IDEOPHONES, ADVERBS, AND PREDICATE QUALIFICATION IN UPPER NECAXA TOTONAC[1]

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Ideophones—sometimes called "expressives"—are familiar from descriptions of African languages and are now relatively well documented in a number of languages of Eurasia, Oceania, and Australia. This paper examines ideophones in Upper Necaxa Totonac, a Mesoamerican language, details a number of their distinctive phonological, morphological, and semantic properties, and compares these with the properties of more traditional-looking adverbs. While ideophones do turn out to be distinguishable from adverbs on some grounds, in terms of their syntax they are shown not to be distinct, leading to the conclusion that ideophones in this language are best treated in terms of their part-of-speech classification as part of an overarching class of adverbial predicate-qualifiers.
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1. Introduction. Typological studies of parts-of-speech systems (e.g., Dixon 1982, Schachter 1985, Croft 1991, Hengeveld 1992, Beck 2002, and Baker 2003) have concentrated for the most part on the so-called major, open lexical classes—nouns, verbs, and adjectives—with the occasional nod in the direction of prepositions and, less frequently, adverbs. Much of this has to do with the fact that these parts of speech have played the central role in most formal attempts to model language, and they seem to be the most active lexical classes in the grammars of the languages that have been the traditional targets of such analyses. Nevertheless, as the number of languages and types of languages attracting the attention of linguists has grown, so has the number of lexical classes that linguists have had to contend with in their grammatical descriptions—and, as a consequence, so has the number of potential parts of speech to be accounted for in one way or another by theorists and typologists.

One novel lexical class that has drawn a good deal of attention over the past few years is the ideophone (Doke 1935). Ideophones are onomatopoeic

or synesthetic expressions which generally exhibit syntactic, morphological, and phonological properties that set them off from other word classes; they tend to have an emotive function and are frequently associated with spoken and dramatic registers of speech (Voeltz and Kilian-Hatz 2001). These words are generally easy to distinguish on a language-specific basis from words belonging to other lexical classes, but there seems to be little agreement on what to do with the class in cross-linguistic terms. Individual analyses of ideophones differ about whether the class in a particular language is best treated as a subtype of verb, adverb, or noun—or if, in fact, they constitute a separate part of speech. In those cases where the latter option is put forward, the question then becomes one of whether or not the proposed part of speech is a language-specific class or if it has some cross-linguistic (or even universal) validity. This paper is an attempt to address some of these issues through a detailed look at the class of ideophones in a particular language, Upper Necaxa Totonac (UNT), a member of the isolate Totonac-Tepehua linguistic family spoken by some 3,000 people living in and around three villages—Patla, Chicontla, and Cacahuatlan—in the Necaxa River Valley in the northeastern part of the state of Puebla, Mexico.[2]

Although ideophones—sometimes called "expressives"—are probably most familiar from descriptions of African languages, they are now relatively well documented in a number of languages of Eurasia, Oceania, and Australia. Recently, some work has been done on the topic in Mesoamerican languages, including two studies on the Mayan family (Durbin 1973 and Maffi 1990) and two on Totonacan languages, Huehuetla Tepehua (Smythe Kung 2005; forthcoming) and Filomena Mata Totonac (McFarland 2006). Totonac-Tepehua languages have a large set of ideophonic words which are frequently treated as adverbs or interjections in practical vocabularies and dictionaries (Aschmann and Aschmann 1974, Reid and Bishop 1974, and

[2] According to Ethnologue (Gordon 2005), Upper Necaxa Totonac (their Patla-Chicontla Totonac, TOT) is also spoken in the nearby village of Tecpatlán and in an unnamed fifth location, probably San Pedro Tlalantongo. My own experience with the Totonac of Tecpatlán is that it differs significantly from the Totonac of Patla and Chicontla both lexically and phonologically, the differences being easily recognizable and preventing complete mutual intelligibility. An attempt at a Bible translation that bridged Tecpatlán and Patla-Chicontla Totonac was largely a failure, and so it seems best to exclude Tecpatlán from Upper Necaxa Totonac. The linguistic situation in San Pedro is less clear; although phonologically San Pedro Totonac is not distinct from Chicontla Totonac, there are a large number of lexical differences that seem to distinguish it more from Patla, Chicontla, and Cacahuatlán than do the lexical differences among the latter three. San Pedro Totonac does, however, seem to be mutually intelligible with other Upper Necaxa varieties and probably should be included therein, pending further investigation (and a clearer idea of what it means to say that two communities speak "the same" language).

Aschmann 1983). Such expressions in Upper Necaxa Totonac are illustrated by the examples in (1):[3]

(1a) **t͡ʃax** ikla̰ʔamu:nú:ɬ tsamá: t͡ʃiʃkṵ́
    t͡ʃax ik-la̰ʔa-mu:nú:-ɬ   tsamá: t͡ʃiʃkṵ́
    IDPH   1SG.SUBJ-face-spray-PFV   that   man

    'I threw water in the man's face'   (RM)

(1b) **kimkimkim** la: ku:kím
    kimkimkim   la: ku:kím
    IDPH   do   firefly

    'the firefly goes along flashing'   (LB)

(1c) **ʔon̰ʈuɬu** li:makawán iʃt͡ʃá:n kíwḭ
    ʔon̰ʈuɬu   li:-maka-wan   iʃ-t͡ʃá:n   kíwḭ
    IDPH   INST-hand-say   3PO-shin   tree

    'the woodpecker makes the tree trunk sound'   (RM)

Many UNT ideophones—like ideophones in other languages—are onomatopoeic: thus, in (1a) the word *t͡ʃax* conveys the sound made by a burst or splash of liquid. The word *kimkim* 'a light flashing on and off' in (1b) illustrates two more common cross-linguistic properties of ideophones: the use of synesthetic expressions (the syllabic structure of the word being evocative of an intermittent series of flashes) and conventionalized sound symbolism (the pattern CiC$_{[bilabial]}$ being associated with a number of roots for flashing, shining, shimmering, etc.).

The ideophone in (1b) also illustrates an important language-specific feature of ideophones in UNT: the use of reduplication to express iteration or

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[3] The abbreviations used in this paper are as follows: 1, 2, 3 = first, second, third person; adj = adjective; adv = adverb; Ch. = Chicontla form; CLS = classifier; CS = causative; CTF = counterfactual; DST = distal; DTB = distributive; DTV = determinative; DYN = dynamic; FUT = future; IDF = INDEFINITE VOICE; IDO = indefinite object; IDPH = ideophone; IMPF = imperfective; INCH = inchoative; INST = instrumental; INTJ = interjection; LOC = locative; NEG = negative; NM = nominalizer; OBJ = object; OPT = optative; PATH = path (in passing); PF = perfect; PFV = perfective; PL = plural; PLC = place of; PO = possessor; PRG = progressive; Pt. = Patla form; QTV = quotative; REL = RELATIVIZER; RPT = repetitive; RT = round-trip; SEM = semblative; SG = singular; ST.PL = stative plural; STM = stimulus; SUBJ = subject; vi = intransitive verb. Clitic boundaries are marked with =. Data are presented in an Americanist IPA where an acute accent on vowels is used to mark primary stress and /y/ is used in place of IPA /j/. Data in this paper are drawn from both principal dialects of Upper Necaxa, Patla (Pt.) and Chicontla (Ch.); where a particular cited form is particular to one of the two dialects, this is indicated after the first line of the interlinear gloss. Individual sources of contextualized examples are cited by the speaker's initials given in parentheses after the gloss. Non-nativized Spanish borrowings are set off in Roman typeface in the first lines of interlinear glosses.

distributivity, one of a number of morphological and phonological idio-syncrasies of this class of words in the language. The reduplicative pattern in (1*b*) involves a full CVC reduplication; an alternate reduplication pattern, copying of the final -CV, is shown in (1*c*), which contains the ideophone *ʔoŋtutu* 'woodpecker pecking on a tree'. Like a great many ideophones in UNT, *ʔoŋtutu* is very specific in its meaning and, rather than simply ex-pressing a manner or a sound, it evokes an entire scene—a specific type of action ('pecking') carried out by a particular kind of participant ('wood-pecker'). This semantic specificity is one of the most striking properties of ideophones, particularly for researchers interested in the semantic properties of lexical classes and how these relate to the typology of parts of speech systems.

In this paper, I tackle the issue of whether ideophones, as defined by these distinctive morphological and semantic properties, constitute a sepa-rate part of speech in Upper Necaxa Totonac—in other words, whether the differences that might exist between ideophones and other lexical classes, in particular the class of adverbs, merit a first-order taxonomic distinction in the lexicon which must be made reference to by rules for sentence-level gram-matical description. I begin by examining those properties of ideophones—primarily phonological and morphological—that set them apart from other words in the lexicon (**2**). These properties include the extensive use of sound symbolism (**2.1**), reduplication (**2.2**), absence of primary word-level stress assignment (**2.3**), and the lack of regular derivational relationships to any other word class (**2.4**).

Such distinctive properties make it tempting to classify ideophones as their own, separate part of speech. However, as shown in **3**, the syntax of ideophones groups them squarely with other words that seem most naturally to fall into a class of adverbs, and so any attempt to posit a separate part of speech for ideophones depends on being able to distinguish them reliably from adverbs, requiring a more detailed examination of this lexical class. Thus, section **4** examines the properties of adverbs in UNT, beginning with a discussion of their semantic subtypes (**4.1**) and then moving on to their morphological characteristics (**4.2**). Section **4.3** deals with the syntactic properties of adverbs and shows that these exactly parallel the syntactic properties of ideophones. Following this, in section **5**, I discuss the seman-tics of the two classes, particularly the issue of semantic specificity, and in **6** I return to the question of how all of these properties inform the status of ideophones as a separate and distinct part of speech. In the end, in spite of the properties that collectively mark ideophones as a distinctive class of lexical items, the fact that ideophones clearly pattern with adverbs for the purposes of sentence-level grammatical description (i.e., syntax) seems to support the position that, in Upper Necaxa Totonac, ideophones and adverbs constitute two subclasses of a single part of speech.

2. Ideophones. In terms of their phonological and morphological properties, ideophones in Upper Necaxa Totonac are highly distinctive, sharing a set of traits that they do not share to any large extent with any other group of words. This is consistent with findings in other languages as well, where the most reliable and consistent way of identifying ideophones is by making recourse to their phonological and morphological properties (Alpher 1994, Childs 1994, and Voeltz and Kilian-Hatz 2001). In UNT, ideophones are distinguished by a range of such properties that, while not all unique to ideophones, do set them off as a group from other parts of speech. These include the frequent use of sound symbolism (**2.1**), the productive use of reduplication (**2.2**), and the lack of primary word-level stress assignment (**2.3**). Ideophones are not the targets of any regular derivational processes forming words belonging to other lexical classes, nor are they the product of any identifiable synchronic or diachronic derivational processes. A few ideophones, however, do show some apparent historical relationship to other words in the lexicon, a topic examined in **2.4** below

2.1. Sound symbolism. Sound symbolism is defined broadly as a phenomenon that establishes some sort of direct linkage between sound and meaning such that their relation is, albeit nonpredictable, nevertheless nonarbitrary. A comprehensive typology of sound-symbolic processes is offered by Hinton et al. (1994) and runs the gamut from corporeal (coughing, hiccupping, etc.) and imitative sound symbolism (onomatopoeia), through synesthesia and the use of conventionalized sound symbols. Ideophones across languages, including UNT, tend to rely most heavily on the last three of these—onomatopoeia, synesthesia, and conventionalized sound symbolism.

Onomatopoeia is perhaps the most universally noted sound-symbolic quality of ideophones (Doke 1935 and Childs 1994), at least some ideophones in most languages being in some way reminiscent or imitative of a sound that is, or is part of, their meaning. Some examples from UNT are given in (2):

(2) *tʃululu* 'water trickling'
    ʔo:sʔo:s 'object making clicking, rapping, or tapping noises'
    kalanɫkalanɫ 'person biting through hard food'
    ɫapo̰ʔ 'object being struck and making a hollow sound'
    lu:p 'object dropping into water'
    patʃ 'small stone falling'
    tsanana 'insects buzzing'
    wa̰ʔtawa̰ʔta 'person sharpening a machete'
    ʃnoŋʃnoŋ 'a cord or elastic being stretched'

In each of these cases, the phonological form of the ideophone is in some way iconic of a particular nonlinguistic sound such as the buzzing of insects or the sound of a hollow object striking the ground. Although this

type of iconicity is not predictive of the particular form an ideophone will take, the function of the ideophone as a sound-symbolic unit constrains its possible forms, and in this sense makes the relation of the phonological form of an onomatopoeic ideophone to its meaning nonarbitrary.

The second type of sound symbolism that gives rise to ideophones in UNT and in other languages (Berlin 1994, Maduka-Durunze 2001, and Watson 2001) is synesthesia, defined as "the notion that the physiological properties of perceptions are designed to view different perceptual stimuli as the same" (Nuckolls 1999). In such cases, the phonological form or phonetic properties of the word are considered to be iconic of some sensory quality of its signified. Some possible examples from UNT are given in (3):

(3) *lam* 'bright light flashing, a fire flaring up'
    liplip 'object sparkling like a diamond or piece of glass'
    nutunutu 'stick waving back and forth'
    tenene 'bright light or flame flickering or shimmering'

The first ideophone in the list, *lam* 'a bright light flashing', uses an open, high sonority vowel to convey the impression of an energetic burst of light, as opposed to *liplip* 'a diamond sparkling', which denotes shorter, sharper bursts with abruptly closed bilabial syllabic codas. *nutunutu* 'a stick waving back and forth' seems to imitate the oscillations of a waving object. In the same way, *tenene* 'a bright light flickering or shimmering' seems to capture some aspect of the shimmering of a flame or a hot coal. Such observations are, naturally, highly impressionistic and difficult to pin down, but, as in onomatopoeic forms, they do lend weight to the notion that the relation between signifier and signified is somewhat less than arbitrary, and that in this respect ideophones are different, at least in degree, from other words in the lexicon.

UNT ideophones not only show evidence of onomatopoeia and synesthesia, but in some cases they form sets of items related to each other in meaning and distinguished from one another by meaningful (or at least semantically motivated) changes in form. Consider (4), which contains a set of ideophones describing events of flashing, flickering, and sparkling:

(4) *lam* 'bright light flashing, a fire flaring up'
    liplip 'diamond or piece of glass sparkling'
    lipilipi 'sun glinting off the water, a mirror, etc.'
    limlim 'sun sparkling off flowing water'
    slimslim 'object twinkling'

There are a number of sound-symbolic patterns that appear to be at work in this set of words. As noted above, the first ideophone in the list, *lam* 'a bright light flashing', expresses the most energetic, brightest phenomenon, as opposed to *liplip* 'a diamond sparkling' and *limlim* 'sun sparkling

off flowing water'. According to Ohala (1994), there is a cross-linguistic tendency for open vowels such as /a/ to be associated with large size and force, while /i/ tends to be associated with smallness and diminutives (for an example of the opposite pattern, however, see Diffloth 1994). Similarly, the /m/ ~ /p/ alternation seems to correspond to the difference between longer and shorter, sharper phenomena (*lam* vs. *lip*) or between instant, potentially singular events (*lip*, *lipi*) and events with a continuous, potentially static component (*lim*, *slim*). Similar sound-symbolic patterns often help to distinguish minimal or near-minimal pairs of ideophones such as:

(5*a*) *lu:p* 'object dropping into water'
　　　slup 'small object falling into water'

(5*b*) *patʃ* 'small stone falling'
　　　patʃʃ 'sudden popping (pistol, firecracker)'

As in the previous data set, the *s-* in the pair in (5*a*) corresponds to the event involving the smaller object, and we see a correlation between vowel length and size as well. In (5*b*) there seems to be a vaguely onomatopoeic correlation between the lengthening of the release of the final affricate and the volume (and perhaps duration) of the noise being described.

　　Another phonological characteristic that can distinguish pairs of ideophones with related meanings is vowel lengthening:

(6*a*) *lu:p* 'object dropping into water'
　　　lup 'sharp object striking and sticking into something'

(6*b*) *ɬtạʔa:ɬtạʔa:* 'broad object waving back and forth'
　　　ɬtạʔạɬtạʔạ 'small object wavering (fish's tail, candle flame)'

Here, relative vowel length corresponds to relatively greater size or longer periodicity. Thus, *lu:p* describes an object dropping into the water with a splash and *lup* describes the sharper, shorter sound of a sharp instrument biting into a surface. *ɬtạʔa:ɬtạʔa:* evokes the long, periodic swings of a broad object such as a door swinging in the wind, while *ɬtạʔạɬtạʔạ* imitates the shorter strokes of a fish's tail or the flickering of a candle. Vowel length is a phonemic contrast for all word classes in UNT, but there are no pairs other than in ideophones where contrastive vowel length serves to differentiate two related meanings in this way.

　　Contrastive syllable structure is also used to distinguish a number of ideophonic pairs that appear to be based on the same root, as in (7):

(7*a*) *poŋʃpoŋʃ* 'large object striking water; container of water being dumped'
　　　poŋʃupoŋʃu 'objects falling into the water'

(7*b*) *toŋltoŋł* 'stick hitting hollow object; end of a stick striking the ground'
        toŋlutoŋlu 'person going along planting corn with a planting stick'

(7*c*) *pa̰ʔʃpa̰ʔʃ* 'person or animal biting down noisily'
        pa̰ʔʃapa̰ʔʃa 'person or animal eating noisily'

In each of these and a few other pairs, the CVC syllable structure seems to correspond to a certain degree of punctuality and the reduplication signals an iteration of a punctual event, whereas the CVCV syllable conveys a more cyclical, continuous, or distributed movement or activity.

UNT also makes use of the last of Hinton et al.'s (1994) types of sound symbolism—the use of conventionalized sound symbols. These take their most obvious form in consonantal alternations correlating to relative size, intensity, or force. This is a sound-symbolic pattern found both in UNT and other Totonacan languages (Bishop 1984, Levy 1987:115–30, McQuown 1990:66, MacKay 1997:113–14, Smythe Kung 2005; forthcoming, and McFarland 2006) and in other parts of the Americas (Nichols 1971, Aoki 1994, and Silverstein 1994). In Totonacan, the pattern involves a three-way fricative alternation, as shown for ideophones in UNT in (8):

(8*a*) *laŋs* 'hand striking hard'
        laŋʃ 'blow striking with force'
        laŋł 'blow striking with great force'

(8*b*) *spipispipi* 'small person or animal trembling'
        ʃpipiʃpipi 'person or animal shivering or shaking slightly'
        łpipiłpipi 'person or animal shaking or having convulsions'

As in these examples, the alternation /s/ ~ /ʃ/ ~ /ł/ (and occasionally /ts/ ~ /tʃ/ ~ /ʃ/) is correlated either with increasingly more energetic or forceful action or with the size of an event participant. The same pattern, though not synchronically productive, is also found in a number of verbs, adjectives, and even a few adverbs—although in most (but not all) cases only a two-way /s/ ~ /ʃ/ alternation is attested:

(9*a*) *xaksán* (vi) 'stink, smell rotten, fetid'
        xakʃán (vi) 'smell strongly, bringing tears to one's eyes'

(9*b*) *ma̰ʔsú:* (vt) 'peel off a fine skin'
        ma̰ʔʃú: (vt) 'peel off a thick skin'

(9*c*) *ʔasása* (adj) 'bare, naked (diminutive)'
        ʔaʃáʃa (adj) 'bare, naked'

(9*d*) *smo̰ʔó̰ʔo* (adj) 'very unripe'
        ʃmo̰ʔó̰ʔo (adj) 'unripe'
        łmo̰ʔó̰ʔo (adj) 'not quite ripe'

(9*e*) *swatáx* (adv) 'slipping (something small)'
       ʃwatáx (adv) 'slipping'

(9*f*) *saláx* (adv) 'broken into splinters'
       ʃaláx (adv) 'broken into shards'
       ɬaláx (adv) 'broken into pieces'

The verbs in (9*a*) vary with the intensity of the smell described, while the pair in (9*b*) vary according to the thickness of the skin being peeled off. The adjectives in (9*c*) show a similar type of variation, the consonantal alternation corresponding to relative size of the noun being modified, just as the adverb in (9*e*) varies with the size of the person or object doing the slipping. The last set of ideophones in (9*f*) varies with the intensity of the event. The set in (9*d*), interestingly, seems to work in the opposite way from the alternations in the other sets: rather than /s/ corresponding to the most attenuated sense of the root and /ɬ/ to the most intensive, /ɬ/ here seems most attenuated and /s/ most intensive. This, however, may be a function of the translation, which rather than 'unripe' could be rendered as 'ripening', making *smo̱ʔó̱ʔo* 'close to ripe' and *ɬmo̱ʔó̱ʔo* 'just about ready to pick'.

The alternation seen in the initial consonant in (9*d*) and (9*e*) applies to a large number of adjectives and adverbs, and seems likely to be a reflex of an older Totonacan diminutive suffix, *s-* (reported by McQuown 1990 in Coatepec), which still occurs in a few pairs of adjectives and adverbs such as those in (10):

(10*a*) *lamáma* (adj) 'bright and shiny'
       slamáma (adj) 'shiny (color)'

(10*b*) *napá̱pa̱* (adj) 'pasty, pale'
       snapá̱pa̱ (adj) 'pale but shiny'

(10*c*) *tiɬ* (adv) 'dispersed'
       stiɬ (adv) 'spread out (small objects)'

This *s-* prefix also appears in the final example in (4) above and again in the second example in (5*a*). The prevalence of initial /s/ ~ /ʃ/ ~ /ɬ/ alternations, and the fact that these are common in word classes other than ideophones, suggest that, historically, this particular sound symbol-symbolic convention had as one of its targets the diminutive **s-*, which was once part of the productive morphology.

Another type of conventionalized sound symbolism that seems to be unique to ideophones is the association of certain prosodic patterns with words denoting a particular type of event or sensation. In Huehuetla Tepehua (HT), Smythe Kung (2005; forthcoming) identifies a number of templatic patterns for ideophonic words associated with such things as cracking noises, nonlinear

motion, actions involving the teeth, etc. Of the eight categories of conventionalized syllable types that Smythe Kung describes for HT, four are also found in UNT:

(11a) Flow—*Culu* (HT *C* + *ul* 'steady flow of liquid')
tʃululu 'water trickling'
mululu 'water being poured out of a container'
mulumulu 'water welling up out of a spring'
ʃpululu 'a person wheezing wetly'
ʃululu 'a person slurping a drink'

(11b) Hollow sound—*oʔ* (HT *oq*)
pǫʔpǫʔ 'someone clapping hands, something popping or cracking'
ɬapǫʔɬapǫʔ 'an object falling and striking the ground'
tǫʔtǫʔ 'brooding hen clucking'

(11c) Ringing—*t/tsVn/nʔ* (HT *tʃaC*[liquid])
tantan 'a mid-sized bell ringing'
tonton 'a church bell ringing'
toŋtoŋ 'heart beating'
tsaŋtsaŋ 'water dripping'
tsintsin 'a small bell ringing'

(11d) Popping sound—*pVCC*[fricative] (HT *CVlVkʃ*)
patʃʃpatʃʃ 'sudden popping (pistol, firecracker)'
pąʔɬpąʔɬ 'person stricking smething hard'
paŋsasa 'popcorn popping'
pąʔʃpąʔʃ 'a person or animal biting down noisily'
pęʔɬpęʔɬ 'object popping open'

Note that of these four categories, the first two, (11a) and (11b), make use of the same phonological template as that found in Huehuetla.[4] In addition, there are four more templatic patterns that can be identified in UNT:

(12a) Light—*lVC*[bilabial]
lamlam 'a light flashing, a fire flaring up'
lamalama 'a fire burning'
lamama 'coals glowing red'
limlim 'sun sparkling off flowing water'
limilimi 'a light flickering on and off quickly, an object glittering'
slimslim 'an object twinkling'
liplip 'a diamond or piece of glass sparkling'
lipilipi 'shimmering sun reflecting off the water, a mirror, etc.'

[4] Note that Upper Necaxa Totonac has undergone an across-the-board sound shift changing all *q to /ʔ/, making the sequence /ǫʔ/ an exact parallel to /oq/ in other Totonacan languages.

(cf. also *tʃĩmtʃĩm* 'a person blinking', *tsimtsim* 'a person winking', *kimkim* 'light blinking on and off ')

(12*b*) Jumping—*lVnC* or *lVŋC*
 luŋʃluŋʃ 'a person jumping around'
 liŋʃiliŋʃi 'a heavy animal walking and making the ground shake'
 linɬlinɬ 'a person hopping around on one foot'
 linɬilinɬi 'heavy person or object walking causing the ground to shake'
 liŋɬiliŋɬi 'heavy objects falling and making the ground shake'
 luŋɬuluŋɬu 'something jumping around'
 liŋkiɬliŋkiɬ 'a person or animal limping'
 liŋkisliŋkis 'a person going along on tiptoe'

(12*c*) Rattling/buzzing, crackling—*tsVC*_[lateral]V or *tsVnV*
 tsilili 'food sizzling'
 tsilili 'a small bell with a hammer ringing'
 tsilulu 'a cricket chirping'
 tsiɬiɬi 'something rattling'
 tsuɬuɬu 'something large rattling'
 tsanana 'fire crackling; rain falling; insect buzzing'
 tsinini 'a small bell or buzzer ringing'

(12*d*) Burst of white noise—*ax*
 tʃaxtʃax 'water splashing in bursts'
 ʃaxaʃaxa 'small objects (pebbles, corn, coffee) rattling in a container'
 ʃaxʃax 'dirt, sand, or dust striking a surface (door, roof, etc.)'

As with the previous set, these templates appear to be conventionalized sound symbols equating a particular syllable type to a particular type of sound, motion, or sensory experience. It should be noted, however, that these patterns are not exclusively associated with these particular semantic fields. For each of the categories, there seem to be one or two ideophones that conform to the syllabic template but denote other types of event. Nevertheless, the patterns are robust enough to be identifiable, and—given the use of similar templates in Huehuetla Tepehua—it may well be that the use of this type of conventionalized syllabic template is a trait of ideophonic expressions in this and other languages of the family (if not the world).

2.2. Reduplication. Although there are traces of historical reduplicative processes found in some Totonacan languages, reduplication is not a feature of synchronic Totonacan grammar for most word classes. In UNT, however, reduplication is a productive morphological process for ideophones, and the

majority of ideophones encountered in texts and elicitations are in redupli-
cated form, following one of two reduplicative patterns—either full redupli-
cation or a partial reduplication of the final -CV of the root.[5] The more
common pattern is full reduplication:

(13)   *tʃiuxtʃiux* 'water dripping slowly onto the floor'
        poʔpoʔ 'clapping sound'
        kalanɬkalanɬ 'person biting through hard food'
        laksliwilaksliwi 'a four-legged animal limping along on three legs'
        pa:nɬupa:nɬu 'someone toothless chewing food'

Full reduplication is generally applied only once, but some examples show
multiple applications:

(14)   *kunikuni* 'caterpillar crawling'
        kunikunikuni *aní:*
        kunikunikuni *an-ní:*
        IDPH   go-PF

        'the caterpillar had crawled off '   (LC)

Fully reduplicated ideophones seem to be those that are most punctual or
cyclical in meaning (that is, they designate things that happen all at once or
over and over), and the contrast between reduplicated versus nonredupli-
cated forms of ideophones with this pattern encodes aspectual distinctions
such as punctual versus iterative, as in (15):

(15)   *te:ɬte:ɬ* 'something hitting the ground'

(15a)   **te:ɬ** *iktawí:ɬ ka:s'ewíwi antsá*
        te:ɬ   *ik-ta-wi:ɬ*   *ka:-s'ewíwi*   *antsá*
        IDPH 1SG.SUBJ-INCH-sit   PLC-cool   here

        'I plopped myself down here where it's cool'   (LC)

(15b)   *mat* **te:ɬte:ɬ** *li:ta:ti:tá: tsamá: misín*
        mat   **te:ɬte:ɬ**   *li:ta:ti:tá:*   *tsamá:*   *misín*
        QTV   **IDPH**   bounce.on.bottom   this   jaguar

        'the jaguar bounced around on its rear end'   (MR)

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[5] Productive reduplication of ideophones is also reported in Huehuetla Tepehua by Smythe
Kung (2005; forthcoming) and in Filomena Mata by McFarland (2006). Huehuetla Tepehua
shows the same two reduplicative patterns (with roughly the same meanings) discussed for UNT
in the section below. P. Levy (personal communication) also reports reduplication of ideophones
in Papantla Totonac, and I would not be surprised to discover that this is a characteristic of this
group of words in a majority of (if not all) the languages in the family.

Reduplication can also correlate with the number of the subject, as in (16):

(16) *patʃpatʃ* 'small stones falling'

(16a) **patʃ** *makawán*
　　　 patʃ　　 *maka-wan*
　　　 IDPH　　 hand-say

　　　 'the pebble falls'　 (LB)

(16b) **patʃpatʃ** *tamakawán*
　　　 patʃpatʃ　 *ta-maka-wan*
　　　 IDPH　　　 3PL.SUBJ-hand-say

　　　 'the pebbles fall'　 (CF)

In the second example here, the fully reduplicated ideophone is accompanied by plural subject marking on the verb, correlating with the plurality of the stones implied by the reduplication of the ideophone. Plural subject marking, however, may be omitted for inanimate, nonindividuated subjects, and in these cases the reduplication of the ideophone may be the only indication of plurality in the clause.

The second pattern of reduplication involves -CV suffixation. This type of reduplication seems more frequently to mark intensity, locative distributivity, and/or duration, as in (17):

(17) Partially reduplicated ideophones
　　　 ʔoʃuʃu 'hollow object being tapped'
　　　 lapʃaʃa 'fish out of water wriggling'
　　　 milili 'wind blowing'
　　　 mululu 'water welling up out of the ground'
　　　 spatata 'viscous substance oozing (mud, pus)'
　　　 yenene 'water boiling in a pot' (Pt.)

Like fully reduplicated ideophones, this class may also undergo multiple reduplication:

(18a) *xalala* 'stone crackling with heat'
　　　 xalalala *makawán tʃiwíʃ*
　　　 xalalala　 *maka-wan*　 *tʃiwíʃ*
　　　 IDPH　　　 hand-say　　 stone

　　　 'the stones crackle with heat'　 (LB)

(18*b*) *tsanana* 'insects buzzing'
   tsananana *kina̠ʔawán taʃkát*
   tsananana *kin-a̠ʔa-wan* *taʃkát*
   IDPH   1OBJ-ear-say wild.bee

   'the wild bee buzzes in my ear' (SC)[6]

This type of multiple reduplication is much more frequent in texts for words of the type shown in (17) than it is for those in (13), and it is offered more freely in elicitations. In both cases, the reduplication seems transparently iconic in the sense that each reduplication marks an additional repetition or degree of intensity, distributivity, or duration.

Phonologically identical stems showing different reduplicative patterns in some cases take on distinct meanings. In most instances, the two readings are clearly related to one another and the semantic difference can be attributed at least in part to the distinct meanings of the two reduplication patterns, as in the pairs shown in (19):

(19*a*) *kuʃkuʃ* 'a person knocking on something'
   kuʃuʃu 'a person tapping quickly on something'

(19*b*) *lamalama* 'a fire flaming'
   lamama 'coals glowing red'

(19*c*) *poɳʃpoɳʃ* 'large objects dropping into water'
   poɳʃuʃu 'water falling in streams'

(19*d*) *teʃeteʃe* 'water coming out in bursts'
   teʃeʃe 'water rushing out of a pipe'

There are also cases where the different reduplication patterns seem to correspond to completely different lexemes:

(20*a*) *xalaxala* 'a wheelbarrow jolting its load as it rolls along'
   xalala 'red-hot rocks crackling from heat'

(20*b*) *xilixili* 'horse galloping and rearing'
   xilili 'roaring (plane, rushing water, thunder)'

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[6] This ideophone occasionally shows onomatopoeic consonant lengthening as well, as in (*i*):

(*i*) *mat* **tsanna** *iʃkiɬwawí:ɬ*
   mat **tsanna** *iʃ-kiɬ-wan-wi:ɬ*
   QTV **IDPH** PAST-mouth-say-sit

   'they could be heard buzzing there' (MR)

Consonant lengthening is also reported in Coatepec Totonac by McQuown (1990).

(20*c*) *pampam* 'a large bird flying'
    pamama 'smoke billowing out of the doors and windows of a
        building'

(20*d*) *tsintsin* 'a small bell ringing'
    tsinini 'a small bell or buzzer ringing'

(20*e*) *ʃaxaʃaxa* 'small objects (pebbles, corn, coffee) rattling in a container'
    ʃaxaxa 'heavy rain falling'

(20*f*) *yanayana* 'flies buzzing around' (Ch.)
    yanana 'water boiling in a pot' (Ch.)

A small number of roots also have slightly different meanings when used in reduplicated as opposed to nonreduplicated form:

(21*a*) *ɬeŋɬ* 'large object falling heavily'
    ɬeŋɬ *ma̰ʔʃtḛ́lḭ ʔawátʃa istánkṵ*

ɬeŋɬ	*ma̰ʔʃtḛ́-lḭ*	*ʔawátʃa*	*iʃ-stánkṵ*
IDPH	let-PV	boy	3PO-younger.brother

    'the boy dropped his little brother'   (LB)

(21*b*) *ɬeŋɬeŋɬ* 'heavy object bouncing or rattling as it is carried'
    ɬeŋɬeŋɬ *tatayaná:ɬ ʃli:ká:n ʔe:ɬata:tikán*

ɬeŋɬeŋɬ	*ta-tayá-na:ɬ*		*iʃ-li:ká:n*	*ʔe:ɬa-ta-ti-kan*
IDPH	3PL.SUBJ-take-ST.PL		3PO-rifle	CLS-four-PL

    'the four of them carried their guns rattling'   (LB)

Clearly, the relations between the pairs in (19) and (21) are not entirely random, although they are by no means transparent.

2.3. Word-level stress. In other word classes, stress is regularly assigned either to a final heavy syllable or to the penultimate syllable (the exceptions being V-final verb stems in most conjugations—which have final stress—and stems affixed with final suffixes that obligatorily attract primary stress), the phonetic correlate of stress being increased amplitude, vowel length, and (for long vowels) a marked pitch contour. UNT ideophones, however, seem to show no differential stress marking of any syllable. In text and elicitations, ideophones are given either without differential stress marking on any syllable, or particular syllables are given emphasis to create a desired rhythmic effect for dramatic or imitative purposes. This applies equally to multisyllabic ideophones and to mono- and multisyllabic ideophones undergoing reduplication. As note in **4.1** below, lack of primary word-level stress is also a feature of dynamic adverbs, which are formed through a process of final -(V)CV reduplication.

TABLE 1
IDEOPHONES FORMED BY FULL REDUPLICATION OF VERBS

lakatʃím- 'blink'	*tʃịmtʃịm* 'person blinking'
xaʃá: 'pant'	*xaʃaxaʃa* 'person panting'
kinkaʃúŋʔ- 'sniffle'	*ʃuŋʃuŋ* 'person sniffling'
lamá: 'burn'	*lamalama* 'fire burning'
	lamama 'coals glowing red'
liŋʃ- 'shake'	*liŋʃiliŋʃi* 'heavy animal walking and shaking the ground'
milí 'make ripple, shake'	*milili* 'wind blowing'
	smilili 'gentle breeze blowing'
pa̰ʔł- 'break'	*pa̰ʔłpa̰ʔł* 'person striking hard'
pilí 'roll, rock'	*tampilili* 'long object rolling away'
pulí 'smoke'	*pulili* 'smoke filling up some area'
sliwí 'wag'	*sliwisliwi* 'small animal wagging its tail'
	laksliwilaksliwi 'four-legged animal going along on three legs'
stiwí 'swing'	*łtiwiłtiwi* 'object up high waving back and forth'
taŋs- 'shove someone'	*taŋstaŋs* 'person shoving someone'
taʃút- 'come unraveled'	*ʃutʃut* 'large pieces of something being torn off'
tukʃ- 'snap in two'	*tukłtukł* 'snapping off'
tsilí 'fry something'	*tsilili* 'food sizzling'
ʃo̰:ʔ- 'pant'	*ʃo̰:ʔʃo̰:ʔ* 'person or animal gasping for breath'
ʃo̰ʔ- 'rush (water)'	*ʃo̰ʔʃo̰ʔ* 'water rushing'
ʃpipí 'shiver'	*ʃpipiʃpipi* 'person shivering or shaking slightly'
	łpipiłpipi 'person having convulsions'
	spipispipi 'small person or animal trembling'
ʃtịlí 'twirl in a circle'	*ʃtiliʃtili* 'spinning in a circle'
ya:wá: 'stand'	*tantu:ya:wa:tantu:ya:wa:* 'object wobbling back and forth'

2.4. Relations to other words. One property of ideophones that clearly sets them apart from other words in many languages is their inability to take any kind of inflectional or derivational morphology. The same is true in UNT, where only a small number of ideophones (53 out of 359 in the lexical database) appear to be related to stems belonging to other word classes. By far the most frequent diachronic source of ideophones seems to be verbs.

Table 1 presents a list of ideophones formed by full reduplication of verb stems. While the reduplication of verbs is not a productive synchronic process, it is possible that historically verbs may have been reduplicated to express iteration or intensity. Alternatively, a small number of verbs in UNT are homophonous and nearly synonymous with adverbs, and the ideophones in table 1 may have their origins in reduplicated adverbial forms, the adverb having been lost in the synchronic language. Of the ideophones in this set, three (*tampilili*, *laksliwilaksliwi*, and *tantu:ya:wa:tantu:ya:wa:*) also include body-part prefixes (*tan-* 'buttocks', *lak-* 'lower leg', and *tantu:-* 'leg', respectively); this suggests verbal origins for these three at least, as body-part prefixation is generally confined to verbs and adjectives. One of the

TABLE 2
VERBS FORMED FROM IDEOPHONES PLUS THE DETRANSITIVE SUFFIX *-nVn*

ʔalạʔalạ 'person crawling on all fours'	**ʔala***nán* 'crawl'
lintilinti 'animal rustling in the underbrush'	**linti***nín* 'move around the underbrush'
luŋſluŋſ 'person jumping around'	**luŋſ***nún* 'jump'
patſſpatſſ 'sudden popping'	*mạʔa***pạ:tſ***nán* 'applaud'
tọʔtọʔ 'brooding hen clucking'	**tọʔ***nún* 'brood (hen)'
ſịtiſịti 'person sliding on his/her bottom'	**ſịti***nín* 'slide along on bottom'
ſtayạyạ 'object floating or gliding'	**ſtayạ***ʔnán* 'float or glide'
ſwẹʔeſwẹʔe 'making noise with noisemaker'	**ſwẹʔe***nín* 'make noise with noisemaker'

ideophones here, *smilili*, makes use of the diminutive *s-* prefix, and another, *ſpipiſpipi*, has two sound-symbolic alternates (*ɬpipiɬpipi* and *spipispipi*). Three of the words in table 1—*tſịmtſịm*, *ſuŋſuŋ*, and *ſutſut*—appear to be based on verbal roots that are no longer in use except as parts of more complex stems. The ideophone *tſịmtſịm* seems to be based on a root *tſịm- which is now found only combined with the body-part prefix *laka-* 'face' in the verb *lakatſịm-* 'blink'. Likewise, *ſuŋſuŋ* appears to be based on *ſuŋʔ- which is now seen only combined with the prefix *kinka-* 'nose' in *kinkaſúnʔ-* 'sniffle', while *ſutſut* is derived from a root that is only attested in its inchoative form—*taſút-* 'come unraveled'—rather than as a transitive verb *ſut- 'unravel something'.

   Another smaller set of ideophonic stems that correspond to verbs is shown in table 2. In these cases, the ideophone seems more plausibly to be the source of the verb. The verbs in these pairs are formed by the addition of the suffix *-nVn* (where the *V* represents a vowel harmonic with the last vowel of the stem to which it is attached). The most common use of this suffix is to detransitivize a transitive verb, giving a reading of an action performed on an unspecified patient (*pasá* 'dirty something; contaminate something' > *pasanán* 'dirty; contaminate'); however, *-nVn* also appears on some inherently intransitive stems to give them an activity or habitual reading (*xaſá:* 'pant' > *xaſa:nán* 'breathe (normally)'). In some other cases, *-nVn* acts as a verbalizer, creating an intransitive verb from a noun (*tſanáx* 'coa' > *tſanaxnán* 'work with a coa'). Similarly, the examples in table 2 appear to be cases where *-nVn* is attached to an ideophonic stem to create an intransitive verb. Many of the roots in this set are obviously onomatopoeic (e.g., *tọʔ* for a clucking hen), synesthetic (*tſịm* for a blink), or are part of one of the sound-symbolic sets discussed in **2.1** above, indicating that the root is likely to have been ideophonic in origin.

   A small number of ideophones are based on the full reduplication of adverbs (see table 3). When considering the examples in table 3, the question that immediately comes to mind is whether or not some of these adverbs— such as *lox*, *pọʔɬ*, and *ſnoŋ*—are not simply unreduplicated ideophonic

TABLE 3
IDEOPHONES FORMED BY REDUPLICATION OF ADVERBS

ʔeɬ’apá: 'with mouth wide open'	t’apaɬ’apa 'animal with mouth open'
	ʃ’apaʃ’apa 'large animal standing with mouth open'
lox 'enveloping, loosely covering'	loxlox 'a person walking in loose dirt'
	sloxosloxo 'an object wobbling loosely'
ɬtạʔáx 'thick and flat'	ɬtạʔa:ɬtạʔa: 'cloth waving in the wind'
pọʔɬ 'dark, in shadow'	pọʔɬpọʔɬ 'light flickering'
ponʔọ́: 'bubbly'	ponʔoponʔo 'liquid bubbling over'
skulúx 'quick, agile'	skuluskulu 'person or animal moving quickly without direction'
swiláx 'agilely'	swilaswila 'person running about in a rush' (Ch.)
ʃnoŋ 'stretching'	ʃnoŋʃnoŋ 'cord or elastic stretching' (Ch.)

stems. In two cases, this is made unlikely by the marked difference in meaning between the adverbial and ideophonic uses, as shown in (22):

(22a) **lox** *ma:ɬẹʔé:ɬ iʃlúʃụ*

   lox   *ma:-ɬạʔá-e:-ɬ   iʃ-lúʃụ*

   loosely CS-dress-CS-PFV   3PO-clothes

   'she dresses [her child] in loose clothing'   (CF)

(22b) **loxlox** *ạnkán naka:pu:ɬún*

   loxlox *ạn-kan   nak=ka:-pu:ɬún*

   IDPH   go-IDF   LOC=PLC-mud

   'they go along, their feet sinking in the mud'   (PS)

(22c) **pọʔɬ** *ʔạ:wa:ná:n, wạ:ʔ xíni la:wakạ́ɬ ta:ɬmá:n*

   pọʔɬ   *ʔạ:wa:ná:n   wạ:ʔ   xíni   la:-wakạ́ɬ   ta:-ɬmá:n*

   dark   have.ambience totally smoke do-be.high   CLS-long

   'it is dark, there is a lot of smoke up there'   (PS)

(22d) **pọʔɬpọʔɬ** *ạn luz*

   pọʔɬpọʔɬ *ạn* luz

   IDPH   go   light

   'the light flickers'   (PS)

While clearly not unrelated, the semantic difference between the adverb and the ideophone in each pair is enough to warrant treatment as separate lexemes (cf. the reduplicated and nonreduplicated pair in 19 above, where the meanings are closely enough related, and predictable enough, to consider these two uses of the same word). For ʃnoŋʃnoŋ 'a cord or elastic stretching' vs. ʃnoŋ 'stretching', the case is less clear than the others, although the adverb ʃnoŋ can be applied to things other than cords (whereas the ideophone

TABLE 4
IDEOPHONES RELATED TO ADJECTIVES

ʔotí:tị ‘slow’	ʔotiʔoti ‘a person plodding along exhaustedly’
ɬ’énti ‘stupid’	ɬ’entiɬ’enti ‘someone dumb doing something’
smátwa ‘chewy’	smatsmat ‘someone chewing soft food’

appears not to be). Additionally, ʃnoŋ appears to be the source of both an adjective—ʃnóŋwa ‘rubbery, elastic’—and a verb root—ʃnonʔ- ‘stretch something’. If we were to treat ʃnoŋ as the unreduplicated form of ʃnoŋʃnoŋ, we might be able to include ʃnoŋʃnoŋ with the other ideophones in table 1, which are derived from the reduplication of verb stems; however, this would make ʃnonʔ- the only verb stem in the lexicon that takes the semblative suffix -wa, which otherwise only attaches itself to adjectives and, more significantly, adverbs.

An additional example of an adverb which seems to be derivationally related to an ideophone is ʃtiní:t ‘with hair standing up on end’ which shares a root with ʃtinini ‘one’s hair standing up on end, one’s skin crawling’; however, the derivational path is far from clear (possibly *ʃtiní:$_V$ ‘stand up on end (hair) + -Vt ‘nominalizer’, although that would normally be expected to give rise to an adjective or a noun). Similarly, there is a locative adverb— ka:skíɬwa ‘tight, narrow (of a path on a hill with unsure footing)’—which seems to share a root with an ideophone—skiɬskiɬ ‘person picking their way along a narrow path on a hillside’. The combinatorial properties of the prefix ka:- suggest the origin of ka:skíɬwa in the adverbial stem *skiɬ, which is a plausible source of skiɬskiɬ, following the pattern shown in table 3. The adverb itself, however, is not found in the synchronic language.

There are also three ideophones that seem to be related etymologically to adjectives. These are given in table 4. The first of these, ʔotiʔoti ‘a person plodding along exhaustedly’, seems to share a root with ʔotí:tị ‘slow’, while ɬ’entiɬ’enti ‘someone dumb doing something’ is a full reduplication of the adjective ɬ’énti ‘stupid’. The source of the final example, smátwa ‘chewy’, looks like the output of a process adding the semblative -wa to an unattested adverb *smat, so historically this ideophone may have been the product of the full reduplication of an adverb, like those forms shown in table 3 above.

Finally, there are a few ideophones that have nominal counterparts (see table 5). The first of these, xalala ‘red-hot rocks crackling from heat’, seems to be the source of the noun xalanát ‘ember, coal’, which is formed with the nominalizing suffix -nVt. Given that -nVt is otherwise found only attached to verb stems, it may be that there once was a verb *xalá ‘crackle from heat’ (or, perhaps, *xalanan, -nVt being derived historically in many cases from -nVn + *-t ‘nominalizer’). Similarly, ʃilili and ɬilili—like the related noun

TABLE 5
IDEOPHONES RELATED TO NOUNS

xalanát 'ember, coal'	*xalala* 'red-hot rocks or embers glowing with heat'
kṵ́nḭ 'caterpillar'	*kṵnḭkṵnḭ* 'something wriggling like a caterpillar'
ʃilít 'mucus'	*ʃilili* 'person's nose running'
	łilili 'person's nose running' (pejorative or humorous)
yuŋyúŋ 'bullroarer'	*yuŋyuŋ* 'bullroarer whirring'

ʃilít—look to be derived from a verb, *ʃilí 'run (nose)', which currently only exists in combination with body-part prefixes in *ʔenʔaʃilí* and *kinkaʃilí*, both meaning 'to have a runny nose' (*ʔenʔa-* and *kinka-* being alternate combinatorial forms of *kínḭ* 'nose'). The second example, *kṵnḭkṵnḭ* 'a caterpillar crawling', seems more straightforwardly derived by the full reduplication of the noun, *kṵ́nḭ* 'caterpillar', which is based on the verb *kṵn* 'swell' and the nominalizer *-nḭ*. In the case of the final example, *yuŋyuŋ*, it seems likely that the ideophone—an onomatopoeic expression for the whirring sound created by swinging a small board in circles at the end of a string—gave rise to the noun, which differs in pronunciation from its source in the placement of a fixed primary stress. This, like the forms in table 2 above, is one of the very few instances of an ideophone being an obvious derivational source for a word belonging to another lexical class.

3. Ideophones as a separate part of speech. As shown in the previous section, ideophones in Upper Necaxa Totonac share a set of fairly distinctive morphological and phonological properties that might potentially serve as a diagnostic basis for identifying them as a separate part of speech. Whether these criteria are in and of themselves enough to justify such a classification is another matter. The dangers of relying on purely morphological (let alone phonological) criteria for the establishment of lexical class distinctions are well known (Lyons 1977, Beck 2002, and Dixon and Aikhenvald 2004), and it is generally recognized that valid parts-of-speech distinctions in a language should correlate with some identifiable set of syntactic (i.e., distributional) properties (e.g., Croft 1991 and Hengeveld 1992). And it is precisely in this realm that ideophones seem to fall short of being an entirely distinctive lexical class. Consider the examples in (23), which show ideophones occurring in the only syntactic position available to them, as a predicate qualifier in preverbal position:

(23*a*)   **sutsut** *kiłtu:ma:yuxu:máːł ʃalakpi:tsún kḁpsnáp*

      sutsut   *kiłtu:-ma:-yux-u:-ma:ł*   *ʃa-lakpi:tsún*   *kḁpsnáp*

      IDPH   edge-CS-go.down-CS-PRG   DTV-pieces   paper

      'he is tearing off little bits of paper'   (LB)

(23*b*) **pe̠ʔɬ ʧe̠ʔeníɬ**
      pe̠ʔɬ   **ʧe̠ʔé-ní-ɬ**
      IDPH   tear-BEN-PFV

      'he tore off a big piece to share'   (SC)

This preverbal position is not unique to ideophones and is shared with a rather wide range of other predicate-qualifying elements that would normally be described—based on their syntactic function as adverbal modifiers—as adverbs. While adverbs do not fully share all of the morphological and phonological properties that make ideophones such a distinctive group of words in UNT, they do have a number of interesting properties of their own, some of which seem to distinguish them from ideophones and others of which indicate a certain degree of affinity between the two. Thus, before we can answer the question of whether ideophones constitute a separate part of speech, distinct from adverbs, it is necessary to take a look at the properties of adverbs in more detail, which is the task of the following section.

4. Adverbs. Adverbs in Upper Necaxa Totonac form a rather heterogeneous class of words in terms of the meanings they express, although they do include a run-of-the-mill assortment of the expressions of time, manner, and place that make up adverb classes in familiar Indo-European languages. More uniquely, UNT adverbs also include a broad range of what I call for the purposes of this paper CONFIGURATIONAL ADVERBS—adverbs that describe configurations of objects and postures—and DESCRIPTIVE ADVERBS—adverbs that designate color, shape, consistency, and other property concepts that are more commonly expressed by adjectives in other languages. Many of the latter coexist with etymologically related adjectives having the same meanings (e.g., *lamǫ́ʔ* (adv) 'dark blue' and *lamǫ́ʔo* (adj) 'dark blue') or can be converted into synonymous adjectives with the semblative morpheme -*wa* (see **4.2.2** below). Additionally, there is a specific class of DYNAMIC ADVERBS, formed from configurational adverbs by a process of final -CV reduplication, which are used to describe the configuration or posture of an object in motion. In spite of their semantic heterogeneity, however, from a morphosyntactic point of view, all adverbs—dynamic, descriptive, configurational, or otherwise—share a range of properties that group them together and distinguish them as a part of speech from other lexical classes. In the following sections I provide a brief sketch of UNT adverbs, beginning with a description of the various semantically defined subtypes (**4.1**) and then moving on to some of the distinguishing morphological characteristics of the class (**4.2**). In **4.3**, I turn to the issue of adverbial syntax and discuss how this compares to the syntax of ideophones.

4.1. Subtypes of adverbs. From the point of view of their meanings, the words that are the most obvious candidates to be considered adverbs in UNT are those that correspond to adverbs in Indo-European and typologically similar languages and which refer to quantity, manner, place, and time, such as those given in (24):

(24) *ạktʃá:n* 'honestly, fully measured (of wares)'
      ạktʃípʃ 'many'
      a:kús 'just a while ago'
      a:miʃtsayán 'in a week'
      kas 'fast; strongly'
      kikɬ 'enviously'
      xiks 'annoyingly, problematically'
      xałáx 'deeply, sadly (sigh, breath)'
      snu:n 'gravely (ill, wounded)'
      talása 'frequently'
      te:lá: 'sometimes'
      tintakú:x 'all day'
      toŋʔéɬtu 'on the other side of the river'
      tsax 'only, just'
      tsenụ́ 'over there'

Not unexpectedly, words like these pattern together syntactically and show a distribution much like that shown for ideophones in (23), appearing in preverbal position:

(25*a*) *pus **snu:n**tunká tạʔa:winị́:*
        pus   ***snu:n**=tunká*   *tạʔa:wí-nị́:*
        INTJ   **gravely**=very   wound-PF

        'well, he's been seriously hurt'   (MR)

(25*b*) ***kikɬ** li:katsán tu: lạʔtsín tu:k mạʔalá:*
        kikɬ   *li:-katsán*   *tu:*   *lạʔtsín*   *tu:*   *ik-mạʔalá:*
        enviously   INST-feel.pain   REL   see   REL   1SG.SUBJ-harvest

        'he is jealous because he sees what I harvest'   (RM)

Clearly, on both syntactic and semantic grounds, these words resemble what we are accustomed to calling adverbs in other languages. However, in UNT, words with meanings related to time, manner, and place actually constitute a fairly small proportion of the words that have this distribution. Much more prevalent are configurational adverbs that describe configurations, orientations, and postures, such as those in (26):

(26) ḁklakatáx 'inside out'
tʃikáj 'open, apart (limbs); loosely folded'
ʔe:po̰ʔó̰:ʔ 'piled up (sand, dirt)'
kinkatáx 'with head bent forward, with head bowed'
kulṵ:ks 'curled up, balled up, folded once'
kupṵ́ks 'bent over'
la̰ʔapulóŋʃ 'face down, flat on one's face'
la̰ʔkalákʃ 'having one's leg bent backward'
lantáʔ 'lying flat with one's belly pressed to the ground'
ma̰ʔatḛʔáx 'arms open and rounded'
ma̰ʔslapúx 'covered, covered over (body of something)'
piló̰ʔ 'turned up at the edge'
pu:tsáx 'lined up with long axis toward the speaker'
tso̰ʔostáx 'kneeling'
ʃpi:t 'in a straight line (larger objects)'

Also prevalent are descriptive adverbs, which have meanings more akin to the meaning of adjectives in most languages:

(27) tʃaláx 'brittle, fragile'
tʃḭpʃ 'dense'
tʃi:ʃ 'blurry'
ʔo:nɬó̰:ɬ 'curly, twisted, tangled'
lampú:ɬ 'wet'
ɬamáŋ 'rounded, full'
ɬ'anán 'red or yellow of ripe fruit'
ɬtoxó̰ʔ 'baggy, sack-like'
mox 'round and bulky, spherical'
po̰ŋʔó̰:ʔ 'bubbly, foamy'
stilḛ́ʔ 'star-shaped'
s'ó:ʔo 'salty'
ta:x 'lit up, illuminated'
tsutsó̰ʔ 'red'
ʃkútḁ 'sour'

Even though the words in (26) and (27) correspond to property concepts and other semantic domains more commonly covered by adjectives, in UNT they are clearly adverbs, as shown by the sentences in (28):

(28a) **lantáʔ** tato:ka̰ná:ɬ naktʃiwíʃ lakstín   (Pt.)
lantáʔ   ta-ta-waká̰-na:n-ɬ   nak=tʃiwíʃ   lakstín
flat.on.belly   3PL.SUBJ-INCH-be.high-ST.PL   LOC=rock   children

'the children are lying on their bellies on the rock'   (CF)

(28*b*) ***pilọʔtsá la:ɬ kintáʔnụ***
        ***pilóʔ**=tsá*   *la:-ɬ*   *kin-táʔnụ*
        turned.up=now   do-PFV   1PO-hat

        'my hat has got its brim turned up'   (RM)

(28*c*) ***mox wakáɬ iʃma:séʔ ʔo:ʃúm***
        mox   *wakáɬ*   *iʃ-ma:séʔ*   *ʔo:ʃúm*
        round be.high   3PO-nest   wasp

        'the wasp nest is up there all big and round'   (SC)

(28*d*) ***ʃkútạ kinkaán tʃáuм***   (Ch.)
        ʃkútạ   *kinka-ạn*   *tʃáuм*
        sour   nose-go   tortilla

        'the tortilla smells sour'   (LB)

Although these words all have glosses that correspond to English adjectives, they cannot be used in noun phrases as adnominal modifiers. This is in stark contrast to adjectives, including those derived from adverbs with the semblative suffix *-wa* (see **4.2.2** below):

(29*a*) *mat tama:ʃtumạ:ná:ɬ naiʃtuxán ạʔtín* ***ʔáɬạ** tʃiwíʃ*
        mat   *ta-ma:-ʃtu-mạ:-na:ɬ*   *nak=iʃ-tuxán*   *ạʔ-tin*   ***ʔáɬạ***
        QTV   3PL.SUBJ-CS-out-PRG-ST.PL   LOC=3PO-foot   CLS-one   **big**
          tʃiwíʃ
          rock

        'they are getting it out from under the base of a big rock'   (JR)

(29*b*) *ʃa**pám**wa tsumaxát*
        *ʃa-**pam**-wa*   *tsumaxát*
        DTV-**fat**-SEM   girl

        'a really fat girl'   (LB)

An additional difference between adjectives and adverbs is also seen in (29*b*), where the adjective *pámwa* 'really fat' is shown taking the determinative prefix *ʃa-*, which can be applied only to adjectives (and some nouns) in modificative and attributive constructions (Beck 2004).[7] The ability of a word to appear with this affix provides a reliable test for distinguishing descriptive adverbs from adjectives and correlates exactly with a word's ability to function as the unmarked modifier of a noun, the primary criterion

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[7] The cognate morpheme to *ʃa-* in Papantla Totonac is discussed at length in Levy (2002). Although not identical in every respect, its behavior is highly similar to *ʃa-* in UNT.

for distinguishing adjectives in UNT proposed in Beck (2000) (and for language in general; see Beck 2002).

The final type of adverb to be discussed here is the dynamic adverb. Dynamic adverbs are derived through final -(V)CV reduplication from configurational adverbs, such as those shown in (26) above, and are used when the object in the designated posture is in motion, as in (30):

(30a) **a̱kłtsáx** *ya:ł*
     a̱kłtsáx   *ya:ł*
     head.up   stand

     'he's standing with his head held high'   (PS)

(30b) **a̱kłtsaxaxa** *tsumaxát a̱má:ł mu:ʃtumá:ł nak?a̱la̱ʃká:n*
     a̱kłtsax-axa   *tsumaxát*   *a̱n-ma:ł*   *muʃtú-ma:ł*
     head.up-DYN   girl   go-PRG   swept.away-PRG

     nak=?a̱la̱-ʃka:n
     LOC=big-water

     'the girl is swept away by the river with her head held up [out of the water]'   (PS)

This method of word formation is particularly striking given that, as noted above, reduplication is not well attested as a morphological process in UNT or in Totonacan languages in general—other than for ideophones. And, just as in ideophones, while single reduplication is the usual case, multiple reduplications can be used to indicate iteration or plurality, as in (31):

(31a) **swatáx** *talakamiya:ná:ł*
     swatáx   *ta-laka-min-ya:-na:ł*
     in.line   3PL.SUBJ-face-come-stand-ST.PL

     'they are standing in line looking this way'   (PS)

(31b) **swatatata** *tama̱:ná:ł tʃa:anín*
     swata-tata   *ta-ma̱:-na:ł*   *tʃa:án-nin*
     in.line-DYN   3PL.SUBJ-lie-ST.PL   ant-PL

     'the ants go in single file'   (PS)

Another significant feature of dynamic reduplication in adverbs is that (also like ideophones) reduplicated forms lack primary word-level stress. This makes them distinct from those few ordinary adverbs that can be repeated (usually to convey iterativity) within the same utterance, as with *laktáx* 'limping along favoring one leg' in (32):

(32a) **laktáx** *la:*
      laktáx   *la:*
      limping   do

      'he's limping'   (RB)

(32b) **laktáx laktáx** *ʃaką́n*
      laktáx   **laktáx**   *ʃak-ąn*
      limping   **limping**   PAST:1SG.SUBJ-go

      'I went along limping on one leg'   (RB)

Note that in these cases, the repeated adverb maintains its original word-level stress pattern; in the case of repeated monosyllabic adverbs like *kas* 'fast', there is a slightly greater stress on the second instance of the word. In contrast, reduplicated adverbs (and ideophones) are pronounced either with undifferentiated stress on each syllable, or with ad hoc word-level accent used for dramatic or rhythmic effect.[8]

4.2. Morphological properties. As in most languages, adverbs in UNT are uninflected and show no kind of agreement with any other words in the clause. As a group, they participate in relatively few productive morphological processes and take very few affixes. One highly productive morpheme that does appear with adverbs is the distributive prefix *lak-*, shown in (33):

(33a) *mat **lak**stiwiwi talé:ł*
      mat   **lak**-*stiwi-wi*   *ta-le:n-ł*
      QTV   **DTB**-swing-DYN   3PL.SUBJ-take-PFV

      'they carried him along swinging'   (MR)

(33b) **lak**ʃléx *wan wamá:* camiseta
      lak-*ʃlex*   *wan*   *wamá:*   camiseta
      DTB-loose   be   this   T-shirt

      'the T-shirts are loose'   (RM)

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[8] A few dynamic adverbs such as *ą́ʔapi:laxaxa* 'moving with wide horns' and *ʔolulu* 'rolling along (i.e., moving while round)' have near-homophones which are adjectives: *ą́ʔapi:laxáxa* 'wide-horned' and *ʔolúlu* 'round (i.e., moving while round)'. These differ from the dynamic adverbs in their semantics (they seem not to have the implication of motion) and in their morphosyntax: they can directly modify NPs; they can take the determinative prefix *ʃa-*; and they can be inflected for plural number (e.g., *laką́ʔapi:laxán wa:káʃ* 'wide-horned cows' (*wa:káʃ*)). They also differ from the adverbs in that they resist multiple reduplications and have a fixed primary accent. The coexistence of pairs of words that are differentiated only by the presence/absence of word-level stress is interesting from the perspective of phonological typology. Also significant is the contrast seen here between the synchronic process of reduplication used to form dynamic adverbs and the historical process used in adjective formation discussed in Levy (1992).

The distributive prefix in UNT has a wide variety of meanings and can appear on words from a variety of lexical classes, although not on ideophones. In (33a), the distributive appears affixed to the adverb *stiwiwi* 'swinging' and imparts a sense of locative distributivity; in (33b), the morpheme indicates the plurality of the objects modified by the descriptive adverb *ʃlex* 'loose' (cf. the use of *lak-* as a plural-agreement marker on adjectives described in Beck 2000). The remainder of the morphemes and morphological processes associated with adverbs in UNT are involved in word formation, either as adverb formatives (**4.2.1**) or as means of deriving words of other classes from adverbs (**4.2.2**). The existence of derivational processes that both derive adverbs and create words of other classes based on adverbs is an important morphological criterion that potentially distinguishes them from ideophones.

4.2.1. Adverb formation. In terms of derivation, most adverbs are monomorphemic, but there are two common affixes involved (at least diachronically) in adverb formation. One of these is the suffix *-x*, which is easily analyzable by the linguist but seems not to be productive in the modern language. Most adverbs that end in *-x* have no roots identifiable in any other words in the lexicon (other than words derived from the adverbs themselves):

(34)   *aḵtsáx* 'head raised up high (people, birds)'
      ʔaláx 'empty (container), hollow'
      ʔałáx 'poorly, sloppily'
      xulúx 'full of fruit'
      łtonʔóx 'long and thin'
      mox 'round and bulky, spherical'
      nax 'a while'
      nanʔáx 'watery'
      paláx 'soon, fast'
      six 'closer'
      skulúx 'quick, agile, hard to catch'
      tax 'lit up, illuminated'
      taláx 'bulky, voluminous, awkward'
      tsax 'only, just'
      tsex 'well, fine, good'
      wa̱ʔá:x 'snatching up'
      ʃlex 'slack, loose'

This affix is most consistently found in configurational adverbs denoting physical attitudes and postures, as in (35):

(35)   *a̱ʔapu:táx* 'drooping, bent downward (branches)'
      aḵpu:táx 'upside down, standing on head'
      tʃikáx 'open, apart (limbs)'
      kiłpu:táx 'doubled over to the front'

> *la̧ʔʃti:táx* 'tilted to one side'
> *lantáx* 'lying flat on one's belly'
> *łapáx* 'falling flat, lying flat on one's belly'
> *łiwáx* 'lying loosely on the floor (rope, cable), snaked along the
>   ground'
> *łki̧wíx* 'with arm sticking out straight'
> *ma̧ʔatȩʔáx* 'arms open and rounded, arms apart and rounded'
> *panʔáx* 'pooled'
> *pa:stakáx* 'lying on one's side, legs straight'
> *pȩʔeléx* 'arms hanging empty, empty-handed'
> *pȩʔetáx* 'touching the ground with one's arms'
> *swatáx* 'in rows, lined up'

As in (34) above, the roots of these words are either unique to the adverbs in which they appear or are the base for smaller subsets of adverbs formed with body-part prefixes such as *a̧ʔa-* 'ear, branch', *a̧kpu:-* 'crown', *pȩʔe-* 'arm' (cf. *a̧ʔapu:táx* 'drooping', *a̧kpu:táx* 'upside down', *kiłpu:táx* 'doubled over', *pȩʔetáx* 'touching the ground'). The roots of such forms do not seem to appear in other words in the lexicon (the possible exception in 35 being *łki̧wíx* 'with arm sticking out', which appears to contain *kí̧wi̧* 'tree').

   The only part of speech that may once have been a regular source for the derivation of adverbs using *-x* is verbs:

(36) *a̧ʔtʃawá* 'cover something's top' > *a̧ʔtʃawáx* 'covered over top'
      a̧ʔslapú 'have head covered'   > *a̧ʔslapúx* 'with the head covered'
      ʔe:ya:wá: 'pile something'   > *ʔe:ya:wá:x* 'piled up'
      xaʃá: 'pant'   > *xaʃá:x* 'breathlessly'
      xikwán 'be afraid'   > *xikwáx* 'afraid'
      milí 'tremble (as leaves)'   > *milíx* 'blowing, rushing air'
      pȩʔestanʔá 'extend arms'   > *pȩʔestanʔáx* 'arms spread wide'
      siyanʔán 'be afraid'   > *siyanʔáx* 'frightening'
      slumá: 'glue something'   > *slumáx* 'glued'

There is also a single example in my database of an adjective potentially giving rise to an adverb through *-x* suffixation: *páła̧* 'hard' > *pałáx* 'tough, fierce, courageous'. As might be expected of a historical fossil, *-x* creates a rather heterogeneous set of adverbs from a variety of sources (or from a consistent source whose nature has been blurred by diachronic processes).

   A morpheme with a consistent set of targets is the prefix *ka:-* 'place of'. This affix is most productively used to form locatives, being added to the plural form of a noun to denote a place full of or typified by the referent of the nominal base:[9]

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[9] The regular plural of nouns in UNT is formed by adding *-n* to vowel-final stems and *nV̧* (where *V* is a harmonic vowel) to consonant-final stems (Beck 2004).

(37) *kíwi̱* 'tree'   > *ki̱wín* 'trees'   > *ka:ki̱wín* 'bush, forest'
    ʔéłu̱ 'limestone' > *ʔełú:n* 'limestones' > *ka:ʔełú:n* 'place of
                                                                             limestone'

    tʃik 'house'   > *tʃíkni̱* 'houses' > *ka:laktʃíkni̱* 'town'[10]
    kukát 'oak'   > *kukátna̱* 'oaks' > *ka:kukátna̱* 'El Encinal (village)'

As seen in the last example, *ka:-* is frequently used in the derivation of place-names. Words formed in this way may be used as perfectly ordinary nouns and can themselves be pluralized and appear in classifier–numeral constructions.

The prefix *ka:-* is also added to non-nominal bases in order to derive adverbs:

(38) *katsán* (vi) 'feel pain'   > *ka:katsán* 'rough (terrain)'
    ká̱kswa (adj) 'quiet, still'   > *ka:ká̱kswa* 'quiet (place)'
    s'ewíwi̱ (adj) 'cool' (liquids) > *ka:s'ewíwi̱* 'cool (place, climate)'
    puks (adv) 'dark'   > *ka:púkswa* 'dark (place)'
    ʔo:ta:nú: (vi) 'be after noon' > *ka:ʔo:ta:nú:* 'every afternoon'

Affixing *ka:-* to non-nouns seems most frequently to form locative adverbs, although there are a few examples in the dictionary of temporal adverbs such as *ka:ʔo:ta:nú:* 'every afternoon' formed in this way as well. These words behave syntactically like adverbs rather than nouns and do not have plural forms or take numeral classifiers.

There are also a few instances of a homophonous (possibly cognate) morpheme, *ka:-* 'by means of', which is prefixed to the singular form of nouns to create adverbs meaning 'by means of', as in *ka:tu:xán* 'on foot (*tu:xán*)', *ka:makán* 'by hand' (*makán*), or *ka:matʃí:t* 'with a machete' (*matʃí:t*):

(39) *ma̱ʔtʃu:yá:-ł kintantu:ya:wá:-ł* **ka:-matʃí:t**
    ma̱ʔtʃu:yá:-ł   *kin-tantu:-ya:wá:-ł*   **ka:-matʃí:t**
    err-PFV   1OBJ-foot-stand-PFV   **MEANS-machete**

    'he slipped up and hit me in the foot with a machete'   (LB)

While this type of construction does not seem to be widespread in UNT, it is reportedly more productive in other Totonacan languages, where it is often analyzed as an alternative use of a single morpheme, *ka:-* 'place of' (e.g., Reid 1991).[11]

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[10] The prefix *lak-*, probably historically a distributive morpheme and cognate with the prefix *la̱ʔ-/lak-* used to mark the plural of adjectives, appears with the plurals of a few nouns to denote a collectivity.

[11] I am indebted to an anonymous *IJAL* reviewer for pointing out the incongruity of treating the two *ka:-* as the same morpheme.

4.2.2. Derivation from adverbs. In addition to being formed by derivation, adverbs also have limited potential to be bases for derivational processes that create words belonging to other parts of speech, principally adjectives. Synchronically, the most productive derivational process that applies to adverbs is the affixation of the semblative suffix *-wa*. This suffix is most frequently used with adjectives to create attenuative forms (e.g., *smukúku̱* 'yellow' > *smukukú:wa* 'yellowish'), but when added to descriptive adverbs it forms largely synonymous adjectives.

(40) *a̱ktí̱ɬ* 'dispersed (from a pile)'   > *a̱ktí̱ɬwa* 'dispersed (from a pile)'
     la̱ʔatsé̱ʔ 'hidden'   > *la̱ʔatsé̱ʔwa* 'hidden'
     ɬpatáŋ 'flushed, red in the face'   > *ɬpatáŋwa* 'flushed, red in the face'
     mox 'round and bulky, spherical'   > *móxwa* 'round and bulky, spherical'
     tuɬ 'looking very angry'   > *tú̱ɬwa* 'very angry looking'
     ʃlex 'loose, slack'   > *ʃléxwa* 'loose, slack'

Additionally, there are a number of adverbs with adjectival counterparts ending in *-ya:* (e.g., *tsex* 'good' > *tse:yá:* 'good'). This affix may be an allomorph of *-wa* or it may be a separate, nonproductive adjectivalizing suffix.

As in Papantla Totonac (Levy 1992), in UNT there are traces of a historical process for forming adjectives from adverbs through a process of partial final reduplication:[12]

(41) *xuló̱ʔ* 'bumpy'   > *xuló̱ʔo* 'with several bumps'
     lamó̱ʔ 'dark blue'   > *lamó̱ʔo* 'dark blue'
     lantáʔ 'blunt'   > *lantáʔa* 'tongue-shaped, bullet-shaped'
     lapá̱ʔ 'uncovered'   > *lapá̱ʔa* 'uncovered'
     lixtéʔ 'pear-shaped'   > *lixtéʔe* 'pear-shaped'
     loxóŋ 'very loose'   > *loxóŋʔo* 'very loose'
     ɬ'anán 'red or yellow of ripe fruit' > *ɬ'anáŋka* 'red or yellow of ripe fruit'
     ɬapó̱ʔ 'fat'   > *ɬapó̱ʔo* 'very fat'
     ɬpapá̱ʔ 'floppy'   > *ɬpapá̱ʔa* 'floppy'

For consonant-final stems, the reduplicative process seems to have involved copying the vowel in the ultimate syllable and affixing it to the base

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[12] Most adverbs that are the targets of this reduplicative process in my database end in a final glottal stop, which may well be the remnants of an earlier morpheme *-q* associated in some way with adverbs in the earlier stages of the language.

and for nasal-final stems, copying this vowel and adding /ʔ/ or /k/ as an on-set to the final syllable. A few adjectives also seem to have been formed from adverbs by the suffix -*lV̯* (where *V* is a harmonic vowel), as in (42):[13]

(42) *łkanká̯* 'uncovered' > *łkankála̯* 'open, uncovered'
     łtoxó̯ʔ 'baggy'   > *łtoxó̯lu̯* 'swollen up'

As with adjectives derived from adverbs with -*wa*, the output of these pro-cesses seems to be largely synonymous with the input.

4.3. Syntactic properties. Rather than relying on their morphological or semantic properties, traditional definitions of adverbs as a part of speech (e.g., Lyons 1977) tend to make reference to their syntactic distribution, defining them as a class of words that modify verbs, adverbs, and clauses. The wide range of word classes that adverbs can modify is remarked on by Schachter (1985), who suggests, based on an examination of lexical classes designated "adverbs" in a wide range of languages, that adverbs can be defined as a class of words that modifies "non-nouns" in general (cf. the suggestion in Beck 2002 that adverbs be defined as the expressions of se-mantic predicates taking other semantic predicates as their arguments). Nevertheless, Schachter does note that in particular languages adverbs (under which he subsumes ideophones) may be more restricted in their func-tions than in other languages. This is certainly the case in UNT, where ad-verbs have a strictly adverbal function and appear in preverbal position, as shown in (43):[14]

(43*a*) **mą̯ʔą:s***tsá mat iʃyúxa pitʃá:wą̯*
       mą̯ʔą:s=*tsá*   *mat*   *iʃ-yux-a*   *pitʃá:wą̯*
       long.ago=now   QTV   PAST-come.down-IMPF   Pichawa

       'long ago, they say, the Pichawa [mythical bird] would come
         down'   (BC)

[13] I have found no examples to date of stems with the vowel /i/ in the final syllable taking this suffix, although there is an adjective, *st̩ilíli̩* 'round, circular', which seems to be derived from a verb, *st̩ilí* (vt) 'coil something'. Whether this is merely an accidental gap in the data or follows from some other property of the grammar or of the language's diachronic development remains an open question.

[14] Other functions commonly ascribed to adverbs, such as clausal and adjectival (or adver-bial) modification, are carried out by other means. Clause-level modification in general is car-ried out by the preverbal particles illustrated in (45) below, while adjectival intensification is carried out by the clitic =*tunká* shown in (52). Additionally, UNT makes use of two temporal clitics with adverb-like meanings (=*tsá* 'now' and =*kús* 'still'), as well as a set of quantifying affixes which includes -*ʔo:* 'all, completely', -*palá* 'again', and *lak*- 'distributive'.

(43*b*) **ɬtanʔáx** ma:pi:kán iʃʔó:ʃʼa̱: xú:ki̱
      ɬtanʔáx   ma:pí:-kan   iʃ-ʔó:ʃʼa̱:   xú:ki̱
      stretched out spread.out-IDF 3PO-skin deer

      'they stake out the deerskin'   (LB)

(43*c*) paɬ ti: ma̱ʔtʃu:yá:ɬ tʃi: ɬi:kán, ʔo̱ɬ tantu:tʃi:wakakán
      paɬ ti: ma̱ʔtʃu:yá:-ɬ   tʃi: ɬi:-kan   **ʔo̱ɬ**
      if   REL err-PFV   how   dance-IDF   **roped**

        tantu:-tʃi:-waka-kan
        leg-tie-be.high-IDF

        'if there was one who erred while dancing, they hung him by the leg
           with rope'   (LB)

Descriptive adverbs, such as those in (43*b*) and (43*c*), as well as manner, configurational, and dynamic adverbs, seem to be rigidly preverbal. However, certain temporal and locative adverbials (including *ma̱ʔa̱:stsá* 'long ago' in 43*a*) can optionally appear after the verb, as in (44):

(44*a*) wiʃ ki:tayatʃíta̱ **nax**tsá tsamá: tʃáuм? (Ch.)
      wiʃ   ki:-taya-tʃíta̱   **nax**=tsá   tsamá:
      you   RT-take-arrive.here:2SG.SUBJ:PFV **awhile**=now   that

        tʃáuм?
        tortilla

        'did you come by awhile ago to get the tortillas?'   (BC)

(44*b*) akʃní mat li:tamakatáɬ **ka:tiyá̱ʔna̱** tsamá: iʃbastón
      akʃní   mat li:-tamakatá-ɬ   **ka:-tiyá̱ʔ-na̱**   tsamá:
      when   QTV INST-strike.ground-PFV **PLC-earth-PL** that

        iʃ-bastón
        3PO-staff

        'when he struck the ground with his staff'   (BC)[15]

In general, the placement of adverbs such as these (like most word-order phenomena in UNT) seems to depend to a large extent on information or communicative structure. Likewise, communicative structure appears to determine the placement of adverbs relative to preverbal particles such as the quotative *mat*, which can either precede or follow an adverb, as shown in (45):

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[15] Although *ka:tiyá̱ʔna̱* is a transparent combination of the word *tiyá̱ʔ* 'earth' and the place prefix *ka:-* discussed in **4.2.1** above, it is clearly lexicalized to mean 'on/to the ground' rather than having the literal predicted meaning 'place full of earth'.

(45*a*) ***lantáx mat** t∫ipapáɬ tsamá: li:ɬtám*

      lantáx   **mat**   *t∫ipá-pa-ɬ*   *tsamá:*   *li:ɬtám*

      glued.down   **QTV**   grab-RPT-PFV   that   glue

      'he hit it and the glue trapped him again'   (MR)

(45*b*) ***mat ʔoɬ** t∫i:wakáɬ mat ta:ɬmá:n*

      mat   **ʔoɬ**   *t∫i:-waká-ɬ*   *mat*   *ta:-ɬma:n*

      QTV   **roped**   tie-be.high-PFV   QTV   CLS-long

      'he tied it up there with rope'   (MR)

The distinction between the two placements seems to be one of emphasis, the pre-particle adverbials being a bit more focused or focalized (in the sense of Mel'čuk 2001), although the details of this await further investigation.

    The same preverbal slot used for adverbs is also available to adjectives, as in (46):

(46) *xa:tsá ikpa:tí: **tsínka** ikuka:nị́: wamá: t∫iwí∫*

      xa:=tsá   *ik-pa:tí:*   ***tsínka***   *ik-kuká:-nị́:*   *wamá:*

      NEG=now   1SG.SUBJ-endure   **heavy**   1SG.SUBJ-carry-PF   this

        t∫iwí∫

        rock

      'I can't stand it anymore, this stone that I'm supporting is

        heavy' (PS)

Preverbal adjectives modify either the transitive object (as in 46) or the in-transitive subject (as in 47*b* below). Interestingly, the use of this slot for both adverbs and adjectives allows for pairs of sentences with an adverb (47*a*) and a synonymous adjective (47*b*) in the same position:

(47*a*) *ka:ná: **wilḗʔɬ** stạ́kli kị́wị*

      ka:ná: ***wilḗʔɬ***   *stạk-li*   *kị́wị*

      truly   twisted   grow-PFV   tree

      'the tree grew very twisted' (LB)

(47*b*) *ka:ná **wilḗʔɬwa** stạ́kli kị́wị*

      ka:ná: ***wilḗʔɬ-wa***   *stạk-li*   *kị́wị*

      truly   twisted-SEM   grow-PFV   tree

      'the tree grew very twisted' (LB)

Although one might suppose that the difference in meaning between the two sentences lies in the attribution of 'twisted' to the growth in (47*a*) and to the tree itself in (47*b*), speakers consistently reject Spanish paraphrases of either sentence along the lines of 'the tree grew twistedly/in a twisted

manner'. In both sentences, the sense seems to be that the tree is twisted, and both the adverb and the adjective attribute the property to the event participant (the tree) rather than to the growth process. It remains to be discovered what exactly the difference in meaning is between the two sentences in (47*a*) and (47*b*).

Another significant feature of adverbial syntax in UNT has to do with the distribution of the optative marker *ka-*, which is most frequently found prefixed to verbs, as in (48*a*). In clauses with preverbal adverbs, *ka-* can optionally appear on the adverb instead of the verb, as in (48*b*):

(48*a*) *la̰ʔstónʔ **ka**tápa̰:*
    la̰ʔstónʔ   **ka**-tápa̰:
    stretched   OPT-lie.down:2SG.SUBJ

    'lie down stretched out!'   (LB)

(48*b*) *ka**la̰ʔstónʔ** tápa̰:*
    ka-la̰ʔstónʔ   tápa̰:
    OPT-stretched   lie.down:2SG.SUBJ

    'lie down stretched out!'   (LB)

To date I have not recorded any instances of this type of *ka*-climbing with preverbal adjectives or preverbal particles.[16]

For some speakers, a limited number of adverbs can be incorporated into the verb stem. Sentences (49*a*) and (49*b*) below show the adverb *xiks* 'troublesomely, annoyingly' in both nonincorporated and incorporated contexts:

(49*a*) *tʃi: **xiks** kima:wí:*
    tʃi: **xiks**   kin-ma:-wi:
    how   **troublesomely**   1OBJ-CS-be:CS

    'how he bothers me!'   (AB)

(49*b*) *ikma:**xiks**wi:ɬtunká kistánkṵ*
    ik-ma:-**xiks**-wi:-ɬ=tunká   kin-stánkṵ
    1SG.SUBJ-CS-**troublesomely**-be:CS-PFV=lots   1PO-younger.brother

    'I teased my little brother a lot'   (LB)

Adverb incorporation in UNT is not a particularly common or productive process and speakers differ as to its acceptability with particular lexical items (in general, speakers from Patla and older Chicontla speakers permit

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[16] I should note that I recently had a sentence I suggested with *ka-* on a preverbal adjective accepted by one speaker, although the same sentence drew a blank stare from another. However, I have no examples of *ka-* on an adjective in spontaneous speech or originating from a native speaker. Further investigation of this possibility is in order.

a wider variety of adverbs to incorporate, while several younger speakers in Chicontla allow none at all). To the extent that it can be considered a productive process, this is the only type of lexical incorporation found in UNT other than certain kinds of *V* to *V* compounding and the prefixation of specialized combining forms of body parts and other partonymic expressions to verbs and adjectives (see, for example, 43*c* above).

If we leave aside the issue of incorporability (which seems to be too irregular, or at any rate unpredictable, to be used as a method of reliably identifying words as adverbs), the primary syntactic features of adverbs are their preverbal position and their ability to host the optative prefix *ka-*. Both of these properties also pertain to ideophones. As shown in the examples throughout this paper, ideophones consistently appear in preverbal position and, as shown in (50), they can—like adverbs—co-occur with preverbal particles, either following or preceding them:

(50*a*) ***laŋs*** *mat lakpa:lásli̱*
     laŋs   *mat*   *lakpa:-las-li̱*
     IDPH   QTV   temple-slap-PFV

     'he slapped him hard in the temple'   (MR)

(50*b*) *mat* ***po̱ʔpo̱ʔ*** *makawamá:ɬ ʃta̱ʔanán*
     mat   ***po̱ʔpo̱ʔ***   *maka-wan-ma:ɬ*   *ʃta̱ʔa-nán*
     QTV   **IDPH**   hand-say-PRG   make.tortilla-IDO

     'there was the sound of someone making tortillas'   (MR)

So far I have not found any examples of ideophones following the verbs they are associated with, indicating that they pattern with dynamic, configurational, descriptive, and manner adverbs. Also like these adverbs, ideophones can attract the optative *ka-*, as in (51):

(51) ***ka*** *luŋʃ yúxti̱, yúxli̱ tsamá:* escalera
    ka- *luŋʃ*   *yux-ti̱*   *yux-li̱*   *tsamá:* escalera
    OPT-IDPH go.down-2SG.SUBJ:PFV go.down-PFV that   ladder

    'jump down! [she said and] the ladder came down'   (BC)

In this example, the optative appears on the ideophone *luŋʃ* 'someone jumping' rather than on the verb *yux-* 'go down'. *ka*-climbing with ideophones is, however, much less frequent than with adverbs, although both are attested in text and elicitation. Nonetheless, on the whole the syntactic behavior of ideophones—unlike their morphological properties—is virtually identical to that of adverbs.

One characteristic of adverbs that might distinguish them from ideophones is their potential for combination with the intensifying clitic *=tunká*

'a lot'. As shown in (52), this morpheme cliticizes to adverbs (52*a*), adjectives (52*b*), stative verbs (52*c*), and active verbs (52*d*):

(52*a*) *mat la̧ʔmaxtsatunká mat ti: tatʃɨ́ɬ texe:ɬa̧:wa̧:ní:n*
       *mat   la̧ʔmaxtsá=**tunká**   mat   ti: ta-tʃin-ɬ*
       QTV   long.ago=**lots**   QTV   REL   3PL.SUBJ-arrive.here-PFV

       texe:ɬa̧:wá̧:n-ni:n
       outsider-PL

       'many, many years ago, they say, outsiders arrived here'   (PS)

(52*b*) *kima̧ʔas'awimá:ɬ tsinkatunká ikle:má:ɬ*
       *kin-ma̧ʔa-s'awí-ma:ɬ   tsínka=**tunká**   ik-le:n-ma:ɬ*
       1OBJ-hand-defeat-PRG   heavy=**lots**   1SG.SUBJ-take-PRG

       'he's getting ahead of me [at work], I'm carrying a really heavy
          thing'   (RM)

(52*c*) *nakʔeɬwá tsamá: kapéx nakta:sá porque tsuma:tunká*
       na-ik-ʔeɬ-wa   tsamá: kapéx   nak=ta:sá porque
       FUT-1SG.SUBJ-mouth-eat this   coffee LOC=cup   because

       *tsumá:=**tunká***
       full=**lots**

       'I'm going to sip a bit off the top of the coffee in the cup because it
          is very full'   (RM)

(52*d*) *iksmani:tunká wa:tsá*
       *ik-smaní:=**tunká**   wa:tsá*
       1SG.SUBJ-feel.at.home=**lots**   here

       'I really feel at home here'   (RM)

In general, the clitic =*tunká* seems to be restricted in its distribution to the intensification of words expressing semantic predicates (Beck 2000). However, it seems not to be applicable to ideophones, a fact which may be related to their semantic properties—a theme taken up in the following section.

    5. The semantics of ideophones and adverbs. When considered from the standpoint of traditional grammar, adverbs and ideophones might seem to differ most markedly in their semantics. In most languages, adverbs as a class are characterized in terms of their meaning as words that "express such semantic notions as time, manner, place, instrument, or circumstance" (Trask 1993:9). Many researchers have noted, however, that the traditional semantic characterization of adverbs is at best a weak approximation of the full range of meanings subsumed by words that are generally assigned to this

category on syntactic grounds (Lyons 1977). As Schachter (1985) observes, English adverbs include—in addition to the expected expressions of time, manner, and place—expressions of degree (*very*, *really*) and expressions of speaker attitude (*hopefully*, *unfortunately*). On the other hand, many words in other languages which correspond semantically to adverbs in English belong to other lexical classes or, in some cases, are expressed by verbal affixes.

Certainly, a comparison of the meanings which are, and are not, expressed as adverbs in UNT with those expressed as adverbs in other languages confirms this cross-linguistic semantic heterogeneity. Many of the attitudinal expressions commonly lexicalized as adverbs in other languages, for instance, are expressed in UNT by preverbal particles such as *ma:ʃ* 'dubitative', *tʃu:* 'admirative', and *xu:* 'mirative',[17] while the adjective-intensifying functions of English words like *very* and *totally* are carried out by the clitic =*tunká* 'a lot' shown in (52) above. On the other hand, the class of adverbs in UNT includes a large number of descriptive adverbs with meanings more typical of adjectives in other languages, making the class difficult to define in semantic terms not just from a typological point of view but also from a language-internal one. Thus, even from the outset, the task of making a principled distinction between adverbs and ideophones on semantic grounds founders on the semantic heterogeneity of the adverbial class. The problem is compounded when we take a more detailed look at the semantic characteristics of ideophones, many of which overlap with the characteristics of many of the words that we would want to group with the adverbs on morphological grounds.

As noted at the beginning of this paper, one of the most striking things about the meanings of ideophones in UNT is their semantic specificity: many ideophones—rather than simply describing sounds, perceptions, and manners—evoke an entire scene involving specified types of actors participating in a certain manner in a particular type of event. A few examples are given in (53):

(53) *ʔalaŋtʔalaŋɬ* 'person chewing or biting down on a pebble'
    tʃeŋʔetʃeŋʔe 'large bottle filled with liquid being shaken'
    xalala 'red-hot rocks crackling from heat'
    ʔala̰ʔala̰ 'person crawling along on all fours'
    ʔa̰nɬiʔa̰nɬi 'person making a face and showing his/her teeth'

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[17] Of course, it might also be possible to include these elements in the class of adverbs, although they are morphologically inert and—unlike adverbs in context—cannot stand alone as utterances.

ʔepɬʔepɬ 'a rabbit or deer hopping'
ʔoŋɬuɬu 'woodpecker pecking on a tree'
kalala 'running at a low level (water)'
lamama 'coals glowing red'
ɬanaɬana 'person running around in a panic because s/he is late'
pa:nɬupa:nɬu 'toothless person chewing food'
peŋʃpeŋʃ 'pustules growing'
toŋtoŋ 'heart beating'
wayaya 'person leaving abruptly or without explanation'
salala '*saláx lukút* spirit passing by dragging bones'
ʃaxʃax 'dirt, sand, or dust striking a surface (door, roof, etc.)'
ʃmatʃmat 'person cutting sugarcane or long grasses with a machete'
ʃumʃum 'a large bird swooping' (Pt. *ʃunʃun*)
yo:nʔyo:nʔ 'a person staring greedily, lustfully, or aggressively'

These meanings are consistent across speakers and can easily be elicited without context (although they are never spontaneously uttered in this way). Thus, *tʃenʔetʃenʔe* in isolation will be translated 'a large bottle filled with liquid being shaken' and does not rely on the meaning of a particular verb or on discourse context to give it its specificity. Not infrequently, UNT ideophones are the only means of expressing concepts, such as insects buzzing, hearts beating, water dripping, etc., that are expressible only as phrases or sentences in a language like English. In a certain sense, many ideophones have the semantic content of entire clauses, although they are not syntactically predicative nor do they allow for the tense or person marking that is normally required to ground utterances,[18] relying for this purpose on an accompanying (often generic or "light") verb, as in the examples in (54):

(54a) *tenene* 'bright light or flame flickering or shimmering'
*xa: katilą́ʔtsi̱ paɬ tʃiwíʃ tsax **tenenene** la: watʃí makskút*
*xa: ka-ti-lą́ʔtsi̱   paɬ tʃiwíʃ tsax **tenenene***
NEG OPT-CTF-see:2SG.SUBJ.PFV if   stone   only **IDPH**

la: *watʃí* *makskút*
do   like   fire

'can't you see that stone? it's shimmering like a flame'   (LC)

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[18] Cf. Creissels (2001), who analyzes ideophones as uninflected predicates in Setswana, and Schultze-Berndt (2001), who makes the same proposal for the Australian language Jaminjung.

(54*b*) *slupslup* 'object falling into water'
    slupslup tala:ma̱:ná:ɬ *tamputʃún naʃʔéɬni̱ ʃka:n*
    slupslup   **ta-la:-ma̱:-na:ɬ**   *tamputʃún*   *nak=iʃ-ʔéɬni̱*
    IDPH   **3PL.SUBJ-do-PRG-ST.PL**   minnow   LOC=3PO-mouth

    ʃka:n
    water

    'the minnows swim along jumping out of (and falling back into) the
      water'   (LC)

(54*c*) *tanʔalala* 'person or animal crawling along like an insect'
    tanʔalalala tala:wakạ̱ná:ɬ *tʃiʃkuwín nakʔáɬa tʃik, xa: talakaxikwán*
    tanʔalalala   **ta-la:-wakạ̱-na:ɬ**   *tʃiʃku-wín*   *nak=ʔáɬa̱*
    IDPH   **3PL.SUBJ-do-be.high-ST.PL** man-PL   LOC=big

    tʃik   *xa:*   *ta-laka-xikwán*
    house   NEG   3PL.SUBJ-face-fear

    'the men work high on the building crawling like insects, they aren't
      afraid'   (LB)

In (54*a*) and (54*b*), the ideophone is accompanied by the "light" verb *la:* 'do' and in (54*c*), it appears with the stative verb *la:wakáɬ* 'be high (temporarily)'. In all three cases, the verb contributes relatively little to the meaning of the clause and does little to specify anything about the type of action or the nature of the event the clause describes—most of this information comes from the ideophone.

Of course, not all ideophones are quite as specific in their meanings as those in (53) and (54). Some are less specific with regard to the participant in the scene evoked, while others are somewhat less specific with regard to the type of event. A few, like *ɬtu:nɬtu:n* 'object coming with force or great speed', seem to be semantically bleached of most content beyond the general notion of some event type (in this case, motion) and a manner (force or speed). Further examples are given in (55):

(55) *tʃaʃtʃaʃ* 'person moving quickly, person making an energetic motion'
    laŋʔʃlaŋʔʃ 'blow striking with force'
    ɬo̱:ɬo̱: 'object falling, object being felled'
    lu:xɬulu:xɬu 'object bouncing up and down'
    pilipili 'object rolling'
    tukɬtukɬ 'object snapping off, breaking after the application of force'
    swilaswila 'person or animal running about quickly'

It is in this area, particularly in the case of heavily bleached ideophones such as *łtu:nłtu:n*, that ideophones become difficult to distinguish in meaning from phonologically and morphologically ordinary descriptive adverbs. Compare the examples in (55) with the descriptive adverbs in (56):

(56) *ą́ʔapu:táx* 'drooping, bent downward (branches)'
    ʔǫł 'tied with rope'
    xulúx 'hanging in bunches (small objects)'
    ka:li:howaxnít 'disgusting (place)'
    kanłít 'with teeth showing'
    lą̣ʔmonʔółł 'liquified inside (egg)' (Pt.)
    lą̣tą́ʔa 'looking greasy, shiny with grease'
    liks 'throwing a tantrum, acting spoiled, whining (children)'
    łamáŋ 'rounded, full'
    łmuk 'bent over by the weight of its fruit (tree)'
    ł'at 'close together, tight'
    łé: ʔę̣: 'having the smell of burnt hair, fingernails, horn, meat, or beans'
    stił 'spread out (small objects), distributed evenly'
    wíł'ę̣ʔ 'having long, messy hair; being jumbled up (clothes)'

As with many ideophones, some of the adverbs in (56) denote not only a manner of event but also a specific kind or form of participant. Thus, *łmuk* applies only to fruit trees, *xulúx* evokes the image of small round things hanging in bunches, and *wíł'ę̣ʔ* means not just 'messy' but 'messy clothes or hair'. Each of these adverbs seems in some respects more specific and more evocative of a scene than an ideophone such as *łtu:nłtu:n* 'object coming with force or great speed' or *pilipili* 'object rolling', whose principal meaning is the expression of a manner of motion by a schematic object. In such cases, classification of a particular word as an adverb or an ideophone can only be made through recourse to the phonological and morphological properties of ideophones discussed above. Semantically, there seems to be little to distinguish between ideophones and adverbs, and any potential distinction to be made between the two classes on these grounds becomes intractably vague or fuzzy.

6. Ideophones and adverbs as parts of speech. Ideophones in Upper Necaxa Totonac possess, as a group, a set of properties which sets them apart from other words in the lexicon. Ideophones are most distinctive on the phonological and morphological levels, and can be identified by their marked phonotactics and prosodic properties, frequent use of sound-symbolic strategies such as onomatopoeia and synesthesia, and a resistance to affixation and regular derivational processes. Unlike other words in UNT, ideophones

are reduplicated to mark number, intensity, duration, or iteration—a feature otherwise seen only in a specialized set of adverbs (although in the latter case reduplication is a derivational, rather than an inflectional or quasi-inflectional, process). Also like adverbs, ideophones appear in the sentence immediately to the left of the verb, very often clause-initially, and are legitimate (although perhaps disfavored) targets for *ka*-climbing. Semantically, they differ from other words in that they seem not to be straightforwardly predicative, modificative, or referential but instead serve to evoke a particular scene specified for actor, action, and manner. In some cases, ideophones serve an adverbial function of qualifying the action or event designated by a verb, while in others they appear with generic verbs or basic verbs of motion and serve as the primary meaning-bearing unit in the clause, supplying information with regard to the type of actor and manner of action.

Although the last characteristic seems at first blush to offer a rather robust semantic characterization of ideophones as a lexical class (one that, perhaps, might be expected to accompany a parts-of-speech distinction), a not insignificant number of UNT descriptive adverbs express similar meanings, specifying properties of clausal actants and evoking concrete images when used with relatively generic or stative verbs (cf. the examples in 54):

(57a) **ɬapǫ́ʔ taːpaːyaːwáː** tsamáː tʃiʃkú

    ɬapǫ́ʔ   **taːpaː-yaːwáː**   tsamáː   tʃiʃkú

    fatly   **side-stand**   that   man

    'that man is potbellied'   (LC)

(57b) tʃiː **taláx wakáɬ** aʔatʃiʃít xáːkaː

    tʃiː   **taláx**   **wakáɬ**   aʔa-tʃiʃít   xáːkaː

    how   **voluminously**   **be.high**   ear-hair   sapote

    'there's a lot of red sapote (fruit) up there!'   (LB)

(57c) **kanɬít kiɬwanʔóːɬ** tʃitʃí̥

    kanɬít   **kiɬ-wan-ʔóː-ɬ**   tʃitʃí̥

    showing.teeth   **mouth-say-all-PFV**   dog

    'the dog bared all of its teeth'   (LC)

In these examples, the adverbs (in boldface) seem to add to the meaning of the clause either some characteristic of the clausal subject (57a), a characteristic and a manner (57b), or a manner and some additional feature of the scene (the dog's teeth in 57c). Like the adverbs in (56) above, these words go a step beyond the traditional notional characterization of adverbs as specifying time, place, and manner, and add an extra dimension to the expressions in which they appear by evoking specific imagery in a manner reminiscent of ideophones. By the same token, a number of ideophones

(identified on phonological and morphological grounds), such as those in (55) above, have rather semantically "bleached" meanings, designating little more than a manner or event-type. Thus, while there are strong central tendencies in meaning-types that might potentially correspond to separate lexical classes of adverbs and ideophones, there is also a good deal of semantic overlap that makes it difficult to use semantic properties of words to group them definitively into separate parts of speech.

This sort of situation is a familiar one in the typology of parts-of-speech systems, where it has long been noted that the meanings of major parts of speech (nouns, verbs, and adjectives) tend to cluster around central or prototypical semantic categories but overlap with respect to the inclusion of other types of meanings (e.g., Dixon 1982, Schachter 1985, and Beck 2003). Because of this kind of overlap, many researchers advocate the use of syntactic criteria in the definition of lexical classes, either exclusively (e.g., Hengeveld 1992 and Baker 2003) or in combination with semantic criteria (e.g., Croft 1991, Beck 2002, and Dixon and Aikhenvald 2004). From the former perspective, the case for ideophones as a part of speech separate from adverbs simply evaporates. The syntactic behavior of ideophones is essentially indistinguishable from that of adverbs—indeed, there is more distinction between the behavior of descriptive and manner adverbs as opposed to locative and certain temporal adverbs (which more commonly follow the verb than precede it) than there is between descriptive and manner adverbs as opposed to ideophones. Thus, syntactic criteria argue strongly for the inclusion of adverbs and ideophones in a single lexical class, within which we might recognize certain morphologically and semantically defined subclasses.

For researchers who give weight to semantic criteria for definitions of parts of speech, the decision may be a more problematic one, though just how problematic will depend to some extent on the degree to which semantic criteria are believed to determine (as opposed to coincide with) the syntactic properties of lexical classes. Nonetheless, in the absence of a strong semantic characterization of a particular class of words that correlates with a unique set of syntactic behaviors, even a semantics-first approach to lexical classification will have little recourse to an ideophone versus adverb distinction in the modeling of UNT syntax. More appeal would be made to this distinction at the morphological level, in terms of reduplication (which applies only to ideophones and dynamic adverbs) and in terms of word-formation and derivational processes (which would be applicable to adverbs but not ideophones). While it is true that morphological distinctions of this type have traditionally been used to motivate parts-of-speech distinctions, the pitfalls of doing so are well known (Lyons 1977, Beck 2002, and Dixon and Aikhenvald 2004). Morphological distinctions similar to those that separate ideophones and adverbs in UNT are also well known to differentiate what are generally considered subclasses of a single part of speech (e.g., redup-

TABLE 6
PROPERTIES OF ADVERBS AND IDEOPHONES

	Ideophones	Dynamic	Configurational	Descriptive	Manner	Time	Place
Preverbal	✓	✓	✓	✓	✓	✓	✓
ka-climbing	✓	✓	✓	✓	✓	✓	?
=*tunká*		✓	✓	✓	✓	✓	✓
Affixation		✓	✓	✓	✓	✓	✓
Stress			✓	✓	✓	✓	✓
Post-posable						✓	✓
Reduplication	✓	✓	✓*				
Specific	Most			Some			

? = not attested in the available data.
*Applied as means of deriving dynamic adverbs.

lication in Alutor, which applies only to monosyllabic nouns in the nominative case; see Mel'čuk 2006). Given that parts of speech are essentially labels applied to sets of words to define their distributional properties in syntactic structure, a parts-of-speech distinction that applies only to morphologically defined subclasses of words is of questionable value.

Thus, ideophones in UNT are probably best treated not as their own part of speech but as members of a more diffuse set of predicate qualifiers which includes the semantically "full" ideophones illustrated in (53), the less specific ideophones in (55), and the "intermediate" descriptive adverbs of the type illustrated in (56) and (57), as well as more ordinary time, manner, and place expressions in the familiar Indo-European style (as in 43 above). The morphosyntactic properties of the various types of words belonging to this larger class that have been discussed in this paper are outlined in table 6. Of these properties, only the first three have any direct effect on the sentence-level description of the language, and of these the third—ability to host the intensifying clitic =*tunká*—cannot be used as a definitive property for a class of adverb, as it applies to words belonging to other parts of speech such as verbs and adjectives. The first two properties—preverbal position and *ka*-climbing—seem to be more relevant to the syntax and, as such, are the most sound bases on which to posit a parts-of-speech distinction for the language. These group ideophones together with all other types of predicate qualifiers. The remaining properties give less consistent results and seem to indicate that, in addition to a second-order division between ideophones and adverbs, adverbs themselves can be classified into subgroups, as in figure 1.

The final result of this study, then, indicates that ideophones do not constitute a separate part of speech from adverbs in UNT. In other words, ideophones should not be classified separately from adverbs at the highest level of the lexical-class taxonomy but instead should be treated as a subclass of a superordinate group of predicate qualifiers. Whether one chooses to refer
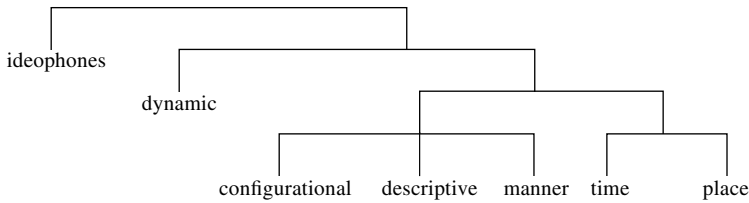
Fɪɢ. 1.—Subclassification of predicate-qualifying words.

to this overarching class as "adverbs" or not, of course, depends ultimately on how determined one is to cling to the familiar Indo-European sense of the word: ideophones may seem semantically bizarre from a traditional point of view—but so, too, do UNT descriptive adverbs. And, in any case, the semantic uniformity of the adverbial class and the relatedness of the meanings that it is traditionally said to contain are something of an illusion. As noted in **5** above, English adverbs express a wide range of meanings and meaning types, a diversity which Schachter (1985) quite correctly points out corresponds to a wide range of syntactic functions. Indeed, from a syntactic perspective, the class of adverbs in English displays a far more heterogeneous set of distributional properties than does the conflated ideophone–adverb class in UNT. Thus, while the term "ideophone" is certainly worth maintaining for descriptive value in discussions of UNT word classes, it seems of little use in syntactic modeling or sentence-level grammatical description. The term "adverb," on the other hand, serves just as well and allows for the correct level of descriptive and theoretical generalization. The fact that ideophones are so clearly grouped with adverbs in UNT also casts doubt on the utility of the ideophone as a cross-linguistically valid part of speech with particular syntactic properties that are predictable (or, at any rate, expectable) from language to language. The semantic category of expressive, onomatopoeic, or synesthetic words does seem to manifest itself in a large number of languages, but overall the syntactic properties of words belonging to this semantic class seem to be cross-linguistically heterogeneous. If Upper Necaxa Totonac is typical of languages with ideophones, it might be expected that—like many other "oddball" semantic categories—ideophones in any particular language are amenable to a wide variety of language-specific treatments in terms of their parts-of-speech classification.

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