Generative Grammar

0.　TOPICS COVERED IN THIS CHAPTER

This chapter covers some of the basic philosophical issues of syntactic theory.

a)　Syntax as a science
b)　Syntax as a part of cognitive science
c)　I-language vs. E-language
d)　Competence vs. performance
e)　Human Language Capacity (HLC)
f)　The scientific method
　　The distribution of person, number agreement in anaphors is used as an example.
g)　Modeling syntactic hypotheses using rules
h)　Prescriptive vs. descriptive rules
i)　Sources of data: judgments, corpora
j)　Distinguishing learning from acquisition
k)　Innateness and arguments for it
l)　Parameters as an explanation for language variation
m)　Choosing among theories: levels of adequacy (descriptive, observational and explanatory)

1.　CHANGES FROM THE THIRD EDITION

Textbook:
- Adjusted examples to be more inclusive
- Distinguished Syntax the discipline from Syntax the grammatical object
- Reorganization: section on Scientific method brought forward.
- Changed the Language/language distinction to i-language and e-language. Switched to a more traditional description of i-language.

- Introduced the idea of the Human Language Capacity (HLC)
- Added box on non-binary gender
- New GPS3: Non-binary gender
- New GPS5: Performance vs. Competence
- New CPS5: Off we go
- New CPS12: Explanatory adequacy

Workbook
- Reworked and updated WBE3 on corpora
- Added WBE5 i-language vs. e-language

2. IF YOU SKIP THIS CHAPTER

Some instructors have expressed to me the desire to do this chapter last instead of first. This is a matter of personal taste. If you leave it until last, then you will want to review number and agreement and the notion of anaphor before you do chapter 5 and will probably want to discuss evaluation metrics (levels of adequacy) before you do chapter 13. Parameter setting should be reviewed before chapter 6. The things that I would review in class before going on to chapter 2 include prescriptive vs. descriptive rules, and basic syntactic methodology and perhaps innateness.

3. IDIOSYNCRASIES IN THIS CHAPTER

My description of the scientific method will undoubtedly cause some people to raise their eyebrows. Of course, scientific investigation does not necessarily begin with data. (In fact, some people claim that it never does.) Often a hypothesis precedes any data gathering. However, from the perspective of the student, I think it is important to perceive the data as being the primary driving force behind linguistic science. So, I made this simplification for pedagogic reasons.

GENERAL PROBLEM SETS

GPS1. PRESCRIPTIVE RULES

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Common answers include: maintaining a standard across dialects for effective
communication, marking of social and educational status, and so-called "clarity"
in writing.
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GPS2. OBLIGATORY SPLIT INFINITIVES

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Clearly, these examples demonstrate that the prescriptive rule against split
infinitives does not accord with native speaker intuitions. As scientists,
our job is to describe linguistic facts, not legislate them; prescriptive
rules are of little interest in this endeavor.
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GPS3. NON-BINARY PRONOUNS AND ANAPHORS

Part 1. The data indicate that grammatical gender and number are the key determinant of English verb agreement forms. The point is that the referent, for whom personal gender and biological sex are uniquely determined, is the same in both (a-b) and (c-d). What differs is the expression referring to that referent. When the personal name *Chris* is used, the verb shows 3rd singular agreement, while the pronoun *they*, with grammatically plural number, triggers 3rd plural agreement.

Part 2. For determining the choice of the first part of the anaphor (*them-*), personal gender seems to be the determining factor. The key point is that the anaphor form does not depend on the form of the expression for the subject, but reflects properties of the referent. This differs from the determination of subject-verb agreement, as seen in Part 1.

Part 3. The dialects differ: dialect 1 (*Chris/they… themselves*) determines number on the second part of the anaphor (-*selves*) on the basis of grammatical number (of the first part of the anaphor, *them-*). Dialect 2 instead has the second part of the anaphor reflecting personal number (namely, singular).

Part 4. A revised hypothesis taking into account the observations above must be formulated separately for the two dialects seen in Part 3.
Dialect 1: an anaphor must agree in person, personal gender, and grammatical number with its antecedent.
Dialect 2: an anaphor must agree in person, personal gender, and personal number with its antecedent.

GPS4. JUDGMENTS

a) Prescriptive (*who* instead of *whom*)
b) Prescriptive (*me* instead of *I*)
c) Descriptive, syntactic (*my red* can't be a subject NP; count nouns like *refrigerator* can't appear without either plural morphology or a determiner)(Some students say semantic; I generally accept this answer too.)
d) Descriptive, syntactic (*that*-trace effect)
e) Prescriptive (*Hopefully* is supposed to mean "in a hopeful manner" not "I hope that…")
f) Prescriptive (split infinitive)
g) Descriptive, syntactic (wrong word order)
h) Descriptive, semantic (a sister must be a sibling)

GPS5. PERFORMANCE VS. COMPETENCE

a) Performance
b) Competence
c) Performance
d) Performance (or both?)
e) Competence

GPS6. LEARNING VS. ACQUISITION

Typical answers:
Learned: Reading, writing, mathematics, modern dance, the rules of basketball,
      driving.
Acquired: walking, facial recognition, sexuality, taste in food.
Other answers are, of course, possible.

GPS7. UNIVERSALS

Common answers include: shared world-view and perception of the way the world
works; a common ancestor language; convergent evolution under similar conditions
of use and acquisition; the idea that syntactic structures reflect some natural
or logical order in the exterior world.

GPS8. INNATENESS

It is really hard to come up with a good answer to this question, which is the
point of the question. It is hard to come up with an argument against innateness,
which suggests the hypothesis is likely correct! The best common answer I've
seen suggests performing an unethical experiment where one exposes a child to
a language that violates UG.

GPS9. LEVELS OF ADEQUACY

a)   descriptive
b)   observational
c)   explanatory

CHALLENGE PROBLEM SETS

CPS1. PRESCRIPTIVISM

This demonstrates that not only is the prescriptive rule inadequate as a
description of what English speakers actually do (it's incorrect as a statement
of fact), it misses out on an important subtlety, that the position splitting
the infinitive is *required* for certain meanings. This reinforces the idea that
the facts of language are to be discovered by careful scientific work, rather
than dictated by language "mavens".

CPS2. ANAPHORA

Part 1: The antecedent must precede the anaphor and agree in person, gender and
      number.
Part 2: The antecedents here are (or contain) quantifiers. Based on the data shown
      here, they allow any gender or number to appear on the anaphor. Note,
      however, that they are both grammatically singular, in that they both

obligatorily trigger singular verb agreement: *Everyone/Nobody is/*are...*
The possibility of plural anaphors may be related to the semantic fact
that we are quantifying over a set of individuals, and aligns with what
we saw in GPS3, that determination of anaphor form is sensitive to a wider
array of factors than subject-verb agreement, which is very narrowly tied
to grammatical person and number.

CPS3. YOURSELF

Part 1: Only *yourself* (and *yourselves*) are fully grammatical.
Part 2: On the face of it, this seems to contradict the rule. Students may note
that this structure permits an overt subject pronoun (in some registers
and dialects), which must be 2nd person (*Don't **you** hit yourself!*). Our
account, of course, will be that this understood silent subject is
syntactically present. This is a good opportunity for you to introduce
the notion of null arguments.

CPS4. CONSTRUCT AN EXPERIMENT

There are several directions students could take with this question. At a
minimum, they should consider the full set of possibilities for singular and
plural nouns in both the real subject and intervener positions. Other wrinkles
could include extending the intervener with a further prepositional phrase
(e.g., *The readiness of our conventional forces in peacetime is/are at an all-
time low*), and varying number in that position as well. Another way to test
the hypothesis would be to investigate questions in which the agreeing verbal
element appears before the subject (e.g., *Are the readiness of our conventional
forces at an all-time low?*).

Students may hold various opinions on how best to run such an experiment:
some will insist on careful experimental procedure and design, with large
numbers of subjects to gather reliable data. Others will be satisfied with an
informal consultation of their own judgments.

CPS5. OFF WE GO

Using the (overly) simple distinction between stative verbs and motion verbs,
it appears that the construction in question is restricted to motion verbs.
Students may notice interesting subtleties here: for example, there is a phrasal
verb *go off*, which can mean "explode": *The bomb went off*. But *off it went*
apparently cannot be used to express this meaning, and must instead indicate
directional motion.

CPS6. JUDGMENTS

Below I provide my own judgments on these sentences (√=fully grammatical); be
sure to allow for variation in your students' judgments, and in those of their
consultants.

a)   i.   √The students met to discuss the project.
        ii.   ?/*The student met to discuss the project.
        iii. √The class met to discuss the project.

(a.ii) is considerably improved if there is some understood person with whom the student is meeting (an advisor, say).

b)   i.   √Zeke cooked and ate the chili.
      ii.   √/?Zeke ate and cooked the chili.
Both are completely grammatical if it is understood that the first verb is used intransitively (e.g., Zeke ate (a lunch of pasta) and cooked chili; Zeke cooked (pasta) and ate chili). If both verbs are understood to take chili as their object, (b.i) is noticeably better than (b.ii). To my ear, these two possibilities (intransitive, transitive, or two transitives with same object) will sound distinct when read aloud (slightly higher stress on the second verb in the two-transitives reading).

c)   i.   *He put the clothes.
      ii.   */√[1] He put in the washing machine.
      iii. √He put the clothes in the washing machine.
      iv.   %/*/?He put in the washing machine the clothes.
1. (c.ii) is fully grammatical with the sense of "he installed the washing machine" (phrasal verb "put in"); note though that read aloud it will sound different, with greater stress on "in" than on "put". With the intended regular verb "put", this gets a *.

d)   i.   √I gave my brother a birthday present.
      ii.   √I gave a birthday present to my brother.
      iii. √That horror movie almost gave my brother a heart attack.
      iv.   ?/*/#That horror movie almost gave a heart attack to my brother.

e)   %Where do you guys live at?

f)   i.   √It is obvious to everybody that Tasha likes Misha.
      ii.   √The fact that Tasha likes Misha is obvious to everybody.
      iii. √/?Who is it obvious that Tasha likes?
      iv.   *Who is the fact that Tasha likes obvious?

CPS7. COMPETENCE VS. PERFORMANCE

This is an open-ended question. Expect creative answers. Possible answers might include musical competence versus musical performance, athletic activities, or even motor functions like walking. None of these distinctions are exactly language-like. Students should be evaluated more on the arguments they present rather than the particular answer they provide.

CPS8. IS LANGUAGE REALLY INFINITE?

Q 1: Premise 2 is contradicted by this assumption; if the set is finite, there
        is a longest sentence (or set of sentences).
Q 2: Assuming that E is infinite begs the question: we start out assuming the
        truth of the conclusion we wish to establish.
Q 3: This is a difficult question. Personally, I do not agree with Pullum and
        Scholz that there is anything formally wrong with this proof. It follows

standard practice in establishing the cardinality of infinite sets (the proof is entirely parallel to, say, Euclid's proof that the set of prime numbers is infinite).

Q 4: Rough proof using subsets
Assume that the set of sentences S is a subset of possible sentences of English (as determined by a native speaker), S contains the sentence Calvin likes tuna. S also contains the embedding construction John said that S which can be applied recursively to any other sentence in S. S is an infinite set, S is a subset of possible English sentences, therefore the set of possible sentences of English is infinite.

Rough proof using contradiction.
Assume there is a sentence S that is the longest sentence in the English language. Native speakers know you can embed any sentence under "John said that", therefore "John said that S" is a grammatical sentence and is longer than S. Therefore there can be no S which is the longest sentence in the English language.

CPS9. ARE INFINITE SYSTEMS REALLY UNLEARNABLE?

This question requires a fair amount of creativity on the part of the student, so I can't give you a definitive answer here. (I doubt most linguists would say there is a definitive answer anyway.) In short none of the equivalents are *necessarily* incompatible with UG (in fact they all require something innate even if it is just a good statistical learning mechanism); they mostly vary in the degree to which innateness is involved in grammar.

CPS10. INNATENESS AND PRESCRIPTIVISM

The important thing about prescriptive rules is that they must be learned explicitly; they exist because some language "expert" perceived a need to correct a common "error." But, of course, if Language really is an instinct, we already know how to do it, so to speak; we do not need additional pointers from the experts. From this perspective, prescriptive rules are as useful as advice from experts on how to grow your organs, say, something the body already knows how to do on its own.

CPS11. LEARNING

Q 1: Positive evidence for pro-drop can only come in the form of hearing sentences without subjects.
Q 2: The default setting must be non-pro-drop.
Q 3: This is a difficult question; on the face of it, this is exactly the sort of trigger that should lead children to analyze English as pro-drop. One way around this problem is to note that imperatives are special in several ways, including prosody and (lack of) agreement. Or perhaps innate instructions tell children to ignore imperatives when determining the pro-drop parameter.

CPS12. EXPLANATORY ADEQUACY 3

A reasonable answer is that it is sufficient for syntactic hypotheses to make
      predictions about language acquisition, without actually having to
      conduct new experiments. This is an open-ended question; expect creative
      responses here.

chapter 2

Parts of Speech

0. INTRODUCTION

This chapter focuses on parts of speech and how they are determined (on the basis of distribution, rather than semantically). Among the lexical categories, subcategories are distinguished on the basis of features.

1. IF YOU SKIP THIS CHAPTER

If you skip this chapter you will want to review the basic ideas of subcategorization before doing chapters 3, 6, 8 and 9.

2. INTRODUCTION

Unlike the first edition I do distinguish adjectives from adverbs. Enough of you were annoyed with me about the A category in the first edition that I've caved to pressure. This makes the rules in chapter 3 considerably more complex than the ones in the first edition. Honestly though, I still don't believe in the distinction, because distributionally they have so much in common.

3. CHANGES FROM THE THIRD EDITION

Textbook
- No major changes in content, just fiddled with the examples so they are more inclusive.
- Added CPS3: Mohawk Incorporation

Workbook
New problem sets:
- WBE2: Irish Morphology
- WBE3: Abaza
- WBE4: Edo
- WBE13: English Pronouns

GENERAL PROBLEM SETS

GPS1. NOUNS

The **lamps** had been lit, but the **blinds** had not been drawn, so that (**I**) could see **Holmes** as (**he**) lay upon the **couch**. (**I**) do not know whether (**he**) was seized with **compunction** at that **moment** for the **part** (**he**) was playing, but (**I**) know that (**I**) never felt more heartily ashamed of (**myself**) in my **life** than when (**I**) saw the beautiful **creature** against (**whom**)(**I**) was conspiring, or the **grace** and **kindliness** with (**which**) (**she**) waited upon the injured **man**. And yet (**it**) would be the blackest **treachery** to **Holmes** to draw back now from the **part** (**which**) (**he**) had entrusted to (**me**). (**I**) hardened my **heart**, and took the **smoke-rocket** from under my **ulster**. After (**all**), (**I**) thought, (**we**) are not injuring (**her**). (**We**) are but preventing (**her**) from injuring (**another**).

lamps, blinds, (I), Holmes, (he), couch, (I), (he), compunction, moment, part, (he), (I), (I), (myself), life, (I), creature, (whom), (I), grace, kindliness, (which), (she), man, (it), treachery, Holmes, part, (which), (he), (me), (I), heart, smoke-rocket, ulster, (all), (I), (we), (her), (We), (her), (another).

GPS2. VERBS

The lamps had been **lit**, but the blinds had not been **drawn**, so that I could **see** Holmes as he **lay** upon the couch. I do not **know** whether he was **seized** with compunction at that moment for the part he was **playing**, but I **know** that I never **felt** more heartily (**ashamed**) of myself in my life than when I **saw** the beautiful creature against whom I was **conspiring**, or the grace and kindliness with which she **waited** upon the (**injured**) man. And yet it would (**be**) the blackest treachery to Holmes to **draw** back now from the part which he had **entrusted** to me. I **hardened** my heart, and **took** the smoke-rocket from under my ulster. After all, I **thought**, we are not **injuring** her. We are but **preventing** her from **injuring** another.

lit, drawn, see, lay, know, seized, playing, know, felt, (ashamed), saw, conspiring, waited, (injured), (be), draw, entrusted, hardened, took, thought, injuring, preventing, injuring

GPS3. ADJECTIVES AND ADVERBS

The lamps had been lit, but the blinds had (**not**) been drawn, so that I could see Holmes as he lay upon the couch. I do not know whether he was seized with compunction at that moment for the part he was playing, but I know that I **never** felt **more heartily ashamed** of myself in my life than when I saw the **beautiful** creature against whom I was conspiring, or the grace and kindliness with which she waited upon the **injured** man. And **yet** it would be the **blackest** treachery to Holmes to draw (**back**) **now** from the part which he had entrusted to me. I hardened my heart, and took the smoke-rocket from under my ulster. After all, I thought, we are (**not**) injuring her. We are (**but**) preventing her from injuring another.

(not), never, more, heartily, ashamed, beautiful, injured, yet, blackest, (back), now,(not)

GPS4. PREPOSITIONS

The lamps had been lit, but the blinds had not been drawn, so that I could see Holmes as he lay **upon** the couch. I do not know whether he was seized **with** compunction **at** that moment **for** the part he was playing, but I know that I never felt more heartily ashamed **of** myself **in** my life than when I saw the beautiful creature **against** whom I was conspiring, or the grace and kindliness **with** which she waited **upon** the injured man. And yet it would be the blackest treachery **to** Holmes to draw (**back**) now **from** the part which he had entrusted **to** me. I hardened my heart, and took the smoke-rocket **from under** my ulster. **After** all, I thought, we are not injuring her. We are but preventing her **from** injuring another.

upon, with, at, for, of, in, against, with, upon, to, (back), from, to, from, under, after, from

GPS5. PART OF SPEECH 1

Students are asked to give only the Adjs, Advs, Ns, Ps, and Vs. They are not asked for Determiners or Ts.

a) The old rusty pot-belly stove has been   replaced.
   D **Adj Adj   Adj**(or N) **N**   T   T(or **V**) **V**

b) The red-haired assistant put the vital documents
   D   **Adj**   N   V   D **Adj**   N

   through the new efficient shredder.
     P   D **Adj**   **Adj**   N

c) The large evil leathery alligator complained to
   D **Adj   Adj   Adj**   N   V   P

   his aging keeper about his extremely
   D **Adj**   N   P   D   **Adv**

   unattractive description.
       Adj   N

d) I just ate the last piece of chocolate cake.
   N Adv V   D **Adj N**   P **Adj**(or N) **N**

GPS6. NOOTKA

1)   N
2)   V
3)   V
4)   N
5) First position in the sentence is a verb, and verbs take –*ma* ending. Second
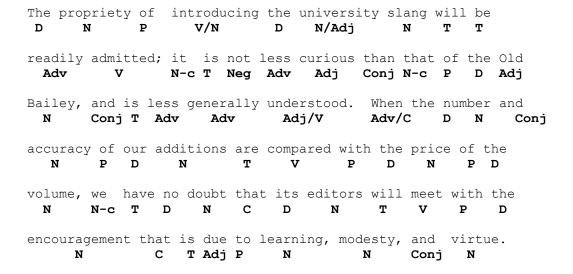   position in a sentence is a noun, and nouns take -ʔi suffix.

6) The same word functions as different parts of speech in the same language. Students may note that this is not so exotic; *work* and *man* may be both verbs and nouns in English as well: *to work*, *the work*; *a man*, *to man* (e.g., *to man the defenses*, though with a different meaning here).

GPS7. GENDER NEUTRAL PRONOUNS

Pronouns are a closed class. Evidently, co-opting a featurally mismatched, but already existing form is preferred to innovation. And note that in this case, speakers have not even innovated the use of this as a grammatically singular form; in contexts where it is used as a stand-in for an unspecified-gender single individual, it still occurs with plural verb agreement (They say…/*they says…). There is also considerable historical precedence for singular use of "their" including the King James Bible and works of Shakespeare (students obviously need not mention this, but it is useful ammo versus any belligerent prescriptivists).

GPS8. FUNCTIONAL CATEGORIES

The categories appear below the words. The categories D, T, Neg, Conj, C, and P are all closed class functional categories, so not marked as such below to save space. Likewise, only the closed lexical categories (here, pronouns) are marked for open/closed class below as N-c

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The propriety of  introducing the university slang will be
 D    N      P       V/N        D    N/Adj      N    T   T

readily admitted; it  is not less curious than that of the Old
  Adv       V       N-c T Neg Adv  Adj    Conj N-c  P  D  Adj

Bailey, and is less generally understood.  When the number and
  N     Conj T Adv    Adv       Adj/V        Adv/C  D   N    Conj

accuracy of our additions are compared with the price of the
   N     P  D     N       T      V     P   D    N   P  D

volume, we  have no doubt that its editors will meet with the
  N    N-c  T  D  N    C   D    N     T    V    P    D

encouragement that is due to learning, modesty, and  virtue.
     N        C   T Adj P    N         N       Conj   N
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GPS9. FUNCTIONAL CATEGORIES

All closed classes allow some small measure of innovation, but interjections seem to allow more than usual. For example, we find the recent introduction of LOL to indicate that the speaker finds humor (perhaps replacing hee hee or ha!)

GPS10. PART OF SPEECH 2

You will be surprised at the variety of responses students will give. A number of alternatives are reasonable in some cases; these are indicated where they are known to me.

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wabe N;           after the
were T;           closed class
mome Adj or N     after the.  If Adj, before a plural N; if N, before an agreeing
   verb (depending on whether the -s ending on raths is a [plural] or [3rd Sg
   Pres].
outgrabe V;       out- prefix
   [also possible are Adj or even P; cf. "...and the mole rats ugly", "...and
   the mole reads outside."]
Jubjub Adj;       after the, before bird
frumious Adj;     after the, -ious ending
bandersnatch N;   after frumious
vorpal Adj;       after his, before sword, possibly -al ending
manxone Adj;      after the, before foe
tumtum Adj;       after the, before tree
And Conj;         closed class
in P;             closed class
thought N;        after in
uffish Adj;       after in, before thought, -ish ending
he                This is tricky, I accept D, Pronoun, or Noun
Jabberwock N;     after the, before PP
whiffling         could be either a V (gerund) (after came, precedes PP) or an
                  Adverb (after verb came)
the D;            closed class
tulgey Adj;       between the and wood, -y ending
burbled V;        -ed ending
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The "modifies" criteria should be avoided here since it isn't clear what modifies what, given that many of these words are meaningless.

GPS11. SUBCATEGORIES OF NOUNS

Noun	Plural	Count	Proper	Pronoun	Anaphor
Cats	+	+			
Milk					
New York		?	+		
They	+	+		+	
People	+	+			
Language		+			
Printer		+			
Himself		+		+	+
Wind					
Lightbulb		+			

New York is tricky, it can't appear with a determiner, but it is of course a count noun, it can't appear with a determiner in English, because it's a proper name.

GPS12. SUBCATEGORIES OF VERBS

There will be some variability in the answers here. The canonical usages of the verb are represented in bold. I'd assume that the bold-faced ones were the minimum a student would give. Implicit arguments can play a little havoc with students' answers. I'd take this exercise as a means for opening up discussion about whether the verb *eat* in *I ate* and *I ate an apple* is the same or not.

spray	**V$_{[NP\_NP\ PP]}$** (ditransitive type 2)	*I sprayed the wall with paint.*
	V$_{[NP\_NP]}$ (transitive type 1)	*I sprayed the bullets.*

sleep   **V$_{[NP\_]}$** (intransitive)   *I slept.*
         V$_{[NP\_NP]}$ (transitive type 1) *I slept a deep sleep* (only possible with cognate objects).

escape   **V$_{[NP\_]}$**(intransitive), *He escaped.*
         V$_{[NP\_NP]}$(transitive type 1), *I escaped prison.*
         Also possible is *I escaped from prison*, which is probably a modified version of the intransitive usage (i.e. with a modifier instead of an argument)

throw   **V$_{[NP\_NP]}$**(transitive type 1) *I threw the ball.*
         V$_{[NP\_NP\ \{NP/PP\}]}$(ditransitive type 3) *I threw him the ball/I threw the ball to him.*

wipe   **V$_{[NP\_NP]}$**(transitive type 1) *I wiped the table.*

say   **V$_{[NP\_NP/CP]}$**(transitive type 2) *I said a lie/I said that he smells.*

think   **V$_{[NP\_NP/CP]}$**(transitive type 2) *I thought something/I thought that he likes peanuts.*
         The classic proverb *I think, therefore I am.* may encourage some students to give you V$_{[NP\_]}$(intransitive).

(be)grudge   **V[NP__ NP NP]** (ditransitive 2) *I begrudged him his trophy.*

thank   **V[NP__NP]**(transitive type 1), *I thanked him.*
             The idiom *I thank my lucky stars that it's not true.* may cause
             people some problems.

pour   V[NP__] (intransitive) *?the water poured onto the ground.*
             V[NP__NP](transitive type 1) *I poured the wine.*
             V[NP__NP {NP/PP}] *I poured her a glass of lemonade, I poured a glass of
             lemonade for her.*

send   **V[NP__NP {NP/PP}]**(ditransitive type 3), *I sent him the message/the message
             to him.*
             Some people may come up with *I sent a message*. This probably has an
             implicit goal. Implicit arguments are what make this problem set a
             little tricky. I'd accept this simple transitive too.

promise   **V[NP__]** (intransitive), *I promise.*
             V[NP__NP/CP](transitive type 2), *I promised him; I promised that we'd
             go.*
             V[NP__NP {NP/PP}]*I promised him an apple*, *?I promised an apple to John.*
             Promise is also an object control verb, which they might analyze as
             V[NP__NP {NP/CP}].

kiss   **V[NP__]** *They kissed,*
             V[NP__NP] *He kissed her.*

arrive   **V[NP__]**(intransitive), *I arrived.*

CHALLENGE PROBLEM SETS

CPS1. *-IAN* AND *-ISH*

This question relies on creativity on the part of students. One answer is that
the words can simply be of either category (Adj or N). Another possible answer
is that the examples without an overt noun head have a silent noun, something
like a null version of "one", or that there is a null nominalizer. Very good
students will notice that *Canadian* and *prudish* don't work exactly alike. You
can say "the very prudish" but "?the very Canadian" sounds odd (but may have an
interpretation like "the very Canadian among us" meaning those people with
Canadian characteristics). *Canadian* can be pluralized (*the Canadians*), which
really suggests it's a noun, whereas *prudish* can't: *the prudishes.
Interestingly, this behavior carries over to the *–ish* in words like *British*:
one can say "?the very British", as noted for *Canadian* above, but not *the
Britishes* (though note the possible clipped form: *the Brits*).

CPS2. NOMINAL PRENOMINAL MODIFIERS

Part 1. Based on the distributional criteria set out in the text, these should
be Adjs.

Part 2. These items do not behave at all like other Adjs, not allowing comparatives or adverbial modification. Note further that there *are* adjectival forms of these words (*leathery, watery*).

How do we resolve this? This is a challenge question, so you can expect a variety of answers. There are several possible solutions: (a) these are really compounds, combining with the head noun to form a single N, or (b), these are really nouns, but that our PSR system is wrong. This kind of issue makes for a really nice way to transition into X-bar theory, where categories are less important and the complement/adjunct distinction takes precedence. Note that examples like these will crop up repeatedly in the tree-drawing exercises in later chapters; if you want your students to use a consistent analysis of such forms, this is a good opportunity to present your favored solution.

CPS3. MOHAWK INCORPORATION

(Note: there is an unfortunate misalignment of the glosses with the words for this example in the text: *thíkʌ* means "that", and *o-'neróhkw-a'* means "NEUT-box-NOMINALIZER".)

Part 1. Based on the morphology they take, it appears that *rak* is a verb, and *'neróhkw* is a noun.

Part 2. The challenge here is that it is not clear if part of speech is relevant for parts of a word, rather than whole words. This is a complicated topic having to do with the proper boundaries between syntax and morphology; you may expect creative answers here. The simple answer is that it is part of a complex verb.

CPS4. INTENSIFIERS

Part 1. Generally speaking, intensifiers form a closed class. But students might notice some recent innovations in this class like *hella* (and *lowkey*?), which might lead them to conclude it's open class.

Part 2. Intensifiers cannot be preceded by anything other than another intensifier within any AdjP or AdvP. Some students might claim that adverbs like "completely" in *He completely destroyed the competition* are really intensifiers. I think this mixes up the subclass of manner adverbs and intensifiers. Again this is a challenge question so you can expect some variation in the answers.

CPS5. COMPLEMENTARY DISTRIBUTION

This of course suggests that complementary distribution doesn't work for part of speech categories, which is one of the reasons I think that many researchers don't use part of speech categories anymore. But, of course, they are in practical use all the time. This question is meant to make your students critically evaluate the material in the main body of the text.

CPS6. SUBCATEGORIES OF ADVERBS

This problem is tricky, because of course the position of adverbs is fairly free in English. If a student puts stress or focus on an adverb, then it can also shift in position or if they place a "comma pause" before or after the adverb then positioning becomes quite free. This makes the data fairly murky. The judgments definitely fall into the category of "subtle".

As with other Challenge exercises, this problem set should be viewed primarily as a means to get the students to think critically about the data and about the methodologies described in the chapter rather than having a "right" or "wrong" answer. Here's what I think, but answers may vary wildly from this:

Parts 1 & 2

TP scope adverbs like *yesterday* (*every day*, etc.) can appear before the subject or at the end of the sentence, but not in any of the intermediate positions
      Yesterday, I gave a waffle to Bill
      I gave a waffle to Bill yesterday
      *I had yesterday eaten the apple
      *I gave a waffle yesterday to bill

The temporal adverbs *frequently*, *always* and *again* (as well as *often*) can appear in pretty much any position (with slightly different interpretations):
      Frequently I give books to charity
      I frequently give books to charity
      I give books frequently to charity
      I give books to charity frequently
      Always, I give books to charity
      I always give books to charity
      ?I give books always to charity
      I give books to charity always
      Again, I gave books to charity
      I again gave books to charity
      I gave books again to charity

The aspectual adverb *almost* is generally only ok right before the verb, although a comma pause will license it at the end of a sentence.
      *Almost I gave it to him
      I almost gave it to him
      *I gave it almost to him
      ?*I gave it to him, almost

Adverbs that express speaker attitude and/or mood, such as *frankly, evidently, hopefully, luckily, necessarily, probably,* and *certainly* can appear initially, after T and at the end of the sentence. They typically don't appear between an object and PP in ditransitives. The sentence final orders get decidedly better with a comma pause.
      Frankly, I hate baseball.
      Evidently, Bill hates baseball.
      Hopefully, Bill eats meat.
      Necessarily, we bought the cheapest car.
      Probably, he didn't notice.
      Certainly, we love doing linguistics.

     Luckily, we love baseball.
     I frankly hate baseball/ I don't frankly like peanuts.
     Bill will evidently leave tomorrow.
     Bill has luckily bought his ticket.
     Bill will hopefully eat the stew.
     We will necessarily buy the cheapest car.
     He will probably not notice.
     We will certainly leave before the fireworks.
     *I gave the book frankly to Bill.
     *I gave the book evidently to Bill.
     *I gave the book hopefully to Bill. (This is ok if hopefully means "in a
     hopeful manner").
     ?*I gave the book necessarily to Bill. (Perhaps ok if Bill is contrastive
     with another potential goal)
     *I gave the book certainly to Bill. (this is ok if certainly means "in a
     certain manner")
     *I gave the book luckily to Bill.
     I hate baseball, frankly.
     Bill hates baseball, evidently.
     Bill eats meat, hopefully.
     Mary's going to come tonight, probably.
     We love doing linguistics, certainly.
     We love doing linguistics, luckily.

Adverbs that express manner, such as *patiently, earnestly, intently, completely,*
and *demandingly*, cannot appear initially without a strong comma pause. Their
preferred place is between the T and the V. They are also ok between a direct
object and a PP in intransitives:
     *Patiently, I gave medicine to Bill (but ?Patiently … I gave medicine to
     Bill)
     *Earnestly, I gave a letter to Bill.
     *Intently, I studied the book.
     *Completely, I read the paper.
     *Demandingly, I asked for a new copy of the book.
     I had patiently given him his medicine.
     I had earnestly given him a letter.
     I had intently studied the book.
     I had demandingly asked for a new copy.
     ?I gave the book patiently to him.
     I gave the book earnestly to him.
     I gave the book intently to him. (This is odd for pragmatic reasons)
     I put the questionnaire demandingly on the table.
     I gave him his medicine patiently.
     I asked the question earnestly.
     I read the paper completely.
     I asked the question demandingly.

Part 3
Initial Position: Generally speaking having more than one adverb in this
position is difficult. In particular adverbs like *yesterday* and those like
always are incompatible on semantic grounds. To the extent that having more
than one adverb is possible, and this is generally only the case with large

comma pauses, temporal adverbs like *yesterday* and modal adverbs like *frankly* are freely ordered:

> Yesterday, frankly, I was sick of his drunken behavior.
> Frankly, yesterday I was sick of his drunken behavior.

Final Position: with neutral stress and focus, multiple adverbs are difficult. I think the order is typically manner > aspectual > temporal. The position of modal adverbs seems to be highly dependent upon stress and focus.

> I give him his medicine earnestly often every day

Between T and V: modal > aspectual > manner > almost. (Keeping in mind that such sentences are pragmatically odd, and you can force reorderings with prosodic cues.)

> I hopefully often intently almost reach the finish line.

CPS7. SUBCATEGORIES OF ADJECTIVES

 two > big > thick > desperate > young > scaly > blue

CPS8. ANIMACY

Part 1: This can be described by insisting that *buy* requires that, when it appears in the frame [NP_1 __ NP_2 NP_3], NP_2 must be animate.
Its feature structure could be described as: V [NP __ $NP_{[+anim]}$ NP], V[NP __ NP PP], alternately V {[NP __ $NP_{[+anim]}$ NP]/[NP __ NP PP]}, or V [NP __ {$NP_{[+anim]}$ NP / NP PP}].
Part 2: The dative marker *a* appears when the direct object of the verb is animate. We could capture this fact with a feature structure like the following:
vimos V$_{[NP \_\_ \{NP-anim/NP+anim+dat\}]}$.

CPS9. IMPLICIT ARGUMENTS

In (1-4), we arguably have *idioms*, relatively fixed expressions with idiosyncratic syntax. So the atypical argument structure of *give* in these examples might be chalked up to the properties of the idiom, rather than being counter-examples to the idea that verbs have fixed argument structure.
     (5-6) present a different kind of issue for a theory of argument structure. In these examples, it is not so clear that there is any idiom present; rather, it just seems like some arguments are implicit, understood but not pronounced. In (5), for example, we understand that Dan gave money to charity. (6) is an even more extreme case, where both what was given (say, money) and to whom it was given (charity?) are reconstructed from context. Notice that the implicit arguments must be typical arguments for the verb; to my ear, no amount of context can allow "I gave last week" to mean "I gave John a noogie last week." In this light, it seems that whatever we want to say about these examples should be extended to examples like the following:

(i)   I ate lunch already.
(ii) I ate already.

     In (ii), the verb *eat* appears without any direct object. In the text, it was suggested that there are simply two verbs *eat*, one transitive and one

intransitive. But notice that in (ii), it is understood not just that I ate *something*, but indeed that I ate something typical (say, a meal). Crucially, (ii) cannot readily refer to atypical kinds of eating – say, a circus performer eating glass. This suggests that a more refined analysis may be appropriate, wherein a verb's argument structure is more fixed than suggested previously, but arguments may be implicit under certain circumstances. Much more would have to be said to spell this out (especially with respect to subjects, which cannot be dropped like other arguments).