Part I
The Interaction of Stress, Syllable Structure and Geminisation in Jordanian Arabic
Esmail Al-Tarawneh .......................................................... 1
Minimal CP and the Adverb Effect
Nicholas Sobon ................................................................. 15
Complementizer Drop and IP Complementation in Japanese
Minoru Fukuda ............................................................... 39
Focus of Address in the Popular Press: A Comparison of Spain, Mexico and the United States
Laura Celanta ................................................................. 53
Archaic Statics: Sentences
Takato Iba ................................................................. 73
‘Adversative Passives’ of Early New EFL learners: syntactic and pragmatic transfer of L1
Hyodes Hob ................................................................. 93

Part II: Studies in Native American Languages XI
The Mixed Origins of Santiagoan Quechua Syntax
Augusto Lorentino ......................................................... 111
Wh-type construction in Kaqchikel
Marcelo Maia ................................................................. 121
Nomination in Northern Paiute
Scott Northam ............................................................... 137
The Interaction of Stress, syllable Structure, and Gemination in Jordanian Arabic (JA)

Emad Al-Tamari
The University of Kansas

Abstract: The purpose of this study is to show that certain cases of homophoneic gemination can be better explained through showing their relations to syllable structure and stress, as in McCarthy (1979) and (1983). The data show that stress and syllable structure play a major role in creating some cases of homophoneic gemination. Moreover, the paper focuses on a way of analyzing, which also places a role in creating other cases of homophoneic gemination, in a spreading phenomenon. The data discussed in this paper are from Standard Arabic (SA), Ja, and Palestinian Arabic (PA). Major theories about gemination are briefly presented in this paper.

1. Views on Gemination

There have been three main views about the nature of gemination. The first one views gemination in terms of syllable structure. Gemination has been viewed as the process of syllabification of a consonant. Geminates are seen as two identical consonants, one of which on the coda and the other which fills the adjacent onset (Dixon 1971). Deurenberg observes that geminates differ from single consonants in that they have two places in their orthography. The first phase constitutes a syllable-final occurrence of the consonant in the coda, and the other one consonant in a syllable-initial position in the onset. The second view deals with geminates as long consonants. Ladefoged (1971) argues in support of this view by showing examples from Italian and Spanish in which short consonants consist of long consonants in intervocalic. He illustrates that occurrences with short consonants contrast with an occurrence with long consonants in some languages. Such a distinctive contrast is found in Italian and Spanish (Mydlarski and Vistone 1993).

For more information, please refer to articles on Italian and Spanish.
b. Spanish: *pan* [pesal] 'dog' and *pen* [pesan] 'Sat'.

The dual view advocated by McCarthy (1979) and Samuels (1980), represents the autosegmental analysis of generation. According to McCarthy's (1979) and Samuels' autosegmental analysis, geminates are analyzed as single segments mapped onto two distinct slots. McCarthy analyzes the Arabic paradigms (interpreted as possible templates that have binominal or binominal roots). He argues that two templates (1) are needed to generate the byways.

2. a. \[\begin{array}{c}
\text{CV} \\
\text{CVC} \\
\text{CVC} \\
\text{CV} \\
\end{array}\] → \text{saalim} 'skeletal hand'

b. \[\begin{array}{c}
\text{CVC} \\
\text{CV} \\
\text{CV} \\
\text{CVC} \\
\end{array}\] → \text{saalim} 'skeletal hand'

3. a. CV(CVC)([seg])CV

b. CV(CVC)([seg])CV

[seg] refers to an element that can be split into a consonant or a vowel, depending on the byway. The byways in (3a) can be generated by the first template (1a), while the ones in (3b) can be generated by the second template (1b).

4. a. CV(CVC) → \text{kataib} 'kataeb'

b. CV(CVC) → \text{kataib} 'kataeb'

5. a. CVCVCCV → \text{kataib} 'kataeb'

b. CVCVCCV → \text{kataib} 'kataeb'

It is unclear that McDavid and McCarthy agree on the idea that a geminate should be segmented as one segment. Oksenhorn, however, argues that a geminate should be represented as two harmonic segments.
2. Constraints on generalization

Kanevski and Pyle (1993) and Guewes (1978) establishing the well-known generalization in (1):

5. Germanic structures contain:
   a. a split by openness.
   b. allow one half of the cluster to undergo a rule that the other half does not undergo.

That is, generalities cannot be separated by inserting a vowel between them in the way below:

6. a lānthb → made write
   c. gāltb → said
   d. gāltb → gal-l

Sorbs Sprachmetamorphosi is a good example that explains the second part of the generalization. Sprachmetamorphosi is a set of rules that turn a phonemic step into a split. However, the following example (7) from Tipton's shows that this process fails to affect [k] although the first X-dot is the geminate in protocase (Silesian and Sorbian 1980). The only explanation for this exception is to argue that since X is a geminate, no rule can affect half of the cluster without affecting the other.

7. a. f ı ı ı ı ı
   b. f ı ı ı ı ı ı ı ı ı

The second well-known constraint, which is motivated by McCarthy (1988b), is the Obligatory Contour Principle (OCP) 8.

8. Obligatory Contour Principle
   In a given prosodic domain, adjacent identical segments are prohibited.

He argues that since a geminate is represented in one segment that is mapped onto two skeleton slots, the existence of identical X slots does not violate the OCP.
A heteromorphemic genome does not violate the OCP, although it is represented as two adjacent identical segments. This is because the identical segments belong to different morphemes and are represented on different autosegmental tiers.

\[ \begin{array}{c|c}
\text{tier} & \text{form} \\
\hline
1 & XX X X X \\
2 & \text{two forms}
\end{array} \]

This analysis suggests that we can distinguish two types of genomes: monosegmental genomes (A) and bisegmental genomes (B). According to McCarthy (1986),

tautomorphemic genomes are monosegmental whereas heteromorphemic genomes are bisegmental.

\[ \begin{array}{c|c|c}
\text{tier} & \text{form} \\
\hline
A & XX X X X \\
B & X X
\end{array} \]

To sum up, McCarthy (1979) and (1985) provides a vivid analysis of genomes in Sesene languages. He introduces templates that would generate the SA branch. Moreover, he distinguishes between tautomorphemic and heteromorphemic generation.

In tautomorphemic generation, the genome is represented as one segment mapped onto two skeleton arcs, whereas in heteromorphemic generation the genome is viewed as two identical segments that are represented on different autosegmental tiers. Since the identical adjacent segments of a heteromorphemic genome belong to two different morphemes, and hence represented on different autosegmental tiers, the OCP is not violated.

Heteromorphemic genomes generally result from either assimilation or deletion.

\[ \begin{array}{c|c}
\text{form} & \text{ SAC form} \\
\hline
\text{the man} & \text{the man (SAC form)}
\end{array} \]
b. *al-kharrāj → al-kharrāj"the moon"
c. *la-charī → *la-charī"bald"
   (deletion)

(1.2a) is an example of a well-known phonological rule in Arabic in which the root of the
definite article (al-)* corresponds to the onset of the following syllable provided that the
onset is [ consonant]. This justifies the addition of (1.2b), where the onset of the syllable
that follows the definite article is [ consonant]. In (1.2c), the deletion of [a] between the first
and second [i] results in a heteromorphic geminates.

The data from JA raise serious questions about the analysis of heteromorphic
gemination. In fact, some cases of heteromorphic geminates, as in (1.3a) and (1.3b),
are not accounted for in McCarthy’s analysis:

13. a. Talkah "enemy"
   b. Talkah-unak "your enemy"
14. a. al-salab "I said to him"
   b. al-salab "I said to him"

A detailed discussion of these two cases will be provided later in the discussion. The next
section focuses on the nature of the relation holding between syllable structure and stress.

2. Stress and syllable structure in JA

McCarthy (1972) presents an interesting analysis of stress assignment in (PA). He argues
that stress is assigned according to the following conditions:

14. a. The final syllable of a word receives the stress only if it contains a long vowel or
ends in a consonant cluster.
   b. If the last syllable of a word does not attract the stress, accent to—rather than heavy
syllable of the word, otherwise, the first syllable is accent provided that it does
not exceed the antepenult.

As stated in (14), the location and duration of the syllable are connected to stress
assignment in (PA). Heavy syllables in PA (as well as in JA) can be CV, CVCC, CCV,
or CVC. The following examples illustrate the conditions mentioned above in (14):

15. a. *kathīr-e "be white"
   b. kathīr-un "they were white"
   c. kathīr-un "be water"
The stress falls on the last syllable in (13a, b, and c) as the last syllable in each case either contains a long vowel or is in a consonant cluster. In (13d) the rightmost heavy syllable is accentuated because the last syllable did not receive the stress. As expected, the first syllable is accentuated in (13b) and (d) due to the absence of heavy syllables, having in mind that the last syllable does not contain a long vowel or ends in a consonant cluster.

JA speakers of Turkish, the capital of Jordan, is very similar to PA. Here I assume that the stress assignment rule stated above applies to JA as well. One important difference between the two dialects is that in JA words do not end in long vowels. For example: the word data-dede would be pronounced as data-de in JA. That is, the morpheme "de" is pronounced as /e/ in word-final position. However, it remains [ie] when it is followed by a consonant. The contrast of the words cited in (13) are pronounced the same way in JA.

In summary, stress assignment rule in JA, we can adopt a solution suggested in Klatt's (1994). We can introduce the device of metrical symmetry, and argue that final consonants are extrametrical in JA. We can assume the following stress-met.

16. Assign the rightmost heavy syllable of a word. Otherwise, the first syllable is assumed to be metrical provided that it does not exceed the extrametrical.

Examples (17a, b, and c) illustrate how extrametrical simplifies stress assignment rule in JA:

17. a. 
   - kafha ➔ kafha-
   - yarish ➔ yarish-
   - idle ➔ idle-

b. 
   - dana-ka ➔ dana-ka-
   - dana-tha ➔ dana-tha-
   - dana-ta ➔ dana-ta-
   - sz tram ➔ sz tram-
   - sz tram ➔ sz tram-
   - sz tram ➔ sz tram-

18. In (17a) [ie] becomes extrametrical, and since the last syllable is no longer heavy, the stress falls on the first syllable. The last syllable attracts the stress in (17b), because it is still the rightmost heavy syllable even after [ie] becoming extrametrical. The penult in
(13a) Boxer, the rightmost heavy syllable and hence attracts the stress as after the extra-stressification of (9). However, (17d) and (18c) apparently violate the simplified stress rule stated in (16). One explanation for this exception lies in the nature of glides. It has been argued that glides are different from the rest of consonants. Ladefoged (1993), for example, refers to glides as sonorants. As we will see later in the following sections, glides are also an exception to other generalizations that are related to accentuation and foot-structure in IA.

So far, the data presented in this section indicate that in IA the stressed syllable might be light in nearly one environment, word-initial position. That is, any stressed syllable in a word must be heavy unless it is the first syllable where it can be either heavy or light. However, there is only one case (10b) where a light syllable is stressed in a common position, which apparently violates the generalization made above. In fact, both words in (10a) and (10b) used in IA.

Abu-Safar (1988) argues that such an apparent exception is due to a rule of openness, that applies after stress assignment.

(19) Length

<table>
<thead>
<tr>
<th>Short</th>
<th>Extra-stressification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long</td>
<td>Stress Assignment</td>
</tr>
</tbody>
</table>

Since stressed syllables are prohibited in IA, (b) regresses as the onset of the next syllable:

(20) 

A formal condition on stress-negligence in IA is stated as follows:

20. Stressed syllables that occupy other than word-final position must be licensed (f1). To be licensed, a syllable must be heavy.
The following examples explain the statement made above in [21].

22. a. 만이
    b. 만이요
    c. 만일
    d. 만일
    e. 만일

Examples [22a, b, c, d, and e] show that all stressed syllables in these environments are heavy, i.e., [4]. Although the stressed syllable in [22d] is light, it does not violate the condition in [21] since it is in an initial position. Notice that the extra-stress of the last consonant in [22d] and the last syllable in [22e] heavy syllable that attracts the stress. On the contrary, after unstressed syllable [5] (22c), the final syllable is no longer heavy, and since there are no heavy syllables in the word, the final syllable is stressed.

4. Assimilation and hetero-morphemic proximities

As mentioned earlier, heteromorphemic proximities in Arabic result mainly from two phonological processes: assimilation and adjacency [24]. The following examples illustrate the role of assimilation in creating heteromorphemic proximities in various phonological environments. In [24a], for example, an agent noun takes on some features of a neighboring consonant resulting in a genitive. In [24b] the latter takes on some features of [a], namely, the features [a] derivable from consonant of [a] by assimilating [a] to a noun is the feature that is related to place and number of articulation of [a]. However, more features are assimilated in [24c]. [a] assimilates [a]'s voice place and number of articulation features. The only difference
between [i] (and [u]) in (25a) is that [i] is phonetically reduced whereas [u] is not. [i] assimilates to [u] resulting in a geminate.

The process of assimilation can also be looked at as a phenomenon that "spreads," using features from one constituent to another one (Schén and Storme, 1998a). For example, assimilation in (25a) can be viewed as spreading the features that are related to manner of articulation (e.g., [dent]) and finally from [i] to [u].

We note that the direction of assimilation is the same in the examples mentioned above (25a), in all cases a constituent in the left assimilates to a neighboring constituent in the root. The following constituent in a prefix (e.g., 23a) or in an infix (e.g., 24c) assimilates to the first constituent in the root. Similarly, the neighboring constituent in a suffix assimilates to the first constituent in the root (25d). The opposite direction of the process (assimilation) results in unacceptable forms:

24. a. 'ad-ma'n → 'ad-han
   b. 'al-ad → 'al-het
   c. 'ahalb → 'al-takla
   d. ma'l-ad → ma'l-atla

Exceptions to the directionality of assimilation can be witnessed in examples like the ones in (25f), where the first constituent in the root is a glide:

25. a. wallah' → preached
   b. waswallah' → was preached
   c. g6lay' → g6lay
   d. y6lay (N=664) → group
   e. h6lay → became deposed
   f. l6laya → became deposed

The examples in (25f) show that a glide assimilates to the neighboring constituent in the prefix (25a) or to the neighboring constituent in the infix (25b). In fact, glides behave differently from the rest of the consonants. They are the only consonants that can be replaced with a reference count of [i] for [u] and [u] for [i].
26. a. waffal (root) → wafal → "you promise"
b. inwaid (root) → t.u.nad → "you come back"
c. yath (root) → b.bas → "it becomes hard"
d. umyil (root) → t.malil → "you recline"

The fact that glides are the only consonant in a root that can be dissolved with by being replaced by vowels in cases like the ones in (26) is an indication of the possibility for glides to assimilate to other consonants in the affixes.

In the next section, we will see how syllabic structure, stress, and spreading (articulation) can explain cases of heteromorphemic generation that have not been accounted for in earlier generation studies.

5. Heteromorphemic generation and spreading:

This section elaborates on the role of stress, syllabic structure, and spreading in creating cases of heteromorphemic generation in O.A. The association forms in (27a) and (27b) mean that an empty position is filled by spreading the consonant that occupies the root of the following syllable:

27. a. t.walik → "enemy"

b. T a u w a m → "fellow-sake" "your enemy"

c. T a u w a m → "fellow-sake" "your enemy"

28. a. g.u.s. l.u.h

b. T a u w a m → "I said to him"
c. g d l b → "gallilah"  "I said to him"

e. g d l b → "gallilah"  "I said to him"

f. O N CO O N CO → "gallilah"  "I said to him"

g. g d l b → "gallilah"  "I said to him"

d. O N CO O N CO → "gallilah"  "I said to him"

The condition on stem assignment in JA (13) is that we have argued for requires the stressed syllable to be [-f] in any position except in word-initial position. This means that (27b) is not acceptable because the stressed syllable is [-f] for (17b) to be acceptable, the stressed syllable must be [-f] i.e. [l]. To make the stressed syllable heavy, we spread [-f] in the root of the following syllable to the root of the stressed syllable, which renders the stressed syllable [l]. This will result in the desired form (27c). The same argument can be made about (28). Notice that we have a cluster of three consonants in (28a), which is impermissible in JA. If we treat "gallilah" as one word, in fact, if we treat "gallilah" as two words (gallil ah), the problem is solved, because we end up with a non-adjacent cluster in "gall il" which permissible in JA (cf. (15a) and (18a)). However, consonant clusters can be broken through stressors which can occur between CO (28b) (cf. (18b) = CO CO (28c)). Stress location and the possibility of pausing after "galil" without affecting the meaning indicate that (28b) should be treated
as being composed of two words. As we notice, the stress falls on the first syllable of 'goldilocks' as expected after the strong/balanced of (i). However, (28e) or (f) should be treated as one word for two reasons. First, we cannot place after 'goldilocks' in both cases. Second, Hebrew speakers of Arabic, unexpectedly, tend to stress the second syllable rather than the first syllable of 'goldilocks'. If we turn now words, we would expect the stress to fall on the first syllable. The problem is that here is that for the second syllable to be stressed, it has to be [-I] as indicated by (28). We obtain the derived tone by spreading the coda on the onset of the next syllable to the coda of the stressed syllable, which causes the stressed syllable to become heavy, i.e. [-I] (28d).

The situation in (28e) is different from the one in (28b) in that no sympathetic takes place in (28e).

\[
\begin{align*}
\text{g} & \quad \text{u} \quad \text{d} \quad \text{l} \quad \text{o} \quad \text{k} \quad \text{s} \quad \text{h} \\
\text{O} & \quad \text{N} \quad \text{Cp} \quad \text{O} \\
\text{g} & \quad \text{i} \quad \text{l} \quad \text{i} \quad \text{b} \\
\text{g} & \quad \text{u} \quad \text{d} \quad \text{l} \quad \text{o} \quad \text{k} \quad \text{s} \quad \text{h} \\
& \quad \text{you} \quad \text{of} \quad \text{sp} \quad \text{said} \quad \text{to} \quad \text{him}
\end{align*}
\]

Moreover, the morpheme that refers to 'you sp. f' in (28e) is pronounced as [i] except when it occurs in word-final position where it is pronounced as [I]. As expected, the stress falls on the second syllable which is already [-I].

b. Summary

This paper has been an attempt to study the interaction of stress, syllable structure, and gemination with respect to IA. The main emphasis of the paper is that certain cases of heteromorphemic gemination are better explained through showing the role of stress and syllable structure in stressing them. It has been argued that the OCP regulates and suppresses the processes of gemination and de-gemination (McCarthy, 1979A) and (1986B). McCarthy further argues that since heteromorphemic geminates are represented on different autosegmental tiers, the OCP is not violated. That is, the existence of
adjacent identical segments. It is in the case of homonymous geminates, as allowed because the two identical segments are in dissyllabic morphemes.

The data presented in this paper show that some cases of homonymous geminates can be equally accounted for through considering the relationship between stress and syllable count, or on the one hand, and homonymous geminates, on the other. The main hypothesis, in this paper is that the condition on stress assignment (23) triggers the derivation of the phonological cases of homonymous geminates (112-1) and (1128). To avoid violating (21), we have to license the stressed syllable by making it heavy. Spreading the onset of the strengthening syllable to the code of the stressed syllable renders the restricted syllable heavy, which means that it becomes [H] as required (112-2) and (1123).

Glide/geminate pairs differ from the rest consonants in two ways: first, they can contribute to the consonant in the neighboring affix (25a). In fact, they are the only exception to the directionality of spreading (23) which is always from the root to the affix. Second, glides are the only consonants that can be replaced with vowels (26).

Notes:
1. For more details see Levelt (1989) and Levelt and Nipkow (1982).
2. \( C' \rightarrow CG \) 
3. \( \text{Note:} \)
4. \( \text{Note:} \)

References: