticalized, then these differences across languages are not random, but are confined to those parts of the sentence where grammaticalized elements occur. The area of sentence structure where languages show the greatest parametric differences is the Inflectional component of the clause, or INFL (corresponding approximately to "AUX" in earlier terminology). Bach (1967) argued that the syntax of auxiliaries must be stipulated for particular languages, since their behavior does not follow from the general principles that apply to basic predicate argument structures. In the INFL component of the grammar, we find functional projections where various sentence operators are marked, including Mood, Tense/Aspect/Modality, and Negation. "Main" or lexical verbs are claimed to raise and adjoin to functional projections in INFL where these features are marked. The overt or "strong" elements present in INFL in particular languages include auxiliary verbs and particles, "adverbial" particles, and clitic pronouns; in many languages we see these elements as components of a second position clitic string (Hale

1973).

Individual grammars select the particular features that are to receive overt expression in INFL. This selection is constrained to the members of a set of "closed class" features, with "grammatical" rather than "lexical" semantic properties. What appears in INFL as a closed class category in one language may be expressed in another by means of a "periphrastic" syntactic structure that utilizes open class categories: for example, some languages have modal particles or affixes, while others express modal notions exclusively by nouns and verbs.

In the array of features marked in INFL across languages, we frequently see portmanteau elements, where some combination of features is expressed in a single non-compositional form. For example, tense and the subject are often marked together in the main verb or in an auxiliary. The distribution of some features may be mutually exclusive across clause type: mood and modality may be excluded from non-finite clauses. It is important to note that typically one member of an inflectional category (third person, present tense, singular number, declarative mood, affirmative polarity, etc.) is marked by default, or is phonologically null. This reflects the principle of economy of expression; when *some value* of the small closed inflectional category is obligatorily present, a zero is an acceptable member of the paradigm. The presence of null and portmanteau forms provides insight into some of the entailments that obtain between the inflectional categories.

In sum, parametric variation in the INFL component of the clause may be characterized as follows:

- There is a universally available set of features that may be grammaticalized and marked in INFL;
- Languages select among and articulate the marking of these features into a particular set of functional projections; and
- There are certain entailments and scopal properties of these features that languages may exploit in determining the particular content of the functional projections they select.

The focus of this paper is the pronominal elements that are introduced by the functional heads VOICE and TRANSITIVE in Lummi. I will argue that these incorporated pronouns do not represent "agreement" with nominals, and therefore that Lummi is not a "pro-drop" language, but rather a language with Pronominal Arguments. Pronominal Arguments are a typological feature entailed by the presence of overt VOICE and TRANSITIVE inflection. I will begin with a description of TRANSITIVE inflection in Lummi and its function in introducing internal arguments.

1. TRANSITIVE. Kuipers (1968), in an early discussion of the question of a noun/verb contrast in Salish, points out the significance of the feature of Transitivity for this problem. Kuipers notes that there is a relatively straightforward correspondence between transitive expressions in Squamish, and a subclass of verb phrases in a language such as English; but with intransitive expressions in Squamish, he finds no formal grounds for sorting them into intransitive verbs, adjectives, or "predicate nouns", as these classifications are generally employed. Kuipers argues that it is the contrast between transitive vs. intransitive forms that is basic to Squamish grammar, while a noun/verb contrast is not, and comments (p. 626):

"The possibility of combinations with possessive affixes was used in The Squamish Language [Kuipers 1967] as the basis for a distinction of noun and verb in Squamish. It is clear, however, that such labelings not only fail to give any information beyond the already known facts on which the labeling is based, but are even misleading as they suggest a far-reaching parallelism between languages that does not exist."

Kuipers (1968) also draws attention to the fact that the feature of Transitivity receives overt morphological expression in Salish. This morphological expression of transitivity is apparently present to varying degrees in all the Salish languages. Thompson and Thompson (1992), in their grammar of the Thompson language, observe (p.50):

"All predicative words are either TRANSITIVE (TR), incorporating specific reference to the object or goal of an act; or INTRANSITIVE... All transitives are marked by the suffix //-t// (although it often is phonologically disguised)... While transitives incorporate pronominal subject and object, intransitives take enclitic pronominal subjects.... They also can have Possessive inflection... This latter inflection takes on special importance in the casting of subordinated predications..."

These generalizations on Thompson provide insights into the structure of Lummi. Recent advances in syntactic theory have made it possible to appreciate the significance of the observations made by Kuipers, and Thompson and Thompson, for the identification of Transitivity as a functional projection in universal clause structure. These aspects of Salish grammar provide confirmation for analyses of argument structure in universal grammar that have been independently developed by linguists working on other languages.

2. Noun and verb. The feature of Transitivity relates to the noun/verb question in Salish in the following way. Within generative grammar, nouns and verbs have been distinguished on the basis of argument structure. While members of the category verb may assign structural case to an internal argument, nouns never assign structural case -- that is, nouns don't take direct objects. In the Minimality framework, direct arguments (Subjects, Objects) are case-checked at a functional head above the VP; Chomsky (1992) identifies these heads as AgrS and AgrO. The notion of "object agreement" presents a number of problems, and Murasugi (1992) argues that the appropriate functional heads in universal clause structure are TENSE and TRANSITIVE, which check the case of "external" and "internal" arguments respectively. Assuming that the Inflectional head associated with structural case is TRANSITIVE rather than "AgrO" fits better with the data from Ergative languages, since Ergative can be a structural case assigned to Agents when they are internal arguments.

This works nicely for Lummi, where the third person Ergative pronoun (transitive Agent) is -s. The Ergative is morphologically an internal argument, preceding the clitic string, in the same position in the predicate word that object suffixes appear -- immediately following a TRANSITIVE suffix (TRAN) that marks the valence of the clause.

1) leŋ-t-s =lə'=θ
see-TRAN-3ERG =PAST=3ABS
He saw him.

2) leŋ-t-oŋeɪ =lə'=sxʷ
see-TRAN-1plACC =PAST=2sNOM
You saw us.

The particular case that the internal argument receives (ACC, ABS, or ERG) depends on the Voice of the construction, which we will consider in a moment.

Let us follow Murasugi and assume that [+ TRANSITIVE] is the proper designation for the functional head associated with the "internal" (suffix) argument in Lummi. Clauses marked [- TRAN] by the contrastive absence of an overt TRAN suffix (the default value), have only one direct argument, the subject; [+ TRAN] marks the presence of a morphologically "internal" argument as well. Salish (and language families such as Athapaskan, Eskimo, Uto-Aztecan, some Philippine languages, and Basque) provide us with explicit evidence of TRANSITIVE as a "strong" feature, marked in an overt functional head. Consider the following kind of parametric contrast:

- In some languages (English, for example), TRANSITIVE is not overtly marked in the syntax, and Transitivity is a subcategorizing feature of a particular class of lexical items, Verbs.
- In other languages (Lummi, for example) TRANSITIVE is an obligatory functional head in the syntax, which is responsible for introducing internal arguments; thus, there is no class of lexical (open class) items which subcategorize for internal arguments.

From the perspective of English grammar, Lummi splits the verb into two parts, the lexical root and the "auxiliary" element, TRANSITIVE, that introduces internal arguments. From the perspective of Lummi grammar, English collapses the lexical root and the TRANSITIVE head into a single lexical item, the verb. The presence of VOICE and TRANSITIVE as overt inflectional elements in Lummi makes the surface syntactic structure closer to the kind of compositional argument structure defined for Logical Form by Parsons (1990).

3) PAST (∃e) [stabbing (e) & Subject (e, Brutus) & Object (e, Caesar)]
Brutus stabbed Caesar.

I assume that in Lummi, the lexical root retains the event argument (or "eventuality" argument, in Bach's terminology).

Salish is famous for the productivity of the transitivization process, a productivity made possible by the overt compositionality of argument structure. Some Lummi examples:

4) 'ən'e-t-θ=lə'=sən
come-TRAN-3ABS=PAST=1sgNOM
I brought it.

5) smoneč-t-s=θ
pitch-TRAN-3ERG=3ABS
He is "pitching" it (covering it with pitch).

While processes that transitivize intransitive verbs and nouns are frequent across languages, the examples in (6, 7) are of a type less commonly seen.

- 6) a. məkʷ'-t-θ=lə'=sən
ALL-TRAN-3ABS=PAST=1sgNOM
I took all of them/it.
- b. his-t-ogəs=lə'=sxʷ
long time-TRAN-1/2ACC=PAST=2sNOM
You kept me a long time.

The roots in Ex. (6a,b) are adverbial quantifiers elsewhere. In (7), the root assigns a quality.

- 7) 'əy-t-ŋ=θ
good-TRAN-PASS=3ABS
It has [been] improved. ("been made good")

(Al Charles used this sentence in speaking of the weather. There is no comparative inflection in Lummi.) This productivity in the transitivity process can be attributed to the fact that TRANSITIVE is an obligatory functional head in the overt syntax which occurs with all roots, rather than a feature of a particular lexical class. Speaking informally, we can say that the Functional head [+ TRAN] takes over some of the syntactic work assumed by the noun/verb contrast in languages like English, and provides for relative freedom in the distribution of the morphologically bound roots. Following Thompson and Thompson, I assume that roots never appear without being inflected for [+ TRAN]; roots do not occur independently, but only within Predicates, which include [+ TRAN] and any internal argument.

3. Intransitives and Possessive pronouns. Possessive pronouns occur with nouns across languages. If the Salish root describes something that can be characterized grammatically as possessed, for example material objects, relations, feelings or experiences, a Possessive pronoun may be affixed.

- 8) a. nə-ŋənə=sxʷ
1sPOSS-child=2sNOM
You are my child.
- b. nə-men=lə'=θ
1sPOSS-father=PAST=3ABS
It is my late (deceased) father.

The point here is that the resulting complex form remains a predicate: these derived predicates occur with the clitic string to produce a finite sentence. In main clauses, a Possessive pronoun can occur only in predicates that are [- TRAN]. Technically, this follows from the fact that [+ TRAN] assigns a structural case (ACC, ABS or ERG) to an internal argument, and POSS case is incompatible with (cannot be checked at) [+ TRAN].

The examples in (9) below illustrate non-agentive "psych" predicates with a Possessive pronoun marking the Experiencer, an internal argument, while the subject is a second position clitic.

- 9) a. nə-sx'i'=sxʷ
1sPOSS-value=2sNOM
You are my dear/valued. (I like you.)
[s-x'i'= be dear/valuable]

- b. nə=sləl=θ
1sPOSS=intent=3ABS
It is my intention to go.
- kʷ ye'-ən
DET go-1sSBD

Possessive pronouns appear also as subjects in nominalized Propositional clauses.

- 10) 'əw' xči-t-θ=sən
LINK know-TR-3ABS=1sNOM
(And so) I know (it), that you left.
- kʷ ən-s-ye'
DET 2sPOSS-SBD-go

Thus, the two functions of Possessive pronouns are clearly distinct syntactically in Lummi. They participate in deriving complex predicates (8, 9) where they are not subjects, and in deriving nominalized Propositional clauses (10) where they are subjects. In other Salish languages, the situation is more complex; Thomason and Everett (1993) note the presence of Possessive pronouns in main clause paradigms in Flathead.

4. VOICE and the subject argument. I have proposed that TRANSITIVE is an overt functional head in Lummi grammar that introduces all internal arguments; unless the feature [+ TRAN] is present, no internal argument can be present in the Lummi clause; if [+ TRAN] is present, then an internal argument must be present. This internal argument may be Accusative (Patient) or Ergative (Agent) or Absolutive. Absolutives, by definition, are either intransitive subjects or transitive objects; in the latter function, they also are introduced by a TRANSITIVE suffix. Jelinek and Demers (1994) and Jelinek (1995) provide data showing that nominals in Lummi are adjoined clausal structures, Determiner Phrases that modify the pronominal arguments, and do not in and of themselves occupy argument positions; together with the pronouns they modify, they form complex *discontinuous* argumental expressions at the level of the interpretation of the sentence. Nominals in Lummi are not case-marked, and are not obligatory constituents of the sentence, in contrast to the pronominal arguments.

If the pronominal suffixes and clitics are the arguments in the Lummi clause, then they do not constitute "agreement" with the adjoined optional nominals. The TRANSITIVE head takes over the functions of "AgrO", and we need to reconsider the status of "AgrS". If agreement is in fact a Spec-Head relation, as Chomsky (1992) proposes, it is not properly a functional head. Murasugi, as noted above, substitutes TENSE for AgrS. In many languages NOMINATIVE case, the default case associated with subjects, occurs only in tensed clauses. But this association is by no means universal. For example, in Salish, nominalized clauses with Possessive subjects can show Tense.

Kratzer (1992, 1994) argues that there is a universal functional head VOICE that introduces the external argument. Kratzer argues on semantic as well as syntactic grounds that external arguments are added via a neo-Davidsonian secondary predication, since all arguments must be introduced by some head, rather than by a phrase. VOICE determines the theta role assigned to the subject: Transitive subjects are Agents, while Passive

subjects are Patients.

On Kratzer's analysis, the functional head VOICE is responsible *both* for assigning a theta role to the external argument and for assigning case to the internal argument; ACC case is not present unless there is an external argument as well as an internal one. The Salish languages provide evidence that we need to recognize both VOICE and TRANSITIVE as functional heads, since both are morphologically overt in Salish. The valence of the clause is determined at TRAN, and the theta role assignments are determined at both VOICE and TRAN, since there are entailments between voice and valence. If the value for the feature VOICE is Passive, then no argument may be introduced at VOICE, and structural (internal) case may not be assigned.

If we define voice contrasts as particular mappings between thematic roles and argument positions, then it follows that the Lummi Ergative construction is an Inverse Voice construction (Jelinek 1993a). The Lummi Inverse is a [+ TRAN] construction where the subject is the Patient, and the morphologically internal argument has the Agent theta role, as in Ex. (1) above. Inverse Voice is also found in Athapaskan, where Transitivity is again overtly marked. Kinkade (1989, 1990) identifies other construction types in Salish where Patients, rather than Agents, are topics.

Thompson (1979) identifies the feature of "control" as a major category of the grammar of Salishan languages, and documents the complex phonological interaction of the marking of transitivity and "control" in Salish. The term "control" as used by Thompson and other Salish scholars has to do with the volitionality or agency of the subject -- whether an action is under the control of the agent, or inadvertent, accomplished with difficulty, etc. Examples from Lummi:

- 10) a. č'əs-t-oŋəɬ =lə'sx^w
hit-TRAN-1pACC =PAST=2sNOM
You hit us (on purpose).
b. č'əs-n-oŋəɬ =lə'sx^w
hit-NCTR-1plACC =PAST=2sgNOM
You hit us by accident/finally managed to hit us.

In (11), the VOICE suffix -ŋ follows the transitivizer, and marks the subject as affected, deriving an intransitive (the Passive).

- 11) a. č'əs-t-ŋ =lə'sx^w
hit-TRAN-PASS =PAST=2sNOM
You were hit (deliberately).
b. č'əs-n-ŋ =lə'sx^w
hit-NCTR-PASS =PAST=2sgNOM
You were hit by accident/finally hit got hit.

It is important to note that [+ TRAN] in the Passive continues to mark the volitionality of the "implicit" agent. When the VOICE suffix -ŋ follows

[- TRAN], it still marks the subject as affected, in a Middle construction.

- 12) hes-ŋ=Ø
sneeze-MID=3ABS
He sneezed.

Both Lummi and Saanich (Montler 1986) have a "Non-control" Reflexive Passive.¹

- 13) 'iɬən-n-oŋət=sən
eat-NCTR-REFL=1sgNOM
I (luckily) got to eat.

Kratzer points out that across languages, we see only a narrow range of theta roles assigned to transitive subjects: there are Agents, and "Holders" in Possessive sentences; there are also Experiencers.

- 14) a. He owns them.
b. He dislikes them.

I suggest that the theta roles assigned at VOICE and TRANSITIVE across languages represent the core thematic categories, along the lines of the "thematic proto-roles" defined in Dowty (1991). These thematic proto-roles receive syntactic expression where argument structure is overtly compositional. The particular argument array selected by the speaker in composing the clause must be consistent with the entailments imposed by the semantic features of the lexical root, or the derivation is ungrammatical. Thus, it is impossible to select more than one Agent or Patient argument in a simple clause.

There is minor variation across languages in the particular semantic content of the thematic proto-roles assigned at VOICE and TRANSITIVE. Agents and patients are the prototypical roles; in some languages, including Lummi, neither Experiencers nor "Holders" can be transitive subjects. One kind of Lummi Possessive sentence includes the Relational prefix:

- 15) a. sɬeniy'=sən
female=1sNOM
I am a woman.
b. č-sɬeniy'=sx^w
REL-female=2sNOM
You have a wife.

And Salish employs [- TRAN] constructions with Possessor non-subject arguments in "psych" constructions, as in (9) above, and (16).

- 16) 'ən-sx^wətin'=sən
2sgPOSS-dislike=1sgNOM
You dislike me. (I am your dislike.)

Similar constraints against non-agentive transitive subjects appear in other languages with Pronominal Arguments (Jelinek 1995b). This appears to be related to the fact that argument structure is overtly compositional in these languages. In Lummi we see agentive features (volitionality or

inadvertence) associated with the TRANSITIVE suffixes, which entail an affected patient.

To summarize the discussion so far: the preceding examples demonstrate that in Lummi there is a functional head TRAN, a suffix that follows the lexical root and any "lexical" suffixes. The TRAN suffix introduces the internal argument, a pronominal suffix with either ACC, ERG, or ABS case. This complex is followed by another suffix, a functional head that marks VOICE, which can appear whether the clause is [+TRAN] or [-TRAN]. When VOICE is not overtly marked, the value is ACTIVE. The root plus TRAN and VOICE constitute a single morphological word, the predicate. The external argument is a clitic that attaches to the predicate word; this clitic is licensed by the VOICE suffix, which assigns its case and theta role. We should note that in other Salish languages, some elements that appear in the VOICE and TRAN positions may interact phonologically and semantically; they may also combine with the pronominal arguments they introduce, producing portmanteau morphemes, in complex inflectional paradigms. This is additional evidence for the status of VOICE and TRAN as functional heads.

5. Further evidence: prepositional objects. A striking typological property of Straits Salish is the absence of prepositional phrases consisting of a preposition with a pronominal object, or an "inflected" preposition or postposition of the kind so common in Native America (Jelinek 1993b). This apparent typological idiosyncrasy can be readily explained with reference to the fact that structural case is assigned only by the TRANSITIVE functional head that is a feature of *clause* structure. The pronominal object forms are licensed only by TRAN, and thus cannot occur with prepositions. Compare:

- 17) a. leŋ-t-ogəs b. *'ə-ogəs
saw-me [to-me]

The Oblique marker 'ə and the few other attested prepositions in other Salish languages occur before Determiner Phrases, as in oblique agents and locative expressions. Oblique (non-subject, non-object) first, second and third person deictic arguments are expressed via use of the typologically interesting "person-deictic" roots, that occur with Determiners and are third person in syntax. These roots often are used to mark emphasis or focus, since the pronominal affix and clitic arguments cannot be stressed.

- 18) a. č'əs-t-ŋ=lə'sən ('ə cə nək^w)
hit-TRAN-PASS=PAST=2sNOM (OBL DET YOU)
I was hit (by YOU).
b. nək^w=lə'=Ø cə č'əs-t-ən
YOU=PAST=3ABS DET hit-TRAN-1sACC
YOU were the one who hit me.

The Salish languages also have roots with "prepositional" (locative) meanings, that occur in main clause predicates and may be [+TRAN]. In sum, we may outline the distribution of objects in Lummi as follows:

- 19) a. PREDICATE: includes a functional head [+TRAN] that may assign a structural case to an internal pronominal argument.
b. PREPOSITION: assigns Oblique case to a Determiner Phrase, deriving an oblique adjunct.

Note that there are no ditransitive predicates in Lummi, in the sense of an obligatory second object; TRAN introduces only one argument. The root that may be glossed "give" takes the Goal as the "direct object", the argument with structural case, and the Theme is an optional adjunct.

- 20) 'ogəs-t-ogəl=sx^w ('ə cə k^wən-t-əx^w)
give-TR-1plACC=2sgNOM (OBL DET take-TR-2sgSBD)
You gifted us (with the one you caught).

With Passive, the goal is subject:

- 21) 'ogəs-t-ŋ=sx^w ('ə cə k^wən-t-ən)
give-TR-PASS=2sgNOM (OBL DET take-TR-1sgSBD)
You were gifted (with the one I caught).

In Saanich, there is an "Indirective" or Applicative construction, where the goal argument again becomes the direct object, and there is an implicit theme argument. When *le'* "be in a place" appears with the "control" transitivizer, it is glossed "fix" or "repair".

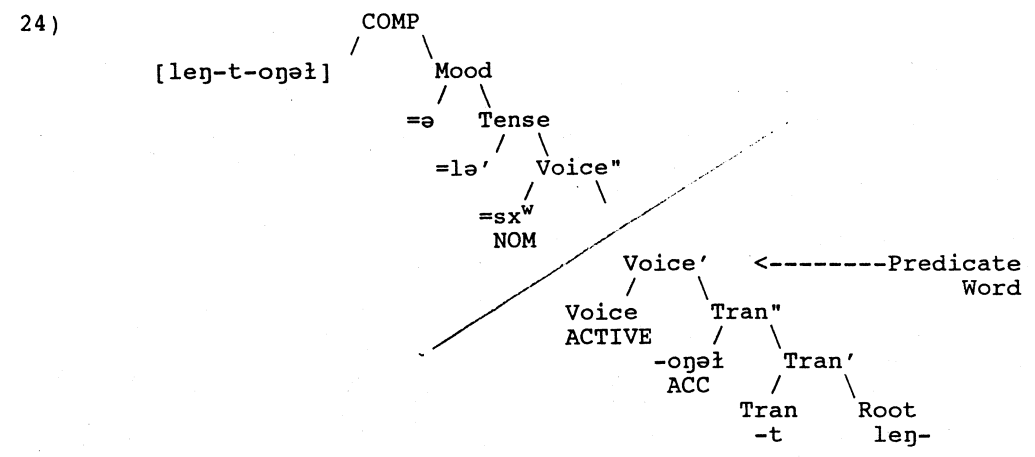
- 22) le' -sis -sx^w
repair-INDIRECT:CTHAN:1OBJ-2SUBJ
You fixed [it] for me. (Montler 1986:171)

6. Other voice alternates. There is also a Voice suffix that derives an Anti-Passive construction. Montler (1986) observes that in Saanich this construction usually refers to customary activities.

- 23) x^wəl'x^w-el's =Ø
roll-ANTIPASS =3ABS
He's rolling (a cigarette). Anti-Passive

The subjects of Anti-Passive constructions are Agents. This construction type also occurs in Lummi and other Salish languages; many Salish languages have a richer system of voice alternates than Lummi.

7. Head-Raising. By the process of head-raising, heads may "raise" successively in the course of a syntactic derivation to incorporate other functional heads. For Lummi, I assume a derivation where the lexical root raises to adjoin the TRAN suffix and the internal argument it introduces, and then adjoins the VOICE suffix. This raising and adjunction produce a complex phonological word, the Predicate, which can move as a unit. The Predicate word then raises to COMP, where the second position clitics are attached to it. These raising processes produce the correct order of constituents. The tree in (24) indicates roughly the relevant features of the structure.



leŋ-t-ŋəɬ=ə=lə'=sx^w
see-TRAN-1plACC=Q=PAST=2sgNOM
Did you see us?

The portmanteau forms in many Salish languages, where TRAN or VOICE combine with a pronoun, are evidence for head raising, and for the status of TRAN and VOICE as functional heads.

A conspicuous advantage of an analysis that recognizes that argument structure is universally compositional, whether the functional heads that introduce the arguments are overt "strong" or "weak" features, is that it is no longer necessary to assume that arguments are introduced at positions within the VP, where they are assigned theta roles, and then raise to reconstellate in positions within IP, in order to receive case or get "case-checked". Arguments receive both their case and theta role from their associated functional heads; this removes a great deal of redundancy from the system. In a language with Lexical arguments, such as English, there are Specifier positions associated with phrasal VOICE and TRANSITIVE projections, where NP arguments are base generated. In Pronominal Argument languages such as Lummi, the pronouns that satisfy the argument positions of the clause are base generated as arguments of the functional heads that license them. These Pronominal Arguments belong to *closed inflectional paradigms*, and are morphological affixes or clitics that attach to their associated functional heads.²

Murasugi (1992) classifies the obligatory Transitive marker in Eskimo clauses as an auxiliary verb "do". This is reminiscent of the function of "light" verbs in Chinese or other languages, where an "light" verb ("do" or "make") often derives a complex predicate from a lexical noun. Hale and Keyser (1987) proposed an element "cause" as a universal feature of the Lexical Conceptual structure of transitive verbs. I assume that this feature is contributed by TRAN in some languages. TRAN may provide a landing site for object clitic raising (see Diesing and Jelinek, in press).

Other recent work on the VP "shell" gives converging results on the feature of Transitivity in universal grammar.

The following table shows informally the grammatical properties of TRAN and VOICE in Lummi:

Table 1

A. Transitivity			
1. - TRAN	-∅		Single argument has default case
2. + TRAN	-t, -nəx ^w , -tx ^w		Introduces second argument, marks volition; External argument has default case; Internal argument has structural case
B. Voice			
1. ACTIVE	-∅	[+ TRAN]	Default voice and theta roles
2. INVERSE	-s	[+ TRAN]	Subject is Patient, Internal argument is Agent
3. PASS/MID	-ŋ	[- TRAN]	Subject is Patient
4. ANTI-PASS	-el's	[- TRAN]	Subject is Agent

Other Salish languages have more complex systems of Voice and Transitivity.

The functional heads VOICE and TRAN are present in all clause types in Lummi, and there are entailments between voice and valence as well as between the root and the the argument projections. VOICE is associated with the agentive or active thematic proto-role; PASSIVE excludes an agent argument. The TRAN projection is associated with the patient or inactive thematic proto-role. There are Unergative and Unaccusative Intransitive subjects in Lummi (aside from the function of the suffix -ŋ in marking the Middle voice). I assume that Unergative subjects, like Transitive subjects, are introduced at the "active" projection, VOICE, where they receive an agentive thematic proto-role. In Unaccusative constructions, as in Passives, there is no agentive argument at VOICE, and the inactive or patient subject is introduced at [- TRAN]. Since the intransitive subject is by default in both cases the highest argument in the clause, it is syntactically external, and receives default case.³ We saw that in Lummi neither Experiencers nor "Holders" (subjects in possessive sentences) can appear as transitive subjects; in Salish as in Athapaskan, transitive subjects are exclusively Agents, more or less successful ones. The interpretation of the sentence is compositional, based on the Lexical Functional features of the root and the argument array selected. If the Lexical Functional features (the entailments) of the root are not compatible with a particular argument array, the derivation crashes.

8. Summary and conclusions. Murasugi argues for the functional head TRAN as a universal clause feature, and Kratzer argues for VOICE. Salish provides evidence that we need both, since both occur overtly (are "strong" features) in Salish morphosyntax: TRAN and VOICE jointly determine the valence of the clause, case, and theta role assignment. Predicates with the value [+ TRAN] are agentive *only*, and assign some structural case (ACC, ABS, or ERG) to an internal argument. Predicates with the value [- TRAN]

cannot assign structural case; default case is assigned to the single argument, which may be introduced at either projection. [- TRAN] predicates may include a Possessive argument. Note that [+ TRAN] does not equate with VP, and [- TRAN] does not equate with NP. [- TRAN] includes forms glossed in other languages as non-agentive transitive verbs (possessive and psych constructions), intransitive verbs, adjectives, nouns, quantifiers, prepositions, etc. [+ TRAN] freely occurs with lexical roots of a wide range of semantic features; there is no copula in Straits Salish. This permits all predicates to fall together into a single syntactic class, occurring with the second position clitic string. In languages with a noun/verb contrast at the word level, [+ TRAN] corresponds to subcategorizational features of the lexical categories that determine the argument structure of the phrasal categories (VP, NP, PP) they head.

I close with some observations on parametric or typological variation as distinct from variation that follows from genetic affiliation. The findings presented here apply specifically to Lummi and closely related dialects (Samish, Saanich) of Straits Salish. As noted in Jelinek and Demers (1994), "there are significant syntactic differences across the members of the Salish family that bear on the noun/verb problem". Within a language family, historical change and language contact produce variation particularly with respect to what is *grammaticalized* -- otherwise we see dialects that differ only in the lexicon or at the phonological level.

It is useful to compare the variation within Salish with that found in other language families. At the phonological level in Salish, we find a language that lacks nasals, and others with pharyngeals, both relatively rare phonological features; there are also considerable differences in syllabic structure. At the syntactic level, some Salish languages have ergative "splits"; some have constructions that mark patients as topics; some have agent hierarchies, while others lack these features. Some have Determiner Quantification and Lexical Arguments, while others do not. Some have a rich system of voice alternates, and others do not. Similarly, in the Athapaskan family, we see Lexical Arguments in some Northern Athapaskan languages, such as Slave (Saxon 1989) and Pronominal Arguments in some Southern Athapaskan languages (Willie 1992; Sandoval and Jelinek, 1989). At the phonological level, some are tone languages, others have rich consonant clusters. Within Uto-Aztecan, Yaqui is a pitch-accent, SOV, Lexical Argument language with case-marked NPs (Jelinek 1995b), while O'odham (Papago) has none of these traits; it is a "non-configurational" Pronominal Argument language with a second position clitic string. Yaqui has a very rich system of voice alternates, including an Impersonal Passive, while O'odham has a minimal voice system. Although these languages are not mutually intelligible, speakers easily recognize and volunteer cognates, and identify the languages as related (both are now spoken in Tucson, Arizona). In the syntactic component, it is in the domains of voice alternations and the compositionality of argument structure that the richness of parametric variation is most strongly attested. By definition, languages differ in what is grammaticalized -- what *must* be said, as opposed to what may be said.

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NOTES

* Some material in this paper appears in a larger work on compositionality in argument structure (Jelinek 1995b). An earlier version of some of the section on Salish was presented at the 29th ICSNL, Pablo, Montana, August 1994. I thank members of the audience there for their comments. I am also greatly indebted to Emmon Bach, Andy Barss, Ken Hale, Barbara Partee and Sally Thomason for helpful discussion of these matters.

¹ Reflexive Passives are frequently seen across languages, evidence of the interaction of voice and valence in determining argument structure.

² This analysis of the contrast in argument type as following from the overt marking of compositionality in argument structure provides an explanation for an array of apparently unrelated features: a) the incorporation of Pronominal Arguments, producing "polysynthetic" languages; b) the presence of second position clitic strings, or "AUX" phenomena, where the same set of semantic features are marked in affixes and clitics in some languages and in auxiliary elements in other languages; and c) the phenomena of "non-configurational" languages, where the second position clitic string, INFL, is the only fixed constituent in the clause, while other constituents move around it (as in Warlpiri, for example). In these languages, the AUX clitics include the Pronominal Arguments, which remain in the INFL positions where they are base generated. Only free-standing lexical items move in Warlpiri.

³ Elsewhere, the contrast between Unergative and Unaccusative constructions is overtly marked in a verbal suffix (cf. Yaqui), or in an auxiliary verb (cf. Italian).

REFERENCES

- Bach, Emmon. 1967. *Have and Be* in English Syntax. LANGUAGE 43.2:462-485.
 Bach, Emmon, Eloise Jelinek, Angelika Kratzer and Barbara Partee, eds., 1995. *Quantification in Natural Languages*. Kluwer.
 Chomsky, N. 1991. Some Notes on Economy of Derivation and Representation, in R. Freidin, ed., *Principles and Parameters in Comparative Grammar*, MIT Press.
 _____. 1992. A Minimalist Program for Linguistic Theory. MIT Occasional Papers in Linguistics.
 Diesing, Molly and Eloise Jelinek. Distributing Arguments. In press, NATURAL LANGUAGE SEMANTICS 3.1.
 Dowty, David. 1991. Thematic Proto-Roles and Argument Selection. LANGUAGE 67.3:547-619.
 Hale, Ken. 1973. Person Marking in Walbiri. In S. A. Anderson and P. Kiparsky, eds., *A Festschrift for Morris Halle*. Holt, Rhinehart and Winston, New York.
 Hale, Ken and S. J. Keyser. 1987. A View from the Middle. Lexicon Project Working Papers 10, Center for Cognitive Science, MIT.
 Hess, Thom. 1973. Agent in a Coast Salish Language. IJAL 39:89-94.
 Hess, Thom and J. van Eijk. 1985. Noun and verb in Salishan. ICSNL 20:97-104.

- Jacobson, Roman. 1959. On linguistic aspects of translation. In R. A. Brower, ed., On Translation. Harvard University Press, Cambridge, Ma.
- Jelinek, Eloise. 1993a. Ergative "splits" and Argument Type. MIT Working Papers in Linguistics 18, Papers on Case and Agreement I.
- _____. 1993b. Prepositions in Straits Salish and the Noun/Verb question. ICSNL 28.
- _____. 1995a. Quantification in Straits Salish. In Bach et al, eds., Quantification in Natural Languages. Kluwer.
- _____. 1995b. Compositionality in Argument Structure. University of Arizona ms. (Lectures given at the Mathesius Institute, Charles University, Prague, May 1995).
- Jelinek, Eloise and Richard Demers. 1994. Predicates and Pronominal Arguments in Straits Salish. *LANGUAGE* 70.4:697-736.
- Kinkade, M. Dale. 1983. Salish Evidence Against the Universality of "Noun" and "Verb". *LINGUA* 60.25-40.
- _____. 1989. When Patients are Topics: Topic Maintenance in North American Indian Languages. ICSNL 24.
- _____. 1990. Sorting out Third Persons in Salish Discourse. *IJAL* 56:341-360.
- Kratzer, A. 1992. Towards a Theory of Voice. University of Massachusetts ms., Amherst, MA.
- _____. 1994. On External Arguments. Functional Projections, UMOP 17, Amherst, MA: University of Massachusetts.
- Kuipers, Aert. 1967. The Squamish Language. Janua Linguarum, Series Practica, 73. Mouton, The Hague.
- _____. 1968. The Categories Verb-Noun and Transitive-Intransitive in English and Squamish. *LINGUA* 21:610-626.
- Montler, Timothy. 1986. An Outline of the Phonology and Morphology of Saanich, North Straits Salish. University of Montana Occasional Papers in Linguistics, No. 4. Missoula.
- Murasugi, K. 1992. Crossing and Nested Paths: NP Movement in Accusative and Ergative Languages. Cambridge, MA: MIT dissertation.
- _____. 1994. The Transitivity Morpheme as Auxiliary in Inuit. McGill University ms.; to appear.
- Parsons, Terence. 1990. Events in the Semantics of English. MIT Press. Cambridge, MA.
- Sandoval, M. and E. Jelinek. 1989. The bi-Construction and Pronominal Arguments in Apachean. Studies in Athapaskan Linguistics, K. Rice and E. Cook, eds., Mouton.
- Saxon, Leslie. 1989. Lexical vs. Syntactic Projection: The Configurationality of Slave. In Eung-Do Cook and Keren Rice, eds., Athapaskan Linguistics. Mouton.
- Thomason, Sally and Daniel Everett. 1993. Transitivity in Flathead. ICSNL 28.
- Thompson, Laurence C. 1979. The Control System: A Major Category in the Grammar of Salishan Languages. In B. Efrat, ed., Proceedings of the Victoria Conference on Northwestern Languages, British Columbia Provincial Museum, Victoria. Pp. 154-176.
- _____. and M. Terry Thompson. 1992. The Thompson Language. University of Montana Occasional Papers in Linguistics No. 8. Missoula.
- Willie, MaryAnn. 1991. Pronouns and Obviation in Navajo. University of Arizona dissertation.