McFetridge, Chapter 6 (last half) & Chapter 7

We follow on from last week to examine structure and change in more detail. Sounds dull, I know; but it isn't!

To set the stage, note that once morphological rules combine morphemes into lexemes or words, phonological rules come along to change the shape of those forms.

> — we saw something similar to this last week when we needed the "clean up" rule e + i → i to help us get the right form for "computing". But that was really just a spelling rule.

Now we will consider rules that act on pronunciation. To that end, examine Table VI.4 from your text and shown on the next slide …

inactive	illegal	irreplaceable
intolerant	illegible	irredeemable
intractable	illicit	irregular
inflexible	illegitimate	irrelevant

These are commonplace words. Maybe we could propose the following rules to explain how they're derived:

$Lex_A \Rightarrow in + Lex_A$

$Lex_A \Rightarrow il + Lex_A$

$Lex_A \Rightarrow ir + Lex_A$

Hmm. We need a way to constrain these rules so that they apply to the appropriate lexemes.

One serious problem here is that we're proposing three different morphemes with a negative meaning. That is an uneconomical "solution".

Upon closer examination, we see that "il-" comes before words that begin with "l" and "ir-" comes before words that begin with "r".

> — "in-", on the other hand, appears to come before a variety of unpredictable sounds (remember that the letters are only orthography; it's the sounds that matter).

So we can propose that there is just a single negative morpheme, "in-", and that we can predict other variants of it by rule. We pick "in-" as the basic morpheme because its appearance is unpredictable, i.e., in the data set you are given it comes before "a", "t", and "f".

> — there's nothing to connect the sounds represented by "a", "t", and "f".

So, we'll claim that there is one negative morpheme "in-" and use the following two phonological rules to derive words that begin with "l" and "r"

$n + l \rightarrow l + l$

$n + r \rightarrow r + r$

These are **assimilation rules**. "Assimilation" is a word you'll see often in this course. In the case at hand, "n" assimilates completely to "l" and "r". Later we will see instances of partial assimilation.

Note that in deriving the negative adjectives we build the lexeme first ($\text{Lex}_A \Rightarrow \text{in} + \text{Lex}_A$) and then follow up with the phonological rules to adjust how the word is actually pronounced.

If this is a valid way of going about things, then we should be able to do the same with other lexemes that take the negative prefix "in-".

Consider in this regard the following table:

moral	immoral
measurable	immeasurable
mobile	immobile
mature	immature
possible	impossible
practical	impractical
precise	imprecise
potent	impotent

We can explain some of the foregoing by the rule

n + m → m + m

This is consistent with our rules on the previous slide.

— but what of words like "impossible"? If the prefix is indeed "in-" then we need a rule like n + p → m + p. This doesn't look like our other other assimilation rules.

But if we look more closely we see that "m" and "p" are both labial sounds. That is, they have the same place of articulation (but different manners of articulation).

The "n" of "in-", on the other hand, is a dental sound, according to your consonant chart on p. 35.

— so there is still assimilation albeit only partial

We should consider, too, a case where English orthography works against our understanding of the underlying assimilation process. For example, take a look at these words …

complete	incomplete
calculable	incalculable
competent	incompetent
conclusive	inconclusive
convenient	inconvenient

At first glance, this looks simply like a case of the negative prefix "in-" being added to the lexeme. But we need to look at the sounds themselves more closely.

> — orthographic "c" in the words of the first column is pronounced as [k] (note the square brackets indicating an IPA symbol) which is a velar sound

> — the nasal sound in the words on the previous slide is actually pronounced not as the dental [n] but rather as the velar [ŋ]

So there IS assimilation! We can capture this in the following rule:

n + k → ŋ + k

So far so good. But we expect phonological rules to generalize throughout a language — otherwise they appear to be ad hoc and not properly motivated. So let's consider an entirely different prefix.

Words in the right column are formed with the prefix "con-"

form	conform
test	contest
sign	consign
respond	correspond
lapse	collapse
mission	commission
relate	correlate
lateral	collateral

This is exactly the result that our earlier rules would predict with regard to assimilation.

— so we don't have to create more than a single <u>morphological</u> rule for "con-": Lex ⇒ con + Lex

So, to summarize, morphological rules create lexemes and phonological rules adjust pronunciations. We need these adjustments because the morphological rules bring together morphemes in new contexts.

Change & borrowing

The following table presents us with a problem:

		happy	unhappy
		conditional	unconditional
		deniable	undeniable
legal	illegal	lawful	unlawful
regular	irregular	readable	unreadable
		ripe	unripe
mature	immature	manly	unmanly
possible	impossible	pleasant	unpleasant

The second column shows us the assimilation of "in-" that we already know about. But the fourth column (far right) illustrates that "un-" refuses to assimilate.

Why?

Because "in-" attaches to words of Latin origin. The prefix was borrowed into English when the words were borrowed.

"un-", however, is an English prefix and attaches to English words. The English prefix does not assimilate.

Therefore we have to frame our rule to show that we're dealing with an English prefix and English lexemes:

$[Lex_A \Rightarrow un + Lex_A]_{English}$

Another example of the **localization** of phonological rules comes to us from Greek …

aerobic	anaerobic
matriarchy	anarchy
oxygen	anoxic
(orexia) = appetite	anorexia
theist	atheist
pathetic	apathetic
rhythmic	arhythmic
static	astatic

The trick here is to find a rule that will predict when the negative prefix "an-" will surface as "a-".

We can see that "n" deletes before consonants (C) and is retained before vowels. That can be captured with the rule n + C → + C.

So now we have, in a sense, three kinds of "n": the kind that assimilates (Latin), the kind that's inert (English), and the kind that deletes (Greek).

So to wrap up Greek, we need both a morphological and phonological rule:

$[\text{Lex}_A \Rightarrow \text{an} + \text{Lex}_A]_{\text{Greek}}$

$[\text{n} + \text{C} \rightarrow \text{C}]_{\text{Greek}}$

This phonological rule should remind you of English.

— the indefinite article in English is "an" and by rule the "n" is dropped before consonants

— this neatly highlights how it is sound and not spelling that forms the basis of phonological rules. Thus, even though a word like, say, "union" has a vowel word-initially in writing, the word is pronounced with a [y], i.e., [yunyən]

— similarly with "hour", which begins with a written "h" but actually starts with a vowel sound (and takes the "an" form of the indefinite article)

The similarity of the preceding Greek, Latin, and English prefixes is striking. No surprise that they are cognates.

— it is thought that all three, an-, in-, and un- derive from the Proto-Indo-European "n"

[Negative prefixes](#)

Consider the following little table:

noble	ignoble
<u>nor</u>m	ignorant

This presents us with a problem: is there now another negative prefix, "ig-" to join the previously seen "in-"? It's not easy to see how "n" transmogrifies into "g". If we say that [n] converts to [g] before [n], then how do we explain words like "innocent"? We can't.

Moreover, if we propose a rule like $[Lex_A \Rightarrow ig + Lex_A]_{Latin}$, we still don't know when to apply it as opposed to our earlier rule (in which we have more confidence): $[Lex_A \Rightarrow in + Lex_A]_{Latin}$.

> — with that earlier rule we were able to predict when we would find the "il-" and "ir-" forms. But that doesn't help us with "ig-".

When situations like this arise, we have to go back and re-examine basic assumptions. We've been assuming that the root lexeme of "ignoble" is "noble". That's a reasonable assumption, but perhaps wrong.

> — maybe the lexeme is in fact "gnoble"

> If this is the case, then our original morphological rule for "in" is intact, $[Lex_A \Rightarrow in + Lex_A]_{Latin}$, and we can get the right form through two phonological rules …

i) $[\# \ gn \rightarrow \# \ n]_{Latin}$

— this rule says that at the beginning of a word (the '#' symbol) there can be no "g" preceding an "n", i.e., we cannot have the "string" gn. So this rule gives us "noble".

ii) $[n + gn \rightarrow + gn]$

— remember that the prefix "in" will attach to the lexeme "gnoble" to form a new word (there's no problem with "gn" appearing inside a word), but we need to rid ourselves of the "n" in that prefix.

— we have to be very specific with this rule and actually state "gn" so that we don't disallow words like "inglorious".

This may seem a little farfetched, so we would like to test these rules. We can do so rather handily, too, using evidence from Latin borrowings and evidence from cognates in Greek and English.

Latin had a root "**gn**" that we've just seen in "ignoble" and "ignorant". This root referred to matters of knowledge.

— But there was another form that alternated between "gn" and "gen" that referred to acts of birth and production, e.g., "generate" and "pregnant".

— We'll use this latter form to probe our earlier rules by looking at the words "natal" and "cognate".

— "cognate" is "con" + "gnate". The "n" deletes just as our rule showed

— "natal" derives from "gnatal" and the "g" deletes, again as another of our earlier rules predicts

The Greek cognate "gnostic", on the other hand, illustrates that Greek did not have the "g" deletion rule.

The English cognate "know" shows the operation of one aspect of the Germanic Consonant Shift ("g" becomes "k").

— so why is the "k" not pronounced? It seems that English has a version of the Latin rule that deletes velars before a nasal:

$[kn \rightarrow n]_{English}$

— the Latin version of the rule only operated on the beginnings of words, but the English version operates anywhere, hence "unknowable" pronounced with no [k] vs "ignoble" pronounced with a [g].

So, the long and short of it is that the principles governing word-building are morphological and phonological rules.

— each set of rules must be tagged with the language it governs.

Remember, too, that derivational rules happen inside inflection.

Ch. 7: Identifying morphemes

Two properties of morphemes:

(i) each occurrence of a morpheme conveys the same meaning as that proposed for its lexical entry,

(ii) the shape, or surface appearance, of a morpheme may vary, but its variants are predicted by phonological rule.

Variants of a morpheme are called **allomorphs**. Thus "il-", "ir-", "im-", "i-", and "in-" are allomorphs of the morpheme IN.

> — the morpheme (like the lexeme) is an abstract entity, but we can deduce its existence through its allomorphs.

Homonyms

Note the definition: forms that have the same spelling, usually the same pronunciation, but different meanings, e.g., "fluke", which is both a type of flatworm or a stroke of good luck.

— homonyms are often mixed up with homophones, which are forms that sound the same, but are spelled differently, e.g., "bare" (a verb) and "bear" (a noun)

Now consider the following:

genius	ingenious
toxic	intoxicate
luminous	illuminate
lustrous	illustrious
radiate	irradiate
rupture	irruption
pact	impact

Do the instances of "in-" we find in the words of the table display a negative meaning? Is this the same "in-" that we've seen already?

No, it is not. It is homonymous, but ...

— the meaning added by this "in-" is not negative at all but rather (and literally) "in". We call this locative.

There is a third type of "in-" as well that we see in words like "inflammable" and, for those who don't cringe at the sound of it, "irregardless".

— in these latter two words the "in-" is an **intensifier**.

Locative "in-" and intensifier "in-" follow the same phonological rules as negative "in-" that we've seen already.

Since we have a Latin locative, it's to be expected that we would find Greek and English ones, too.

Consider some English locatives first …

born	inborn
deed	indeed
door	indoor
put	input
road	inroad
set	inset
sight	insight

No assimilation of "in-" here! Now let's consider some Greek ones.

encyclopedia	en+cyclo+pedia	circle + teach
endemic	en + demos	people
energy	en + erg	work
ellipsis	en + leip	leave
empyrean	en + pyre	fire
emblem	en + ball	throw
embolism	en + ball	throw

The Greek "n" assimilates totally to "l" but only partially to "b" and "p".

So, to sum up:

1. Linguistic strings that sound alike (homonyms) can't be examples of the same morpheme if they don't carry the same meaning.

2. Linguistic strings that mean the same thing (synonyms) can't be examples of the same morpheme if they don't share the same phonological characteristics.

	English	**Latin**	Greek
Locative	in	in assimilation	en assimilation
Negative	un	in assimilation deletion	an deletion