This paper will look at a different approach to Navajo phonology than what is presented in this class.

Overview of past literature.

Present a usage-based model for phonology.

Reanalyze some sound changes and discuss phonological rules.

Show how this view influences other linguistic structure.
Past Research

- Hoijer, 1945; Harris, 1945

- The first most detailed explanation of phonology.

- However, conventions and data are representative of Navajo more than half a century ago.
Past Research

- Young & Morgan, 1987; Young & Morgan, 1992; Young, 2000

- None focus specifically on phonology, but do give some explanation.

- Ex. Classifier deletion: Ł- deletes when preceded by [-s-] or [-sh-] (Young, 2000:29)

- Generative for the most part, but they do identify and present hundreds, if not thousands, of prefix and morpheme combinations.
Past Research

  
  /cha/
  
  V insertion  i – cha
  
  Gh insertion  gh – i – cha
  
  Gliding  y – i – cha

- See also Faltz, 1998.
Past Research

- McDonough, 2003
- Assumes the phonemes and sounds from previous research
- Uses selected word lists instead of naturally occurring language
- Uses more advanced methods of data collection and representation.
- Gives specific measurements of phonetic features.
Inherent vs. Emergent

- **Inherent**: Generative approach of phonology in which there is an underlying form which rules are applied to for the derivation of a surface form.

- **Emergent**: Usage-based approach. Language structure is based off an individuals experience with the language and other speakers around them.

- “…the knowledge underlying the fluent use of language is not grammar in the sense of abstract structure but rather a large store categorized and sorted previous utterances that form the basis for the production and comprehension of new utterances” (Bybee, 2007:279)
Sistin

- Generative:
  si – sh – d – tin
  Rules: Classifier deletion, Strident Assimilation

- Usage-based:
  sistin
  Rules: None
Concentrations

- The study of variation in sound production- maintenance and change because of variation.

- Ongoing sound changes- explaining social attitudes and propagation of currently changing sounds.

- Historical sound change- how sounds have changed within a language over time and from proto-languages.
Phonetion reduction- the result of articulatory reduction in speech production.

Analogy- the sound characteristics or sound changes undergone in some words are mapped onto other words.

Frequency- Sound changes typically occur in the most frequent items first.

Usage-based Phonology-Pierrehumbert, 2003:119

![Graph showing phonetic frequencies](image-url)
Includes both speaker and hearer.

Perceptual constancy- hearer’s expectation based on conventionalized norms tune out all the variation.

Sound change occurs when hearers fail to correct the variation of other speaker’s speech, and then reproduce that variation.
Usage-based Phonology

- Variation and overlap of phonetic features leads to some types of sound changes.
- Articulatory gestures also explain sound changes such as deletion of phonemes.
- Typically effects high frequency items first.
- Some less frequent items may be influenced by analogy before phonetic overlap or phonetic reduction.
Continuation of Past Research

- Just cause there are no phonology rules doesn't mean past work should be abandoned.
- A lot of Young & Morgan’s work uses data from other Athabaskan languages and proto-Athabaskan.
- Past research can give us a push in the right direction for explaining historical sound change.
Ł-voicing: ł \rightarrow l / d_

 Speakers produced a variation of ł with [+voice] from the d as l.

 Hearers failed to correct the break in speech convention.

 Hearers reproduced the change in production.

 Other similar sound changes: gliding, strident assimilation, vowel fronting, continuant devoicing, and some instances of d-effect.
Need for Further Extensive Study

- Why does the ℓ become [+voice] instead of the d become [-voice]
- Where these really two sounds that underwent a change.
- If yes, then no further work is necessary.
- If no, then other conditioning factors need to be identified or other sounds changes that lead to this sound change need to be identified.
Feature Reduction

- y-deletion: $y \rightarrow \emptyset / V \# \_\_\_ i$

- There isn’t an overlap in neighboring features, just reduction or deletion of a sound’s duration.

- Variation is still apparent: variation in the duration of consonant/vowel.

- Other similar changes: ni-absorption, n deletion, classifier deletion, h deletion, vowel deletion, vowel degemination, consonant degemination, and some instances of d-effect.
Peg Element

i insertion: \( \emptyset \rightarrow i / \# \_\_ +C \)

gamma (gh) insertion: \( \emptyset \rightarrow gh / \# V \) (either i or o)

gliding: \( gh \rightarrow y / \_\_ i \)

\( w / \_\_ o \)
[yi-] and [wo-] added as a whole to words to maintain syllabic integrity of verb.

[yi-] and [wo-] chosen because of analogy to words with other verb initial sounds.

Analogy possibly based on frequency or semantic relations between verbs.
Peg Element- Option 2

- Three stage sound change in Navajo’s history

1. i insertion

2. gh insertion

3. gliding- feature overlap, the gh fricative is becoming more vowel like on the sonority scale.

The first two steps would both be through analogy, so why is this a better explanation than number 1.
[yi-] and [wo-] identified as peg elements historically bore meaning, but these meaning is no longer present with just the form remaining.

Option 1, because to my knowledge there aren’t any verbs with the peg element [ghi-] or [gho-], even in frequent verbs.
This mode and the progressive mode have the most irregular phonological patterns of the modes.

Additional rules necessary to derive perfective conjugations:
- Tone assimilation
- O(h) reduction
- Ghe readjustment
- Yi-doubling
- Í lowering
- Si-syncope
Perfective Mode Phonology

- Frequency- irregular verbs are verb forms that have maintained historically regular verb formation (Bybee, 2007)
  
- Frequency tests would need to be made
  
- Check the findings of perfective against progressive
‘At least a generative approach actually gives an explanation’

With these additional rules we still many times ended up say, ‘its just the way it is’

A usage-based approach doesn’t need to give an explanation, what speakers hear is what they reproduce.

Encourages the discovery of historical sound changes or linguistic structure which lead to irregular perfective phonology.
Ongoing Sound Change

- daoo(h) vs. dawoo(h)

- Either a sound change which will diffuse for the most part into the Navajo language as a whole

- Or, this feature will become defining characteristics of two divergent Navajo dialects and possibly a defining characteristic of two future daughter languages.
A new description of language

- Usage-based approaches don’t only apply to phonology.

- “by recognizing that synchronic language is variable, we can integrate language change and language itself” (Croft, 2006:125)

- How this approach of phonology impacts other areas:
  - Phonotactics
  - Morphology/Morphological structure (The lexicon)
  - Sociolinguistics
Phonotactics

- Navajo seen as a CV/CVC syllable language.
- Could epenthesis ever change this structure to look more like CCV/CCVC?
- \([t^h]\) and \([k^h]\) described as \([tx]\) and \([kx]\) (McDonough, 2003).
- The fricative is inserted at the meeting point between the \([t/k]\) aspiration and the tongue formation of the following vowel.
- For \([t]\), it is further divided into \([tç]\), \([tx^w]\), and \([tx]\).
Phonotactics

- The velar fricatives identified in these contexts don’t differ in spectral analyses from velar fricatives in isolation.

- McDonough describes these instances as affricates (hetero-organic affricates).

- While in the literature these aren’t autonomous sounds, with speech supporting this, it may be that in the future that the stops and fricatives are considered separate, which would give a CCV/CCVC syllable structure.
The Lexicon

- There is no separation in processing between spoken forms and the lexical form.

- Any sound change at the articulatory/auditory level directly effects the lexical representation of a unit.

- Explains why sound changes don’t occur instantaneously across languages, they are lexically gradual (Bybee, 2007).
Equally, a morpheme’s structure is not separate from its surface form.

Instead of one 2\textsuperscript{nd} sg. subject pronoun, there are multiple forms based on phonological and semantic qualities:
- ni- Simple incomplete action
- ní- Incomplete action with terminus, attainment of goal
- sí- Incomplete action with static sequel
- yii- incomplete transitional or semelfactive action
Morphological Structure

- There is a cyclical change in morphological structure in languages (Croft, 2013)
  - Agglutinating - multiple morphemes per word (one meaning to one morpheme)
  - Inflectional - multiple morphemes per word (multiple meanings to one morpheme)
  - Isolating - one morpheme per word

- Agglutinating ➔ Inflectional ➔ Isolating
- Isolating ➔ Agglutinating
Using a generative approach to verb conjugation, Navajo is very much an agglutinative language.

If we use a usage-based approach and see morphemes with multiple meanings (like 2\textsuperscript{nd} sg. subject pronouns), then Navajo is becoming an inflectional language.

Ex. yii- represents the meanings 2\textsuperscript{nd} person, singular, imperfective, and either semelfactive or transitional.

Ex. ni- represents the meanings 2\textsuperscript{nd} person, singular, imperfective.
A usage-based approach emphasizes the relevance of an individual’s relationship and interaction with the society and culture around them.

It should then be expected for a sound change to be involved with issues of social attitude and social diffusion.

Some sound changes or phonetic properties may be looked upon as favorable or unfavorable by a speech community, e.g. /ay, aw/ centralization in Martha’s Vineyard English (Labov, 1972).
SAMUEL: They probably think it's important, but there's a time when they're put at a standpoint when they're judged by it by other people that speak English more clear than they do and they just kind of feel dirty about the whole thing, and that's why they put on the fake... And try to make it sound like they speak more English than they do Navajo.... Because... If you have that Navajo dialect[example]... they'll be judged by that, and they'll say, "Oh, you're Johnned out," you know. And [laughs]Navajos don't like to be told they're Johnned out. The word itself is a put-down word.

SAMUEL: It means a person...that's uneducated and they haven't experienced anything in the world. That's what the word "John" means. (McCarty et al. 2006:38)
The previous quote applied to linguistic variables of English.

Is there any influence between this and the sounds of Navajo?

These variables and the linguistic variables within the Navajo language are still to be identified and described.
Conclusions

- I argue to look at Navajo phonology from a usage-based approach.

- Such an approach wouldn’t concentrate on defining rules which derive spoken Navajo, but on the historical sound changes of the language and the study of currently progressing sound change.

- Extensions: Phonotactics, Morphology, Sociolinguistics

- Mostly speculative, this approach’s application to Navajo language still needs a lot of work.
References


References


