

Are a-adjectives like *afraid* prepositional phrases underlying and does it matter from a learnability perspective?

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There is a longstanding paradox concerning the fact that there exist many grammatical patterns that are productively used with new, novel or low frequency lexical items and yet are unacceptable with certain familiar lexical items, even though there is no straightforward semantic or phonological explanation for the restriction (Baker 1979; Pinker 1989; Bowerman 1988; Goldberg 1995). How do learners figure out constraints such as those illustrated below in (1a) and (2a), given similar examples in (1b) and (2b) and new examples in (1c) and (2c):

(1) a. ??The magician vanished the woman

b. The king banished the woman.

c. She friended him.

(2) a. ??She explained him the news.

b. She told/guaranteed him the information.

c. Please facebook us your question. (local radio station, Princeton NJ, 6/10/11)

Boyd and Goldberg (2011) attempt to address this question by investigating a different set of cases that share a restriction that is not wholly predictable on the basis of general semantic or phonological factors. In particular, there is a class of adjectives beginning with a syllabic schwa (“a”) that resist appearing preminally in attributive position:

(4) A-ADJECTIVES (A-ADJS)

a. ?? the/an asleep child

b. ?? the/an afraid man

c. ?? The/an alive monster

d. ?? The/an ablaze building

To see that the restriction is not due to a general semantic nor phonological restriction, note that near synonyms (7) and certain words with closely related phonology (8) readily appear preminally.

(7) Semantic near-synonyms

a. the/a sleeping child

b. the/a scared man

c. the/a living monster

d. the/a burning building

(8) Phonologically related NON-a-adjs (Non-segmentable into *a* + stem)

a. the/an adult male

b. the/an astute comment

c. the/an acute sickness

d. the/an aloof woman

The distinction between the a-adjs in (4) and the non-a-adjs in (8) appears to be related to the fact that each of the words in (4) is morphologically segmentable into *a-* plus a semantically related stem. Other adjectives with similar phonology, but which are not segmentable, fall outside the a-

adj category. For example, /dʌlt/ in *adult* is not an English morpheme, and neither are the syllables /stʊt/, /cut/ and /lʊf/ in *astute*, *acute* and *aloof* (Coppock 2008; Boyd and Goldberg 2011). We can conclude that while a-adjs are partly defined by the way that they sound, the category does not reduce to phonological or semantic characteristics.

The restriction is motivated by the diachronic history of many of the adjectives as prepositional phrases (e.g., *asleep* comes from the Old English PP *on sleep*). As prepositional phrases, it made sense that they would not occur attributively. Today's speakers, however, are generally unaware of the historical origin of these adjectives, and yet they implicitly recognize and respect their unusual distributional pattern. Their unusual distribution poses a clear learnability challenge. How do speakers learn to avoid using these adjectives in prenominal attributive position?

Bruening (blog) argues that a-adjectives are still prepositional phrases *underlyingly*, not adjectives. For Bruening (blog)'s line of argumentation to be valid, there must be evidence that a-adjectives (Class III) pattern like PPs (Class IV) and unlike real adjectives (Classes I and II).

I. Uncontroversial ADJECTIVES <i>sleepy</i> <i>floating</i> <i>red</i> <i>full</i> <i>huddled</i> <i>pinkish</i>	II. ADJECTIVES that begin with unstressed schwa but that <i>can</i> occur prenominally: <i>absurd</i> <i>acute</i> <i>aloof</i> <i>astute</i>	III. "a - ADJECTIVES" <i>asleep</i> <i>afloat</i> <i>afraid</i> <i>alone</i> <i>ablaze</i> <i>alive</i>	IV. Prepositional phrases: <i>on the table</i> <i>into the room</i> <i>towards the house</i> <i>at two o'clock</i>
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First note that there are at least six pieces of positive evidence in favor of treating a-adjectives as *adjectives*—i.e., with Classes I and II--and not prepositional phrases (Class IV).

- Semantically, they necessarily modify a property of a noun like other adjectives and unlike prepositional phrases.
- Phonologically, they are inseparable units like adjectives and unlike prepositional phrases.
- The verb *seem* provides a classic test for adjective status, and readily occurs with the a-adjectives but not with prepositional phrases (Lakoff 1970; Jackendoff 1972):
 - The child seemed alive/afraid/afloat/alone/aghast.
 - *The child seemed on the table/at two o'clock.
- A-adjectives can be conjoined with uncontroversial adjectives, like other adjectives and unlike prepositional phrases,
 - The man was quiet and afraid/alone.
 - ??The man was quiet and on the table.
- Like many (but not all) other adjectives but unlike prepositional phrases, *afraid* (if not other a-adjectives) can occur with *of* phrase complements:
 - afraid of the man
- A-adjectives do not readily appear after nouns except if they have a complement and/or an intonation break (a), just like simple adjectives (b), but unlike prepositional phrases (c):
 - *The man asleep escaped the police. (postnominal a-adjective)
The man, asleep on the floor, escaped the police.
 - *The man short had escaped the police. (postnominal (non a-) adjective)
The man, short even with his boots on, escaped the police.
 - The man under the bed escaped the police. (postnominal PP)

Bruening uses *at ease* and *on fire* in his discussion. These cases are unusual, in that they necessarily involve bare Ns instead of NPs, and they pattern with *adjectives* according to tests 1-4 and 6.

The prepositional phrase account might offer a syntactic explanation of their unusual distribution if a-adjectives patterned with PPs generally and unlike other adjectives (but see below). However, importantly, the learnability question remains. That is, unless there exists *positive* evidence that a-adjs are underlyingly PPs, learners would still have to learn a *restriction* (or a set of restrictions), that would require recourse to indirect negative evidence. Bruening (blog) suggests two cases that might seem to provide positive evidence that a-adjs pattern with PP. First he claims that both a-adjs and PPs occur as complements of *have memories of*, while other adjectives do not (9b):

- (9) a. I have fond memories of him at work/ on shore/ with his friends.
b. *I have fond memories of him crazy/ proud of his son/sleepy.
c. I have fond memories of him asleep/ alone in his office/ ashore. (Bruening blog; March 2011)

But (9b) is misleading, as many uncontroversial adjectives *can* appear in this position:

- d. I have fond memories of him naked/sun-tanned/sober/drunk.

Bruening (blog) also suggests that *a*-adjectives pattern with prepositional phrases and not with adjectives in that they can appear with *right* as in: *he fell right asleep, they went right ashore, it went clear askew/awry, it came right alive*. However, this is not true of all *a*-adjectives. While there are 8 examples of *right asleep* in the 410 Million word COCA corpus, there are 0 instances of *right afloat/afraid/alone* and each are markedly odd:

- (10) a. ??It became right afloat.
b. ??He became right afraid.
c. ??He was left right alone.

Aside from this case, Bruening (blog) emphasizes *restrictions* on *a*-adjs. His arguments are quoted in italics below:

1. *Bruening (blog): A-adjectives cannot be used with "the" to form kind-denoting NPs: (1) a. the scared, the living, the fat, the sleepy, the aloof, the lonely (will be expelled from the earth) b. *the alive, *the afraid, *the ablaze, *the afloat, *the asleep, *the alone (will be expelled from the earth)*

First, there do exist attested instances of such uses involving *a*-adjectives (Class III):

- (11) a. Books are written by the alone for **the alone**.(COCA corpus)
b. The oppressed will come to you for shelter, and **the afraid** will find safety with you.
books.google.com/books?isbn=0791423913

Secondly, the ability to be used as a kind-denoting NP is not a good test for adjectives, since not all clear adjectives (Class I) pass it:

- c. ??The full/huddled/pinkish will inherit the earth.

Thirdly, if Class III items are dispreferred relative to Classes I and II to some degree as they may well be, it could well be *because* the kind-denoting NP construction prefers adjectives that can readily appear in NPs.

2. *Bruening (blog): A-adjectives cannot have comparatives with -er, even though most of them meet the phonological requirements for -er suffixation (maximally two syllables), and there is no ban on morphologically complex stems for -er: (2) a. sleepier, scareder (I hear this used), floatier, lonelier b. *aliver, *afraider, *ablazer, *afloater, *aloner.*

The comparative ending requires the adjective be gradient, and most a-adjectives are inchoative and therefore not gradient. Again, all adjectives obey this semantic restriction:

(12) a. *deader, *sunker

The phonology of these adjectives may also play a role, explaining the few cases that *are* gradient (such as *afraid*) since *Class II adjectives* also resist the comparative ending:

b. *absurder, *acuter, *aloofer,

Thus the lack of appearance with –er cannot be taken as evidence for underlying PP status without overgeneralizing the structure to Class II adjectives.

3. Bruening (blog): *They cannot be turned into adverbs with -ly:* (3) a. *sleepily, burningly, fearfully, floatingly, aloofly, astutely* b. **afraidly, *ablazely, *afloatly, *alonely*

This again is not a good test for adjective status since many Class I would fail it:

(13) a. *Sacredly, *fatly, *bigly, *tinily

4. Bruening (blog): *Moreover, it seems to me that there is no blanket ban on prenominal A-adjectives. In my judgment, they vastly improve with modification: an almost-alive monster, a totally ablaze building, a still-afloat hulk; this works for the -ing ones too: a noisily a-rockin' van.*

This is an interesting point, but it is evidence of course that *a-adjectives* are adjectives and not prepositional phrases. (for whatever it might be worth, I don't actually find the "a noisily a-rockin' van" acceptable).

It is true that if a number of restrictions were to co-vary, this could be valuable to the learner--only a single restriction need be recognized, if by inferring the existence of an invisible feature or underlying structure, the other restrictions would follow. And yet, without positive evidence, at least one restriction still needs to be recognized by the learner. That is, at some point, the learner must recognize that a non-occurring pattern cannot occur. Therefore positing underlying structure or an invisible feature does not address the learnability issue unless positive evidence is available. Restrictions must be learned via indirect negative evidence unless they follow from general semantic or phonological factors. In this way, the learnability issue is as relevant to generative accounts that posit underlying structure or invisible features, as it is to surface-based accounts.

Relevant references

- Bowerman, M. (1988). The "No Negative Evidence" Problem: How do children avoid constructing an overly general grammar? In J. Hawkins (Ed.), *Explaining Language Universals* (pp. 73-101). Oxford: Blackwell.
- Boyd, J. K., & Goldberg, A. E. (2011). Learning what not to say: categorization and statistical preemption in the production of a-adjectives. *Language*.
- Brown, Roger & Camille Hanlon. 1970. Derivational complexity and order of acquisition in child speech. *Cognition and the development of language*, ed. by J.R. Hayes, 11-53. New York: John Wiley and Sons.
- Brooks, Patricia J. & Michael Tomasello. 1999. How children constrain their argument structure constructions. *Language* 75.720-38.
- Brooks, Patricia J., Michael Tomasello, Kelly Dodson & Lawrence B. Lewis. 1999. Young children's overgeneralizations with fixed transitivity verbs. *Child Development* 70.1325-37.

- Brooks, Patricia J. & Otto Zizak. 2002. Does preemption help children learn verb transitivity? *Journal of Child Language* 29.759-81.
- Chouinard, Michelle M. & Eve V. Clark. 2003. Adult reformulations of child errors as negative evidence. *Journal of Child Language* 30.637-69.
- Clark, Eve V. 1987. The principle of contrast: A constraint on language acquisition. *Mechanisms of Language Acquisition*, ed. by B. MacWhinney, 1-33. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Coppock, E. (2008). *The logical and empirical foundations of Baker's Paradox*. *Linguistics*. Stanford University.
- Goldberg, Adele E. 1993. Another look at some learnability paradoxes. *The Proceedings of the Twenty-Fifth Annual Child Language Research Forum*, ed. by E.V. Clark, 60-75. Stanford, CA: Center for the Study of Language and Information.
- Goldberg, Adele E. 1995. *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: Chicago University Press.
- Goldberg, Adele E. 2006. *Constructions at Work: The Nature of Generalization in Language*. Oxford: Oxford University Press.
- Goldberg, Adele E. to appear. Corpus evidence of the viability of statistical preemption. *Cognitive Linguistics*.
- Marcus, Gary F. 1993. Negative evidence in language acquisition. *Cognition* 46.53-85.
- Pinker, S. (1989). *Learnability and Cognition: The Acquisition of Argument Structure*. Cambridge, Mass: MIT Press/Bradford Books.
- Stefanowitsch, Anatol. 2008. Negative entrenchment: A usage-based approach to negative evidence. *Cognitive Linguistics* 19.513-31.