

The Truth about English Grammar: Rarely Pure and Never Simple¹

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Abstract Two kinds of dogmatism afflict the study of English grammar. They have more in common than is widely realized. On one side we have tradition-bound fundamentalists who take the rules to be clear and simple regulative principles laid down centuries ago by unquestionable authorities. On the other, we have theoretical linguists, who correctly take grammatical principles as a topic for discovery rather than stipulation, but insist that the detail and complexity of grammar must be explainable through the action and interaction of principles that are universal, elegant, and biologically based. I believe both views are in error. Here I focus mostly on the traditionalists. Their system of analysis, essentially unaltered for two hundred years, is assumed in all dictionaries and almost all grammar textbooks today, despite its grave defects. The deepest errors stem from a longstanding confusion of category (word class) with function (grammatical or semantic relation). Attempts to define category in terms of function yield a familiar story: nouns name things, verbs name actions, adjectives name qualities, and so on. All of this is puerile confusion. And in the case of adjectives and adverbs, new evidence reveals that the contrast cannot be reduced to differences in function, because the complementarity view (adjectives modify nouns, adverbs modify non-nouns) is not tenable.

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1 Introduction

JACK: *That, my dear Algy, is the whole truth pure and simple.*

ALGERNON: *The truth is rarely pure and never simple.*

—Oscar Wilde, *The Importance of Being Earnest*

It should be no surprise that dogmatism might rear its head in a field like English grammar. So many people regard grammar as a matter of pettifogging rules and regulations, comparable to legal statutes or religious dictats (except not as interesting or important), enforced by stern authoritarianism. Grammarians have a real image problem.

Yet over the past century the study of the grammar of natural languages has become an intellectually exciting subject, with something of the flavour of science as well as subject matter from the humanities. New discoveries are constantly being made, and many questions are currently open. The subject does face a problem, though: from two different sides, with more in common than they realize, people are trying to impute to grammar a greater degree of logic and order than objective study can support.

On one side we have old-school prescriptivists, whose stance is reminiscent of the biblical literalism that supports creationism: they seem to regard the rules of grammar as perfectly clear regulative principles that were either laid down centuries ago by authorities who are beyond question, as if handed down on engraved stone tablets, or (and it is odd that they are never quite clear about which view they defend) are logically deducible from plain common sense.

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This tradition is centuries old — it goes back at the very least to Lowth (1762) — but it has never died out. It animates most of the judgmental commentary on grammar and usage found in popular books on how to write accurate English, and it drives far too much of the work on English training and testing.

On the other side we have recent trends in theoretical linguistics, which correctly take grammatical constraints and principles to be a topic for discovery and investigation rather than stipulation and allegiance, but urges a kind of ‘intelligent design’ perspective on language. They insist that the apparent detail and complexity of grammar must be explainable without complex parochial (i.e., non-universal) conditions: everything must follow from simple universal mechanisms such as a supremely competent linguistic engineer might have designed.

I take both of these views to be deeply misguided. They simply do not accord with the results of serious study of the grammatical systems of human languages.

2 The truth about English grammar

It looks just a little more mathematical and regular than it is; its exactitude is obvious, but its inexactitude is hidden
— G. K. Chesterton, *Orthodoxy*, chapter VI

If anything has become clear from the work on large-scale comprehensive reference grammars such as *The Cambridge Grammar of the English Language* (Huddleston and Pullum 2002; henceforth *CGEL*), and from earlier works such as Quirk et al. (1985) and Jespersen (1949), it is that Standard English grammar is full of small complexities and irregularities. The notion that a respectable description of English could have the character suggested in recent theoretical linguistics — a set of elegant general principles mapping a lexicon of words to a set containing all and only the grammatical sentences — is indefensible. My objection is not to explaining facts through scientific idealizations; what I am against is avoiding facts by substituting fictions.

It is even more obvious that the kinds of theories being discussed by theoretical syntacticians today are of no use whatever to applied linguists or those involved in language training or testing. These theories could not possibly be mistaken for something that might aid in foreign language course design, preparation of teaching materials, understanding of pedagogical issues, development of dictionaries, natural language processing work, speech engineering, dialogue design, practical discourse analysis, or any of the other fields of applied linguistic work. Indeed, one gets the impression that they are very proud to be thus isolated.

Let me give a couple of examples of the kind of complexity I am talking about, the kind that current theoretical linguists seem to wilfully avoid mentioning.

2.1 *Wh*-word distribution

First, look at the so-called *wh*-words in English. The pattern is remarkably — and quite mysteriously — irregular. Table 1 distinguishes — to use *CGEL*’s terms — open interrogatives (also known as *wh*-interrogatives) integrated relative clauses (traditionally called ‘restrictive’ or ‘defining’); supplementary relatives (‘non-restrictive’ or ‘appositive’ relatives); and fused relatives (‘free’ or ‘headless’ relatives). I use ‘✓’ for a case where a word is fully acceptable, ‘*’ for a case where it is ungrammatical, and ‘?’ before an annotation to signal that the matter is in doubt but there is a tendency in the relevant direction. Notice the decidedly irregular distribution of these marks.

The following sentences illustrate some of the key grammatical contrasts for the pronoun forms *whose*, *what*, *why*, and *how*:

	OPEN INTERROGATIVE	INTEGRATED RELATIVE	SUPPLEMENTARY RELATIVE	FUSED RELATIVE
<i>who</i>	✓	✓	✓	?*
<i>whom</i>	✓	✓	✓	*
[+hum] <i>whose</i>	✓	✓	✓	*
[-hum] <i>whose</i>	*	✓	?*	*
<i>what</i>	✓	*	*	✓
<i>which</i>	✓	✓	✓	*
<i>where</i>	✓	✓	✓	✓
<i>when</i>	✓	✓	✓	?✓
<i>how</i>	✓	*	*	?✓
<i>why</i>	✓	✓	*	?*
<i>while</i>	*	*	*	✓

Table 1: Use of *wh*-words in Standard English

(1) *Whose* with non-human reference:

- a. Open interrogative: **I asked whose hinges squeaked.*
- b. Integrated relative: *Oil any door whose hinges squeak.*
- c. Supplementary relative: ?*I fixed the back door, whose hinges squeaked.*
- d. Fused relative: **Oil whose hinges squeak.*

(2) *What*:

- a. Open interrogative: *I didn't know what he was doing.*
- b. Integrated relative: **I was not aware of the things what he was doing.*
- c. Supplementary relative: **There was a secret plan, what he had not told me about.*
- d. Fused relative: *I was suspicious about what he was doing.*

(3) *Why*:

- a. Open interrogative: *I didn't know why he was yelling.*
- b. Integrated relative: *I was not interested in the reason why he was yelling.*
- c. Supplementary relative: **You ignored my painful foot, why I was yelling.*
- d. Fused relative *why*: *I was suspicious about why he did it.*

(4) *How*:

- a. Open interrogative: *I didn't know how he would respond.*
- b. Integrated relative: **I had no knowledge of the way how he would respond.*
- c. Supplementary relative: **The usual way, how he responded this time too, was to cry.*
- d. Fused relative: *I was suspicious about how he did it.*

A quick glance at an incomplete list of examples could easily give the impression that all *wh*-words can be used in all constructions. But a second look would call to mind what G. K. Chesterton (1908:131) said about life:² that it “is not an illogicality; yet it is a trap for logicians” because the world “looks just a little more mathematical and regular than it is; its exactitude is obvious, but its inexactitude is hidden; its wildness lies in wait.”

²I first saw these comments by Chesterton quoted in connection with linguistics by Lightner (1971).

It would have been so reasonable and economical for *wh*-words to be uniformly distributed throughout all the different constructions. As an alternative, also very reasonable, there could have been a distinct series of words for each different construction. (Something like this holds in Hindi, a distant relative of English genetically, where the analogous words begin with *k*- in interrogative clauses and *j*- in relatives.) And yet that is not the way things are. Some uses of *wh*-words have caught on in particular constructions and others have not.

I repeat that this is not an objection to scientific idealization. One could certainly analyse the properties that interrogative and relative constructions share, abstracting away from all details of *wh*-word idiosyncrasies as necessary for a particular explanatory purpose. But denial of the reality of interrogative and relative constructions is very different. There is no serious prospect of identifying a general universal explanations of the gaps in the pattern in Table 1. The gaps are irreducible syntactic irregularities, learned somehow by every native speaker, yet clearly parochial (note that there are non-standard dialects in which *the way how you do it* is fully grammatical).

2.2 Verb agreement

As another illustration, consider the agreement of tensed verbs, a morphosyntactic aspect of English grammar which must be a perennial source of difficulty for students speaking languages like Chinese or Vietnamese in which there is no trace of anything similar. Modern linguists take it to be a trivial and automatic low-level process that checks certain features on subjects to make sure that they match (or cancel or unify with) certain correlated features on verbs, so that appropriate morphological shapes can be plugged in when certain features are present on the head noun of the subject noun phrase (*goes* for 3rd person singular number present tense, and so on). But in fact things are dramatically more complex.

Let's begin with the fact that collective nouns can determine agreement in two different ways, and there is a dialect influence on the choice:

- (5) a. %*The government is working on it.* [preferred in American English]
b. %*The government are working on it.* [preferred in British English]

The bias can be readily checked using Google: on British university sites it is fairly easy to find clauses like *the Committee are actively seeking further data*, whereas on American university sites it seems impossible. Finding *England are* on Google News is easy: *England are training in Abu Dhabi*, *England are scheduled to travel to Chennai*, and so on — nearly all referring to national sports teams. But similar syntax with sports team names is almost impossible to find in the USA. We get *Nebraska shows depth on the field*, not %*Nebraska show depth on the field*; *where Nebraska is heading*, not %*where Nebraska are heading*, etc.³

The involvement of semantics here is subtle and deep. Sports teams and governments and committees and countries do not all behave the same way for agreement, even when the same noun is involved. As an astute commenter noted on Language Log (<http://languagelog.ldc.upenn.edu/nll/?p=877#comment-13676>), *England collapse* would not be nearly as alarming a headline in a British newspaper as *England collapses*. Native speakers of British English would read *England collapse* as being about a sports team, such as the England cricket team, and the collapse would be merely a failure to win a game. But the headline *England collapses* would have to be about a disaster (a financial one, perhaps, or even a geological one) that had befallen the country itself.

³The percent sign prefix means there is a split in the population of Standard English speakers: for some percentage of them it is grammatical and for others it is not.

It is particularly interesting that there is an American/British dialect split, because that almost completely rules out any determination by universal principles of syntax of the exact way agreement works. The matter is variable in complex ways, partly semantic and partly syntactic, and it is parochial: there are no universal constraints that will explain everything away.

Plural NPs with a numeral determiner are particularly prone to taking agreement according to their meaning:

- (6) a. *Forty acres is a lot of land for one man to farm.* [SINGULAR AGREEMENT]
b. *Forty acres have been put up for sale.* [PLURAL AGREEMENT]

Jerry Morgan made this observation in an important paper (Morgan, 1972) that is the source for several further interesting points. Consider the view that agreement is with the head noun of the noun phrase. While this often appears to be true, it is not true in these cases, where there is no head noun in the subject of the underlined verb:

- (7) a. *I bought a bag of cheap rice, but some was mouldy.*
b. *I bought a bag of cheap nuts, but some were mouldy.*
c. *I bought a bag of cheap rice, but lots was mouldy.*
d. *I bought a bag of cheap nuts, but lots were mouldy.*

When *some* means “some of it”, we get singular agreement. When *some* means “some of them”, we get plural agreement. The same is true with *lots*. But *it* and *them* are not head nouns in NPs like *some of it* and *some of them*. If the head noun in an NP that is subject of a finite clause is a pronoun, it is in the nominative case (as in *We who are about to die salute you*). And in (7c) and (d) the pronouns are absent anyway, the subject NP containing nothing but a determinative. If verb agreement has to be sensitive simply to the lexical content of the subject NP, it seems we will have to posit two different versions of *some*, and two of *lots*: a singular version and a plural version. This seems inelegant compared to saying that it is the meaning of the NP that is relevant here.

However, it is very important that meaning cannot be relied on in general to predict agreement. There are also cases where it makes no difference. In (8) the sentences are all synonymous, but while (a) and (b) have singular agreement, (c) and (d) have plural agreement.

- (8) a. *Not a single student was there.*
b. *Not one student was there.*
c. *Zero students were there.*
d. *No students were there.*

So here the agreement is not determined, even in British English, by any simple notion of what the subject NP denotes: in all four cases we are talking about an empty set of students.

Sometimes agreement can take either singular or plural without any apparent difference in truth-conditional meaning, the only difference being a rather subtle suggestion of viewpoint. Some of the following examples will be rejected by some speakers, and in some cases one senses subtle semantic or pragmatic contrasts; but the presence of dialect variation and confounding factors are precisely the kind of thing I am drawing attention to:

- (9) a. *Cornflakes makes a cheap and delicious breakfast.*
b. *Cornflakes make a cheap and delicious breakfast.*

- (10) a. *Eggs and bacon makes a more substantial breakfast.*
 b. *Eggs and bacon make a more substantial breakfast.*
- (11) a. *None of the children is in danger.*
 b. *None of the children are in danger.*
- (12) a. *A host of problems arises when you replace the motor.*
 b. *A host of problems arise when you replace the motor.*
- (13) a. *We'll be there during what are usually the two hottest months of the year.*
 b. *We'll be there during what is usually the two hottest months of the year.*

Another wrinkle in the fabric of the language is that sometimes the order in which coordinate NPs are presented affects agreement:

- (14) With *parrot* before *puppies*:
 a. *There is a brightly colored parrot and three puppies in the picture.*
 b. *? There are a brightly colored parrot and three puppies in the picture.*
- (15) With *puppies* before *parrot*:
 a. ** There is three puppies and a brightly colored parrot in the picture.*
 b. *There are three puppies and a brightly colored parrot in the picture.*

More bewilderingly, phonological reduction of an auxiliary verb to its final syllable may affect this strikingly; nearly everyone will accept (in informal style) the reduced variant of (15a):

- (16) *There's three puppies and a brightly colored parrot in the picture.*

But then sometimes (as pointed out by Fillmore 1972) we get situations in which no agreement form seems fully acceptable at all:

- (17) a. *?? Either my brother or I am likely to be there.*
 b. *?? Either my brother or I are likely to be there.*
 c. *?? Either my brother or I is likely to be there.*

As Morgan noted, some people think the best approach to well-formedness is when the agreement is right for the nearest coordinate; others do not.

Morgan also noted several other remarkable facts. I will cite just one more, a contrast between pseudo-clefts and reversed pseudo-clefts. Pseudo-clefts are clauses like *What we need is plywood* or *All I want is money*. Reversed pseudo-clefts are clauses like *Plywood is what we need* or *Money is all I want*. Here is what Morgan noticed:

- (18) a. *All I could see was the two headlights.* [PSEUDO-CLEFT]
 b. *The two headlights were (?? was) all I could see.* [REVERSED PSEUDO-CLEFT]
 c. *All they could see was themselves.* [PSEUDO-CLEFT]
 d. *Themselves was (*were) all they could see.* [REVERSED PSEUDO-CLEFT]

Reversed pseudo-clefts, where the focus constituent of a pseudo-cleft changes places with the subject, show agreement with the initial NP, as if that were the true subject; but not when the focus constituent is accusative-marked, as reflexive pronouns are.

To summarize: verb agreement in English is a highly complex matter, involving semantics as well as syntax. And it suggests a very different view of grammar from the generative one. Jerry Morgan made a perceptive remark at the conclusion of his paper:

- (19) ‘The most likely explanation for these facts [is] that the speaker learns a relatively simple principle of agreement which somehow fails to extend to complex cases. This sometimes leads to patching the principle by adding subsidiary principles, and [Verb Agreement] ends up as a (possibly hierarchical) set of principles.’ (Morgan 1972:285)

This is a very informal suggestion, but it has the ring of truth, unlike the hand-waving of more recent generativist-minimalist literature, with its lofty assertions that universal grammar takes care of everything.

2.3 What human languages are actually like

I have expressed the opinion that it is off the mark, and hopelessly so, to suggest that human languages are simple and regular formal systems defined by a universal system of grammar that makes everything simply explainable and represents the language as a system of optimal or near-optimal design for human communication. What would be a more plausible view of what human languages are like?

As a brief and admittedly very programmatic statement I would say the following. A human language, far from being a tight-knit redundancy-free formal system, is more like a sprawling library of interlocking construction types with a wide range of different productivities, frequencies, and vintages. Like any library, it has contents of very different ages: some constructions are essentially borrowings from centuries ago (*as it were*, or *would to God*, or *be it ever so humble*), while others are brand new (*How cool is that!* or *Oops, my bad!*).

The enormous library in question is capable of being acquired, internalized, and used — to varying degrees for different people — through a process involving massive exposure leading to ingrained familiarity and ultimately a degree of automaticity. The mental storage load is moderated by the sporadic presence of indefinitely large equivalence classes of words or phrases with fully shared syntactic behaviours (this point is made in a little more detail in the final section of Pullum and Scholz 2007).

This is very broadly the view taken by the proponents of construction grammar: Charles Fillmore, Paul Kay, Arnold Zwicky, Adele Goldberg, and also Ivan Sag and others in the HPSG tradition. There are many open problems about how construction grammar might be made fully explicit (Paul 2002 makes a start on the problem of devising a formalization), but the top-level insight seems to me broadly the right one.

Developing the construction-grammar view fully is of course a research programme to be worked out over decades. *CGEL* can be seen as a step in the direction of providing the descriptive basis for such a research programme, and a move away from the kind of theoretical linguistics that leans toward radically selective attention and purely fictive regularity (see Culicover 2004 for an interesting discussion of the relations between *CGEL* and current linguistic theory). Neither *CGEL* nor construction grammar, however, represents a return to traditional grammar, which has its own shortcomings. I now turn to those.

3 Traditional grammar and its failings

... heedless of grammar, they all cried,
“THAT ’S HIM!”

— Thomas Ingoldsby, ‘The Jackdaw of Rheims’

In many ways traditional grammarians could be said to have had a better idea of what a human language is like than the one that generative grammar has promoted. But they relied — as most pedagogical and applied grammarians continue to rely — on a system of analysis that has

gone essentially unaltered for two centuries at least, and arguably for quite a bit longer than that. In this section I want to look at a few of the gravest failings of that analytical tradition, which is robust and long-lasting, descending from Lowth (1762) and the earlier works on which Lowth relied. That tradition forms the basis for all dictionaries in print today, and for almost all grammar textbooks targeted on the general public. Most of its deepest errors stem from a single longstanding confusion between three concepts that it is crucial to keep separate: grammatical **categories** (word classes); syntactic **functions** (grammatical relations); and the properties and relations that are the province of **semantics**.

The familiar story of the ‘notional’ definitions of grammatical categories (‘parts of speech’) is just the simplest and most basic example of this. Categories like ‘adjective’ are confused with functions like ‘modifier of’, and both are confused with semantic notions like ‘attribute’.

The philosopher John Wilkins made the following explicit admission in a post on his blog⁴ about what he had learned about grammar:

(20) ‘I got through 12 years of state funded schooling with the sum total of my grammatical knowledge being — Nouns are thing words, verbs are doing words, and adjectives are describing words. I suspect we never covered adverbs.’

The tragedy is that he probably isn’t exaggerating. Indeed, Wilkins is at least sophisticated enough to draw the distinction between things and ‘thing words’, and between deeds and ‘doing words’. Not everyone is.

- TV personality Jon Stewart told a college graduating class that *terror* ‘isn’t a noun’, by which he must surely have meant that it isn’t a word denoting a concrete object.⁵
- Numerous Christians have used the phrase *faith is a verb* (and it is the title of at least one book.⁶ Presumably what is meant (since *faith* is definitely not a verb) is that faith is something you have to do, not just a thing to be possessed.
- A mother in Baltimore was overheard telling her child (who had referred to an eccentrically constructed fun house as ‘that silly house’): ‘We do NOT use adjectives!’, meaning, apparently, that she disapproved of negatively judgmental descriptions.⁷

These examples suggest that ordinary non-linguists scarcely know the word classes from the things they are supposed to stand for. At least traditional grammarians knew that they were trying to define classes of words. The trouble is that the whole basis of their attempt to provide those category definitions was a conceptual disaster, and yields mostly confusion.

3.1 Defining nouns and verbs

It is scarcely necessary for me to point out, I would hope, that NOUNS DO NOT NECESSARILY NAME THINGS. Leonard Bloomfield’s familiar example (Bloomfield 1933:266) is as good as any after 75 years: what is fire, exactly? It is of course a process — rapid oxidation producing heat release. It is something that happens. But that does not make the word *fire* a verb; it is a

⁴On June 14, 2008, at http://scienceblogs.com/evolvingthoughts/2008/06/grammar_wars_in_queensland.php.

⁵See the Language Log post ‘Terror: not even a noun (says Jon Stewart)’, <http://itre.cis.upenn.edu/~myl/languagelog/archives/000932.html>.

⁶See ‘Religious syntax’, <http://itre.cis.upenn.edu/~myl/languagelog/archives/001718.html>.

⁷See ‘Adjectives banned in Baltimore’, <http://itre.cis.upenn.edu/~myl/languagelog/archives/004270.html>.

noun. How can we tell that *burn* is a verb but *fire* is a noun? Not by reference to the nature of combustion, that's the point.

One similarly could ask of many other nouns why anyone would regard them as things: *absence*, which denotes a state of not being in a certain location; *failure*, which denotes the process of not being successful in an attempted action; and similarly for *lack*; *emptiness*; *method*; *assistance*, and so on.

Consider also nouns that occur only in idiomatic phrases, like *sake* (as in *Do it just for my sake* \approx "Do it out of concern for me") or *dint* (as in *It was achieved by dint of hard work* \approx "It was achieved through the means of hard work"). These words do not really have meanings, in any ordinary sense. The world cannot really be said to contain any lacks or assistances; but it certainly contains no sakes or dints.

So the traditional view has it backwards: it is not that these are things or stuff so they had to be named with nouns; it is rather that we have named them with nouns, and in that sense we have (in a way) treated them linguistically as if they were things or stuff.

The whole idea of classifying words on a rigorous basis, so that within a language we can definitively place words in lexical categories, depends on parochial criteria. The right definition of nouns in English depends on morphological facts like having forms for **plain** and **genitive case** and forms expressing **singular** and **plural number**, and syntactic facts like occurring as **Subject** or **Object**, or as **Complement** of a preposition.

In a radically different language, for example any of the Chinese languages, such morphological criteria will not apply at all. And in fact it is only when we try to identify in Mandarin a class of words analogous to the nouns we have identified in English that the traditional view of things shows its modest usefulness. We can say that every human language will have a large and open class of words among which, as central and typical members, will be all of its names for natural kinds of thing like trees, leaves, cats, dogs, houses, water, salt, the sun, and the moon. That class will be its noun class.

But that is not a definition of nounhood. It is a rough rule-of-thumb idea of how to track categorisation across languages. It is not (of course) immune to error, and within a language it is not really of any use at all.

Finding accurate criteria for classifying words as nouns internal to some other language, different in its typology from English, will be a significant challenge. For example, the project to produce a comprehensive reference grammar for Mandarin Chinese that is currently being directed by Professor Huang Chu-Ren (formerly of the Institute of Linguistics at the Academia Sinica in Taiwan, and now at the Hong Kong Polytechnic University) will have the task of determining the grounds on which a word may be identified as a noun internally to Chinese. It cannot be done on the basis of the old notion that the nouns are the thing words.

And of course morphological criteria are essentially absent altogether in Chinese. Bloomfield (1933) rejects the whole idea of universal systems of grammatical categories, and argues, for example, that in Chinese we should recognize only two lexical categories: **full word** and **particle** (see pp. 199–200). This might indeed be all we could do if we looked only at syntactic classification of individual words. But he then describes how various particles, functioning as markers, identify expressions very much like the NPs ('substantive phrases') of English. Later he proposes that 'A task for linguists of the future will be to compare the categories of different languages and see what features are universal or at least widespread.' He adds that the NP phrasal category appears to be universal: "a form-class comparable to our substantive expressions, with a class-meaning something like 'object,' seems to exist everywhere" (Bloomfield 1933:270–271).

So his point is not that we should assume we will encounter languages without NPs; that

seems extraordinarily unlikely. The point is to have rigorous criteria within a language for saying what we do have and what we do not.

For verbs, traditionally conceived of as names of actions or activities, very similar remarks apply. The old definition is similarly hopeless. Manipulation is an action; but the word *manipulation* is a noun. Yoga is an activity; agriculture is an activity; osculation is an activity: but all these words are nouns. Internal to English, verbs are defined by their showing (in all the central cases) tense inflections and participial forms. In Chinese the characterization will have to be given differently, since there are no tense inflections or participial forms.

3.2 Distinguishing adjectives and adverbs

Traditional definitions of ‘adjective’ are even less adequate than traditional definitions of ‘noun’. Adjectives (a category) are standardly defined as words that modify nouns (a syntactic function), or ‘add to the meaning of’ nouns (a semantic notion). This fails utterly as a definition.

First, it is not true that if a word is an adjective then it modifies a noun. A sentence like *The good die young* contains two adjectives, but there are no nouns to be modified.

Second, it is not true that if a word modifies a noun then it is an adjective. To maintain that, we would have to include every noun, even proper nouns, in the list of adjectives. Every city name (because of phrases like *London fog*, *Los Angeles freeways*, *Bangkok traffic*); all the states of the USA (because of *California girls*, *his Texas ranch*, *the New Jersey turnpike*); all other place names that exist or will ever be invented; every element name (because of *gold cufflinks*, *plutonium bomb*, . . .); every tree name (*mahogany table*, *pine panelling*); every computer make (*Dell laptop*); every car make (*Lincoln limousine*); even number names (*the 1812 overture*; *her prestigious 10025 zipcode*); and so on. The list of adjectives would be never-ending — and larger than the list of nouns.

Some dictionaries actually do — quite wrongly — include subentries for words like *gold* that show them as adjectives as well as nouns, so as to cover cases like *gold cufflinks*. It is a doomed endeavour. There is no way to delimit to the class of nouns that need to be dually categorized under such a policy. It is useless trying to chase after every noun that could ever be used as an attributive modifier and augment the dictionary with a subentry calling it an adjective. The fact is that EVERY noun can be used as an attributive modifier, so if you confuse category with function you completely lose the distinction between nouns and adjectives. Adjectives cannot sensibly be defined as words modifying nouns. It is an utterly untenable idea, two hundred years beyond its use-by date.

3.2.1 Function complementarity and category identity Just as the categories Adjective and Noun should not be conflated, nor should the categories Adjective and Adverb. And in this case entirely new data and lines of argument reveal that these categories are further apart than some think.

The traditional view of adjectives and adverbs asserts a very simple complementarity: adjectives modify the meanings of nouns, and adverbs modify the meanings of words other than nouns: verbs, adjectives, prepositions, other adverbs. On this view the two categories never overlap in function: *a happy man* is correct and **a happily man* is incorrect; *she sings beautifully* is correct and **she sings beautiful* is ungrammatical; there are no cases of a function in which either category is permitted to serve.

Based on the presumed complementarity, some transformationalist linguists have developed a more radical view that grows out of the traditional one: that the categories Adjective and Adverb can be amalgamated.

- John Lyons (1966) proposed that adverbs are mere “positional variants” of the corresponding adjectives.
- A decade later Joseph Emonds (1976:12–13) suggested the same thing, that the adverbs formed with *-ly* are simply “adjectives in a verb-modifying rather than a noun-modifying function”.
- Another decade on we find Radford 1988 arguing more generally for an equating of the two (he even suggests the term ‘Advective’ for the combined category).
- Plag (2003:196) explicitly asserts that *-ly* is an inflectional suffix occurring on exactly those occurrences of adjectives that do not modify nouns.
- Baker (2003:230–257) makes an even more radical proposal, under which there are just three universal categories: nouns, which have to refer to things; verbs, which have to assign semantic roles (like agent, patient, recipient, etc.) to nouns; and adjectives, which occur where neither nouns nor verbs can.

Recent research (see Payne et al. (2010), on which much of the presentation below relies) shows that the single-category thesis cannot be correct, because even the complementary-functions claim is false.

The single-category thesis begins to look less plausible if we simply consider the semantic ranges of the most frequent adjectives and adverbs in English. Adjectives, in any language that has them (and there seem to be a few languages that don’t have any) tend to be words denoting the property of being at a certain point or in a certain range on some scale, often a one-dimensional scale. So we find many frequent adjectives of size (*big, small, long*), age (*old, young, new*), value (*good, bad, worthless*), colour (*black, white, red*), feel (*hard, rough, wet*), personality (*happy, clever, silly*), speed (*fast, slow, quick*), ease (*difficult, easy, simple*), domain (*local, general, political*), primacy (*main, primary, only*), authenticity (*real, fake, actual*), likeness (*similar, different, other*), qualification (*correct, normal, possible*), quantification (*many, numerous, plentiful*), and position (*high, low, far*). There are adjectives denoting other more miscellaneous properties too: words like *open, free, full, sure, certain*, and *sorry*. And there are fully open classes of adjectives for special properties like ordinal position (*first, second, third, . . .*) and nationality or ethnicity (*Chinese, Japanese, American, . . .*).

Adverbs cover a rather different set of semantic ranges. The commonest words that are usually classified as adverbs in English tend to modify the meaning of constituents in ways that affect focus either additively (*also, even, too*) or limitatively (*just, only, especially*), or express such notions as degree (*very, well, quite*), aspect (*still, yet, already*), order (*again, any/once more*), connection of ideas (*however, therefore, otherwise*) frequency (*never, always, often*), modality (*perhaps, certainly, clearly*), location in time (*later, soon, recently*), extent of time (*long, longer, eventually*), manner (*quickly, cheerfully, easily*), or any of a number of other domains — for example, the very common illocutionary modifier *please*, which simply makes a directive or request more polite.

The majority of the most common adverbs in English are in fact not formed from an adjective base using *-ly*. What is true is merely that a large open class of less frequent adverbs are formed by addition of *-ly* to an adjective base. That suffix appears to be a derivational one — it functions in lexical word formation, not inflection. Under the single-category thesis, it is supposed to be inflectional: it is claimed to be attached to just those members of the amalgamated category that are used with a noun-modifying function.

It is for this reason that the single-category thesis has to be rejected. Adjectives and adverbs do not in fact have complementary functions: they have unnoticed overlaps in function.

3.2.2 Adjectives modifying adjectives A genuine though minor instance of functional overlap between adjectives and adverbs is found in cases where adjectives modify other adjectives. In some cases there is no related adverb: *dead wrong*, *nuclear capable*, *worldly wise*.⁸ But even when there is a related adverb, often either the meaning or the acceptability (or both) is slightly different from the case with the related adverb in the same function:

(21)	ADJECTIVE MODIFIER		SEMANTICALLY DISTINCT ADVERB
	<i>cold sober</i>	≠	<i>coldly sober</i>
	<i>plain stupid</i>	≠	<i>plainly stupid</i>
	<i>bloody good</i>	≠	<i>bloodily good</i>
	<i>silky smooth</i>	≠	<i>silkily smooth</i>
(22)	ADJECTIVE MODIFIER		UNACCEPTABLE ADVERB
	<i>blind drunk</i>	≠	? <i>blindly drunk</i>
	<i>filthy rich</i>	≠	? <i>filthily rich</i>
	<i>pretty cruel</i>	≠	? <i>prettily cruel</i>
	<i>black British</i>	≠	? <i>blackly British</i>

We know that adverbs often modify adjectives. But the examples in (21)–(22) show that adjectives can as well. Therefore the functions of the two categories overlap. Therefore it is not possible to say whether or not an item should have the *-ly* suffix purely on the basis of how it is being used. Yet we have to be able to draw that distinction in order to distinguish between *a happy man* and **a happily man*.

3.2.3 Copular internal complements Another functional context in which both adjectives and adverbs occur can be found in certain cleft constructions there is a (purely semantic) ambiguity between ascriptive and specifying complements of *be*. Consider pairs like (23)–(a).

- (23) a. *The way she dressed was elegant.* [ASCRPTIVE COMPLEMENT]
 (≈ “She elegantly accomplished the act of dressing.”)
- b. *The way she dressed was elegantly.* [SPECIFYING COMPLEMENT]
 (≈ “Her appearance was characterized by sartorial elegance.”)
- (24) a. *It was rude that she spoke to me.* [ASCRPTIVE COMPLEMENT]
 (≈ “Her speaking to me was an act of rudeness.”)
- b. *It was rudely that she spoke to me.* [SPECIFYING COMPLEMENT]
 (≈ “She spoke in a rude way to me.”)
- (25) a. *It was clever that they used flashbacks in the film.* [ASCRPTIVE COMPLEMENT]
 (“Using flashbacks in the film was a clever idea.”)
- b. *It was cleverly that they used flashbacks in the film.* [SPECIFYING COMPLEMENT]
 (≈ “They used flashbacks in the film in a clever way.”)

The underlined words are all internal complements of the verb *was*. The meaning differences are rather subtle, and the paraphrases in parentheses are only rough approximations. But what is clear is that adjectives and adverbs are appearing in exactly the same syntactic function: complement of the copula.

⁸Notice that despite the distracting ending *ly*, the word *worldly* (like *deadly*, *goodly*, *lovely*, and a few others) is an adjective.

3.2.4 Adverb postmodifiers of nouns The most convincing evidence we have found for overlap in function between adjectives and adverbs — and the main new empirical contribution of Payne et al. (2010) — comes from a construction (not covered at all in *CGEL*) where adverbs (or adverb phrases) modify nouns in noun phrases. Here is one example:

(26) *I express my profound disappointment at the government's refusal yet again to take the high road and bring forth a motion to allow parliament to sit in committee of the whole.*

This an attested sentence, and so are (27)–(30) below. The underlined adverb phrase is modifying the preceding noun. It is certainly not modifying *take the high road*. The speaker is not complaining about a government that has repeatedly taken the high road; but about a government that never takes the high road: it has yet again refused to do so, and that refusal is being referred to by means of the phrase *refusal yet again to take the high road* (etc.). Here it is not clear what adjective could substitute: there don't seem to be any adjectives that capture the notion that 'yet again' expresses. To call it a repeated refusal would not be too far wrong, but it does not capture the idea that one more refusal in a long series has occurred. So the speaker has used an adverb to modify the noun.

In this case, the noun is an event nominalization, and the adverb semantically modifies the event. But that is by no means a necessary feature of the construction. In (27) the noun modified by an adverb is *organisation*, which does not refer to an event, but rather an institution:

(27) *The NHS and other health organisations internationally clearly need methodologies to support benefit analysis of merging healthcare organisations.*

The adverb *internationally* modifies the noun *organisations*. It is within the second NP in a coordination of NPs, *the NHS and other health organisations internationally*. It cannot be construed as modifying the verb *need*, as *clearly* is doing. Notice that **They internationally need it* is not really grammatical at all.

In this case the noun *organisation* is related to a verb etymologically. But in (28) not even this is true:

(28) *The unique role globally of the Australian Health Promoting Schools Association, as a non-government organization specifically established to promote the concept of the health promoting school, is described.*

Role is a noun not derived from any verb; yet here it is modified by an adverb (which separates it from its *of*-PP complement, in fact; this is quite a common feature of the construction).

The noun modified by the adverb can denote a person, or many people, or the weather, or an abstract entity like the central sequence in a film:

- (29) a. *the winner recently of both a Gramophone award and the Royal Philharmonic Society Award for Best Chamber Ensemble*
b. *the people locally*
c. *the weather recently*
d. *the centerpiece visually of the film*

Once the construction illustrated by (26) to (29) has been noted, new examples of it are easy to find. A few further examples (shortened a bit, and with the relevant adverb underlined):

- (30) a. *These major strides forward have been accomplished due to the support financially of the local community.*
 b. *Obtaining the information requested would entail the scrutiny individually of nearly 1,500 written answers...*
 c. *The argument collectively of these media moguls was “efficiency”...*
 d. *... the opinion generally of the doctors who appeared at the hearing was that each day of delay would further endanger the child.*

There is a clear difference between where adverb modifiers and adjective modifiers go:

- (31) a. *the opinion generally of the doctors*
 b. **the generally opinion of the doctors*
 c. **the opinion general of the doctors*
 d. *the general opinion of the doctors*

Adverbs modifying nouns are required to follow those nouns. But not all adverbs are allowed to modify nouns. For example, manner adverbs appear not to, even when the related adjective does go with the noun in question. Notice this contrast (illustrated with an invented example):

- (32) a. *This should appeal to heavy smokers.*
 b. **This should appeal to heavily smokers.*
 c. **This should appeal to smokers heavily.*
 d. *This should appeal to people who smoke heavily.*

Heavily can modify verbs, but it cannot modify such a meaning when it is (as it were) locked up inside a related noun like the agent nominalization *smoker*.

The developing phenomenon of noun phrases containing adverb postmodifiers of nouns is an ongoing topic of research. But enough is already clear to establish that the plausibility of the complementary-functions claim about adjectives and adverbs is entirely undercut, and thus the single-category claim is rendered untenable.

With no remaining possibility of maintaining that adjectives and adverbs have disjoint syntactic functions, we can completely dismiss the traditional definition of the two categories as unworkable, and also the modern idea that the two categories might be united.

4 Implications for language testing *I will not go down to posterity talking bad grammar. — Benjamin Disraeli*

The poor state of nearly all currently available material on English grammar is an issue that connects in a very tangible way to the work of the Language Training and Testing Center. How can we check on the extent to which a learner of a language is mastering its grammar? What I have so far argues that it would be an extremely bad idea to work by having learners answer questions about the grammar using traditional or generativist grammatical terms and concepts. What traditional grammar books say is very often inconsistent or incorrect, and what technical papers in modern linguistics say is generally of no use whatever. How, then, is one to proceed?

One familiar approach is to present material containing grammatical errors and ask the student to identify the errors. But this is a very bad idea. First, it exposes the student to ungrammatical strings, which is well known to be bad pedagogical practice: students are quite likely to unconsciously remember the word sequences they saw but forget that they were supposed to be errors. Second, it requires that suitable errors, uncontroversially agreed to be errors,

must be identified, and that raises the whole issue of the myths of prescriptive grammar (what Language Log writers refer to as ‘prescriptive poppycock’).

There are many grammatical and natural turns of phrase that have been wrongly stigmatized by usage writers of the past — or are believed to have been thus stigmatized. The ‘split infinitive’ (*to immediately resign*), for example, is so widely thought to be an error that grammar authorities condemn, the truth is that all grammarians agree, and nearly all major usage handbooks stress, that it is fully grammatical and in some cases essentially obligatory. I do not have time to treat this interesting topic in detail, regrettably. But I will briefly describe a fairly significant (and certainly expensive) related problem that arose in the USA a few years ago in the context of the Scholastic Aptitude Test, or SAT.

4.1 The SAT and the mythical ban on genitive antecedents

The SAT is devised by marketed by a large commercial organization, the Educational Testing Service (ETS), overseen by a committee that calls itself the College Board. The College Board decided in 2003 to use this sentence as the basis for a grammar question on a preliminary SAT (known as the PSAT):

(33) *Toni Morrison’s genius enables her to create novels that arise from and express the injustices African Americans have endured.*

Four places were underlined in the sentence, and the students taking the test were asked whether any of them were grammatical errors, or whether (the fifth option) there were no errors. The Board initially took the right answer to be that there are no errors in the sentence. They were correct. But Maryland high school teacher Kevin Keegan persuaded them that they were wrong. He claimed the sentence did have an error in it.

Keegan’s case was based on the fact that there are usage books that proscribe genitive noun phrases as antecedents of personal pronouns — that is, they deny that the pronoun *her* can refer back to the antecedent *Toni Morrison*.

This extraordinary nonsense does not stem from anything in traditional grammar. I am not sure it goes back any further than 1966, when Wilson Follett said this in the section on ‘Antecedents’ in his *Modern American Usage*:

(34) “A noun in the possessive case, being functionally an adjective, is seldom a competent antecedent of a pronoun.” (Follett 1966:66)

It is interesting that Follett did not actually phrase this as a firm prohibition. But Keegan apparently took it as one. And if you do that, then as Geoffrey Nunberg (2003) points out, ‘you’ll have to take a red pencil to just about all of the great works of English literature, starting with Shakespeare and the King James Bible (“And Joseph’s master took him, and put him into the prison”).’ Genitive antecedents of pronouns are found in almost all English prose: Dickens, Thackeray, Fowler’s *Modern English Usage*, Strunk and White’s *The Elements of Style* (Nunberg cites *The writer’s colleagues ... have greatly helped him in the preparation of his manuscript*), *The New York Times*, *The New Yorker*, and also the right-wing magazine *The Weekly Standard*, where the columnist David Skinner wrote a column expressing disgust at the lax standards of the College Board, not realizing that his own column had used the same construction (e.g., Skinner wrote *It may be Bush’s utter lack of self-doubt that his detractors hate most about him*, where *Bush* appears as a genitive-marked determiner and is antecedent of two pronouns, a genitive one and an accusative one).

The ridiculous incident became a significant national news story. After a long battle with Mr Keegan, ETS agreed to change the scores of every student who had taken the test. Everyone who had said there was an error in the question was scored as correct.⁹

Can it really be that a belief in a completely fictional rule can take hold among an educated public — that people with university degrees can come to believe something about their own native language that is so transparently false and easy to discredit? Apparently so. Arnold Zwicky (a Stanford linguist and writer for *Language Log*) read a review in which Professor Louis Menand (then at CUNY, now at Harvard) endorsed the ‘no genitive antecedents’ rule, and immediately did what seemed to him the obvious thing: he took down his copy of Menand’s best-known book, a much respected work entitled *The Metaphysical Club*, and started reading it to see whether Menand used genitive antecedents. He started spotting examples after only seven pages. In the following examples I underline the pronouns and their genitive antecedents, and bracket the NP within which the genitive NP serves as Determiner:

- (35) p. 7 ... *a phrase that became [the city’s name] for itself...*
p. 7 [*Dr. Holmes’s views on political issues*] *therefore tended to be reflexive: he took his cues from his own instincts...*
p. 25 [*Emerson’s reaction, when Holmes showed him the essay,*] *is choice...*
p. 28 [*Brown’s apotheosis*] *marked the final stage in the radicalization of Northern opinion. He became, for many Americans,...*
p. 31 [*Wendell Holmes’s riot control skills*] *were not tested. Still he had, at the highest point of prewar contention...*
p. 38 [*Holmes’s account of his first wound*] *was written, probably two years after the battle in which it occurred, in a diary he kept during the war.*

It could hardly be clearer: when writing his own prose, Menand regards genitive antecedents of pronouns (whether in the same clause or in the same sentence or across the discourse) as grammatical. Yet when writing about grammar he professes to believe that there is an important rule barring them. In an email to Zwicky he later confirmed that he still thought there was a rule that he ought to have tried harder to obey.

It is like finding someone who believes tomatoes are poisonous, despite seeing family and friends eating them all the time.

Yet the mythical prohibition on genitive antecedents is not the only piece of pseudo-grammar that the SAT test has been involved with. At least one SAT preparation book (Conner and Hixon, 1994) contains questions (with model answers given) that require students to identify error in phrases like *the town he was born in* or *an opinion everyone agreed with*. The supposed fault is the stranded prepositions! A third of a millennium has passed since John Dryden invented the notion that stranding prepositions was some kind of error, and still there are people who believe it.

The same book requires the student to find an error in sentences such as this one:

- (36) *It was my roommate who caught the thief stealing my wallet, which is the reason I gave him a reward.*

⁹This appeasement did not satisfy Mr Keegan, however. He claimed it was still unfair: his students had flagged it in the first place, but they had now been placed on a par with students who failed to spot the alleged error. Keegan thought his students’ scores were therefore relatively lower than they should have been!

The supposed error here is the supplementary relative clause introduced by a relative pronoun, *which*, having a clause as its antecedent. (I have no idea at all why this familiar use of supplementary relative clauses with clause antecedents should be under a ban.)

The worry about such pseudo-rules of grammar creeping into language testing is identified perceptively by Mark Liberman (2005). He makes the extremely important point that at the moment, for a student taking a test such as the SAT in the USA any ‘decision about how to answer becomes a judgment about the linguistic ideology of the College Board, not a judgment about English grammar and style’ — the tests are ‘testing knowledge of linguistic ideology rather than knowledge of English grammar’, and in order to answer correctly the student must guess how much of the traditional prescriptivist dogma the tester is assuming. To do well on the test you have to know not just how to construct and understand grammatical English sentences but also to ‘calibrate the College Board’s precise ideological stance’ on controversial usage points.

4.2 Better ways of testing?

The College Board recently switched over to testing writing on the SAT in part by having students write an essay. I have no idea how it is working: I don’t know whether there is much hope of assessing essays on a fair, reliable, objective, and replicable bases, even on the very crude 6-point scale the College Board will be using. But the old multiple-choice questions are still in use alongside the essay part of the test (see http://www.collegeboard.com/student/testing/sat/prep_one/sent_errors/pracStart.html). They still involve giving the student a possibly ungrammatical sentence and asking for a decision between four points of possible error and a fifth ‘No Error’ selection.

It seems to me that we need new techniques for testing command of the syntax of a living language, better ones than the SAT is using. I am no expert in testing, but do I have a suggestion, at least for students at the top end of the ability range. It may turn out not to work, but I might as well share it just in case. The idea is to test for ability to recognize and productively use tricky, genuinely robust, but under-described grammatical features that are entirely independent of prescriptive nonsense. The aim is to distinguish students who have a sense of what sounds like Standard English from those who do not, and to do it by having them construct appropriate phrases for given contexts using isolated words supplied to them.

Here is an example. Out of the following six word sequences, only one says anything at all; the rest are ungrammatical gibberish:

- (37) *The main thing to remember is to keep the oven door closed.*
**The main to remember thing is to keep the oven door closed.*
**The thing main to remember is to keep the oven door closed.*
**The thing to remember main is to keep the oven door closed.*
**The to remember main thing is to keep the oven door closed.*
**The thing to main remember is to keep the oven door closed.*

To get the words in the right order you need to know that *main* can only go before the head noun *thing*, and that the infinitival relative *to remember* can only follow the head.

Of course, I’m not suggesting that anyone should show students half a dozen word sequences like this, most of them gibberish. It would make their heads spin. It would NOT make a good exercise to say ‘Spot the good sentence’ (as noted above, it is not good policy to expose learners to erroneous examples). However, consider asking them this:

The following text has a place (marked by four dashes) where four words are missing:

If you open the oven door, what you are baking may be ruined. It may sink in the middle and become heavy. People often forget this, and imagine that it won't matter to open the oven door just for a few seconds. So when you're baking, the _____ is to keep the oven door closed.

Fill in the blanks in a way that makes sense, using these words:

{remember, main, to, thing}.

There are $4! = 24$ orders of the four words (all very common), so the probability of getting the right answer by guessing would be 1 in 24 (less than 0.042), and the chances of getting five questions of this sort right by guessing would be roughly one in 8 million.

Here's another example, based on one of the *wh*-word peculiarities of Table 1. Among the six word sequences in (38) there are three ways of saying exactly the same thing, and three sequences that are completely ungrammatical:

- (38) *How the doctors do this is really amazing.*
How that the doctors do this is really amazing.
The way how that the doctors do this is really amazing.
The way how the doctors do this is really amazing.
The way that the doctors do this is really amazing.
The way the doctors do this is really amazing.

These facts could be used to make a test item as follows:

A variety of new surgical methods have been developed over the past few years. For example, surgeons now have a technique that permits reaching inside the body near the heart and repairing a collapsed blood vessel without cutting into the chest. _____ the doctors do this is really amazing.

Fill in the blank in a way that is grammatical, meaningful, and appropriate to the context, using ONE of the following words:

{in, how, the, that, way, what}.

Now find another way to say the same thing, using TWO of the words:

_____ the doctors do this is really amazing.

Now find another way to say the same thing, using THREE of the words:

_____ the doctors do this is really amazing.

A student has a 1 in 6 chance of getting the first part right by guessing, but only a 1 in $\binom{6}{2} = \frac{1}{15}$ chance of getting the second part right, and only a 1 in $\binom{6}{3} = \frac{1}{20}$ chance of getting the third part right. Hence there is a 1 in 1800 chance (about 0.00056) of getting all three parts of the

question right, and an absurdly low probability of guessing correctly on five such questions in a row (one chance in $1800^5 \approx 5.3 \times 10^{-17}$).

With no chance of succeeding by guesswork, it's a puzzle you can solve if you know what sounds like natural English, and you can't if you don't. That might be a bit better than answering questions that test knowledge of the mythology of prescriptive grammar.

We need testing that is based on the actual truth about English sentences, so that we are actually testing knowledge of English. And the pure and simple truth about English grammar is that it is rarely pure and never simple.

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