All typologies leak: Predicates of change in Lowland Chontal of Oaxaca

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1. Introduction

In his (1921) book, *Language*, Sapir made the famous observation, "All grammars leak" (38). By this he meant that within the systematic paradigms, rules and routinized patterns of any grammar, we always find a few irregularities and surprises. The same can be said for linguistic typologies. Typological theories are critical tools for linguists, for exploring differences and similarities among languages, for learning about the cognitive factors and social practices that make languages the way they are, and for making predictions about other properties of languages that are members of a certain type. So what do we do when a typology leaks?

This paper follows the spirit of such work as Aske (1989) on path types and Mithun and Chafe (1999) on grammatical relations types to understand the grammatical and functional motivations of language-internal typological diversity: that is, why and how a single language uses patterns and constructions of more than one type. In doing so, it offers support for calls in the literature to broaden our focus to consider typologies of constructions and of usage patterns of language-specific resources (e.g. Bickel 2007, Slobin 2004, 2008). The data are from my in-depth study of predicates of change in Lowland Chontal of Oaxaca, an endangered language of southern Mexico.[1] I approached the study of expressions of change in Chontal using Talmy's well-known typology of lexicalization patterns (1985, 1991, 2000) but found that no single type provided a satisfying way to characterize the language as a whole. The solution that emerges here is to evaluate the language-internal lexicalization typology, identifying grammatical and functional usage patterns of each predicate type.[2]

Section 2 serves as introduction to the language, the lexicalization typology, and the rich variety of structural patterns in Chontal. In Section 3 I present the three change predicates in the context of particular grammatical and discourse functions afforded by each type. Section 4 summarizes the problems with an assessment of language type, and the final section illus-

trates the advantages of investigating Chontal expressions of change as a set of construction types.

2.   Chontal and the lexicalization typology of languages

Lowland Chontal of Oaxaca is an endangered indigenous language spoken near the Pacific coast in southeastern Mexico. Together with sister language Highland Chontal it forms the Chontal of Oaxaca family, a small and unclassified language family often linked to the proposed Hokan stock of languages that are or were spoken throughout southwestern United States and northwestern Mexico, and/or to the Jicaque languages of Honduras. Today there are probably fewer than 100 fluent first-language speakers of Lowland Chontal and perhaps another few hundred fluent first-language speakers of Highland Chontal. This paper deals exclusively with the lowland variety.

Typologically, Chontal is a verb-initial, head-marking language with variable constituent order and no case marking. It has a complex aspectual system but no tense marking. Nominal morphology is mostly prefixing, and verbal morphology is mostly suffixing. The major person-marking paradigm is an agentive system responsive to the perceived volition or intention of the participant with respect to change. Person-marking morphology in the agentive (AGT) series can occur as free pronouns but frequently occur as clitics. Third persons have no AGT markers but can be expressed lexically or as polyclitic pronouns.[3] The patientive (PAT) series of person markers are verbal affixes that reference non-agentive participants, defined for this language as undergoers of involuntary or unintentional change. Third person singular has no PAT marker, neutralizing the agentive / non-agentive distinction for this person.

The main points of this paper are drawn from the larger qualitative study of the expression of change in Chontal, using data collected from narratives, naturally-occurring speech, response to non-verbal stimuli, and response to elicitation. Chontal has three formal predicate types to depict change events, defined as any event in which an undergoer moves to a new location, shifts to a new position, or transforms to a new state, with respect to an endpoint. The structures are illustrated in Table 1, with the formal structure that expresses 'change' in bold type.

In a simple predicate, change is encoded in the verb root. In a compound stem predicate, the semantics of change are expressed by a typically two-part construction formed of an initial verbal element (V1) and a mor-

pheme of direction or topological relation (DTR) that may or may not be independent verbs and may or may not independently encode change. And finally, in an associated motion (AM) predicate, change is encoded in verbal morphology that follows all other derivational morphology and can occur verb-finally as inflection (hence, the parentheses in the table). The main verb of an associated motion predicate is most often a process or stative root that does not encode change.

Table 1. Formal predicate types in Chontal

Predicate type	Form
simple	**VERB** – (derivation) – inflection
compound stem	**V1-DTR** – (derivation) – inflection
associated motion	VERB – (derivation) – **AM** – (inflection)

I use concepts and terminology from Talmy's seminal work on lexical and constructional typology to describe the locus of change semantics in expressions of change in Chontal. In Talmy's approach, languages are classified into two *framing types* by locating the core schema, or characterizing semantics, of any event description. The core schema is identified as, for example, the path of a motion event, or the changed property of a state change event (Talmy 1991: 480). If the core schema is found in the verb root, then the language is classified as *verb-framed*, and if it is expressed outside the verb root, e.g. in verbal morphology, adpositions, or adjuncts, it is what he calls a *satellite-framed* language. The claim is that other factors such as manner or cause will be found where the core schema is not and that the framing designation holds for the primary or most frequent means of expressing each event type in a given language.

I also adopt a third category of framing, drawing on work by Slobin (2004) and Zlatev and Yangklang (2004), among others. In a language with *equipollent framing*, the core schema is located in two or more elements of equal syntactic status, such as the multiple verbal elements of a serial verb construction.

My claim in this analysis is that the core schema of a change event is the fact of change, located in a simple or complex verbal structure. Adapting the definitions of framing type to the structural patterns in Chontal, the three change predicate types in Chontal represent all three language types in the Talmy-Slobin typology:[4] simple predicates are verb-framed; compound stem predicates are equipollently-framed, and associated motion predicates are satellite-framed. The next section examines each predicate type and highlights the functions of each one.

3.　Predicates of change in Lowland Chontal

3.1.　Simple predicates: verb-framed change

Simple predicates are formed by an inflected verbal root or stem without special morphology of 'change'. There are 73 simple predicates in the current corpus that express caused and uncaused change with respect to an endpoint. The semantics of change are in the verbal root, as in the following examples of change of location (1), change of position (2), and change of state (3).[5]

(1)　*may-pa=ya'*　　*el*　　*pana'*　　*f'aj-pa=ya'*　　　*el*　　*'ej*
　　　go-PFV=1S.AGT　DET　river　ascend-PFV=1S.AGT　DET　tree
　　　'I went to the river and climbed a tree.'

(2)　*pang-na-pa*　　　*sa=ya'*　　　*lya'*　　*joo-gi*
　　　sit-TERM-PFV.SG　CLIT=1S.AGT　there　cry-DUR.SG
　　　'Then I sat down there, crying.'

(3)　*iya=sa*　　　*jas-p-ola'*　　　*lan-je'e*
　　　1S.AGT=CLIT　tear-PFV-3P.PAT　DET.PL-paper
　　　'I tore the papers.'

　　Simple predicates of change of position and change of state include both transitive and intransitive verbs, while simple predicates of change of location are all intransitive. If the change is perceived as non-agentive, this is indicated by non-agentive person marking, as in (4).

(4)　*joypa*　　*xwij-ko-p-ola'*　　　　　　*lan-naranja*
　　　already　turn_yellow-APPL-PFV-3P.PAT　DET.PL-orange
　　　tye-p-ola'　　　*lamats'*
　　　fall-PFV-3P.PAT　earth
　　　'The oranges ripened and fell to the ground.'

3.1.1.　Semantic typology of the path of change

The notion of change with respect to an endpoint is a critical criterion in distinguishing predicates that express change. Typological studies of the concepts of motion and path (Aske 1989, Slobin 1996, 1997, Levinson and

Wilkins 2006: 531–536) point out that there are multiple types of path encoded in the languages of the world and that path type often correlates with other patterns within a language.

Change of location verbs in Chontal show two types of path. One type, called translational or translocational in the studies cited above, asserts a change over a trajectory and implies an endpoint. Simple predicates with a translational path all orient to Goal in Chontal; these were exemplified in (1). Another path type, called boundary-crossing, state change, or non-durative change of location, asserts a change at endpoint and implies a trajectory. In Chontal this path type is identified by the inflectional patterns of certain roots. In (5) and (6), the change of location is expressed as ongoing, following a perfective departure from Source.

(5)   *jaape=ma'*   *ay-pa*
       where=2S.AGT   depart_away-PFV.SG
       'Where are you going (where have you departed toward)?'

(6)   *pa'-pa*   *lakwi*
       come-PFV.SG   rain
       'It's going to rain (rain is coming, has departed toward here).'

Chontal has manner of motion verbs (e.g. run, walk, swim) and a series of verbs that depict 'transport' which can depict localized motion but which do not imply direction or endpoint. The root *pe-* means 'transport a small thing', and *pepa* with perfective inflection could mean 'he took, he brought, he carried' or even 'he held'. Manner verbs typically recruit a change verb to supply the notion of change with respect to an endpoint.

(7)   *ñulye-jlay-pa'*   *la'way'*   *ma+la+y-pa'*   *tyuwaj-lado,*
       run-PL-PFV.PL   children   go+PL+-PFV.PL   other-side
       tyan-lado   *el*   *parke*
       that-side   DET   park
       'The kids ran across the park (ran, went to that side of the park).'

In example (7), the manner verb *ñulye-* 'run' depicts localized manner of motion, and the path verb may- 'go' encodes the change of location to the other side of the park.[6]

3.1.2. Summary of simple predicates

Simple predicates, with semantics of change in the verb root, constitute the *verb-framed* portion of the grammar of change. Change of location predicates orient to a specific endpoint in space, either the Source (the starting point) or Goal (the ending point) of motion, while manner of motion verbs and transport verbs orient to neither and are not considered change predicates. The endpoint of change of position or change of state is the position or state expressed by the verb. The primary functions of simple predicates are to depict spontaneous change of location and position and caused and uncaused change of state.

3.2. Compound stem predicates: equipollently-framed change

In addition to simple predicates, Chontal has a second formal predicate type that encodes change in a typically two-part compound stem construction. Each element in the compound stem makes a specific contribution to the meaning of the predicate, yet it is the construction itself that consistently depicts 'change' (see O'Connor 2007: 20–25, 156–165).

The initial element of the compound stem, here called a V1, falls into one of four notional classes according to the semantics of the element and to the patterns of combination with the second element. The labels were chosen to capture broadly the various senses within each category.

– A *means* V1 describes the manner in which or means by which the change takes place.
– A *classificatory* V1 identifies the shape, size, or identity of the undergoer of change (semantic Theme) or, more rarely, describes the Goal participant.
– A *dispositional* V1 identifies the posture, spatial disposition, or configuration of the undergoer participant with respect to the endpoint of change.
– A *trajectory* V1 depicts the specific shape of the path taken by the undergoer in motion.

There are approximately 100 V1 elements in the current corpus, some of which are stand-alone verbs but many of which are not. These combine with one of a dozen morphemes that encode direction or topological relation (DTR), such as 'up', 'down', 'in', 'inside', 'out', 'up on', 'down on', 'down in', 'across', and 'on the edge'. A few of these fundamentally spatial elements are verb roots, capable of standing alone and taking inflection

to form a complete verbal word, but most are bound elements that only occur within a compound stem construction. Not all combinations of V1 and DTR are allowed: there are about 175 such predicates in the current corpus. In a given compound stem, either, both or neither element might be an independent verb, and either, both or neither might encode change.

In my analysis, the name of the V1 notional class also characterizes the compound stem construction. Most change of state compound stems are *means* constructions, and most change of position compound stems are *dispositional* constructions. A change of location might be encoded by either of these, a *classificatory* construction, or a *trajectory* construction. The endpoint of change is the spatial orientation, topological relation, or result state depicted by the DTR element.

3.2.1. Means predicates: adverbial function

Unlike English, with the suffix *-ly*, or Spanish, with *-mente*, Chontal does not have a productive process for forming adverbs that describe the manner or means in which an event occurs. Instead, this detail can be provided with a means construction. The following examples describe changes at or to an endpoint 'inside', achieved by 'digging' (8) or 'stabbing' (9).

(8) *awe' el   pana' pu-k'oy-pa   lamats'*
     big   DET river dig-inside-PFV.SG   earth
     'The river is big, it eroded (dug inside) the earth.'

(9) *k'ane-dɯy=ya'*   *lay-pich'ale*
     extend-DUR.SG=1S.AGT   my-clothes
     sk'wi-k'oy-yɯy-ya'   *jaape*   *lukwix*
     stab-inside-DUR.SG=1S.AGT   where   rope
     'I'm hanging clothes (by) sticking the tips into the clothesline.'

A frequent pattern with change of state verbs is the use of the element *-ñi* 'across' to signify 'apart, separate'. Compare the earlier example (3) with the constructed sentence below.

(10) *iya=sa*   *jas-ñi-p-ola'*   *lan-je'e*
      1S.AGT=CLIT   tear-across-PFV-3P.PAT   DET.PL-paper
      'I tore the papers apart.'

The difference in (10) is that the endstate is explicitly described as being 'apart', an earlier whole now separated into more than one piece.

3.2.2. Classificatory predicates: referent introduction and tracking

Classificatory V1 elements index some feature of the undergoer of change (size or shape) (11), identify the type of undergoer (as liquid, grain, or animate) (12), or identify the semantic Goal (as a container or a human) (13).[7]

(11)   *tyinchi   maa=yma'   p-ayj-pa   lo-bolsa*
     why   NEG=2S.AGT   small-down-PFV.SG   your-bag
     'Why don't you take off your backpack?'

(12)   *ch'uj-'mi-'ma=yma'   ten   sa=yma'   maj-ko-da*
     grain-in-IPFV=2S.AGT   what   CLIT=2S.AGT   cook-APPL-SNJCT.SG
     'You put in whatever grain you want to cook.'

(13)   *sa=yma'   wa-s-'mi-'ma   jaape   lo-na'wa-bolsa*
     CLIT=2S.AGT   container-AND-in-IPFV.SG   where   your-DIM-bag
     'You put it in your little purse.'

The primary discourse functions of classificatory constructions involve referent introduction and tracking. In (14), an excerpt from instructions for cooking fish stew, the cooking pot is introduced and tracked twice as a 'container' before the first lexical mention in (d).

(14)   a.   *wa-s-'mi-'ma   sa=ya'   lankiña,*
         container-AND-in-IPFV.SG   CLIT=1S.AGT   banana
         'I put in a banana (in the pot),'
     b.   *wa-s-'mi-'ma   sa=ya'   li-ju'e,*
         container-AND-in-IPFV.SG   CLIT=1S.AGT   its-salt
         'I put in salt (in the pot),'
     c.   *wa-s-'mi-'ma   sa=ya'   li-seboya.*
         container-AND-in-IPFV.SG   CLIT=1S.AGT   its-onion
         'I put in onion (in the pot).'
     d.   *joypa   sa   pulya   sa   lapixu*
         already   CLIT   boiling   CLIT   pot
         'Once the pot is boiling...,'

The ability to introduce and disambiguate among multiple referents is particularly important in a language like Chontal, which has no morphology of nominal classification and uses a set of semantically general clitics to track third-person referents in discourse.

3.2.3. Dispositional predicates: spatial precision and referent tracking

Dispositional predicates describe in rich detail the spatial disposition of the undergoer of change at endpoint, as for example 'mouthward upon' (15) or 'sitting down in' (16).

(15)   *k'o-ma-f'i-yuy*   *iya'*   *li-tapadera*   *lay-k'ejwa'*
      mouth-X-up_on-DUR.SG   1S.AGT   its-lid   my-well
      'I put/am putting a lid on my well.'

(16)   *jojl-may-pa*   *lapixu'*   *maj-lixpantalek-'ej*
      sitting-down_in-PFV.SG   pot   LOC-forked_branch-tree
      'The pot sat/is sitting in the crotch of the tree.'

In addition, dispositional predicates play a role in referent tracking. The narrative excerpt (17) is from a description of the rituals for the dead. The body of the deceased is mentioned lexically in (a), tracked by the classificatory element *le-* 'animate' in (b) and (c), and then referenced with a dispositional element *ñaj-* 'lying' in (d).

(17)   a.   *chee-duy*   *le-f'-kix-pa*   *lemayñe*
          go_return-DUR.SG   anim-up-AND-PFV.SG   corpse
          'He goes and lifts up the deceased.'
      b.   *ñoy-yuy*   *lamats'*   *para*   *naa=sa='le*
          lay-DUR.SG   earth   for   REF=CLIT=thing
          le-ñi-wa   *lamats'*
          anim-across-PROG.SG   earth
          'He lays the body on the ground so that the earth receives its spirit.'
      c.   *joyya*   *sa*   *le-f'-na-'me'*   *sa*
          after   CLIT   anim-up-TERM-IPFV.PL   CLIT
          'And then they lift the body.'

    d. **tyijpe**   **sa**   **ñaj-'mi-yay'**   **jaape**   **li-ñejwijma**
        there   CLIT   lying-in-DUR.PL   where   his-mat
        'There they place him on his sleeping mat.'

    Example (18) from the same story demonstrates that some compound stems combine a series of two DTR elements to depict an elaborated trajectory of motion, here, 'up' and then 'in'.

(18)   **tyijpe**   **sa**   **ñaj-f'-'mi-pa'**   **jaape**   **li-caja**
        there   CLIT   lying-up-in-PFV.PL   where   his-coffin
        'There they picked him up and put him in his coffin.'

3.2.4. Trajectory predicates: elaborated path of motion

Only a few compound stem predicates in my corpus depict an elaborated trajectory by stacking DTR elements as a series of endpoints. More commonly, details of path shape are expressed by the initial element of a trajectory predicate, such as a flat arc (19), a high arc (20), or a straight line (21).

(19)   **'oy-f'i-'ma**   **sa=ya'**   **lay-buru**
        flat_arc-up_on-IPFV.SG   CLIT=1S.AGT   my-burro
        'I will saddle my burro.'

(20)   **xpa-gi-'ma**   **sage=l**   **kasi**   **para**   **sa**   **fa-'ma**
        high_arc-out-IPFV   3S=DET   chili   to   CLIT   plant-IPFV
        'He would transplant the chili to plant it (in the field).'

(21)   **joypa**   **sa=yma'**   **ki-ñi-pa**   **el puente de Piña**
        already   CLIT=2S.AGT   straight-across-PFV   the_bridge_of_Piña
        'Once you crossed the Piña bridge...'

    Trajectory predicates constitute the smallest group of compound stem predicates. They sometimes play a backgrounding role in discourse by directing the focus away from the undergoer. Example (22) shows one way to describe putting a breadsheet into the oven, with the classificatory predicate *wask'oy-* 'put inside a container'.

(22) *wa-s-k'oy-'ma=yma'*   *lo-'i*   *maj-horno*
      container-AND-inside-IPFV.SG=2S.AGT   your-bread   LOC-oven
      'You put your bread in the oven.'

In a different story about bread-making, the speaker describes making
the dough, letting it sit, and, when it has risen, putting it in the oven.

(23) *joypa*   *sa*   *cho-lyu-pa*   *'oy-k'oy-ta*
      already   CLIT   rise-CLOC-PFV.SG   flat_arc-inside-DLOC.SG
      sa=yma'   *con*   *el*   *pala*
      CLIT=2S.AGT   with   the   paddle
      'Once it has risen, you go off and put it in with the paddle.'

In (23), the activities involved in the process of bread-making are the
salient topics, and the speaker backgrounds both bread and oven with a
trajectory predicate that highlights the pathshape of the final activity.

3.2.5. Summary of compound stem predicates

The compound stem predicate type is defined as a change construction, or
more accurately, a family of change constructions, each one a meaningful
structure composed of two elements of equal syntactic status. The seman-
tics of change are in the combination of elements in the multi-part con-
struction, so these predicates arguably constitute the *equipollently-framed*
portion of the grammar of change, in terms of the Talmy-Slobin typology.
    Compound stem predicates express most caused change of location,
both caused and uncaused change of position, and play a minor role in
depicting the realization state or location of a change of state.

3.3. Associated motion/change predicates: satellite-framed change

A third type of change predicate in Chontal is composed of an inflected
verbal root or stem with additional morphology of associated motion and
associated change, here abbreviated as AM.
    In the literature (e.g. Wilkins 1991), AM is described as a semantic cate-
gory that associates a subevent of motion prior to, simultaneous with, or
subsequent to the action of a main verb. The AM paradigm in Chontal is
comprised of only four suffixes, yet the set is internally diverse in seman-

tics, distribution, and function. The three suffixes to be discussed here[8] depict a displacement in space or time prior to the action or state of main verb, supplying a boundary-crossing or non-durative path of change. While simple and compound stem predicates situate some *participant* as an undergoer of change, most AM predicates instead situate an *event* or *state* in a certain place or time.

3.3.1. Locate an event in another place

Three of the AM morphemes occur with virtually any process verb in the language and with certain change verbs to signal that the action of the main verb takes place in the context of a 'go and do' or 'come and do' subevent. In (24), an *andative* suffix meaning 'go from Source' indicates that the 'buying' took place after motion away from the speech event.

(24) *'ña-s-pa*   *naa   ñulyi   montón   lampityu'*
      buy-AND-PFV.SG   REF   one   pile   whistles
      'He went and bought a pile of whistles.'

Andative morphology also occurs in the imperative, with a special suffix that also signifies 'motion', as a command to do the verb action elsewhere.

(25) *sma-s-ki*
      sleep-AND-IMPV.MOV.SG
      'Go and sleep!'

Similarly, the *venitive* suffix of 'come from Source' means the 'asking' event in (26) took place after someone had come from somewhere else.

(26) *jl-nu'ee-way-pa*   *naa=sa*
      1S.PAT-ask_for-VEN-PFV.SG   REF=CLIT
      'She came and asked for me.'

Both *andative* and *venitive* encode a departure from Source and occur with perfective or imperative inflection. In contrast, a third AM morpheme, the *dislocative*, appears to have fused with imperfective aspect and occurs verb-finally. This suffix contributes semantics of 'go to Goal' and signals

that the action of the main verb takes place after arrival at a Goal location
(27).

(27) *joola   sa   o-melyu   'na-ta=yma'   panela*
      if   CLIT   your-money   buy-DLOC.SG=2S.AGT   sugar
      'If you have money, you go and buy some sugar.'

Another typical function of dislocative inflection is to specify an activity as the Goal of a motion event, in a motion-cum-purpose construction, as in (28).

(28) *lay-pekwe   may-pa   x'wi-tya*
      my-husband   go-PFV.SG   chop_bush-DLOC.SG
      'My husband went to clear his land.'

The endpoint of the simple predicate *may-* 'go' is an unspecified Goal location. In a motion-cum-purpose construction, the AM predicate casts the event of the main verb as the Goal, the 'endpoint activity' of the preceding change of location event. In effect, 'My husband went to do some bush-chopping.'

3.3.2. *Locate a state along a path of change*

In a temporal sense, 'go and do' morphology affects the positioning of a stative main verb event in time. Andative derivation with perfective inflection changes a stative root into an inchoative predicate (29), while dislocative inflection depicts the result of a state change (30).

(29) *joypa   k'ej-'mi-pa=yma'   manj-s-pa   lapixu'*
      already   water-in-PFV=2S.AGT   be_full-AND-PFV.SG   pot
      'You poured the water, and the pot is filling.'

(30) *spojl-'ma   sa=yma'   manj-ta   sa*
      nestle-IPFV.SG   CLIT=2S.AGT   be_full-DLOC.SG   CLIT
      'You nestle them (inside the pot) until it's full.'

When suffixed to a stative root, AM morphology exploits the path semantics of a boundary-crossing type of path, encoding the departure to-

ward the new state, with andative plus perfective, and the arrival at the new state, with dislocative. Phasal verbs, too, are usually derived and inflected with andative and dislocative morphology.

3.3.3. Frame change of position as state change

The role of AM morphology in encoding change of position is a minor one and can best be described as framing a change of position as a change of state. An interesting example of this occurs with the verb root *pang-*, which means 'sit' or 'live'. An AM construction with *pang-* denotes 'being born', a non-agentive state change (31).

(31) a. *pang-ix-p-ola'*   b. *pang-t-o'*
          sit-AND-PFV-3P.PAT   sit-DLOC-2S.PAT
          'They are/were being born.'   'You were born.'

3.3.4. Summary of associated motion predicates

In AM predicates, the semantics of change are in the AM morphology, making these predicates the *satellite-framed* portion of the grammar of change. The primary function of AM predicates is to situate not a participant but an event or state in a specific place or time. With a process or change root, the event of the main verb is situated at a particular point in space, sometimes casting the Goal itself as an activity more than an identifiable location. With a stative root, the state of the main verb is situated at a particular moment in time, as the inception of change or as the result state of change.

Although they play an important role in the language ecology of Chontal, AM predicates are not the primary or most frequent means for expressing a change of location, position, or state, and therefore this framing type cannot be argued to characterize the language as a whole.

4.   Language framing type and predictive power

This analysis of expressions of change in Chontal presents a mixed picture for assessing language type. The grammar of change involves three verbal constructions of distinct morphosyntactic make-up and with distinct functional roles.

The primary function of a change event, in which an undergoer moves to a new location, shifts to a new position, or transforms to a new state, is divided between simple predicates and compound stem predicates. Simple predicates mostly encode uncaused change of location, uncaused change of position, and caused and uncaused change of state. Compound stem predicates mostly encode caused change of location, caused change of position, and caused change of state with a specified realization as 'apart'. The subevent of change in an AM construction serves an important complementary role, often working in combination with other predicate types, to express change of location, change of position, and change of state.

In the larger study cited previously (O'Connor 2007), I evaluated the predictive powers of the Talmy-Slobin typology through an analysis of narrative style in Chontal. I devised expectations for narrative style, involving factors such as the type of path, the number of endpoints, and the quality of manner description, extrapolating primarily from Slobin's (1997) predictions for the types of patterns expected in motion event descriptions. The results of narrative style analysis in Chontal were again mixed in terms of language framing type, and they highlighted the value of a construction-based approach that takes language ecology, grammatical function, and discourse function into account.

5.   Construction type and predictive power

A better solution is to explore the typologically interesting questions that arise from a consideration of the individual constructions. The comparative study of constructions involves examination of the types of meaning encoded, the types and combinations of structural elements that express these meanings, and the discourse-functional roles and language-internal properties that influence the usage patterns of particular constructions, all within the context of the individual genetic inheritance and contact history of a given language.

The typological study of meaning investigates the types of semantic distinctions made within a particular domain, at ever-finer degrees of detail, identifying semantic parameters and dependencies as units and patterns that can be compared across languages. This means, for instance, breaking an abstract construct like 'manner of motion' into subcomponents such as velocity, gait, medium, effort, posture of the undergoer, and psychological state of the undergoer. My own work on Chontal has involved methods and tools of semantic typology developed at the Max Planck Institute in Ni-

jmegen (e.g. Levinson and Wilkins 2006: 1–23) for analysing semantic domains of motion, location, placement ('put and take'), and object separation ('cut and break'). A typological approach at this level of detail addresses cross-linguistic similarities and differences in the categorizing and encoding of finely grained semantic distinctions.

From the perspective of morphosyntactic typology, we know that meaningful elements such as the semantics of space can be distributed throughout the clause (Sinha and Kuteva 1995, Grinevald 2006), in verbs, nouns, particles, adpositions, affixes, and constructions. Investigations by Grinevald and colleagues in the Trajectory Research Group at Lyon explore the semantic structures in lexical and grammatical forms of path expressions in languages throughout the world. Many languages have inventories of spatial elements similar to the paradigms I treat separately in Chontal, as associated motion morphology and elements of direction and topological relation. It may be useful to type languages according to the size and membership of these paradigms, to the ways in which elements can be combined, and to the semantic classes of verbs with which they occur. For example, Grinevald (2006) shows that in Jacaltek Popti', spatial elements can be divided into three distinct sets, with fixed position in combinations, and that these directionals can even attach to verbs of perception and locution, to stipulate the fictive path of gaze or speech.

The topic of associated motion itself portends promising ground for typological investigation. The AM paradigm in some languages is quite extensive, such as the fourteen suffixes of deictic and directional motion in the Central Australian language Mparntwe Arrernte, described by Wilkins (1991). Cavineña, a Tacanan language of Bolivia, boasts eleven suffixes that qualify the direction and aspectual properties of motion as well as the precise location and stability or permanence of the target of motion (Guillaume 2007). In other languages, morphology of associated motion is used not only for spatial deixis but can also serve aspectual functions, be used in anaphora, and/or play a role in participant marking (Hooper 2002 on Tokelauan, Polynesian; Margetts 2002 on Saliba, Oceanic).

The extended role of associated motion morphology cross-linguistically underlines the value of investigating usage patterns of constructions within the context of language-specific resources. We may be more likely to find complex predicates such as the Chontal means construction in languages without a productive process of adverb formation. Similarly, we may find that languages without referent-individuating pronominal operators are more likely to rely on structures like a classificatory or dispositional compound stem construction for referent introduction and management (e.g.

Hellwig 2003 on the classificatory properties of posture verbs in Goemai, West Chadic).

Typological investigation at the level of the construction can be applied to topics of language classification. Chontal has the resources it does for reasons of genetic inheritance and of language contact. These topics go well beyond the scope of this paper, but a few observations are in order. The two-part compound stem constructions arguably represent a semantic and syntactic subset of the bipartite stem construction, providing a possible link to other candidate Hokan languages of the California linguistic area (see Mithun 2007 for a good discussion of the difficulties in characterizing the link as genetic or the result of contact). From an areal perspective, space is a well-known preoccupation of Mesoamerican languages, and indeed many languages of the area have multiple and interacting sets of formal structures that encode spatial meanings.

In conclusion, in terms of the Talmy-Slobin typology of language types, this paper has shown that a classification of Chontal within a single framing type obscures the rich variety of formal and semantic structures that Chontal speakers use to express the notion of change. The analysis presented here suggests that we should take the illuminating insights from Talmy's work on typologies of languages, expand greatly such basic notions as 'path', 'manner', and 'changed property' to reflect the nuanced distinctions that languages make, and use the tools of semantic and syntactic typology to investigate typologies of constructions, as products of genetic and areal development, and as used by speakers in specific grammatical, discourse and cultural contexts.

Notes

2. Other studies have pointed out that typological tendencies can also be overridden by cultural factors (cf. Wilkins 1996 on Arrernte of Central Australia) and by dialectal differences (cf. Berthele 2004 on varieties of German). These strands will not be developed here but are important parts of the explanation of 'leaks' in language typologies.

3. Chontal has a rich inventory of clitics that function in reference, deixis and interaction. Some clitic morphemes can occur alone, but mostly these attach to nouns, verbs, and to each other, forming polyclitic words. To illustrate, in the data for this paper there are many instances of *sa*, a clitic which occurs (1) alone, (2) with person markers, as in *sa=ya'* or *iya=sa* for first person singular and *sa=yma'* for second person singular, (3) with *=ge* 'person' or *=jne* 'persons' to form *sa=ge* and *sa=jne,* used as pronouns for third person singular and plural, respectively, and (4) with *naa,* a clitic that indexes a known referent, in *naa=sa* and *naa=sa='le.* See O'Connor (2007: 55–56) for a preliminary but more extensive description of clitics in Chontal.

4. Slobin's analysis has evolved in recent years, departing from the basics of the Talmy-Slobin framework to take a more finely-grained approach. For example, with respect to motion events, Slobin now talks about languages with PIV and PIN constructions (path in verb vs. path in non-verb) rather than verb-framed and satellite-framed languages.

5. Only words pertinent to the discussion were fully glossed. Glossing and orthographic conventions include the following: 1S-3P person, AGT agentive, AND andative, APPL applicative, CLIT clitic, CLOC cislocative, DET determiner, DLOC dislocative, DUR durative, IMPV imperative, IPFV imperfective, LOC locative, NEG negation, PAT non-agentive, PFV perfective, PL plural, REF given referent, SG singular, SJNCT subjunctive, TERM terminative, VEN venitive, X unknown morpheme. At morpheme boundary, a hyphen (-) marks derivation or inflection, an equal sign (=) marks a clitic, and a plus sign (+) marks an infix. Special graphemes are {j} for the glottal fricative /h/ and the velar fricative /x/, {x} for the alveopalatal fricative /š/, and the apostrophe {'} for the glottal stop and for glottalization as secondary articulation. There is rampant palatalization of alveolars, conditioned environmentally, and in a regular morphophonemic process, verb-initial alveolar consonants are palatalized when the verb occurs with a third person subject (*n~ñ, t~ty, s~x, l~ly*).

6. One reviewer asked if the example in (7) could be considered an instance of equipollent framing (as will be discussed in 3.2). The answer in this analysis is no, but a sequence of verbs as in (7) illustrates the likely diachronic path to the formation of both compound stems and associated motion constructions. The specific sequence of elements and the permissible semantic combinations in each of these constructions are introduced in 3.2 and 3.3, respectively.

7. The stems *was'mi-* 'put into container' and *wask'oy-* 'put inside container' are highly unusual in that they have what appears to be an andative morpheme inside the stem. No other compound stems, including others with *wa-* 'container',

show this pattern. One explanation is that the extra morpheme distinguishes movement *to* a container, as a Goal, from movement *of* a container, as a Theme.

8. The remaining suffix, the *cislocative*, occurs exclusively with certain change of location roots, as in (23). It seems to depict simultaneous motion, supplying a durative or translational path of 'coming from Source'. The cislocative is infrequent in my corpus and unusual within the small AM paradigm, with senses or homophonous forms not yet well understood.

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