

Elicitation and documentation of alignment and argument structure: Overview of the issues

Andrew Koontz-Garboden
The University of Manchester
andrewkg@manchester.ac.uk

In documenting and eliciting data on any phenomenon, one must:

- (i) know what kinds of things to look for, and
- (ii) have some idea how to find them.

1 Argument structure

What is meant by the term “argument structure” depends on the company one keeps.

- Traditionally: some kind of theoretical construct lying at the interface between syntax and lexical semantics from which a predicate’s argument taking properties and constructional behavior are meant to follow.
- Empirically: “‘argument structure’ is now adopted as a pretheoretical cover term to refer to those linguistic phenomena that involve the realization of a lexical item’s arguments, including morphosyntactic phenomena that affect the morphosyntactic realization of arguments” (Levin 2013).

(1) Object realization in Ulwa

- a. *M raudi L *(kau) bau-t-ida.*
M SUBJ L at hit-TA-3SING.PAST
‘M hit L.’ (0405-1024)
- b. *Áka bakaka ulniki panká (*kau) bah-t-ida.*
this child writing stick at break-TA-3SING.PAST
‘This kid broke my pen.’ (0405-1030)

The notion is relevant for not just verbs, but nouns and adjectives as well. E.g., nominalization (Chomsky 1970; Marantz 1997; Wechsler 2008), deverbal adjectives (Wasow 1977; Bresnan 1982; Levin and Rappaport 1986; Embick 2004; Koontz-Garboden 2010), adjectival diathesis (Stowell 1991; Landau 2009), etc.

The question theories aim to address: Why do predicates show the behaviors they do and not some other?

The answer: Something to do with the lexical semantics of the predicates and the mapping of these predicates and their arguments to syntax.

Our focus: The *kinds* (not all) of phenomena, with an eye towards the goal of providing adequate descriptive and documentary coverage for an understudied language. (See Levin and Hovav 2005; Ramchand 2013; Wechsler 2015; Williams 2015 for recent theoretical overviews.)

1.1 Alternations

Some of the core facts of argument structure concern alternations (Levin 1993), the realization of the arguments of a verb in distinct morphosyntactic ways.

Such alternations often have meanings that are closely related to one another, but also distinct, in sometimes very subtle ways.

- (2) locative alternation
 - a. Sharon sprayed water on the plants.
 - b. Sharon sprayed the plants with water.
- (3) dative alternation
 - a. Kim gave the present to Sandy.
 - b. Kim gave Sandy the present.
- (4) conative alternation
 - a. Kim hit the door.
 - b. Kim hit at the door.
- (5) unspecified object
 - a. Kim ate an apple.
 - b. Kim ate.
- (6) understood reflexive alternation
 - a. Kim shaved his face.
 - b. Kim shaved.

In each of these pairs, the arguments of the verb are realized in distinct ways (if at all).

The meanings are, however, intimately related to one another, in some cases looking, at least on the surface, like paraphrases (locative, dative alternations) and in other cases looking like they stand in entailment relationships, one to the other (conative, unspecified object, understood reflexive alternations).

If these alternations were restricted to single verbs, we'd just say that it's a lexical property of each verb that it can be used in each of these ways, but they are not:

- (7) causative/inchoative alternation (Levin 1993:27)
 - a. Kim broke/chipped/cracked/crushed/shattered the vase.
 - b. The vase broke/chipped/cracked/crushed/shattered.
- (8) locative alternation (Levin 1993:49)
 - a. Kim brushed/heaped/drizzled/spattered/splashed/sprayed/spritzed paint on the wall.
 - b. Kim brushed/heaped/drizzled/spattered/splashed/sprayed/spritzed the wall with paint.
- (9) dative alternation (Levin 1993:45)
 - a. Kim leased/lent/loaned/passed/paid/refunded/sold/traded the money to Joe.
 - b. Kim leased/lent/loaned/passed/paid/refunded/sold/traded Joe the money.
- (10) conative alternation (Levin 1993:41)
 - a. Kim bashed/battered/beat/butted/hammered/hit/kicked/knocked/slapped/smacked the door.
 - b. Kim bashed/battered/beat/butted/hammered/hit/kicked/knocked/slapped/smacked

at the door.

- (11) unspecified object alternation (Levin 1993:33)
 - a. Kim baked/chopped/cooked/ate/mended the cake.
 - b. Kim baked/chopped/cooked/ate/mended.
- (12) understood reflexive alternation (Levin 1993:35)
 - a. Kim bathed (her body)/ dressed (herself)/ shaved (his face)/ washed (himself).
 - b. Kim bathed/dressed/shaved/washed.

Perhaps it's just that any verb can appear in each of these? In which case, we just say that these are sentences of English grammar and any verb can appear as their head? No.

- (13) causative/inchoative alternation (Levin 1993:27)
 - a. Kim cut/hacked/sawed/scratched/slashed/snipped the shirt.
 - b. ??The shirt cut/hacked/sawed/scratched/slashed/snipped.
- (14) dative alternation (Levin 1993:45)
 - a. Kim delivered/distributed/donated/reimbursed/returned/transferred/transported the money to Joe.
 - b. ??Kim delivered/distributed/donated/reimbursed/returned/transferred/transported Joe the money.
- (15) conative alternation (Levin 1993:41)
 - a. Kim belted/bludgeoned/bonked/caned/clobbered/clubbed/flogged/knifed/walloped the door.
 - b. ??Kim belted/bludgeoned/bonked/caned/clobbered/clubbed/flogged/knifed/walloped at the door.
- (16) unspecified object alternation (Levin 1993:33)
 - a. Kim broke/chipped/smashed/cracked the vase.
 - b. ??Kim broke/chipped/smashed/cracked.
- (17) understood reflexive object alternation (Levin 1993:35)
 - a. Kim brushed his teeth/ flossed his teeth/ braided his hair/ dyed his hair.
 - b. ??Kim brushed/flossed/braided/dyed.

These alternations are *productive* yet *restricted* to certain classes of verbs.

- (18) a. Kim faxed/mailed the contract to Sandy.
- b. Kim faxed/mailed Sandy the contract.

Some descriptive questions:

- (i) What alternations are there, and what is their morphosyntactic nature?
- (ii) Which verbs do and don't participate in them?
- (iii) How do the alternations alter what the verb entails/implicates of its arguments?

1.2 Valence-changing morphology

In English, alternations don't tend to be accompanied by any morphological marking on the verb. In many languages, they are, particularly in cases where the valence of the verb is altered.

Haspelmath and Müller-Bardley (2004) provide a nice overview of major phenomena.

The descriptive questions:

- (i) What marked operations does a language show?
- (ii) Which morphology appears with which verbs in what kind of contexts?
- (iii) How does the derivation alter what is entailed by the verb of its arguments?

1.2.1 Operations that reduce the number of arguments

- (19) deobjective (viz, indefinite object drop) in Ainu
- a. *Sake a-ku.*
sake 1SG.TR-drink
'I drink sake.'
 - b. *I-ku-an.*
DEOBJ-drink-1SG.INTR
'I drink.'
- (Shibatani 1990:46)
- (20) antipassive in Chukchee
- a. *?Aaček=a kimitʔ=ən ne=nlʔetet=ən*
youth-ERG load=ABS 3PL=carry=3SG/AOR
'(T)he young men carried away the load.'
 - b. *?Aaček=ət ine=nlʔetet=gʔe=t kimitʔ=e*
youth=ABS ANTIPASS=carry=3PL/AOR load=INSTR
'(The) young men carried away a load.'
- (Kozinsky et al. 1988:652)

Antipassive seems to be functionally equivalent to the conative (see Polinsky 2013 for discussion), in that antipassive seems to have a subset of the lexical entailments that the direct version has, and also involves demotion of an argument.

- (21) anticausative
- a. *Kim rompió el vaso.*
kim break the glass
'Kim broke the glass.'
 - b. *El vaso se rompió.*
the glass anticaus broke.
'The glass broke.'

With anticausative markers, it is often the case that the morphology is used for other things in the language as well (especially reflexive, passive, reciprocal, etc., see Haspelmath 1990 and Kemmer 1993).

- (22) reflexive
- a. *Kim bañó al niño.*
Kim bathed the child
'Kim bathed the child.'
 - b. *Kim se bañó.*
Kim refl bathed
'Kim bathed (herself).'
- (23) passive in Sre (Mon Khmer; Vietnam)
- a. *khay pàʔ mpòŋ.*
he opened door
'He opened the door.'

- b. *mpòŋ gə-pàʔ.*
 door PASS-open
 ‘The door was opened.’ (Manley 1971:62)

In languages where passive and anticausative are marked identically, teasing these apart can be tricky. The best test is due to Siewierska (1984).

- (24) a. The door opened by itself.
 b. *The door was opened by itself.

1.2.2 Valence increasing

There are various kinds of operation that add a direct object, all going under the name applicative (benefactive, malefactive, instrumental, etc.; see Peterson 2007 for an extensive typology).

Some make a ditransitive out of a transitive:

- (25) Applicative (Indonesian)
 a. *Orang itu masak ikan untuk perempuan itu.*
 man the cook fish for woman the
 ‘The man cooked fish for the woman.’
 b. *Orang itu me-masak-kan perempuan itu ikan.*
 man ART TR-cook-APPL woman ART fish
 ‘The man cooked fish for the woman.’ (Chung 1976:58)

Others make a transitive out of an intransitive:

- (26) Applicative (Ulwa)
 a. *Ai ati kawarayam?*
 what be laugh.2SING
 ‘Why are you laughing?’ (Green 2004:kawaranaka)
 b. *Muih luh kang kawaradai.*
 person all 3.APPL laugh.3SING
 ‘Everyone laughs at him/her.’ (Green 2004:kang kawaranaka)
- (27) Causative (Babungo)
 a. *nw n̄i t̄áa n̄i*
 he enter in house
 ‘He entered the house.’
 b. *m n̄i-s nw t̄áa n̄i*
 I enter-CAUS him in house
 ‘I made him enter the house.’ (Schaub 1982:211, in Haspelmath and Müller-Bardey 2004:11)

NB: Causativization processes are often more productive than causativization observed in the causative/inchoative alternation (to the extent that that process is marked in a language by a causativization process).

The two kinds are often encoded differently (e.g., Romance causative alternation versus *make/faire/hacer* causatives), and show differences in meaning (see McCawley 1978; Levinson 2000:140-142; Levin and Rappaport Hovav 1995:110-119; 293, fn. 3 for discussion).

1.3 Case and agreement properties of arguments

Different classes of verbs have arguments that differ from one another in case/ agreement properties.

- (28) Ulwa nominative-taking intransitives
- a. **Yang** *tuh-p-ikda*.
1SING.NOM spit-PA-1SING.PAST
'I spit.' (0405-1135)
- b. **Yang** *sînak kas-i bêt-p-ikda*.
1SING bean eat-SS fart-PA-1SING.PAST
'I ate beans and farted.' (0405-1063)
- c. **Yang** *aud-i ala-w-ing*.
1SING be.happy-SS grow-WA-1SING.PRFCT
'I grew up happy.' (0405-1079)
- (29) Ulwa non-nominative-taking intransitives
- a. **Yâ** *suh-p-ang*
1SING.NON-NOM tire-PA-3SING.PRFCT
'I am tired.' (mar06-10)
- b. *Yang yab-ikda bahangh yâ nana-p-ida*
1SING be.scared-1SING.PAST because 1SING.NON-NOM tremble-PA-3SING.PAST
'I trembled because I got scared.' (0405-1091)
- c. **Yâ** *baham-p-ai*.
1SING.NON-NOM be.hungover-PA-3SING.PRES
'I'm hungover.' (Green 2004:bahamnaka)

Phenomena of this sort are often taken to reflect a difference in the thematic role and associated grammatical relation (at some level) of the single argument of the verb (i.e., of unaccusative/unergative status).

1.4 A host of other phenomena

Many other phenomena fall under the heading of "argument structure" (qua empirical phenomena), amongst them various kinds of complex predicates (serial verb constructions, light verb constructions, etc.), the peculiarities of verbs of psychological state, unaccusativity, many other kinds of alternations, resultative constructions, etc. See Levin (2013) for a great overview and references.

1.5 In sum

Central questions:

- What is the set of alternations in a given language?
- What is their morphological/syntactic nature?
- What is their semantic nature? I.e., how does the morphosyntactic nature of the argument realization correlate with the entailments a predicate imposes on its arguments?
- Which verbs appear in which morphosyntactic contexts and which do not?

With some intransitive verbs, the subject is in the case of the object of a transitive (35-a), and with others the case of the subject of a transitive (35-b).

(35) Guaraní (Mithun 1991:511)

- a. *šé-rasĩ*
'I am sick.'
- b. *a-puʔã*
'I got up.'

(ii) Heterogeneity across grammar, e.g., person, tense, aspect splits:

(36) Ergative/absolutive alignment in Chol perfective (Coon 2013:11)

- a. *Tyi i-jats'-ä-yoñ.*
PRFV A3-hit-TV-B1
'She hit me.'
- b. *Tyi majl-i-yoñ.*
PRFV go-ITV-B1
'I went.'

(37) Nominative/accusative alignment in Chol progressive (Coon 2013:11)

- a. *Choñkol i-jats'-oñ.*
PROG A3-hit-B1
'She's hitting me.'
- b. *Choñkol i-majl-el*
PROG A3-go-NML
'She's going.'

Many ergative languages are claimed to lack (i) (e.g., Warlpiri, see (31)). All ergative languages apparently have (ii), i.e. some kind of heterogeneity, which is to say, that no language is uniformly ergative (Moravcsik 1978).

Alignment and argument structure

Alignment and argument structure, then, are intimately entangled with one another:

- (i) Argument structure is about the constellation of configurations of particular lexical items.
- (ii) Alignment is usually talked about in the context of an entire language.

But you can't do (ii) without doing (i). In that sense, alignment is about patterns of argument structures of (lexical) predicates (across the grammatical contexts in which they are used).

See Bickel and Nichols (2009) for some useful discussion teasing alignment and argument structure apart much in the way suggested here:

"Surveying alignment patterns for any language then requires surveying all the valence types found in that language, or at least those found with any frequency" (Bickel and Nichols 2009:3)

"every language we have seen has at least some verbs exhibiting other patterns, at least some of which are in fact salient in the language, and some languages have two clear contenders for default or plurality type. " (Bickel and Nichols 2009:17)

A suggestion for typologizing:

“Probably the best way to define types is to set up a standard list of verb glosses, determine the argument coding of each of those verbs in the language in question, and use the frequencies of the different coding types and their distribution in the list to typologize languages” (Bickel and Nichols 2009:15)

The moral: understanding alignment means focusing on a collection of individual verbal predicates, observed in a wide range of morphosyntactic contexts, and then on putting the observed behavior together to understand the constellation of patterns attested in a particular language.

How to do this?

References

- Bickel, Balthasar, and Johanna Nichols. 2009. Case marking and alignment. In *The oxford handbook of case*, ed. Andrej Malchukov and Andrew Spencer, 304–321. Oxford: Oxford University Press.
- Bresnan, Joan, ed. 1982. *The mental representation of grammatical relations*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1970. Remarks on nominalization. In *Readings in English Transformational Grammar*, ed. Roderick Jacobs and Peter Rosenbaum, 184–221. Waltham, MA: Ginn.
- Chung, Sandra. 1976. An object-creating rule in Bahasa Indonesia. *Linguistic Inquiry* 41–87.
- Coon, Jessica. 2013. *Aspects of split ergativity*. Oxford University Press.
- Deal, Amy Rose. 2012. Ergativity. *International Handbook on Syntactic Contemporary Research, 2nd edition, Berlin, Walter de Gruyter*, <http://people.ucsc.edu/~ardeal/Deal-erg-handbook-2012.pdf>.
- Dixon, R.M.W. 1994. *Ergativity*. Cambridge: Cambridge University Press.
- Embick, David. 2004. On the structure of resultative participles in English. *Linguistic Inquiry* 35:355–392.
- Green, Thomas. 2004. Electronic version of dictionary in Green (1999). Unpublished raw XML.
- Hale, Ken. 1983. Warlpiri and the grammar of non-configurational languages. *Natural Language & Linguistic Theory* 1:5–47.
- Haspelmath, Martin. 1990. The grammaticization of passive morphology. *Studies in Language* 14:25–72.
- Haspelmath, Martin, and Thomas Müller-Bardey. 2004. Valence change. *Morphology: A handbook on inflection and word formation* 1130–1145.
- Kemmer, Suzanne. 1993. *The middle voice*. Amsterdam: John Benjamins.
- Koontz-Garboden, Andrew. 2010. The lexical semantics of derived statives. *Linguistics and Philosophy* 33:285–324.
- Kozinsky, Isaac, Vladimir Nedjalkov, and Maria Polinskaja. 1988. Antipassive in Chukchee. In *Passive and voice*, ed. Masayoshi Shibatani, 651–706. Amsterdam: John Benjamins.
- Landau, Idan. 2009. Saturation and reification in adjectival diathesis. *Journal of Linguistics* 45:315–361.
- Levin, Beth. 1993. *English verb classes and alternations: A preliminary investigation*. Chicago, IL: University of Chicago Press.
- Levin, Beth. 2013. Argument structure. *Oxford Bibliographies* DOI: 10.1093/OBO/9780199772810-0099.
- Levin, Beth, and Malka Rappaport Hovav. 2005. *Argument realization*. Cambridge: CUP.
- Levin, Beth, and Malka Rappaport. 1986. The formation of adjectival passives. *Linguistic Inquiry* 17:623–661.
- Levin, Beth, and Malka Rappaport Hovav. 1995. *Unaccusativity: At the syntax-lexical semantics interface*. Cambridge, MA: MIT Press.
- Levinson, Stephen. 2000. *Presumptive meanings: The theory of generalized conversational implicature*. Cambridge, MA: MIT Press.
- Manley, Timothy. 1971. Outline of Sre structure. Doctoral Dissertation, University of Hawaii, Honolulu.
- Marantz, Alec. 1997. No escape from syntax: Don’t try morphological analysis in the privacy of your own lexicon. In *Proceedings of the 21st Annual Penn Linguistics Colloquium*, volume 4.2 of *University of Pennsylvania Working Papers in Linguistics*, 201–225.
- McCawley, James. 1978. Conversational implicature and the lexicon. In *Pragmatics (Syntax and semantics 9)*, ed. Peter Cole, 245–259. New York: Academic Press.
- Mithun, Marianne. 1991. Active/agentive case marking and its motivations. *Language* 67:510–546.

- Moravcsik, Edith. 1978. On the distribution of ergative and accusative patterns. *Lingua* 45:233–279.
- Peterson, David A. 2007. *Applicative constructions*. Oxford: Oxford University Press.
- Polinsky, Maria. 2013. *Antipassive constructions*. Leipzig: Max Planck Institute for Evolutionary Anthropology. URL <http://wals.info/chapter/108>.
- Ramchand, Gillian. 2013. Argument structure and argument structure alternations. In *Cambridge handbook of generative syntax*, ed. Marcel den Dikken, 265–321. Cambridge: Cambridge University Press.
- Schaub, Willi. 1982. *Babungo*. London: Croom Helm.
- Shibatani, Masayoshi. 1990. *The languages of Japan*. Cambridge: Cambridge University Press.
- Siewierska, Anna. 1984. *The passive: A comparative linguistic analysis*. London: Croom Helm.
- Stowell, Tim. 1991. The alignment of arguments in adjective phrases. In *Perspectives on phrase structure: Heads and licensing*, ed. Susan Rothstein, 105–135. New York: Academic Press.
- Wasow, Thomas. 1977. Transformations and the lexicon. In *Formal syntax*, ed. Peter Culicover, Thomas Wasow, and Adrian Akmajian, 327–360. New York: Academic Press.
- Wechsler, Stephen. 2008. A diachronic account of English deverbal nominals. In *Proceedings of the 26th WCCFL*, ed. Charles B. Chang and Hannah J. Haynie, 498–506. Somerville, MA: Cascadilla.
- Wechsler, Stephen. 2015. *Word meaning and syntax: Approaches to the interface*. Oxford: Oxford University Press.
- Williams, Alexander. 2015. *Arguments in syntax and semantics*. Cambridge: Cambridge.