

# An argument-structure account of transposition-to-adjective

Andrew Spencer

CoBaLiSe meeting, University of Essex

1 December 2009

## 1 Introduction

Transposition:

Word of one major syntactic class (N, V, A) is converted by morphology to a word of another class without concomitant addition of a semantic predicate. Six theoretically possible types :

$V \Rightarrow N$  (*during*) *the printing of the document* (action nominal)

$A \Rightarrow N$  *redness, unprintability* (property nominal)

$V \Rightarrow A$  *the quietly-eating-an-apple* (*girl*) (participle)

$N \Rightarrow A$  *prepositional* (*phrase*) (relational adjective)

$N/A \Rightarrow V$  *Harriet tall/doctor*.3SG.PRES.INDIC 'Harriet is-tall/a doctor'

In a transposition (e.g. deverbal participle) we don't create a new lexeme, but we do change the morphosyntactic word class (while preserving a variety of verbal properties).

How do we account for transpositions in a lexicalist framework?

Proposal: Spencer (1999) proposes to define transpositions in terms of argument structure representations, making use of the 'semantic function roles', 'R' for nouns, 'E' for events. E.g. a deverbal nominalization ((NP's) *shooting* (of) *the lions*) has the a-structure: shoot<R<E<x,y>>>. The 'E' role licenses (limited) verbal properties, the 'R' role licenses nominal properties.

However, what is the semantic function role of an adjective? What kind of representation would we need to account for deverbal/denominal adjectives (participles/relational adjectives)?

## 2 Argument structure representations and lexical classes

Semantic function roles:

**Verb:** Event 'E', hence, '*eat*<E<x,y>>'

**Noun:** 'referential' semantic function role 'R': *apple*<R>

**Adjective:** 'attributive modifier' semantic function role 'A', indexed to the (highest) thematic argument of the adjective and co-indexed to the 'R' role of a head noun in attributive modification: *green*<A\*<sub>x</sub><x> *apple*<R\*>.

Relation to semantic representation (Lexical Conceptual Structure)

$[\text{Event EAT}(x,y)] \Rightarrow \text{eat} \langle \text{E} \langle x,y \rangle \rangle$

$[\text{Thing APPLE}(x)] \Rightarrow \text{apple} \langle \text{R} \rangle$

$\lambda x [\text{Property GREEN}(x)] \ \& \ [\text{Thing APPLE}(x)] \Rightarrow \text{green} \langle \text{A}^*_x \langle x \rangle \rangle \ \text{apple} \langle \text{R}^* \rangle$

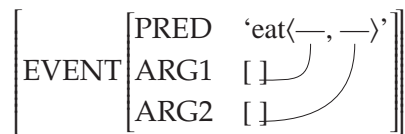
### 3 Semantic function roles as LFG A-STR representations

Assume a level of ‘syntacticized argument structure’ (A-STR) (Manning 1996; see also Matsumoto 1996).

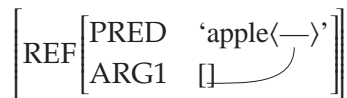
A-STR representation for semantic function roles.

- EVENT            See (1)
- REF(EVENT)     See (2)
- ATTR(ATTRIBUTE) See (3, 4)

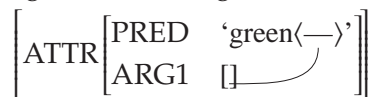
(1) ‘eat’ cf  $\lambda e \lambda x \lambda y [\text{eat}(e,x,y)]$



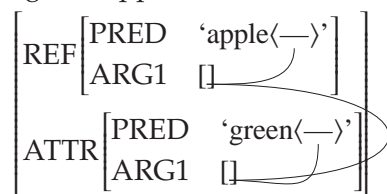
(2) ‘apple’ cf  $\lambda x. [\text{apple}(x)]$



(3) ‘green’ cf  $\lambda x \lambda \mathcal{P} [\text{green}(x) \ \& \ \mathcal{P}(x)]$



(4) ‘green apple’

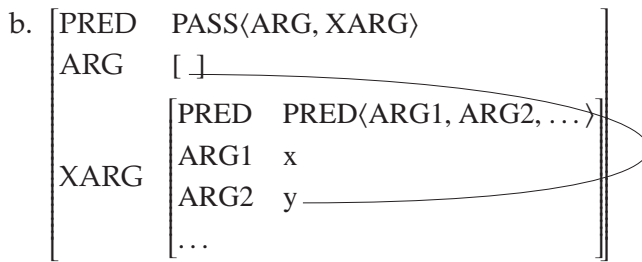


### 4 A-structure alternations as asemantic predicates

Following Manning (1996: 44, 107) define passive alternation in terms of an asemantic PREDICATE (PASS) which takes the A-STR of a verb and redistributes its arguments. The passive (and other asemantic valency-changing devices) can be thought of as a transposition which doesn’t (necessarily) change word class.

(5) a.  $\text{PASS}\langle \text{---}, \text{SING}\langle \text{Tom}, \text{song}\rangle \rangle$

'The song was sung by Tom'



## 5 Transpositions as asemanic predicate operations

Generalize Manning's idea to all transpositions, as implementation of Spencer (1999).

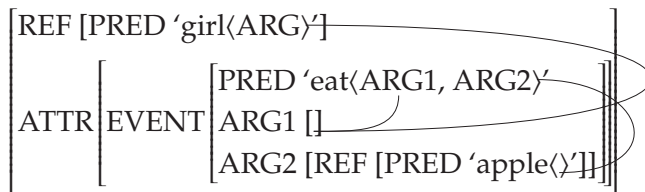
A-STR representation of transposition-to-adjective:

Deverbal transposition to adjective = participle =  $\text{eating}\langle A_x^* \langle E \langle x, y \rangle \rangle \rangle$

'A' semantic function role linked to highest argument of verb; as attributive modifier co-indexed with 'R' argument of head noun:

$\text{eating}\langle A_x^* \langle E \langle x, \text{apple} \rangle \rangle \rangle \text{ girl}\langle R^* \rangle$

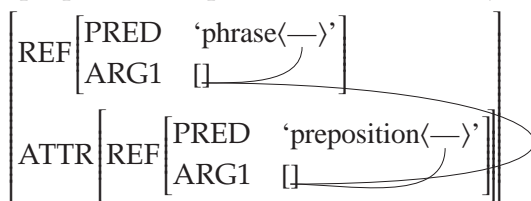
(6) '(girl) eating an apple' (participle)



Denominal transposition to adjective = relational adjective

$\text{preposition}(\text{al})\langle A_R^* \langle R_1 \rangle \rangle \text{ phrase}\langle R_2^* \rangle$

(7) 'prepositional (phrase)' (relational adjective)



## 6 Other transpositions

Other transpositions can be handled similarly:

Action nominal:

[REF [EVENT [PRED 'verb<...>']]]

Property nominal:

[REF [ATTR [PRED 'adjective<...>']]]

Note: these do not denote any member of the argument structure list of the base verb/adjective, rather they denote the "name" of the event/property.

Predicate nominal/adjective, e.g. *is green*

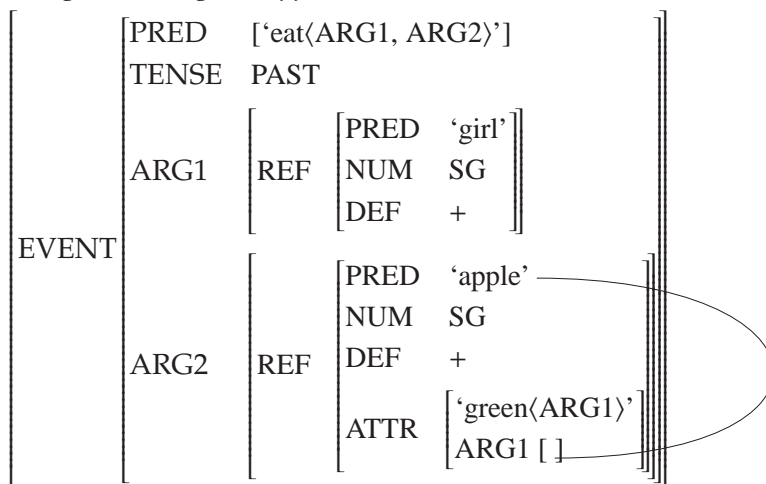
[EVENT [ATTR [PRED 'adjective<...>']]]

<This solves the problem of how you relate an attributive adjective to a predicative adjective - it's just a subcase of the general problem of how you describe predicate phrases. See Ackerman and Webelhuth 1998>

## 7 Further implications

Semantic function roles license functional categories such as NUM, DEF, TENSE, ... (assuming these can be represented in a-structure; if not the licensing is assumed to mediate between A-STR and F-STR representations).

(8) *The girl ate the green apple*



## References

- Ackerman, Farrell and Gert Webelhuth. 1998. *A Theory of Predicates*. Stanford, CA: CSLI Publications.
- Manning, Christopher D. 1996. *Ergativity: Argument Structure and Grammatical Relations*. Stanford, California: CSLI Publications.
- Matsumoto, Yo. 1996. *Complex Predicates in Japanese: A Syntactic and Semantic Study of the Notion 'Word'*. Stanford and Tokyo: CSLI Publications and Kuroiso Publishers.
- Spencer, Andrew. 1999. Transpositions and argument structure. In G. Booij and J. van Marle, eds., *Yearbook of Morphology 1998*, pages 73–102. Dordrecht: Kluwer Academic Publishers.