Syntactic nuts, the core-periphery distinction, and universal grammar

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The issue that I focus on here is that of ‘reconciliation’ between the ‘periphery’ and the ‘core’.

The reconciliation is accomplished by dropping the notion of “core” as a principled theoretical term.

I take the view that the distinction between core and periphery is simply one of degree, generality, and perhaps complexity.
Outline

- Background: The continuum from words to rules
- The Simpler Syntax Hypothesis
- Words that go in the **Wrong Place**
- **Syntactic Nuts**
  - Sluice stranding
  - Other examples
- **Constructional idioms** in the VP
- Core grammar and its relation to UG
  - VP structure
  - Idiosyncrasy and generality
- Conclusion
  - Learning
  - What does UG have to do with this mess?
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The continuum from words to rules

Mainstream generative grammar makes two divisions among linguistic phenomena, with the goal of identifying those aspects of language where deep generality and rich abstract deductive structure are to be expected.
The continuum from words to rules

The first is the traditional division between grammar – the rules of the language – and the lexicon, which mainstream generative tradition takes to be the locus of all irregularity.
The continuum from words to rules

The second division, introduced around the time of Lectures on Government and Binding (Chomsky 1981), distinguishes between two parts of the grammar itself, the core and the periphery.
The continuum from words to rules

- The core rules represent the deep regularities of language, those that are governed by parameter settings.

- The periphery represents “marked exceptions” such as irregular verbs, for which there are no deep regularities. The research program idealizes the study of the language faculty to the study of the core:
The mainstream approach

“A reasonable approach would be to focus attention on the core system, putting aside phenomena that result from historical accident, dialect mixture, personal idiosyncrasies, and the like.”

(Chomsky and Lasnik 1993, reprinted in Chomsky 1995)
The mainstream approach

Such an idealization may indeed be “reasonable”®, but as always, an idealization carries with it an implicit promissory note to make good on the phenomena it has omitted. And “periphery” tends to become a tempting dumping ground for any irregularity one’s theory cannot at the moment explain.

Is it really “reasonable” to exclude dialect mixture and historical accident – can a first language learner take into account these distinctions?
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Simple Syntax Hypothesis

The approach that we have taken in *Simpler Syntax* and other work leads to a rather different perspective, motivated in large part by the Simpler Syntax Hypothesis:

**Simple Syntax Hypothesis (SSH):**
The most explanatory theory is one that imputes the minimum syntactic structure necessary to mediate between phonology and meaning.
Simple Syntax Hypothesis

- This hypothesis requires an evaluation metric, in the sense of Chomsky 1965.
- Such a ranks accounts of the phonology/meaning mapping in terms of their relative complexity,
- and permits us to say when a particular mapping in a language is “natural” or unmarked and when it is “exceptional” or marked.
On this view, what is most unmarked is most likely to be universal.

And there are many possibilities (perhaps infinitely many), that are linguistically possible but so highly marked that they are unattested.

But there are many marked possibilities that do exist: this is the ‘periphery’.
We find over and over again that “peripheral” phenomena can lead to judgments as sharp and unexpected as the “core” phenomena, and, recalling our basic goals, we are led to ask how the language learner could possibly acquire these “syntactic nuts.”

That is, the periphery presents at least as much a problem for acquisition as does the core.
In addition, we must bear in mind the problem of lexical acquisition

- Children acquire thousands of words in a relatively short time, and each word presents severe problems, particularly in the semantic domain; a vast and subtle experimental and theoretical tradition has grown up around this problem (see Bloom 2000 for a survey).

- In other words, even if we were to solve the acquisition problem for “core” grammar, it would still leave mysterious the acquisition of the rest of the language – which, including the lexicon, constitutes most of the language.
The logic of *Syntactic Nuts* is that there are constructions beyond the level of individual words that are readily learned, about which native speakers have sharp and reliable intuitions. They display various degrees of generality combined with irreducible syntactic idiosyncrasy.
What is the problem?

- The problem is not to give a formal account of them in some linguistic theory, by locating the idiosyncrasy in a feature or a stipulation.
- And the problem is not to show how the oddities of some construction in one language reflects regularities in some other language.
- Doing this may be reassuring to the syntactician, but it doesn’t help the learner figure out how the language works.
The problem is:

- to explain how these phenomena are acquired on the basis of exposure to the primary linguistic data.

(Cross-linguistic considerations may reflect a common basis in the architecture of Conceptual Structure, but they do not explain how learning takes place when one language realizes a particular conceptual structure in a fully systematic way while another does so with irregularities and exceptions.)
Occam’s Razor

Beyond this, once we have an account of the learning mechanism that can acquire syntactic nuts, Occam’s Razor demands that we demonstrate that this learning mechanism cannot also acquire those constructions that are fully general and widely exemplified in languages of the world, constructions that one might be tempted to locate in the “core”.
Occam’s Razor

- That is, it is not unreasonable, at least on the face of it, that a learning theory that is adequate for the lexicon and the “peripheral” rules would be able, with a suitable generalization mechanism, to learn the “core” as well.

- This is the hypothesis that we pursue, leading in a direction quite different from the mainstream program.
Two conclusions

- An idealization to the “core,” while a priori reasonable, has proven in practice to be systematically misleading.

- The traditional distinction between lexicon and grammar is mistaken.
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Words that go in the Wrong Place

- *Enough* follows its head.

(1) so big
too big
as big
*sufficiently* big
*enough* big
big *enough*
*big so*
*big sufficiently*

etc.
Words that go in the Wrong Place

- As a nominal modifier, where it functions like a sort of quantifier, it can go either before or after its head.

  (2) \textbf{much} pudding
  \textbf{more} pudding
  \textbf{sufficient} pudding
  \textbf{enough} pudding
  \textbf{*} pudding \textbf{much}
  \textbf{*} pudding \textbf{more}
  \textbf{*} pudding \textbf{sufficient}
  pudding \textbf{enough} (‘There’s pudding enough for everyone!’)
Words that go in the Wrong Place

The quantifiers *galore* and *aplenty* also go after the head rather than before it – obligatorily:

(3)  
many balloons  
numerous balloons  
*galore* balloons  
*aplenty* balloons  
balloons *galore*  
balloons *aplenty*  
*balloons many*  
*balloons numerous*
Words that go in the Wrong Place

- *Responsible*, unlike other adjectives, can occur either before or after its head.

(4)  
  a. the **responsible** parties
  the **guilty** parties
  b. the parties **responsible**
  *the parties **guilty**
Words that go in the Wrong Place

- Notwithstanding parallels other prepositions such as despite, in spite of, and regardless of in its semantics, but it can go on either side of its complement NP.
- The related word aside goes on the right of its complement, though aside from goes on the left:

(5) a. Notwithstanding
   Despite
   In spite of
   Regardless of
   your preferences, we’re going ahead.

b. Your preferences notwithstanding
   *despite
   *in spite (of)
   *regardless (of)
   we’re going ahead.
Words that go in the Wrong Place

c. Your preferences aside (*from), what kind of syntax is left to do?
d. Aside *(from) your preferences, what kind of syntax is left to do?
**Words that go in the Wrong Place**

*Hence* and *ago* are either prepositions which occur on the wrong side of their complement (6a) or intransitive prepositions which, uncharacteristically, require a specifier (6b).

(6) a. He’s leaving 3 years hence = He’s leaving in 3 years.
    He left 3 years ago = German Er ist vor 3 Jahren weggefahren.

b. He’s leaving 3 years hence = He’s leaving 3 years from now.
   *He is leaving hence/from now.
He left 3 years ago = He left 3 years before now.
   *He left ago.
??He left before now.
How are these exceptional words to be characterized?

- “ago-shift” [sic] etc.
  In the old days of generative grammar we could formulate a rule of “ago-shift” that applied to a single word; perhaps other, similar rules would apply to the others.

- [+wrongheaded]
  Or we might introduce a feature [+wrongheaded] on all of them and have a general movement rule that applied to words containing this feature.
To make this approach more appealing, maybe we could formulate matters in terms of head-movement, a ‘strong’ EPP feature that must be ‘discharged’ before ‘SPELL OUT’, etc., or some equivalent device.
“NP moves to Spec to satisfy the strong EPP feature of *ago* etc; the EPP feature of *before* is weak, ...”. 😊

I propose that the driving force is a strong EPP feature in [*ago*] which has to be overtly licensed, unlike the EPP feature of most prepositions, which is weak and does not have to be overtly licensed.
Words that go in the Wrong Place

And similarly for

- enough [EPP]
- galore [EPP]
- responsible [EPP]
- notwithstanding [EPP]/[EPP]
Structural Uniformity

Such a rule simply presumes that in underlying form these words must be regular, an idea that we have referred to as Structural Uniformity.

Structural Uniformity
An apparently defective or misordered structure is actually a distorted regular form.

(Simpler Syntax, Ch. 2).
Structural Uniformity

- A formulation in terms of a feature and a movement that is sensitive to the value of the feature localize the irregularity at a point in the grammar that preserves the underlying structural regularity in the language.
What does this story suggest about language acquisition?

- One possibility:
  - ... that children hear *ago, enough*, etc. in the “wrong” place, and, knowing somehow that it’s in the “wrong” place (because they are applying **Structural Uniformity**), they “correct the error” and construct a grammar in which it is in the “right” place in underlying structure.
  
  - Then, in order to create the right output, children construct a rule of “wrongheaded-shift” and tag the relevant words with the feature that this rule detects,

  - or (to be more mainstream) simply tag the relevant words with the ‘strong EPP feature’ and let general mechanisms do the work.
A more direct alternative (in the spirit of Occam’s Razor)

- Children hear these words in these positions, so that’s where they think they belong, in violation of the general phrase structure rules of English.
- That is, words are learned with their idiosyncrasies, in this case, with their position explicitly marked.
- The phrasal order of a language is not totally rigid, but is rather just the unmarked default, arrived at by the learner on the basis of frequency.
- We might then consider the stipulated positioning of ago/enough et al. as rather like morphological blocking, where, for example, the explicitly stored irregular form drank blocks the form *drinked that the regular rules would produce.
- This solution is of course more in tune with the Simpler Syntax Hypothesis, in that it posits no additional hidden syntactic structure or mechanisms.
A lexical solution

- Lexical entry: *ago* means ‘before now’
  - is intransitive
  - requires filled Spec

Hence:

```
   PP
  /   \
 Spec NP P' P
 /     |   |
 3 years ago
```

(which is what we get from the *movement*; it’s not so ‘interesting’, but is it ‘wrong’?)
These two solutions are not notational variants

- The feature+movement solution sees underlying form as altogether regular, and deviations from it are the result of movement. The consequence is that the learner must construct or recruit considerable abstract machinery to correctly produce and understand these forms.

- The direct solution dispenses with movement and abstract features that trigger movement, at the price of reducing the exceptionless regularity of underlying phrase order and of having some lexical items that specify their own position.

- In this respect, the word contains (or is) a rule for its syntax.
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(7a) is clearly understood as meaning the same as (7b).

(7) 

a. John went to NY with someone, but I couldn’t find out who with.

b. John went to NY with someone, but I couldn’t find out who John went to NY with.

(7a) is especially interesting because it contains not only the wh-phrase, but also a preposition from whose complement the wh-phrase has apparently been moved: **sluice-stranding**.
Sluice-stranding

- The issue for syntax, of course, is the source of the syntactic fragment *who with*.
- As usual, the strategy in MGG, following a widely held tradition of uniformity, is to derive it from an underlying regular structure, in fact from the underlying structure responsible for (7b).
The problem is where *who with* comes from

- The literature offers two main analyses. Both assume what we call *Derivational Uniformity*.

**Derivational Uniformity**: Where possible, the derivations of sentences are maximally uniform.
By Derivational Uniformity, since sluice-stranding is like a wh-question, it must have the structure of a wh-question and undergo wh-movement.

The first analysis, represented by Ross himself, assumes an underlying form of the usual sort; then *who* moves to the front in the usual fashion. The omitted part then deletes (alternatively it could be empty to start with), leaving just the fragment *with*.

The second analysis, of which Lobeck 1995 is representative, first fronts the entire PP. Then – on the condition of the rest of the sentence being empty, either by deletion or base generation – *who* is moved around the preposition.
Derivational Uniformity

(8) a. *Ross’s derivation:*
... but I couldn’t find out [\text{CP} \text{John went to NY with who}]
→ [who John went to NY with t]
→ [who [John went to NY] with t]

b. *Lobeck’s derivation:*
... but I couldn’t find out [\text{CP} \text{with who(m) John went to NY t}]
→ [\text{CP} \text{with who(m)}]
→ [\text{CP} \text{who with}]

(*whom with*)
The difficulty is that sluice-stranding is both more productive and more restricted than these accounts would suggest.
Productivity

- Ross notes that sluicing is possible where the purported extraction site normally forbids extraction.
- (9a) illustrates for ordinary sluicing of a PP;
- (9b) illustrates for Sluice-stranding.

(9) I saw a fabulous ad for a Civil War book, but I can’t remember
   a. by who(m).
   b. who(*m) by.
   c. * by who(m) I saw a fabulous ad for a Civil War book.
   d. * who I saw a fabulous ad for a Civil War book by.
Restrictiveness

- Sluice-stranding severely constrains what combinations of wh-word and preposition are acceptable.

(10) *Normal pied-piped preposition*
He left with someone, but I couldn’t figure out with who(m).
She says she’s happy, but it’s not clear with what.
They arrived with some friends. – Really, with how many?
You’ve got to cut this bread with a knife. – Ok, with which one? / Ok, with which knife? / Ok, with which?
Restrictiveness

- Only a restricted range of these are grammatical with sluice-stranding. Full wh-phrases are impossible.

(11) *Sluice-stranding:*

- He left with someone, but I couldn’t figure out who(*m) with.
- She says she’s happy, but it’s not clear what with.
- They arrived with some friends. – *Really, how many with?*
- You’ve got to cut this bread with a knife. – *Okay, which one with? / *Okay, which knife with? / *Okay, which with?*
Restrictiveness

Not all prepositions are possible with all wh-words. 

(12)  a. She was talking about something, but I couldn’t figure out about what/ what about.

b. She was talking about someone, but I couldn’t figure out about who / *who about.
Restrictiveness

- Individual speaker judgments will vary slightly (probably because of different experiences and slightly different directions of generalization).
Standard approach

- Under standard assumptions, sentences with sluice-stranding have perfectly regular underlying structure; but they are derived by applications of wh-movement that sometimes violate the regular constraints on movement, and

- the acceptable combinations of wh-word+preposition nevertheless must be learned pretty much one by one (though there are subregularities that have the flavor of those in semiproducive morphology).
Since UG is supposed to take care of the constraints on movement, it must contain a rider that suspends the constraints when movement takes place across deleted (or empty) structure – this is Ross’s proposal, updated by Merchant 2001.
Alternative

Suppose instead that the learner acquires the possible forms of sluice-stranding directly, on the basis of experience with each one, without reconstructing a derivation from a regular sentential underlying structure.
This implies that the interpretation of (9a) as synonymous with (9b) is not a matter of common underlying syntax: it is a matter of the syntax-semantics interface.

(9) I saw a fabulous ad for a Civil War book, but I can’t remember
a. by whom.
b. who by.

And the bizarre syntax of the construction is not a matter of derivation from a fully regular form; rather, it just is a fact of English that such forms are possible.

P-stranding is a fact of English, so it should be no surprise that sluice-stranding occurs in English and not other languages, although how it came into existence still needs to be explained.

This would be the conclusion urged by the Simpler Syntax Hypothesis.
This case presents two complications beyond those of *enough*, etc.

- The peculiarity of sluice-stranding cannot be localized in particular words.
  - It is not *who, what, how much*, and *where* per se that are exceptional, nor is it particular prepositions.
  - Thus no distribution of features on individual *words* can account for the exceptionality.
  - Rather, what is exceptional is the syntactic structure itself.
- Sluice-stranding extends the normal sluicing structure to a wh-phrase plus a stranded preposition.
  - It is sufficiently special that its individual cases must be learned one by one.
  - But these cases are not marked on individual words: it is the combination of words that is idiosyncratic.
Sluice-stranding, because it involves wh-phrases, superficially looks like a (sub)case of wh-movement, one of the “core” rules of grammar.

But if the wh-phrase in sluice-stranding is interpreted without movement from a canonical underlying form, what does this say about normal sluicing, not to mention wh-movement itself?

Is movement the right analysis?

We suggest in *Simpler Syntax* that it is not.
These are not isolated cases (see *Syntactic Nuts*).

(13) no matter*(how heavy the load/what the cost/the difficulty)*; 
    -ever (as in *whatever the cost*); 
    the comparative correlative (*the more he eats the hungrier he gets*) (also *Simpler Syntax*); 
    would rather; 
    *had better;* 
    infinitival relatives; 
    parasitic gaps; 
    *Not*-topics (*not in my car (you won't)*); 
    Italian *loro*; 
    dative NP in English; 
    the possibility & scope of clitic climbing; 
    English tags, 
    ...
And there’s more ...

- There are quasi-idiomatic V-AP combinations conveying the meaning ‘become’, eg.

  (14)  
  
  become/get/*turn/*come/*go/*fall ready 
  become/get/turn/*come/?go/*fall red 
  become/*get/*turn/come/*go/*fall true 
  ?become/*get/*turn/*come/*go/*fall false 
  become/get/turn/*come/go/fall silent 
  become/get/turn/*come/*go/*fall noisy
And there’s more ...

- Cases such as these are characterized by regularity combined with irreducible idiosyncrasy that has to be noted explicitly in the lexicon or somewhere else in the grammar.

- The regularities may well follow as specific instantiations of general structures and principles available from UG, but the idiosyncrasies do not, as far as I know, and thus need to be learned on the basis of exposure to the facts of the language.
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Constructional idioms in the VP

- Let us consider now the principles by which a verb’s semantic arguments are realized in syntax, surely a supreme instance of a core system.
- The core principle is that the verb licenses everything in the VP adjacent to it, in particular direct objects. Adjuncts, which are not selected by the verb, are out to the right.
Constructional idioms in the VP

But now consider cases like (a-c). These are syntactically congruent with verb-particle constructions like (d,e), in which the verb licenses its complements in the usual way.

(15)a. John sang/drank/sewed **his heart out**. [also **his guts**]
   b. Mary yelled/wrote/programmed **her head off**. [also **her butt, her ass, her tush**, etc.]
   c. Leslie talked/cooked/composed **up a storm**.
Constructional idioms in the VP

- These have the form of the verb-particle construction.
- Unlike the normal verb-particle construction, these have fixed order with respect to the object and different orders to boot.

*Normal verb-particle constructions:*

(16)  a. Pat threw the trash **out**.
    b. Leslie picked **up** the garbage.

- We take it that this is just a brute fact about these cases.
The difficulty is that in (15a-c), the verb does not license the complements.

Rather, X’s heart out, X’s head off, and up a storm are idiomatic combinations, all of which mean approximately ‘intensely and/or excessively’ – that is, semantically they function like adverbials.
Constructional idioms in the VP

Yet at the same time, they apparently “use up” the direct object position, since the verb is not allowed to license its own object:

(17) a. *Pat sang the Marseillaise his heart out.
    b. *Terry yelled insults her head off.
    c. *Leslie cooked eggs up a storm.
A possible solution

- Preserve phrasal syntax as a locus of free combination, but do not require that the verb must license its syntactic complements.

- \([V \, X’s \, heart \, out]\) is a lexical VP, where \(V\) is a freely chosen verb and \(X\) is a pronoun bound to the subject; all of its constituents are licensed by the idiom, not by the verb.

- The idiom is combined with the verb in syntax, where free phrasal combination properly belongs.

- Because this idiom prescribes the form of the VP, there is no room left in the VP for arguments licensed by the verb.
The price for this solution

- a richer treatment of the syntax-semantics interface, in particular a new kind of principle for licensing syntactic complements of the verb; and
- a new sort of lexical item consisting of a VP with a free choice of verb. If these adjustments were required for just this case, they might not be worth it. But this is not an isolated case. English harbors several more of these VP constructional idioms, of which (18) illustrates four.
More VP constructions

    Elmer hobbled/laughed/joked his way to the bank.
    (≈ ‘Elmer went/made his way to the bank hobbling/laughing /
joking’)

b. *Time-away construction* (Jackendoff 1997b):
    Hermione slept/drank/sewed/programmed three whole
    evenings away.
    (≈ ‘Hermione spent three whole evenings sleeping/drinking /
    sewing/ programming’)

c. *Sound+motion construction* (Levin and Rappaport Hovav 1995):
    The car whizzed/rumbled/squealed past Harry.
    (≈ ‘the car went past Harry, making whizzing/rumbling /
squealing noises’)

d. *(One case of)* *Resultative construction* (above references
    plus Simpson 1983, Goldberg and Jackendoff 2004)
    The chef cooked the pot black.
    (≈ ‘the chef made the pot black by cooking in/with it’)
More VP constructions

- These constructions preclude the verb selecting its own object:

(19) a. *Elmer told jokes his way to the bank.
    b. *Hermione drank scotch three whole evenings away.
    c. *The car made loud squeaks past Harry.
    d. *The chef cooked the beans the pot black.
More VP constructions

- There is no way to predict the meanings from the words yet in each case the choice of verb is free within semantic limits – as long as it is intransitive.

- Hence it doesn’t make sense to list the full VPs as idioms like *kick the bucket*. 
More VP constructions

The approach urged by Goldberg 1995, Jackendoff 1997a, and Goldberg and Jackendoff 2004 is to view the constructions in (16), like (14a-c), as lexical VP idioms with open verb positions. Unlike (14a-c), these idioms also select other arguments – within VP to be sure, but not selected by the verb:

(20) a. \([_{VP} VX’s\ way\ PP]\), ‘go PP, while/by V-ing’
b. \([_{VP} VNP\ away]\), ‘spend [NP amount of time] V-ing’
c. \([_{VP} VPP]\), ‘go PP, making V-ing noise as a result of motion’
d. \([_{VP} VNP\ AP/PP]\), ‘make NP become AP/PP, by V-ing’

Because the idiom dictates the form of the VP, there is no room for the verb to have its own arguments there; this is why the verb must be intransitive.
The sound+motion (squeal past Harry) and resultative cases (cook the pot black) are especially interesting because they have no special morpheme such as heart out, way, or away that overtly marks them.

All there is to mark the sound+motion case is the semantic clash of a sound emission verb against a path complement; to mark the resultative, the presence of an object and a PP that the verb would not normally license.

That means that there can be no word in the lexicon marked for these special interpretations.
More VP constructions

But where then do the rules of interpretation encoded roughly as (20c,d) belong in the grammar?

If *kick the bucket* is in the lexicon, and *V X’s heart out* is in the lexicon, and *V X’s way PP* is in the lexicon, then the logical place for sound+motion and the resultative is in the lexicon as well.

That is, the lexicon must contain, besides words and idioms, pieces of meaning-bearing structure without phonological content.

Thus we are dealing here with pure “constructional meaning.”
More VP constructions

- There is no question that these constructions in are “peripheral”, in the sense that
  - every language has to have a way for verbs to license arguments, but not every language has to have this particular way.
- Certainly these constructions in English are peculiar and must be learned.
- But it precisely in this that their interest lies.
More VP constructions

Finally, if this account of VP constructions is correct on empirical grounds, it supports the Simpler Syntax Hypothesis, in that,

- although the items contributing to syntactic structure are unusual,
- the syntactic structure itself has nothing special about it – no extra nodes, no hidden elements, no movements or deletions.
The constructional approach

- We note also that this “constructional” approach lends itself to other phenomena discussed earlier.
  - The “wrongheaded” elements such as *enough* and the geographical words such as *ocean* are like *X’s heart out*, in that they carry with them a syntactic frame that dictates how they are integrated with the phrase in which they occur.
  - Sluice-stranding is defined by an unusual syntactic structure \([_{CP} \text{wh-word } P]\), of which the possible instances are listed. It thus parallels the family of NP+particle idioms *X’s heart out, X’s head off, X’s butt off*, etc., which have a common pattern made of known words but which have to be learned one by one.
The constructional approach

- This suggests that at bottom all peripheral constructions can be treated as special sorts of lexical items.
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Core grammar and its relation to UG

- An obvious objection: “This may be all well and good for the periphery. But that has no bearing on the core, which has quite different properties altogether. The periphery may be learned by brute force, like words, but the core isn’t. We know the core is very complex and abstract, so it requires a different sort of learning theory.”

- (Word learning is far from brute force – it involves very sophisticated use of environmental input. But let’s put that aside and concentrate on the core.)
VP structure

- The argument:
  - English VPs show degrees of generality from specialized idioms to quasi-idioms to constructions to full generality.
  - They are specializations of X-bar theory
    a. $\text{XP} \rightarrow \ldots \text{X} \ldots$
    b. $[\text{XP} \ldots \text{X} \ldots]$
  - But X-bar theory cannot account for them (since they are not parametric variants).
  - Conclusion: There is no principled distinction between core and periphery, only a gradation of generality.
VP structure, periphery to core

- $[\text{VP V X} \text{’s heart out}]$ [‘periphery’]
- $[\text{VP V NP Prt}]$ [‘periphery’]
- $[\text{VP V PP }]_{\text{sound+motion}}$ [‘periphery’]
- $[\text{VP V ...}]$ [instantiation of ‘core’]
- $[\text{XP ... X ...}]$ [‘core’]
VP structure

- The last is of course (part of) X-bar theory, a basic component of UG – at last a believable candidate for a component of an innate language capacity.
Departures from X-bar theory

- There are other rules of English that are not specializations of these principles, at various levels.
  - The “wrongheaded” words carry with them structures that violate normal head position for the phrases they are embedded in; that is, they are violations of default phrase structure for their categories.
- As is well known, gerundive complements such as John’s habitually drinking scotch occur in all the syntactic positions appropriate for NPs; but they are headed by a V, so they violate \([_{XP} \ldots X \ldots ]\).
Departures from X-bar theory

- An even worse violation of $[_{\text{XP}} \ldots X \ldots ]$ is the minor construction exemplified by *head to head, side by side, dollar for dollar*, and so on (Williams 1994, Jackendoff 1997b, Jackendoff in preparation).

- These expressions occur in adverbial positions, have no obvious head, and permit no complementation and only extremely limited modification (e.g. *day by miserable day*).

- But they too are expressible in a constructional format.
Idiosyncrasy and generality

- These analyses lead us to believe that there is a smooth continuum of linguistic material in the lexicon, ranging from words through idioms through truly idiosyncratic constructions through more general but still specialized constructions to the most general core-like principles.

- On this view, there is no principled distinction between core and periphery, only a gradation of generality.

- What is needed is a theory of markedness (in the sense of Chomsky 1965) in which we can adequately characterize degrees of idiosyncrasy in a principled way.

- Restricting ourselves to studying only the most general aspects of language gives a very incomplete (and distorted) picture of how language works.
Outline

- Background: The continuum from words to rules
- The Simpler Syntax Hypothesis
- Words that go in the **Wrong Place**
- **Syntactic Nuts**
  - Sluice stranding
  - Other examples
- **Constructional idioms** in the VP
- Core grammar and its relation to UG
  - VP structure
  - Idiosyncrasy and generality
- Conclusion
  - Learning
  - What does UG have to do with this mess?
Learning

- The learner stores current analyses of novel heard utterances in the lexicon.
- The learning procedure then attempts to construct new and more general lexical entries on the basis of positive experience, in which common parts of existing lexical entries are retained and differing parts are replaced by a variable. (See Tomasello 2003, for example)
- This makes the new lexical entry function as a schema or rule that encompasses existing entries and permits construction of new utterances.
- In turn, this schema along with others may be further abstracted into a still more general schema by replacing further dimensions of variation with variables.
- The result is a hierarchy of lexical entries, in which each layer consists of generalizations of items in the more specific layers below (the term used in HPSG and Construction Grammar is *inheritance hierarchy*).
- The key is how and when generalization works.
What does UG have to do with this mess?

- We conceive of UG as pre-specifying the highest, most general layer of the hierarchy.
- The ultimate foundation for this general layer is arguably not syntax *per se*, but Conceptual structure (see Culicover 1999).
- The gradual creation of lower, more specialized levels from idiosyncratic input is guided by the criterion that, if at all possible, lower levels should be specializations of the highest layer, so that the hierarchy is maximally coherent.
What does UG have to do with this mess?

- Thus UG guides, but does not determine, the course of language acquisition.
- It is the heart of the evaluation metric, in the sense of Chomsky 1965.
- If the input contains curiosities such as *who with*, the child can learn them by the usual procedures, even if they do not fall entirely under UG.
- It is just that these constructions fail to generalize any further with anything else, and hence remain *sui generis* excrescences on the language.
What does UG have to do with this mess?

- On the other hand, relatively “core” phenomena are direct specializations of UG, and represent degrees of abstraction and generality that likely could not be achieved without the principles of UG as “goals” or “attractors” for the process of generalization.

- In short, with the addition of these UG “attractors”, a theory of markedness, and an adequate account of generalization, a theory adequate for acquisition of the lexicon and the ‘periphery’ may also be adequate for the ‘core’.
The End

- Thank you