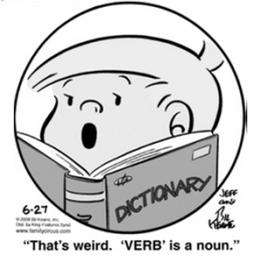


Word classes and syntax in English: Interesting problems

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7 December 2016

Word classes: Who needs 'em?

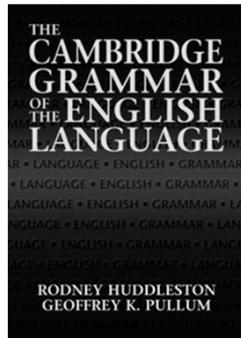
- most theoretical linguistic frameworks, including Minimalism, LFG, HPSG, build structure from fixed set of word classes
- British schools, for teaching of foreign languages
- English schools, for teaching of English grammar
- TEFL and TESOL
- most dictionaries, monolingual and bilingual



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A professional view

- I will use **word class** (= their **lexical category**) and **PoS** interchangeably
- Their word classes not identical to traditional ones
- Syntax constituency-based, without movement or empty categories
- Always one analysis best



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Status of word classes

- In most theories
 - word class is a primitive
 - every word in every grammatical sentence belongs to one and only one word class.
- In many Construction Grammars
 - word class is epiphenomenal
 - but word classes appear in syntactic descriptions.
- This is a programmatic paper, starting from word classes used for English in the *Cambridge Grammar*.

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Plan

1. Ambiguity and vagueness
2. Conventional change of category
3. Stepwise change of category
4. Supercategories
5. Decategorialisation
6. An alternative view of categories

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1. Ambiguity and vagueness

Introduction

- *Cambridge Grammar*: conventional word classes but adjusted to capture distributional facts better.

I haven't seen him since $\left\{ \begin{array}{l} \emptyset \\ \text{Tuesday} \\ \text{he resigned} \end{array} \right.$

- All these uses of *since* are P (not Adv, P, Cj).
- Classes justified on basis of **morphosyntax**.
- Language-particular. 'Methodological opportunism'?

Huddleston & Pullum (2002), Croft (2001: 30), Haspelmath (2010)

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Lexical ambiguity ...

- a. ... so I toasted the man in coffee. (BNC)

- Ambiguity due to verb *toast*:
 - 'drink to the health of'
 - 'hold in front of flame'



- Standard tests for ambiguity, e.g.
- b. Jim toasted the man and Fred did so too.
 - ≠ 'Jim drank to the man and Fred tortured him by burning' (× crossed meaning impossible)

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... and vagueness

- *kick* 'strike with foot' (L or R not specified)
 - *kill* 'cause to die' (intentionality not specified)
 - *deny* 'say something isn't true' (truth or falsity of denial not specified)
- a. He had denied the charge. (BNC)
- b. Jim had denied the charge and Fred had too.
'Jim had falsely denied the charge and Fred had honestly denied it' (✓ possible meaning)

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Word class ambiguity

Visiting relatives can be boring.

- *visiting*
 - adjectival participle modifying *relatives*
 - verbal *-ing* (gerund) governing *relatives* as object

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Word class vagueness

- Parade examples of one kind of change are *fun* and *key*, both originally N.
- Development of Adj use considered by de Smet, Kiparsky, DD, among others.



de Smet (2012: 621-8), Denison (2013, etc.), Kiparsky (2015)

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Word class vagueness

- Some speakers can use *fun* either as N or Adj
- a. And I'm like, "I don't really do things that are really that fun. The ultimate fun is doing nothing. (2000, COCA, *etc*)
- b. So you must have had fun doing this. I mean, this is just really -- it's very silly and very fun (2002, COCA)

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Word class vagueness

- For such a speaker, in the **unambiguous** sentence

It was fun.

word class of *fun* is **underspecified** but constrained.

Jespersen (1909-49: I 41)

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2. Conventional change of category

Quick change: conversion



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Conversion = zero-derivation

- *brick* n. > *brick* v. 'make electronic device useless'
 - a. Following a class action lawsuit against Microsoft regarding '**bricked**' Xbox 360s - caused by the fall dashboard update [...] (2006, via WebCorp)
 - b. [...] malware won't be able to **brick** your battery (2011, COCA)
 - c. In 2011, US Senator Chuck Schumer (D-NY) proposed that phones be "**bricked**" when reported stolen. (Wikipedia, Brick (electronics))
- Conversion abrupt and complete.

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Conversion via ellipsis

- *mobile (tele)phone* > *mobile* n.
- a. The Bell people estimate that in the next five or ten years perhaps 10,000 mobile phones will be used in New York City. (OED, 1945)
- b. The MT4 is..much more powerful than the normal handset-only mobiles. (OED, 1990)
- Early uses structurally ambiguous?
- c. If you have not yet invested in a mobile then you are missing out. (OED Browser, 1992)

*mobile*_{Adj} + zero head noun **OR**
*mobile*_N

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3. Stepwise change of category

Stepwise change

- Word classes defined by basket of properties, **not all necessary and sufficient**.
- Some word classes **share** distributional properties.
- Word moving from one to other need not acquire entire distribution of new category at once.
- Evidence:
 - lexical diffusion
 - distributional variation
 - inter-speaker variation

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N > Adj

Coding and behavioural properties	N	Adj
X takes D as dependent (<i>the man, some people</i>)	+	?-
XP can be subject, direct object, indirect object, complement of P	+	-
X can postmodify N (<i>a politician greedy for power</i>)	-	+
X takes intensifier as dependent (<i>very big, so dangerous</i>)	-	+
X can premodify N (<i>bad habits, coal strike</i>)	+	+
XP can be predicative complement (<i>be a pest, be happy</i>)	+	+
[various features characteristic of V, e.g. tense]	-	-
[various features characteristic of other PoS]	-	-
X inflects for plural (<i>three strikes, the children</i>)	+	-
X inflects for genitive (<i>the boycott's impact</i>)	+	-
X can be marked for cp and superlative (<i>heavier, more dangerous</i>)	-	+

adapted from Denison (2013: 160)

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Test: postmodification

- Each track has something **killer** on offer (2013, via WebCorp)
- Adler believes in filling your surroundings with all things **fun** and [j]oyful, ... (2005, COCA)

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Test: derivation

- Only Adj can add *-ly* suffix to form Adv
 - one exception: *partly*

 - The concept of his art is inherently hard to put into words. But most commonly (and **amateurly** put), Turrell's Skyspaces can be described as ... (2013, via WebCorp)
 - Trying to explain the ferry system very **draftly** (2015, via WebCorp)

OED s.v. *-ly* suffix²

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Adj properties arrive stepwise

- Corpus data
- Informant testing
 - Postmodification with *rubbish* better than comparison.
- Age-graded reactions to *fun* in (a-c):

 - Doing something **fun** like redecorating your room ... (1951, OED) ✓ (all speakers)
 - And they are so **fun** to eat! (1979, COHA) ? (younger)
 - Walking and looking is boring. Touching is **funner**. (1990, COCA) * (very few)

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Diachrony

- Differential acceptability, stepwise change.
 - Pooled data of corpus not necessarily helpful.
- Bridge context approached by small steps, modest extensions often involving familiar collocations.
- Finally, context impossible for N implies full Adj.
- Underdetermined contexts now genuinely vague.
- Vague + clearly-Adj contexts influence more speakers.
- No need for 'catastrophic' reanalysis or conversion.

De Smet (2012: 625-8)

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Adj > D

Coding and behavioural properties	D	Adj	N	Prn
lexical rather than grammatical	-	+	+	-
can iterate	-	+	(-)	-
number marking	(-)	-	+	+
nominative-accusative marking	-	-	-	+
comparison	-	+	-	-
can act as predicate	-	+	-	(+)

modified from Denison (2006: 283)

Huddleston (1984), Huddleston & Pullum (2002), Kayne (2007, 2002 ms), Aarts (2007: 86-7)

Examples of *various* in OED

- a. One whose conversation was so various, easy, and delightful. (1852)
 - sense 7.a. '[e]xhibiting variety of subject or topic'
 - purely lexical sense, typical Adj, ? obsolescent
- b. Dr. Jackson..is very careful in marking all those various effects produced from similar causes. (1805)
 - sense 8.a. 'of different kinds'

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Various

The eyeball is moved in various directions by six muscles. (1879)

- sense 9, 'In weakened sense, as an enumerative term: Different, divers, several, many, more than one'
- sense close to quantifier, more typical of D.
- OED note: "It is not always possible to distinguish absolutely between this sense and 8, as the meaning freq. merges into 'many different': cf. *DIVERS adj.* 3."
- Semantics and syntax go hand in hand.
 - Difficult to find explicit formal differences

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Test: partitive construction

- Only D can appear in this construction:
 - a. He went about the town on foot, called on various of the sovereigns at their hotels (BNC)
 - b. [...] crime being behaviour that breaks certain of the rules of society (BNC)
- Both *various* and *certain* described as 'somewhat marginal members of D'
- Subtle, incremental semantic changes in *divers(e)*, *several*, *certain* and *various*
- Syntax change, leftward movement (if it shows)

H & P (2002: 392, 539), Denison (2006), Breban (2006a,b, 2008, 2010a,b,c, 2011, 2012, 2014)

Adv > Adj

- Straightforward use of *long* as Adj or Adv

- a. If your hair is long [...] (BNC)
- b. It may not last long. (BNC)

- Idioms like *be long* and later *take long*

- c. Hit bið long hwonne se hlaford cume (YCOE)
it will-be long until the Lord comes
- d. þan þou mon be lang abowte few psalms (PPCME2)
then you must be long over a-few psalms

Denison (to appear)

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Adv or Adj?

- e. But it is full longe sith þat ony man durste neyge to the tour (PPCME2)
but it is full long since that any man dared move-near to the tower
 - f. Oþur monye dispites þei duden him, whuche weore longe to telle. (PPCME2)
other many injuries they did him which would-be long to relate
- Semantically and functionally adverbial, but structural position in f. more typical of AdjP than AdvP.

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OED reclassifies some examples

[...] The part of speech in these senses is sometimes ambiguous. Some quotes. might be analysed as showing LONG *adj.*¹ [...], and in sense 7 *long* is used where the corresponding noun phrase *a long time* would function as a direct object to the verb, rather than as an adverbial complement. These instances are perhaps best understood as extensions of the core adverbial sense into constructions where the part of speech is underspecified.

OED (s.v. *long* adv.¹, note above sense 5, revised June 2016)

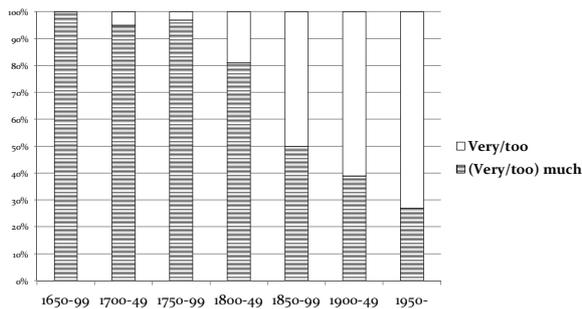
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V > Adj

- One night she brought him to see a horror film about the Living Dead, and he was so **frightened** by the zombies that he fled into the foyer in a panic. (BNC)
 - **Verbal** (dynamic, *What happened to him was ...*)
- Although he was nine years old [...], Frankie was still **frightened** of the dark. (BNC)
 - **Adjectival** (statal, can be modified by *very*)
- They were **frightened**. (BNC)
 - **Unclear** without further context

Huddleston & Pullum (2002: 1437-9), Visser (1963-73: II 1224-5), Denison (1998: 229-30)

Intensifier with mental state *Ved*



based on Denison (1998: 230)

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Intensifier with mental state *Ved*

-ed	1830-1859	1860-1889	1890-1919	1920-1949	1950-1979	1980-2009
<i>very</i>	0.15	0.51	1.49	3.56	6.35	6.59
<i>(very) much</i>	14.18	17.43	13.37	7.96	3.19	0.81
Total	14.33	17.94	14.86	11.52	9.54	7.40

Vartiainen's figures (from COHA, normalised per 1m words)

- Confirms replacement of *(very) much* by *much* from late 19C/early 20C
- Vartiainen notes use of both modifiers by same author.

Vartiainen (2016: 52, Table 9)

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Reanalysis & statistical change

- Adjectival use developed out of verbal use.
- Thought to be different, so "must" be reanalysis.
- Then what kind of change is seen in chart?
 - continuing reanalysis of V as Adj?
 - changing preference between two pre-existing structures?
 - diffusion through lexicon of preference for Adj?
 - NB. V and Adj use may co-exist for same speaker
 - steady increase in preponderance of states over events?
 - surely unlikely, though possible genre/corpus effect
 - gradual change in correlation between particular syntactic structures and particular semantic interpretations?

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Test: complement of *seem*

- Verbal participles cannot occur in complement of *seem*, *appear*, *remain*, etc.

- She seems **happy**. Adj
- She seemed **interested** in art. Adj
- *She seemed **arrested** by the police. V

- Often used as knockdown test for Adj.
- Adj very different from V.

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Test not completely reliable

- Many examples of *seem* + verbal *Ved* up to early 20C.
- Sporadic examples appear in PDE:
 - The article “Music for the senses” (21 October) appears based on the hoary old assumption that anything which can make waveforms can make music. (1995, *New Scientist*)
 - [...] and God’s absolute freedom would seem secured. (2000, Eagleton)

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Gradient from V to Adj?

- | | | |
|---|--|-----|
| A | <i>He had taken it</i> | V |
| B | <i>He was killed by Tom</i> – ‘slightly less verbal than A with respect to its complementation’ | |
| C | <i>a rarely heard work by Purcell</i> – ‘much less verbal still by virtue of the severe restrictions on permitted dependents’ but ‘less adjectival than D because it cannot occur as predicative complement’ | |
| D | <i>a broken vase / it seemed broken</i> – ‘less adjectival than E because it is ungradable’ | |
| E | <i>a worried man / He seemed worried</i> | Adj |

Huddleston (1984: 324); cf. Svartvik (1966). Aarts (2007: 67, 178-80)

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Stepwise development V > Adj?

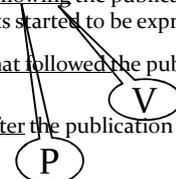
- Underdetermined type facilitates acquisition of more and more adjectival properties, eventually becomes genuinely vague.
- H & P call participial V > Adj change ‘conversion’, but non-central
 - because inflected form is converted – ?because inflectional morphemes usually outside derivational ones
 - because process so productive
- Alternative, gradient scenario needs testing with large corpus.
- Needs convincing evidence of stepwise accumulation of properties in same order, e.g. inanimate agent-phrases, agentless passives, modification by *very*, *too*, etc., prefixation by *un-*, particular kinds of statal meaning.

Huddleston & Pullum (2002: 1644)

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V > P

- Forms such as *concerning*, *considering*, *during*, *given*, *granted*, *including*, *regarding*, *following*
 - In the years following the publication of the General Theory, doubts started to be expressed [...] (BNC)
 - In the years that followed the publication of the General Theory, [...]
 - In the years after the publication of the General Theory, [...]
- Part of speech is underdetermined: bridge context



Aarts (2007: 145-50), Kortmann & König (1992), Olofsson (1990)

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V > P

- Following a general strike and calls for his resignation, the President was arrested on 26 March by fellow army officers. (BNC)
 - Can only be P (‘switch context’)

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4. Supercategories

How to solve boundary issues

- Solve problems of demarcation by lumping some categories together in supercategories?
- Majority of my examples of stepwise change involve overlap between Adj and some other class.
Interestingly, adjectives emerge [...] as the most versatile in being capable of resembling the syntactic behaviour of the other categories. (Aarts)
- Abolish category Adj and subsume its members under N, V, Adv, and so on?

Aarts (2007: 239)

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Against abolishing Adj

- Perverse to abolish Adj when – if anything – Adv is derived.
- If treat Adj and Adv as a single class, then would have boundary problems with N, V, P as before.
- And not all boundary problems involve Adj.

Giegerich (2012)

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Other supercategories

- Perhaps supercategory to include N and Adj
 - resembles some traditional classifications
 - recalls [\pm N], [\pm V] of early generative grammar
- Hudson proposed supercategory of N, Prn, D.
- Conflicts remain with other needed supercategories if retain assumption of unique word class for each word.
- Granularity of *Cambridge Grammar* system is contrived to be efficient in capturing generalisations about English (cf. lumpers vs. splitters).

Chomsky (1970), Hudson (various, p.c.)

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5. Decategorialisation

Modals

- Grammaticalisation weakens evidence of category membership.
- Modal verbs are good example
 - either most idiosyncratic of verbs
 - or no longer verbs at all
- Have (nearly) lost characteristic features of English verbs, such as inflectional marking of person and tense, and predication.

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NP ~ AdvP after low-trans. verb

- Grammaticalised *much*, *more*:
 - a. It coste me moche more. (c1400(c1378), MED)
 - b. His bath costs much; his riding house costs more. (1647, OED)
 - Nominal (Prn, D?) or Adv?
 - c. He says it's cost him dear. (BNC)
 - AdvP, NP, AdjP?
 - Even Huddleston & Pullum admit analysis of *dear* is 'unclear'!

Huddleston & Pullum (2002: 313), Denison (to appear)

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Decategorialisation

Word class of *long* in certain idiosyncratic uses:

- a. Prof. Nakamura will ensure that I don't take long.

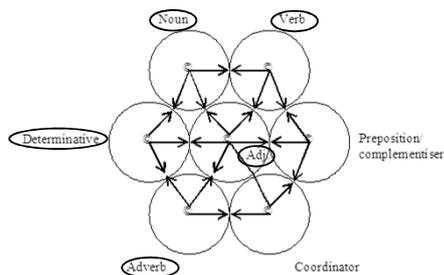
Word classes are theoretical constructs devised to capture syntactic and other analogies. It is no more than a convenient fiction to assume that speakers and hearers operate with precisely those analogies and no others.

Denison (to appear)

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6. An alternative view

Category space



Aarts (2007: 240), Denison (2016)

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Category space

- Redraw Aarts's diagram as 3D (or multi-dimensional) modelling of category space – domes of different sizes, no dead space
 - [?]no outside: cf. *go* + quotation/noise
- Low perimeters represent
 - distance from prototype
 - (in some cases) low probability of occurrence
- No need for absolute demarcation between classes
- Possibility of different kinds of deviation from core

Hudson (1985)

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Another way out of problem?

- In Radical Construction Grammar, word classes are epiphenomena rather than building-blocks of sentences.
- Attractive, but descriptions usually involve word classes, and historical accounts can be *post hoc*.

Croft (2001), Traugott & Trousdale (2013), Vartiainen (2016)

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Why conventional categories work

- a. The child is heavy.
- b. The child is alive.
- Even not-very-good category member behaves syntactically just like fully typical member **in that context**.
 - Possible also that vague or intermediate examples are inherently unstable diachronically.
 - Would tie in with idea of category strengthening – though most relevant to new categories like D and M.

Rosch (various), Warner (1990)

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How conventional categories fail

- Stepwise change, underspecification, decategorialisation.
- Over-rigidity:

With admirable clarity of purpose, the *Cambridge Grammar* always tries to figure out the best analysis when there is a choice. [...] **By rejecting the less good analysis**, but one which nevertheless was persuasive enough to require detailed rejection, **it doesn't allow for the part played in a speaker's grammar by the analogies of that second analysis.**

[H]istorically, by rejecting reanalysis until all evidence of the older state has disappeared entirely, [the *Cambridge Grammar*] has **no explanation for gradually changing distributions and dispositions over time.** [...]

Denison (2013: 181)

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Mischiefous analogy: *dialect*

- Linguists don't reify '*the*' dialect of area X.
- *Yorkshire dialect* is a non-linguistic, lay-persons' label influenced by cultural knowledge.
 - definition and boundaries highly problematic
 - individual usage far more complex than "±Yorkshire"
- But useful generalisation even for linguists.
 - covers features common to most Yorkshire speech
 - broadly distinguishes one cluster of regionally-based idiolects from most other Englishes
- '*The*' category of a word is just a cluster of similarities.

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Manning on tagging guidelines

There is a tradition in linguistics of imposing categoricity on data. One sees this also in NLP. [...] Maintaining this as an arbitrary rule in the face of varying linguistic usage is essentially meaningless. One can avoid accepting gradual change by stipulating categoricity. But the results of such moves are not terribly insightful: It seems that it would be useful to explore modeling words as moving in a continuous space of syntactic category, with dense groupings corresponding to traditional parts of speech [...]

Manning (2003: 315)

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Provisional end-point

- Continue to work with form-based word classes as practical abstraction, but recognise
 - fuzzy edges
 - semantics not irrelevant
 - syntagmatic context sometimes more important than paradigmatic replaceability.
- Finally, are we messing up a neat analytical system?
- Yes! But individual speakers, let alone whole speech communities, cannot have maximally economical and entirely self-consistent grammars.

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Last slide!

- Presentation can be downloaded from

<http://tinyurl.com/DD-download>

- Comments welcome!

Domo arigato gozaimashita

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