

Pye, C. 1998. Zoque verb compounds. *Proceedings of the 1997 Mid-America Linguistics Conference*, Columbia, Missouri. 358-365.

Zoque Verb Compounds
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Linguists have long sought to understand the tie between verb meaning and the number and types of arguments the verb projects to the syntax (see 1). While subcategorization frames and selectional restrictions describe the constraints on the range of arguments that may appear with verbs, these devices are obvious bandaid solutions that call for deeper explanation.

1. English verb argument structures
 - a. Subcategorization constraints
 - i. The stick broke.
 - ii. * The lamb sheared.
 - iii. * The farmer put the cow.
 - b. Selectional restrictions
 - i. Lucy tore her blouse.
 - ii. ? Larry tore the sissors.
 - iii. ? The cloth shattered.

Hale and Keyser (1985) proposed decomposing verb meanings at a level of conceptual structure. Semantic decomposition allows the theory to pick out semantic features that play a role in constraining verb argument structure. The divergent behaviors of the English verbs *break* and *cut* in the causative alternation (2) provide one well known example.

2. The causative alternation in English
 - a. Moe broke the window.
The window broke.
 - b. Curly cut the paper.
* The paper cut.

Hale and Keyser tied the syntactic behavior of *break* and *cut* to the feature of SURFACE CONTACT that is part of the meaning of *cut*, but not *break*. This feature requires the expression of an external agent (a knife wielding murderer for example) that is not demanded for verbs that refer to simple changes of state like *break*. Steven Pinker (1989) as well as Beth Levin and Malka Rappaport Hovav (1996) have developed this approach by noting that English verbs describing a particular manner of action (e.g. *cut*, *shell*, *waddle*, *slouch*) have more constraints on their argument structures and do not participate in the causative alternation.

The basic difficulty in evaluating semantic determinants of verb argument structure is that semantic features are only as restrictive as our semantic theory happens to be. Intuitions about word meaning are notoriously opaque (Higginbotham 1989; Putnam 1993), and intuitions about the meanings of semantic features are even more suspect (Fodor 1975). In the absence of a robust

theory of word meaning, semantic features are no better than simple markers that flag which verbs participate in selected alternations. The limitations of semantic determinants on verb argument structure become obvious when comparing verb behavior in different languages. When verbs in two languages differ in their syntactic behavior, semantic theories inevitably attribute the difference to a semantic contrast. The temptation to invoke semantic contrasts undermines the case for semantic determinants in the absence of independent evidence for the semantic contrast. A tightly constrained theory of possible semantic contrasts along the lines of Talmy's conflation categories for verbs of motion (1985) is currently missing from the literature on verb argument structure. This result is inevitable when the focus of the research is on English and related European languages.

The Mixe-Zoque languages, and especially Copainalá Zoque, seem to have been created for the purpose of exploring the syntax-semantics interface. Copainalá Zoque is one of the western varieties of Zoque spoken in the region around the town of Copainalá in the state of Chiapas, Mexico (Wichman 1993). The Mixe-Zoquean language family is shown in (3).

3. Mixe-Zoquean (Kaufman 1997)

	Mixe		
Mixe-Zoquean		Veracruz Zoque	Sierra Popoluca
	Zoquean		Texistepec Popoluca
		Zoque	Western (Oaxaca) Zoque
			Santa Maria Chimalapa
			San Miguel Chimalapa
			Copainalá
			Eastern (Chiapas) Zoque
			Francisco Leon
			Rayon

The youngest speakers of this language are in their forties, so the language has entered the final phase of its existence. Several Summer Institute of Linguistics dictionaries exist for this language (Harrison et al. 1981; Engel & Engel 1987; Harrison & Harrison 1984), and William Wonderly published a description of the language's phonology and morphology in the early fifties (Wonderly 1951, 1952).

Copainalá Zoque verbs have unusual argument structures that set the language apart from the related Mixe-Zoque languages (3). The Mixe-Zoque languages generally have an ergative cross-reference morphology that differentiates between the subjects of transitive and intransitive verbs. In Copainalá Zoque the ergative third person singular prefix /y-/ marks the subject of transitive verbs and the possessor of nouns. The absolutive third person singular prefix is a zero morpheme (4):

- | | |
|---------------------------------------------------------------------|-----------------------------------------------------------|
| 4a. choʔyɨpya
y-tzoʔyɨy-pa
3ERG-cure-INC
'She/he cures it' | b. kaʔŋba
Ø-kaʔŋ-pa
3ABS-walk-INC
'She/he walks' |
|---------------------------------------------------------------------|-----------------------------------------------------------|

The Mixe-Zoque languages generally have a rich derivational morphology for altering the argument structures of verbs. The antipassive affix /-ʔoy/ and the causative prefix /yah-/ are very productive morphemes in Copainalá Zoque. Copainalá Zoque also contains a verbal affix /-Atɨh/, which is related to the passive affix in other Mixe-Zoquean languages, but functions primarily as a marker of reciprocal action in Copainalá Zoque. Even with such a productive morphological apparatus, most Mixe-Zoque languages allow verbs to alter transitivity with no overt morphological changes other than the change between ergative and absolutive cross-reference marking. This zero-marked alternation takes one of two forms. The first type (VT1) is similar to the antipassive in that a transitive verb alternates with an intransitive form that retains the logical subject (5). The second type of verb alternation (VT2) is similar to the causative alternation in English in that a transitive verb alternates with an intransitive form that retains the logical object(6). Copainalá Zoque is unusual among the Mixe-Zoque languages in having so many verbs belonging to the VT2 verb class. I found that 321 of 561 root verbs (57%) in Copainalá Zoque belong to the VT2 class while only 87 root verbs (16%) belonged the VT1 class. Of the remaining verb roots, 150 (27%) were intransitive and only 3 were purely transitive.

5. VT1 verbs

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| a. transitive verb form
ʔyukpa te wayeʔ te piʔnis
y-ʔuk-pa te wayeʔ te piŋ-ʔis
3ERG-drink-INC the pozol the man-ERG
'The man drinks the pozol' | b. intransitive verb form
ʔukpa te piŋ
Ø-ʔuk-pa te piŋ
3ABS-drink-INC the man
'The man drinks' |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|

6. VT2 verbs

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| a. transitive verb form
ʔyɨkspa te ʔɨksi te yomoʔs
y-ʔɨks-pa te ʔɨksi te yomoʔ-ʔis
3ERG-shell-INC the corn the woman-ERG
'The woman shells the corn' | b. intransitive verb form
ʔɨkspa te ʔɨksi
Ø-ʔɨks-pa te ʔɨksi
3ABS-shell-INC the corn
'The corn shells' |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|

The large set of VT2 verbs in Copainalá Zoque obviates the need for a productive passive, but defies the typical Mixe-Zoque pattern in that the set of VT1 verbs greatly outnumber the set of VT2 verbs in all the other branches of this language family. Copainalá Zoque verb argument structure contrasts with the argument structure of other Mixe-Zoque languages almost as much as it contrasts with the argument structure of English. This indicates verb argument structure can shift radically within a single language family as well as between families. In the case of Copainalá Zoque, the extension of the VT2 verb class may well be correlated with the loss of a productive passive. An alternation like that shown in (6) may have

required the passive at one time, but this requires further investigation.

The VT2 verbs in Copainalá Zoque undermine semantic theories of verb argument structure. The Copainalá Zoque VT2 class includes surface contact verbs such as *hak-* ‘cut’, *neps-* ‘scissors_cut’ and *taʔps-* ‘whip’ as well as specified manner verbs such as *ʔiks-* ‘shell’ and *poʔt* ‘grind to a powder’. There is no indication of an obvious semantic difference between the Zoque verbs and their counterparts in English and other Mixe-Zoque languages that can account for the divergent syntactic behavior of these verbs. These findings demonstrate that semantics plays at most a minor role in limiting verb argument structure, although just what limitations semantics imposes remain to be shown.

The real fun begins when you examine the verb compounds in Copainalá Zoque. The Mixe-Zoque languages resemble Chinese in the productivity of their verb compounds. Verb compounds consist of two or more stems fused together. Transitive verb compounds take a single ergative cross-reference prefix and aspectual suffix, which provides morphological evidence of their compound status (7). The verb compounds are generally right-headed, but I will discuss some important classes of exceptions to this generalization.

7. Verb compounds

a. waʔnisu

Ø-waʔn=ʔis-wi

3ABS-sing=try-COMP

‘He/she tried to sing’

b. poyeminu

Ø-poyeʔ=min-wi

3ABS-run=come-COMP

‘He/she came running’

The productivity of the compounding process in Mixe-Zoquean languages provides a flexible process for deriving new verbs. Copainalá Zoque verb compounding is of theoretical interest because it provides another forum for testing theories of verb argument structure. An adequate theory of verb argument structure should be able to predict the argument structure of the compounds from the argument structures and meanings of the component verbs. I find the verb compounds especially interesting because of the way they decompose complex events before our ears as it were.

Compounds composed from two intransitive verbs are usually intransitive, while compounds that contain a transitive verb are generally transitive (8). But exceptions exist. Some verb compounds result in an increase in valency. I refer to these compounds as Argument Addition compounds (9). Other verb compounds result in a decrease in valency. I refer to these compounds as Argument Reduction compounds (10).

8. Intransitive verb compounds

a. popyuhtu

Ø-poy=put-wi

3ABS-run=leave-COMP

‘She/he left running’

poy (VII) + put (VI) = VI

- b. hakswihtu
 Ø-haks-wit-wi haks (VI) + wit (VI) = VI
 3ABS-cough-go-COMP
 ‘She/he went coughing’
- c. teʔngaʔŋu
 Ø-teʔn=kaʔŋ-wi teʔn (VI1) + kaʔŋ (VI1) = VI
 3ABS-stand_on_toes=walk-COMP
 ‘She/he walked on her/his toes’

9. Argument Addition Compounds

- a. hiʔtkaʔu
 y-hiʔt=kaʔ-wi hiʔt (VI) + kaʔ (VI) = VT2
 3ERG-sweep=die-COMP
 ‘It swept him/her dead’
- b. kyunnemu
 y-kun=nem-wi kun (VI) + nem (VI) = VT2
 3ERG-fall=flame-COMP
 ‘He/she heated it {from below}’
- c. pyoki:ʔmu
 y-poy=kiʔm-wi poy (VI1) + kiʔm (VI1) = VT2
 3ERG-run=climb-COMP
 ‘He/she climbed it running’

10. Argument Reduction Compounds

- a. ki:ʔkaʔu
 Ø-kiʔf=kaʔ-wi kiʔf (VT1) + kaʔ (VI) = VI
 3ABS-anger=die-COMP
 ‘She/he got angry’
- b. tzeʔngaʔŋu
 Ø-tzeʔŋ=kaʔŋ-wi tzeʔŋ (VT2) + kaʔŋ (VI1) = VI
 3ABS-tilt=walk-COMP
 ‘She/he walked on the side’
- c. sonwituʔu
 Ø-son=wituʔ-wi son (VT2) + wituʔ (VI1) = VI
 3ABS-excite=return-COMP
 ‘She/he got excited again’

The intransitive verb compounds in (8) appear to be straightforward cases of clause union with argument identification. The second verb in the compound

Zoque verb compounds challenge linguistic theory on two levels. On the purely descriptive level it is difficult to predict which compounds will result in increases or decreases to valency. On the theoretical level the participation of the verb compounds in the two types of argument structure alternations poses a problem in that the compound constructions contain elaborated manner specifications that are thought to rule out alternations in argument structure (Levin & Rappaport Hovav 1995).

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