Morphology Today
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I. What we know

(1) Morphology is realizational (cf. traditional transformational grammar, Anderson, Beard)
   a. underspecification (i.e., paradigm effects – see (4-5))
   b. blocking (to account for blocking on non-realizational theories one needs competition at the word level)

(2) Realization involves impoverishment (Bonet, Grimshaw, Bresnan)
   a. emergence of the unmarked (appearance of a less marked affix in a more marked environment)
      deletion of features prior to phonological realization, or ranking of "structural constraints" barring the expression of certain features over "faithfulness" constraints requiring the expression of features.
   b. paradigm effects (syncretism)
      e.g., no gender distinctions in plural (delete gender features in the context of plural)

(3) Phonological structure follows/realizes/depends on syntactic structure (Baker, etc.)
   a. "mirror principle" effects vs. templatic structure
   b. locality within words follows syntactic locality domains
      cyclic derivations (derivation by phase) within words and within sentences define locality for phonological and semantic interpretation

(4) *He walk to school every day.

(5) (4) is bad because "walks" exists for third person singular subjects. The zero present tense suffix is clearly underspecified for person and number features, but to know that you don't use zero for third person singular subjects, you must know that a special suffix exists for such subjects. This competition effect – a paradigm effect – requires a realizational approach to morphology.

(6) Distributed Morphology embodies morphological lessons of 20th century:
   a. "Late Insertion" = realizational approach
   b. Vocabulary Insertion (providing the phonological form to structures built by the grammar) interprets syntactic structure = syntax all the way down
Distributed Morphology provides the proper account of "possible words."

a. Can explain why certain phonological forms can't have certain meanings (to generate the meaning in question would require a particular syntactic structure, which would have a different phonological interpretation – i.e., blocking)

b. Can explain why in some cases more marked constructions block less marked constructions ("he walks" blocks "he walk") while in other cases less marked constructions appear to block more marked constructions ("se lo" blocks "le lo" in Spanish)

Emphasis today: lexical relatedness and blocking

a. possible vs. impossible relations between words mediated by the grammar
b. possible vs. impossible words determined by the grammar

Counter claim: 21" Century morphology = "Emergent Morphology"?

a. we memorize "surface" forms of whole words
b. morphological structure = emergent properties of the lexicon of stored forms

Pushed by "connectionists" (e.g., Seidenberg) and also certain linguists (e.g., Burzio)

However, study of classic issues of morphology:

a. lexical relatedness (compare: comparable)
b. blocking (give, gave, *gived)
c. distribution of information in words (nominalization-s vs. *nominize-sation)
d. distribution of phonological pieces in words (children, childrens)
e. paradigmatic relations among words (I walk, you walk, we walk, s/he walks, …)

all demand the (de)compositional (structural) approach to morphology

Crucial issue: how are distinct linguistic objects “related”?

a. emergent morphologists: relatedness defined in terms of similarity (of sound and meaning)
b. distributed morphologists: relatedness defined in terms of identity (of constituents/features)

[Same question as for sentences/syntax. Consider "emergent syntax." In, "The cat is on the mat," the locality of the sound/meaning connection, /kæt/ = CAT, would be discovered rather than presupposed, just as the non-string-local realization of subject/verb agreement, "The cat that eats the rats is (*are) on the mat," is discovered on emergent/connectionist approaches.]

DM (=standard generative morphology): Words are related to the extent that they contain identical pieces (e.g., phonological features, morphological features,
semantic features, syntactic features, roots) and/or identical structures (so, for example, “happiness” and “verticality” show the same structure).

(14) Crucially, the relation between, e.g., “gave” and “give” cannot be reduced to a semantic and phonological relationship. Blocking depends on “gave” being the past tense of an item that “give” is an un-tensed version of. Defining what “an item” is requires symbolic identity, since no semantic theory would unite all uses of “give/gave” as a semantic family excluding other verbs.

Outline:

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II. Distributed Morphology (A decompositional theory)

(15) Syntax all the way down: all composition is syntactic composition (really: even where semantic composition is opaque, as in con-ceive, de-ceive, re-ceive, per-ceive…)

(16) Minimalist Syntax structure of the grammar: syntactic composition feeds phonological and semantic interpretation cyclically ("phase" = cycle)

(17) The phonological form of morphemes is determined at the point of phonological interpretation.
(18) All words built from roots (like √CAT). So the noun, “cat” is the root √CAT with a “little n” nominalizing affix, phonologically realized as zero.

(19) The meanings (and pronunciations) of roots are fixed in the environment of the first category-determining head (n = noun, v = verb, a = adjective) to attach to the root. Any structure attached higher than the first category head above the root must take (and perhaps manipulate) the meaning (and pronunciation) determined in the environment of the lower category head.

(20) This a version of Chomsky's "derivation by phase." Each category head is a phase delimiter, and triggers interpretation of its complement. Heads adjoined via head-movement to another head count as being in the complement of this higher head, so head movement is not an escape hatch for phonological and semantic interpretation in a phase.

(21) Claim:
   a. the distribution of information in a word is syntactically determined. So if you want to know why plural occurs outside of a nominalizing head inside a word, you ask, why should plural attach outside of a noun (rather than inside) in the syntax
   b. the distribution of phonological pieces (= Vocabulary Items inserted via competition in the phonology) is also determined syntactically. Thus phonological pieces realizing the same syntactic/semantic features will occur in the same (hierarchical) place in a word.

(22) Contrast with other (de)compositional theories of morphology:
   a. Lexical Morphology and Phonology (for Kiparsky, a “realizational” theory, like Anderson’s A-Morphous Morphology)
      i. distribution of phonological pieces determined by phonological properties of affixes rather than strictly by their syntactic/semantic content
      ii. (word structure is distinct from syntactic structure, since the Lexicon feeds the syntax)
   b. Lieber-style Lexical Morphology
      i. distribution of phonological pieces determined by arbitrary subcategorization frames carried by affixes = templatic morphology – see Section IV
      ii. (word structure is semi-autonomous from syntactic structure, since the Lexicon feeds the syntax)
(23) The major defeat of Lexical Phonology & Morphology: phonological properties of affixes do not determine the position of an affix in the word. Wrong prediction: triggering "level 1" phonology predicts occurrence inside level 1 and level 2 affixes regardless of what syntactic/semantic features are expressed by the affix.

a. cómparable
b. comparáble

DM: [COM+√PARE]+a  [[COM+√PARE]+v]+a

c. level 1 stress-shifting “able” in (a) doesn’t become eligible for extra morphology that the level 2 non-stress shifting affix in (b) cannot take

d. cómparability, comparábility

(24) The only real argument (from English) that a shift in phonological properties of the realization of a particular syntactic head correlates with shift in position of the affix with respect to other morphology comes from irregular plurals:

a. mice-killer, *rats-killer
   irregular (plural) inflection is level 1, before compounding, so irregular plural may feed compound formation; regular plural formation, on the other hand, feeds compound formation
b. but compounding is the exception (and requires special treatment in any case): “mice” is not generally available for (level 2) affixation: *ratsless, *miceless, mouseless, ratless
c. even plural stem allomorphs don’t feed compounding or level 2 affixation: shelf, shelves, to shelve, *shelves-construction, *shelve-construction, shelf-construction, *shelveless, shelfless

III. Impossible words

(25) atrocious : atrocity :: glorious : *gloriosity

(26)a.  
   \[ \text{root} \quad n \quad \text{GLORY} \quad \emptyset \quad \text{GLORY} \quad -ous \quad -ness \]

   ‘glory’

b.  
   \[ \text{root} \quad a \quad \text{GLORY} \quad -ous \quad -ness \]

   ‘gloriousness’

(27) Generalization: -ity is inserted into an “n” node in the context of little a -able, -al and also a list of roots. It does not get inserted next to an “a” node with -ous. So “atroc-“ must be a root, which is listed with -ity.
When VI (vocabulary item) –ity doesn’t select an adjective-forming affix, as it doesn’t select –ous in (17b), it will not be inserted into the noun-forming terminal node (and will be blocked”by –ness). Where VI –ity does select the adjective-forming affix, as it does –able, then –ness will be blocked by –ity for insertion into the noun-forming terminal node:

(28) return-abil-ity/*returnableness, refuse-abil-ity/*refuseableness….
contrast with *glori-ous-ity, gloriousness
(also: able, ability, ableness, where "able" is a root, not the realization of a little a head)

(29) Predicts apparent doublets (ability, ableness) just when –ity attaches to root to create a noun, while a zero little a head attaches to the same root to create an adjective. –ness will attach to the zero-derived adjective to create a noun:

[ [insane] ity n] [ [ [insane] ø a] ness n]

NO doublets when –ity competes with –ness for realization of little n node outside little a node, as in (28).

(30) atrocious, atrocity – root ‘atroc’, with both forms built on root with overt a, n “atrocity” looks like truncation (from atroci-ous-ity) to Aronoff
the appearance of truncation is a clear indication of root formations

Where there's truncation, and thus root formation, doublets are predicted:
atrocity/atrociousness
variety/variousness

(31) Aronoff (1976): where there is a noun form without the –ous related to an adjective with the –ous (glory, glorious), the –ity nominal formed via affixation to –ous is blocked (e.g., since “glory” exists, “gloriosity” is bad). Aronoff’s generalization follows from the present analysis without assuming a direct blocking relation between “glory” and “gloriosity,” since the existence of a noun without the –ous means that –ity outside –ous would be attaching to –ous, not to a root, and –ity doesn’t attach to –ous.

(32) But what about: virtue : virtuous : virtuosity ???

(33) “virtuosity” CAN’T be related to “virtue” In fact, it’s a noun made from (the root) “virtuoso”

(34) virtue : virtuous : virtuosity
(so "virtuousness" blocks "virtuosity" as "gloriousness" blocks "gloriosity")

(35) Suppose you memorized words, and morphology “emerged.” The word, “virtuosity” exists, and it is phonologically related to “virtue.” Why CAN’T it mean, virtu-os-ity (the state of being “virtuous,” which is the property of having “virtue”)?
Mandatory decomposition explains Impossible Words. To relate “virtuosity” to “virtue,” one must decompose “virtuosity” so that it contains “virtue.” But in the resultant structure, one has an “n” attaching outside an “a” into which –*ous* is inserted. But we know that –*ity* doesn’t get inserted into such “n” nodes (outside little a –*ous*) – the default –*ness* gets inserted. So if “virtuosity” were related to “virtue,” it would be pronounced “virtuousness” (or, again, “virtuousness” blocks “virtuosity”).

In general, to explain blocking – and impossible words that are blocked – one needs to appeal to decomposition and the identity of roots/stems shared by related words. Semantic similarity isn’t necessary or sufficient to establish the relation between words that explains blocking.

a. take a leak, take a break, take 5… all have past tense “took” *taked* – so, (strong) semantic similarity isn’t necessary for blocking
b. take a break & break are closely related semantically, yet “broke” doesn’t block “took a break” (cf. “pissed” blocking “took a leak”) – so, semantic similarity isn’t sufficient for blocking

But isn’t blocking explained at the word level? Isn’t "gloriosity" blocked by "glory"? Don’t we know that blocking occurs at the word level, as in "thief" blocking "stealer" and "chef" blocking "cooker"?

Does “thief” block “stealer”?

generalization: don’t create agentive –*er* nominalizations of obligatorily transitive verbs (more complicated than this – real story involves recognizing that agentive –*er* nominalization nominalizes vPs, not verbs)

a. “hitter” -- specialized baseball meaning, or habitual child misbehaver
b. base-stealer, heart-stealer
c. ?”breaker” as agentive nominalization is as ill-formed as "stealer," without the existence of a competing thief-like form

That is, words like “stealer” that are claimed to be bad through blocking based on semantic similarity of words are always bad for reasons independent of the proposed “blocker” (in this case, “thief”).

Burzio: predicts semantic drift for “gave,” creation of “gived” for general case, “gave” for specific meanings. But this doesn’t occur. Semantic relatedness isn’t a possible explanation for blocking.

In any case, if semantics were sufficient account of blocking ("avoid synonymy"), "gloriosity" would simply not mean "glory" – semantic considerations don't explain impossible words.
(41) And blocking is, then, knock-down evidence for (de)composition – we don’t memorize words but necessarily (de)compose them = generate them with our grammars.

IV. Asymmetrical blocking: Templates and decomposition

The usual argument for the syntactic analysis of words is the "mirror principle" = morphological structure reflects syntactic structure. But the argument for syntactic analysis can be made much stronger, since the alternative – some sort of templatic analysis – fails to account for blocking and for the distribution of information in words.

(42) The [ cat ] is on the mat.
    The [ dog ] is on the mat.
    *The [ cat dog ] is on the mat.

(43) Syntactic structure in a sense provides "templates" where there is free choice for lexical items. If you insert one item, this blocks insertion of another item, but insertion of the second item is also possible, and blocks insertion of the first. For template-based analyses, blocking should be symmetrical in this sense.

(44) In Distributed Morphology, in considering the distribution of Vocabulary Items, only potentially the root positions are "templatic" in this syntactic sense – you may potentially pick any root for a root position in syntactic structure. For other morpheme positions in the structure, Vocabulary Insertion is competitive and chooses the most highly specified item that fits in the structure. So blocking is asymmetrical at a position in a structure, with the more highly specified items blocking the less highly specified items.

(45) In Minimalist terms, we should say that syntactic merger is free, and this provides the only sense of symmetrical blocking – I chose to put these two things together, blocking at this point in the derivation other elements I may have chosen. Assume that all "selection" and "subcategorization" effects result from conditions at the PF or LF interface or from the checking of "uninterpretable features."

(46) For third person singular present tense in English, /-s/ is most highly specified VI and blocks the default /∅/: He walks, *He walk. –s blocks ∅ asymmetrically. "He walks" vs. "He runs" – free choice of root – might be called symmetrical blocking at a position in the structure.

(47) Sometimes features or a VI at one structural position blocks the appearance of a VI at a different position. Within DM, this must be handled via "Impoverishment": within a certain context, features at a node are deleted – and the context may be features of a different node in the tree.

(48) Classic impoverishment in Spanish (analysis from Bonet): in clitics, expected le lo (‘to_him it’) is pronounced se lo (‘reflex it’). Features on the dative clitic are
impoverished in the environment of the accusative clitic (le), leading to the insertion of an unmarked clitic ("reflexive" se).

(49) Impoverishment yields the emergence of an unmarked VI in a marked environment, e.g., unmarked se appears for dative in special environment before 3rd person accusative clitic. There are equivalent OT theories – see, e.g., Grimshaw, where structural constraints outrank faithfulness to the input.

(50) As in the competition between VIs at a position in structure, Impoverishment yields asymmetrical blocking: le (ACC_3rd) impoverishes the DAT clitic, not the other way around. For the set of features, DAT_3rd ACC_3rd, the only output is se lo.

(51) In competitive blocking at a position in a structure, the more highly specified phonological realization wins in blocking. In impoverishment blocking across positions in a structure, the less highly specified phonological realization wins in blocking (emergence of the unmarked).

(52) This analysis of blocking depends on a "realizational" theory of grammar, one in which the feature structure exists prior to phonological realization. If we memorize words, we have the problem of accounting for why, in some cases, the more specific form blocks the more general ("walks" blocks "walk") while in other cases, the more general blocks the more specific ("se lo" blocks "le lo"). In the case of Spanish clitics (so-called "spurious se"), there are potential independently motivated output filters one can appeal to in order to block "*le lo." We'll see clearer cases below of impoverishment blocking between independently well-formed words that again illustrate the situation of a less highly specified form blocking a more highly specified word.

(53) Typical templatic structure: Navajo verb structure (data from Speas):

<table>
<thead>
<tr>
<th>ADV</th>
<th>Iter</th>
<th>DistPl</th>
<th>AGRo</th>
<th>DeicS</th>
<th>ADV</th>
<th>Mode</th>
<th>AgrS</th>
<th>Voice</th>
<th>Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

1 manner, direction, etc. – open class, potentially iterative (i.e., not blocking)
2 ná
3 da
4 person, #
5 {ji, ‘a, hwi} indefinite or “4th person”
6 adverbial, aspectual – open class
7 {i, yi, ni, si, o}, perf., inperf., prog., optative
8 person, #
9 {1, d, l} +/-transitive, +/-active

(See also K. Rice’s analysis of Athapaskan (Slave) morpheme order)
NOTE: these slots have \textbf{labels}, i.e., are featurally coherent. Ordering is related either to particular vocabulary items (2, 3) or to a functional head, with the exception of the adverb positions.

"Templates" with labeled slots provide an argument for syntactic analysis independent of "mirror principle" effects. It doesn't matter whether AgrO comes inside AgrS or vice versa in the structure; the distribution of features implied by labeled slots requires a syntactic analysis.

So, standard templatic analyses generally do not contain “grab-bag” slots for heterogeneous class of mutually blocking morphemes (Anderson’s A-morphous Morphology rule blocks are in fact such “grab-bag” slots for inflectional morphemes; and Lieber's subcategorization frames for affixes also create grab-bag slots for morphemes for which the only thing they have in common is that they appear in the same position, i.e., share a subcategorization frame). If templatic positions are featurally coherent, as they are in Navajo, then they present the data for a syntactic analysis of morphological positions. In fact, Rice pursues such a syntactic account.

But, for Inkelas (1993), following Lieber, templatic morphology precisely includes such “grab-bag” slots for heterogeneous classes of mutually blocking morphemes.

Nimboran verb structure, standard templatic analysis (flat structure):

```
0  1  2  3  X  4  5  6  7  8  
root Plsubj DuSubj MObj Part InDuSubj Loc Iter tense AgrS
  PObj________________________
  Durative________________________
```

(the underlines indicate blocking relations between positions, to be discussed)

1. Single vocabulary item, competes with DuSubj, InDuSubj
2. DuSubj, single VI, competes with DuSubj, InDuSubj
   PObj, single VI, competes with MObj
   Durative, single VI
3. MObj, single VI, competes with PObj
4. InDuSsubj inclusive dual subject, single VI, competes with DuSubj, PlSubj
5. Loc, group of locative suffixes
6. Iter, iterative suffix
7. AgrS, set of person agreement suffixes
Inkelas’ hierarchical interpretation of the Nimboran templatic structure:

![Diagram: G, F, E, D, C, B, A with positions 1, 2, 3, 4, 5, 6, 7, 8]

Inkelas: affixes block other affixes by occupying hierarchical positions via subcategorization for a "level" (A, B, ...) and raising the level of the word (A-G) beyond the subcategorization level of the affixes they block.

Thus, blocking behavior (mutual exclusivity between/among morphemes) determines position of morphemes in the word tree and vice-versa.

Individual Particles of position X show a variety of blocking behavior. Some particles block as far as slots 5 and 6, while other block only into 2 and 3. Inkelas accounts for the blocking behavior of PARTs by having them occupy different sets of hierarchical levels. They attach to one level and create structures of some higher level, sweeping out a certain number of positions and thus preventing the insertion of morphemes that are subcategorized to occupy these positions.

However, the labeled slot analysis in (58) describes all the data presented by Inkelas; that is, PARTs always seem to occur in the same position, no matter what their blocking behavior. There is no evidence presented by Inkelas that a PART that blocks positions 5 and 6 appears anywhere but between positions 2 and 4. Thus, although Inkelas' theory predicts that a morpheme should appear hierarchically in a structure according to its blocking behavior rather than according to the features it realizes, she presents no forms that illustrate such "mobile" classes of morphemes that "jump around" in a structure depending on what they block.

That is, the templatic view correlates (linear and hierarchical) position with blocking behavior (you occupy a slot, which determines your position, and also prevents other morphemes from occupying the same slot). But the Nimboran facts and the facts of all languages I've seen analyzed show that positioning and blocking are not correlated – a fixed template defined in terms of the features realized by the templatic slots is sufficient to describe the order of morphemes. What is correlated, as is clear from standard templatic analyses, are features and positioning, i.e., “slots” are associated with the features that are expressed by morphemes in those slots.

Distributed Morphology: If affixes are competing for the same terminal node, then they block each other, with the most highly specified affix winning (pace cases of
fission). Blocking at a position is thus featurally coherent (blocking is between VIs that carry the same type of feature) and asymmetric (one VI is always the winner over another in any given situation).

Otherwise, in cases of blocking or mutual exclusivity involving VIs inserted at different terminal nodes in a structure, “blocking” must be accomplished via impoverishment across positions (one morpheme or vocabulary item deleting features in another morpheme before vocabulary insertion at the other morpheme).

Therefore, competition blocking is at a position, but between vocabulary items that spell-out the same types of features.

Impoverishment blocking is between positions, and between independent morphemes (usually different sorts of features, but one agreement morpheme might impoverish features on another, in which case the same sorts of features are involved).

So, blocking behavior between vocabulary items with different sorts of features will not be correlated with position (although impoverishment requires a structural locality between the morphemes involved).

(65) Inkelas: since words are built through free combination of morphemes in the lexicon, blocking at and across positions is symmetrical; for example, one could choose to use a PART, which would block also using an Object agreement morpheme, since PART fills the space in the word where ObjAgr fits, or one could choose to use ObjAgr, which would block any PART, since ObjAgr would fill the space in the word where PART fits. If one could interpret a word with PART but without (overt) ObjAgr as if the plural ObjAgr were there, one should be able to interpret a word without an overt PART but with plural ObjAgr as if the PART were there. However, blocking in fact is always asymmetrical, as predicted by the DM theory. If PART impoverishes ObjAgr, a word with an overt PART can be interpreted as if the ObjAgr were there (since if it is there in the syntax, it is Impoverished prior to Vocabulary Insertion), but a word with an overt ObjAgr can not be interpreted as if a PART were there (since if the PART were in the syntactic structure, it would serve as the locus for Vocabulary Insertion and the ObjAgr would be Impoverished prior to Vocabulary Insertion).

(66) Similarly, Inkelas has no explanation for why a word with a plural morpheme may be interpreted as having a dual subject only if the dual morpheme is blocked by another morpheme from appearing in the structure. For Inkelas, there is no connection between the morphemes that you didn’t use to build a word and the interpretation of the word. For DM, the dual Vocabulary Item will win the competition for insertion at a morpheme with the features for dual unless another Vocabulary Item or morpheme Impoverishes a number feature of the morpheme, preventing the dual VI from winning the competition and causing the less marked plural to win. Thus a plural VI in the same word as a VI that Impoverishes number to block the dual VI is predicted to be interpretable as dual.
(67) Blocking at a position: most highly specified VI is inserted:
   a.  [ngedou]-[k-d-u] 'we two will draw here'
       dual-Fut-1st
   b.  [ngedóí]-[<i>-d-u] 'we (many, but not two) will draw here'
       plur

So, more highly specified 'k' (dual) blocks less specified '<i>' (plural) when subject
number is dual.

(68) Blocking across positions: Impoverishment causes less specified form to block
more specified form
   a.  [ngedóí]-[<i>-tam-t-u] 'we two (or many) are drawing'
       plur-DUR-Pres-1
   b.  *[ngedóí]-[k-tam-t-u]

Here the Durative particle "tam" impoverishes subject number across positions (from an
aspect position, DUR impoverishes agreement on tense), causing a less specified plural
form to block the more specific dual form in the expression of dual subject number.

V. Reconnecting with Psycho and Neurolinguistics

(69) How do we understand frequency effects in language processing?
   a.  e.g., high frequency words show faster reaction times (to name, judge as
        words, etc.)
   b.  e.g., words with more derived "family" members show faster reaction
        times than words with few derived relatives

(70) Need to know what people count, how they count occurrences of what they count,
and how they store the frequency data.

(71) Decomposition view (Distributed Morphology) would claim that we count
occurrences of roots, so frequency effects should be based on frequency of root
occurrence and the same root in different constructions should activate the same
representations of the root.

   Since we don't memorize words as unanalyzed wholes, there should be no word
frequency effects that are not derived from root frequency effects and root-context
frequency effects.

(72) BUT although for (regularly) inflected words, the main predictor of speed of
response is frequency of the stem in all (regularly) inflected and non-inflected contexts
while for (some) derivation, the main predictor of speed of response is the form
frequency of the derived word. That is, there is prima facie evidence against
decomposition and for memorization of derived words (but not, on this evidence for
memorization of regularly inflected words).
(73) And:
although "walked" primes "walk" (in cross-modal priming)
"gave" does not prime "give" (although "idea" primes "notion")
shouldn't activation of the root of GIVE when decomposing "gave" prime root of GIVE in "give"?

(74) On the other hand, pointing to decomposition of derived words, the number of derivatives a stem has correlates with speed of access (more derivatives, faster response) while, mysteriously, the frequency of these derivatives does not seem to affect speed of response (see, e.g., Baayen et al. 1997).

(75) In favor of Decomposition, Marslen-Wilson and others (see the summary in Kouider 2002) have shown that in long-distance priming studies, derivationally related words exhibit root repetition priming (repeated roots speed reaction) independent of phonological and semantic relatedness. In fact, the longer a prime and target are separated from each other, the closer "morphological priming" comes to "identity priming" in magnitude, as one would expect from equating "identity priming" effects with root repetition, where context effects fade over time.

(76) Key to understanding the results: activation of lexical entries is prior to and somewhat independent of selection of lexical entry/Construction of word – selection involves competition among activated material after activation of entries (partially or wholly) matching input stimulus.

KIT/MIT MEG Joint Research Lab has identified a brain index of root activation – the M350 (like the ERP N400) – that is sensitive to the activation of lexical entries prior to competition for selection. So the M350 may be speeded for stimuli that nevertheless are slow to respond to, due to competition for selection (see Pylkkänen et al., 2002).

(77) So, "gave" primes activation of the root of "give," but competition between phonological forms of the stem (both "give" and "gave" as stem forms are activated and compete for selection) slows down response. Phonological distance between past and present stems predicts degree of competition (so "taught" behaviorally primes "teach" since "taught" and "teach" are far apart phonologically and cause less competition for one another than "gave" and "give") – see Allen and Badecker 2001.

(78) For "family" effects (e.g., Baayen et al. 1997), family frequency (frequency of all derivatives of a stem) adds to root frequency (each occurrence of a derivative should be tallied as an occurrence of the root) and should speed up activation of the representation of the root in any derived form. But derivatives made directly on the root must compete for selection in any presentation of the root (root must combine with some little x category head – but which one? = competition for the context of the root within the phase/cycle that is interpreted in sound and in meaning). If you hold family size constant and vary family frequency, high family frequency (=high root frequency) should speed lexical activation but add competitors for selection, slowing response. The net effect is,
roughly, zero in terms of behavior, but the effect of family (=root) frequency on lexical (=root) activation should be visible, e.g., in the MEG M350.

(79) If you hold family (=root) frequency constant but vary family frequency between stimuli, lexical (root) activation should be the same across stimuli, but spreading the same count of occurrences across more contexts for stimuli with high family size creates lower-frequency competitors, albeit more of them. Higher frequency competitors cause more competition than low frequency competitors, and the effect of frequency on competition strength is non-linear. Thus we expect that if we hold family frequency stable but vary family size, stimuli with bigger family sizes should experience less competition for selection (less potent competitors) than stimuli with small family sizes (higher frequency, more potent competitors), yielding faster reaction times for the stimuli with the larger family sizes.

(80) For frequency effects to make sense, every exposure to language should have an effect on stored knowledge. On the decomposition view, exposures must be tallied as exposures to types, not tokens, and context of exposure will be relevant only within linguistically significant locality domains.

(81) Quick Review:

Blocking – impossible words – demonstrates the impossibility of the "emergent morphology/we memorize the words" approach to word structure.

Lexical relatedness always involves identity of pieces, and pieces imply decomposition into hierarchical syntactic structures of roots and functional morphemes

Blocking implicates “realizational” grammars in which feature structures exist prior to phonological realization

The difference between blocking at a position and blocking between positions supports the particular approach of Distributed Morphology, in which blocking at a position involves competition among Vocabulary Items for insertion – leading to blocking of less highly specified forms by more highly specified forms – and blocking between positions involves Impoverishment of features at one position in the context of material at another – leading to the blocking of more highly specified forms by less highly specified forms.

References:


