

TOWARDS A NEW THEORY OF ARABIC PROSODY

by: Zaki N. Abdel-Malek
University of Utah

FOOTNOTES

¹See al-Sayyid's al-^CArūd wa al-Qāfiyah, pp. 38, 49, 63, 80, 88. See also al-Rādī's Sharḥ Tuḥfat al-Khalīl, pp. 15-41.

²For each meter, only one hemistich is generated; the two hemistichs are identical.

³See al-Zahāwī's "Tawallud al-Ghinā' wa al-Shi^Cr".

⁴The occurrence of such alterations after, not before, the MC's have been grouped into feet sometimes forces al-Zahāwī to change the foot boundaries established by al-Khalīl; for example, each hemistich of almunsariḥ is mustaf^Cilun maf^Cuulaatu mustaf^Cilun according to al-Khalīl, but mustaf^Cilun fa^Clun faa^Cilun faa^Cilun according to al-Zahāwī.

⁵See Anīs' Mūsīqā al-Shi^Cr, pp. 139-161.

⁶See Anīs' Mūsīqā al-Shi^Cr, pp. 147, 148. See also al-Nuwayhī's Qaḍiyyat al-Shi^Cr al-Jadīd, pp. 240, 241.

⁷Anīs prefers to say that the syllables which occur in ancient Arabic poetry are either short (CV) or medium (CVV, CVC), long syllables being of very rare occurrence (see pp. 146-149 of his Mūsīqā al-Shi^Cr).

⁸fa^Cuulaatun corresponds to al-Khalīl's mafaa^Ciilun; mustaf^Cilaatun occurs only as the first foot in each hemistich of almunsariḥ (according to Anīs, each hemistich of almunsariḥ is mustaf^Cilaatun mustaf^Cilun faa^Cilun).

⁹See pp. 156-159 of his Mūsīqā al-Shi^Cr. In stating these rules, Anīs uses the expression "medium syllable" where the present writer uses "long syllable".

¹⁰The sequence - . . , which occurs exclusively in hemistich-final position, should be considered a variant of - . ; only occasionally is the sequence - . . encountered in Arabic poetry.

¹¹See Abū Dīb's Fī al-Bunyah al-Īqā^Ciyyah, pp. 85-87.

¹²See Abū Dīb's Fī al-Bunyah al-Īqā^Ciyyah, pp. 106, 107.

¹³The present writer disagrees with Abū Dīb's argument: the inability of a descriptive device to account for performance does not constitute sufficient grounds for rejecting that device (see Chomsky's Aspects, pp. 3-15).

¹⁴See section 2.3.2 of this study.

¹⁵In some modern varieties of Arabic, stress is entirely predictable from the phonological environment; in other modern varieties, stress is almost entirely predictable from the phonological environment (see Nasr's The Teaching of Arabic as a Foreign Language, pp. 27, 28). The present writer believes that stress was phonologically conditioned in Classical Arabic and the contemporaneous dialects; it is difficult to see an accident in the fact that ancient Arab grammarians, meticulous as they were, have left us no systematic description of stress.

Unless trained in structural linguistics, native speakers are usually unaware of phonologically conditioned entities (i.e., allophones); e.g., in Colloquial Egyptian Arabic the sound [p] occurs before voiceless obstruents as an allophone of /b/, and yet the average Egyptian does not recognize [p] as an entity which differs phonetically from [b].

¹⁶As the following examples indicate, stress patterns cannot be considered the main determinant of variation either in modern or in ancient Arabic poetry (a dash stands for a mutaḥarrik and a dot stands for a saakin):

(a) Modern Arabic poetry contains instances where commutable feet have different stress patterns; for example, Egyptian poets substitute — — — — · for — · — · — — · although Egyptians pronounce the form — — — — · with primary stress on the first constituent and the form — · — · — — · with primary stress on the fifth constituent.

(b) Ancient Arabic poetry contains instances where a single form is commutable with at least two feet of different stress patterns. For example, ancient Arab poets frequently substituted — — · — — · for — — · — · — · and for — · — · — — · although, according to Guyard, the last two forms were probably pronounced in Classical Arabic with different stress patterns (see section 2.3.2 of this study).

¹⁷See Abū Dīb's Fī al-Bunyah al-Īqā^Cīyyah, pp. 46, 47, 93-98.

¹⁸At the end of Chapter I (p. 98), Abū Dīb rejects feet in favor of rhythmic nuclei. He argues that the use of feet has resulted in "fossilizing" Arabic meters. The present writer considers the foot a useful entity which should be retained. There is no guarantee that rhythmic nuclei would not have resulted in "fossilization" had they been proposed by al-Khalīl; it is no secret that the tendency to revere and therefore to imitate ancient models has flourished among Arab poets of the modern age.

¹⁹Vol. II, pp. 358-368.

²⁰See Shapiro's Handbook.

²¹See Wright's Grammar, Vol. II, p. 363. A single bar separates two consecutive feet; a double bar marks the break between the two hemistichs of a meter. In the scansion of metrical verse, — stands for a long or stressed syllable, while u stands for a short or

unstressed syllable; the theory being discussed employs a representation of Arabic feet where - stands for a long syllable and u stands for a short syllable.

²²The first and the third of the defects listed here are pointed out in ^CAyyād's Mūsīqā al-Shi^Cr al-^CArabīy, pp. 62-67.

²³The summary is based on pages 68-87 of ^CAyyād's Mūsīqā al-Shi^Cr al-^CArabīy.

²⁴Each symbol stands for the durational value of a syllable: - stands for a full beat; u , for half a beat; -u , for a beat and a half.

²⁵For example, the string $\Pi_u \ u \ | \ u \ u \ u$ (the first portion of sequence (a) which begins with a primary stress and which is followed by a primary stress) yields a measure in the following manner:

$$\Pi_u \ u \ | \ u \ u \ u \ + \ \Pi_u \ u \ | \ u \ u$$

This change results from rule (6). The transformation

$\Pi_u \ u \ | \ u \ u \ u \ + \ \Pi_u \ u \ | \ u \ u$ seems to satisfy rule (6), but it would be incorrect since it reduces the number of symbols (each symbol stands for a syllable; thus the number of symbols cannot be reduced as long as the number of syllables remains the same).

²⁶Unlike other symbols, Ω does not represent the duration of a syllable.

²⁷Pages 75-87.

²⁸See ^CAyyād's Mūsīqā al-Shi^Cr al-^CArabīy, pp. 81, 82.

²⁹See ^CAyyād's Mūsīqā al-Shi^Cr al-^CArabīy, pp. 77, 78.

CHAPTER III

A NEW PROPOSAL

The theory proposed by the present author places equal emphasis on generality (explanatory power), adequacy, and simplicity. Our goal is to account for the meters reported by al-Khalīl and al-Akhfash; we make no attempt to account for the innovations which occur in modern Arabic poetry, but it is quite possible that our theory provides a general framework which can easily accommodate those innovations.

We propose three levels of analysis; those levels are discussed below.

3.1. Level I. Theoretical Meters

On this level, there are only two feet: the short (faa^Cuulun) and the long (faa^Cuulaatun); the former will be represented by A, and the latter will be represented by B.

The principle characterizing this level is that patterned recurrence, in the hemistich,¹ of at least one foot gives rise to "meter".²

The rules on this level are the following:

(1) A hemistich consists of two, three, or four feet.

(2) Each hemistich is characterized by the patterned recurrence of A, B, or both; the patterns utilized are: mere

repetition, interrupted repetition, supplemented repetition, and alternation.

Thus the following types of meters exist on this level (only one hemistich is represented; the two hemistichs are identical in each case³):

- (a) Mere repetition
 - (i) AAAA (ii) AAA (iii) BBB (iv) BB
- (b) Interrupted repetition: BAB
- (c) Supplemented repetition: BBA
- (d) Alternation:
 - (i) ABAB (ii) BABA

Notes:

(1) The first three types lack the following possible meters: AA, BBBB; ABA; AAB. Three of the four missing meters are A-based (an A-based meter is one which consists entirely of A's or which employs more A's than B's). In other words, Arabic poetry favors B-based meters--a fact which will be explained later. Exclusion of BBBB may be for the purpose of avoiding excessive length: four feet constitute the maximum length for a meter, and B is the long foot.

(2) Rule (1) above results from the fact that mere repetition requires a minimum of two feet, alternation requires a minimum of four feet, and each of the other two types requires a minimum of three feet.

If faa^Cuulun is substituted for A and faa^Cuulaatun is substituted for B, the meters on this level assume the following forms:

- (a) Mere repetition
 - (i) faa^Cuulun faa^Cuulun faa^Cuulun faa^Cuulun
 - (ii) faa^Cuulun faa^Cuulun faa^Cuulun
 - (iii) faa^Cuulaatun faa^Cuulaatun faa^Cuulaatun
 - (iv) faa^Cuulaatun faa^Cuulaatun

- (b) Interrupted repetition
faa^Cuulaatun faa^Cuulun faa^Cuulaatun
- (c) Supplemented repetition
faa^Cuulaatun faa^Cuulaatun faa^Cuulun
- (d) Alternation
 - (i) faa^Cuulun faa^Cuulaatun faa^Cuulun faa^Cuulaatun
 - (ii) faa^Cuulaatun faa^Cuulun faa^Cuulaatun faa^Cuulun

3.2. Level II. Standard Meters

The principle which operates on this level is that patterned recurrence of long and short syllables in the hemistich gives rise to "meter";⁴ consequently, theoretical meters are modified on Level II by reduction of certain syllables.

That patterned recurrence is a general principle can be seen from the following passage:⁵

"Meter should be defined as the theoretically regular, although in practice sometimes much varied, recurring pattern of acoustic detail within the line. In modern English verse the pattern consists of a fixed number of stresses and of fixed positions for them in relation to the unstressed, or more lightly stressed, syllables. The mere ordered physical placement of stresses and nonstresses tends to create a determinate acoustic structure--that is, to convey a sense of regularity.....--and this structure is enhanced by the ISOCHRONIC principle, the fact that the intervals between primary stresses tend to seem equal. In Old English poetry, only the number of syllables and the end rhymes are the determinants; in Greek and Latin poetry the number of long and

short syllables and their positions were the fixed elements; in Chinese poetry the principle is that of variation in pitch together with a fixed count of syllables. Thus, for a definition that will cover all instances, we have to describe METER as the distribution of syllables according to stress, quantity, pitch, or mere number, in some regular pattern either within the line or among successive lines."

The rules on this level are discussed below; they will be called "the rules of standard reduction".

(1) Each foot in a given theoretical meter undergoes syllable reduction. Syllable reduction is either foot-initial or foot-medial⁶ (in a quadri-syllabic foot, medial reduction may affect either of the two medial syllables). No foot-final reduction occurs on this level since a short syllable has its clearest rhythmic effect when followed in the same perceptual group by a long syllable (in this context the short syllable lends prominence to the long syllable).

(2) Foot-initial and foot-medial reduction are mutually exclusive: they co-occur neither in the same foot nor in different feet of the same standard meter. Thus reduction is similarly positioned in all the feet of a given hemistich.

(a) Initial reduction is, by definition, identically placed in all the feet of a given hemistich.

(b) In most cases, medial reduction is identically placed in all the feet of a given hemistich.⁷ In a hemistich where such is not the case, the feet differing in the placement of medial reduction are adjacent; in non-contiguous feet, reduction is identically placed. Thus the sequences

under (i) below are possible, but those under (ii) are not.⁸

- (i) - U - - - U - - - U - -
 - - U - - - U - - - U -
 - U - - - - U - - U - -
 - - U - - U - -
 - U - - - U - - U - - U -
 - - U - - - U - - U -
 - - U - - U - - - U -
- (ii) - U - - - U - - - - U -
 - U - - - - U - - - U -
 - - U - - U - - U - -

The ultimate degree of consistency is the situation where syllable reduction is identically placed in all the feet of a given hemistich; we shall call this degree of consistency "standard congruence".

(3) Applying initial reduction to faa^Cuulaatun produces fa^Cuulaatun. Because fa^Cuulaatun (which constitutes a single perceptual group) ends in three long syllables, the sequence fa^Cuulaatun fa^Cuulaatun is monotonous, and the sequence fa^Cuulaatun fa^Cuulaatun fa^Cuulaatun is even more monotonous. Therefore fa^Cuulaatun fa^Cuulaatun is avoided optionally, while fa^Cuulaatun fa^Cuulaatun fa^Cuulaatun is avoided obligatorily; this is done by changing both the first and the third syllables (rather than only the first) of faa^Cuulaatun in one of the following ways:⁹

- (a) - - - - + ω - U - (faa^Cuulaatun + fafa^Cuulatun)
 (b) - - - - + U - ω - (faa^Cuulaatun + fa^Cuulalatun)

It must be emphasized that the replacement of a long syllable by two short ones is not reduction since the

long syllable has approximately the same duration as the two short syllables combined; thus initial and medial reduction are still mutually exclusive.

Notes on the rules

(1) It has already been pointed out that Arabic meters favor long rather than short feet; in the light of the above rules, the reason becomes obvious. When the rules of standard reduction are applied, a long foot yields more forms than does a short foot:

$$\begin{aligned} & \text{---} \text{---} \text{---} \text{---} \text{---} + \text{v} \text{---} \text{---} \text{---} , \text{---} \text{v} \text{---} \text{---} \text{---} , \text{---} \text{---} \text{v} \text{---} \text{---} , (\text{v} \text{---} \omega \text{---} \text{---} , \omega \text{---} \text{v} \text{---} \text{---})^{10} \\ & \text{---} \text{---} \text{---} \text{---} \text{---} + \text{v} \text{---} \text{---} \text{---} , \text{---} \text{v} \text{---} \text{---} \end{aligned}$$

Thus an A-based theoretical string yields a small set of standard meters (i.e., a set consisting of relatively few members), while the B-based counterpart yields a large set of standard meters (i.e., a set consisting of relatively numerous members). Because B-based strings are predominant on Level I, the small sets of standard meters are less than they would otherwise be; in other words, the standard meters of Arabic poetry, thanks to such predominance, are structurally disposed to forming a few large sets.

(2) Of the meters produced by the above rules 76% actually occur in Arabic poetry, and 24% are potential. The 76% include all but three of the standard meters listed by al-Khalīl; they include as well the standard meter added by al-Akhfash:

(a)

(i)

almutaqaarib v --- v --- v --- v ---
 (fa^Cuulun fa^Cuulun fa^Cuulun fa^Cuulun)
almutadaarak - v - - v - - v - - v -
 (faa^Cilun faa^Cilun faa^Cilun faa^Cilun)

(ii)

majzū'ulmutaqaarib u - - u - - u - -(fa^cuulun fa^cuulun fa^cuulun)majzū'ulmutadaarak - u - - u - - u - -(faa^cilun faa^cilun faa^cilun)

(iii)

arrajaz

- - u - - - u - - - u - -

(faa^cuulatun faa^cuulatun faa^cuulatun)alkaamil

w - u - w - u - w - u -

(fafa^cuulatun fafa^cuulatun fafa^cuulatun)alxafiif

- u - - - u - - - u - -

(faa^cilaatun faa^cuulatun faa^cilaatun)

*Latent

- - u - - u - - - - u - -

(faa^cuulatun faa^cilaatun faa^cuulatun)arramal

- u - - - u - - - u - -

(faa^cilaatun faa^cilaatun faa^cilaatun)

*Latent

u - w - u - w - u - w -

(fa^cuulalatun fa^cuulalatun fa^cuulalatun)

(iv)

alhazaj

u - - - u - - -

(fa^cuulaatun fa^cuulaatun)majzū'ulwaafir

u - w - u - w -

(fa^cuulalatun fa^cuulalatun)

majzuu' u

rrajaz

-- u - - - u -
(faa^Cuulatun faa^Cuulatun)

majzuu' u

lkaamil

w - u - w - u -
(fafa^Cuulatun fafa^Cuulatun)

almujta00

-- u - - u - -
(faa^Cuulatun faa^Cilaatun)

majzuu' u

lxafiif

- u - - - - u -
(faa^Cilaatun faa^Cuulatun)

majzuu' u

rramal

- u - - - - u - -
(faa^Cilaatun faa^Cilaatun)

(b)

almadiid

- u - - - u - - u - -
(faa^Cilaatun faa^Cilun faa^Cilaatun)

majzuu' u

lbasiif

-- u - - u - - - - u -
(faa^Cuulatun faa^Cilun faa^Cuulatun)

**Additional

u - - - u - - u - - -
(fa^Cuulaatun fa^Cuulun fa^Cuulaatun)

(c)

alwaafir

u - w - u - w - u - -
(fa^Cuulalatun fa^Cuulalatun fa^Cuulun)

arramal

- u - - - u - - - u -
(faa^Cilaatun faa^Cilaatun faa^Cilun)

assarii^C - - u - - - u - - u -
 (faa^Cuulatun faa^Cuulatun faa^Cilun)
 **Additional u - - - u - - - u - -
 (fa^Cuulaatun fa^Cuulaatun fa^Cuulun)
 *Latent ω - u - ω - u - u - -
 (fafa^Cuulatun fafa^Cuulatun fa^Cuulun)
 **Additional - u - - - - u - - u -
 (faa^Cilaatun faa^Cuulatun faa^Cilun)
 *Latent - - u - - u - - - u -
 (faa^Cuulatun faa^Cilaatun faa^Cilun)

(d)

(i) attawiil u - - u - - - u - - u - - -
 (fa^Cuulun fa^Cuulaatun fa^Cuulun fa^Cuulaatun)
 (ii) albasiit - - u - - u - - - u - - u -
 (faa^Cuulatun faa^Cilun faa^Cuulatun faa^Cilun)
 *Latent - u - - u - - - u - - u - -
 (faa^Cilun faa^Cilaatun faa^Cilun faa^Cilaatun)
 *Latent - u - - - u - - u - - - u -
 (faa^Cilun faa^Cuulatun faa^Cilun faa^Cuulatun)
 *Latent u - - - u - - u - - - u - -
 (fa^Cuulaatun fa^Cuulun fa^Cuulaatun fa^Cuulun)
 *Latent - u - - - u - - u - - - u -
 (faa^Cilaatun faa^Cilun faa^Cilaatun faa^Cilun)

(3) In general, standard meters which lack standard congruence are of relatively uncommon occurrence: this explains the infrequency of almujtaθθ (- - u - - u - -),

a meter which is used in about 2% of ancient Arabic poetry and about 3% of modern Arabic poetry;¹¹ it also explains the latency of the meter -- u - - u - - - - u - in ancient Arabic poetry.

(4) In any given standard meter, consecutive short syllables do not exceed two, and consecutive long syllables do not exceed four. The situation could not be otherwise given the type of patterning which exists on Level II (similar placement of reduction in all feet) and given the theoretical meters which exist on Level I: a sequence of two short syllables results from the third rule of standard reduction; a sequence of four long syllables may result when medial reduction is not identically placed in two theoretical feet which are long and adjacent.

Notes on standard meters

(1) In our inventory of standard meters, the strings identified by one asterisk are latent meters,¹² while those identified by two asterisks are meters which occur in ancient Arabic poetry but which count for variants in al-Khalīl's theory (we have called those meters "additional" since they are to be added to al-Khalīl's list of standard meters).

(2) In ancient Arabic poetry, which is the subject of this study, the meters almudaari^c (u - - - - u - -) and almuqtaḍab (- - - u - - u -) are almost nonexistent;¹³ in fact, it is related that al-Akhfash considered those two meters alien to Arabic poetry.¹⁴ Neither of the two meters is produced by the rules of standard reduction.

The meter almunsariḥ (- - u - - - - u - - u -) is not produced by the rules of standard reduction. As will be seen on Level III, almunsariḥ can be considered a variant of the latent meter - - u - - u - - - - u - (see the fifth of the restrictions listed in section 3.3.1);

this assertion is supported by the fact that the two variants which commonly alternate with the middle foot of almunsariḥ (- u - u and u u - u¹⁵) can be generated from - u - - (see section 3.3.1).

(3) For the standard meters almujtaθθ, almadiid, alwaafir, and assarii^C, al-Khalīl specifies forms other than the ones given above for the same meters. Significantly, those other forms occurred very rarely--if at all--in ancient Arabic poetry, while the forms listed here occurred commonly in the same corpus.¹⁶ In considering the rare (or nonexistent) form "basic", al-Khalīl was obviously guided by the framework of his theory rather than the frequency of occurrence. It is perfectly legitimate to postulate theoretical strings which can yield the actual meters, but such postulation should not take place on a level where the strings are clearly actual (rather than theoretical) meters.

(4) If it does not consist entirely of identical feet, a standard meter usually has at least one pair of identical feet. This may explain the latency in ancient Arabic poetry of the standard meter faa^Cuulatun faa^Cilaatun faa^Cilun.

(5) A standard meter is not favored if, by occurring in a different order, all or most of its feet constitute another standard meter. Of each pair given below, the first member is rare¹⁷ on account of this restriction:

almadiid: - u - - - u - - u - -
 (faa^Cilaatun faa^Cilun faa^Cilaatun)

arramal: - u - - - u - - - u -
 (faa^Cilaatun faa^Cilaatun faa^Cilun)

assarii^C: - - u - - - u - - u -
 (faa^Cuulatun faa^Cuulatun faa^Cilun)

majzuu²u
lbasiit - - u - - u - - - u -
 (faa^Cuulatun faa^Cilun faa^Cuulatun)

Listed below are four pairs of meters; the first member of each pair is a latent meter all or most of whose feet, by occurring in a different arrangement, constitute the second member.

Latent: - u - - u - - - u - - u - -
 (faa^Cilun faa^Cilaatun faa^Cilun faa^Cilaatun)

arramal: - u - - - u - - - u -
 (faa^Cilaatun faa^Cilaatun faa^Cilun)

Latent: - u - - - u - - u - - - u -
 (faa^Cilun faa^Cuulatun faa^Cilun faa^Cuulatun)

albasiit: - - u - - u - - - u - - u -
 (faa^Cuulatun faa^Cilun faa^Cuulatun faa^Cilun)

Latent: u - - - u - - u - - - u - -
 (fa^Cuulaatun fa^Cuulun fa^Cuulaatun fa^Cuulun)

attawiil: u - - u - - - u - - u - - -
 (fa^Cuulun fa^Cuulaatun fa^Cuulun fa^Cuulaatun)

Latent: - u - - - u - - u - - - u -
 (faa^Cilaatun faa^Cilun faa^Cilaatun faa^Cilun)

arramal: - u - - - u - - - u -
 (faa^Cilaatun faa^Cilaatun faa^Cilun)

Given any of the above pairs, what determines whether a certain member of the pair is likely to be favored? At least in the majority of cases, the degree of syllabic symmetry involved seems to be the answer: the member with more syllabic symmetry is favored (as will be seen on Level III, syllabic symmetry is highly desirable in Arabic poetry). The patterns of syllabic symmetry referred to in the following discussion are periodicity and a type of syllabic balance which may be defined thus: beginning from the extremities of the string and moving towards the middle, we find that the corresponding syllables are identical in regard to the feature of length (the middle may be zero or a syllable).

(a) Syllabic balance pervades all of string (ii) below but only the portion preceding the slanting line in string (i); besides, there is more periodicity in string (ii) than there is in string (i): each two short syllables in string (ii) are separated by the same number of long syllables, but such is not the case in string (i). Hence the latency of string (i).

(i) . - u - - u - - - u - - u - / -
(ii) - u - - - u - - - u -

(b) Syllabic balance pervades all of string (i) below, and it pervades all of string (ii) as well; but there is more periodicity in the latter (each two short syllables in the second string are separated by the same number of long syllables, but such is not the case in the first string). Hence the latency of string (i).

(i) - u - - - u - - - u - - - u -
(ii) - u - - - u - - - u -

(c) In string (i) below, there is slightly more syllabic balance than there is in string (ii): syllabic balance pervades all of string (i) but only the portion which follows the slanting line in string (ii). However, this difference is more than counteracted by the difference in periodicity: in string (ii), one syllable must be deleted in order to make the short syllables periodic (each occurring after two long syllables); in string (i), three syllables must be added in order to make the short syllables periodic (each occurring after three long syllables).

(i) - u - - - u - - u - - - u -
(ii) -/- u - - u - - - u - - u -

3.3. Level III. Variants

3.3.1. Major rules governing variation

There are four major rules which operate on Level III to produce variants. The application of those rules is subject to the following stipulations:

(1) In most cases, variants are derived directly from Level II feet; the variants derived from other variants are relatively few. Generally speaking, then, the four rules operate with Level II feet as the domain (or input).

(2) A given foot is usually transformed by a single rule; occasionally, however, a foot is transformed by two or more rules operating simultaneously.

The four rules in question are stated and discussed below.

(1) Amalgamation: The constituent w may be replaced by a long syllable (e.g., $w - u - \rightarrow - - u -$, $u - w - \rightarrow u - - -$).

(2) Level III reduction: Unless preceded in the same foot by a short syllable, any long syllable may be shortened (e.g., $- u - \rightarrow u u -$, $u - - \rightarrow u - u$, $u - - - \rightarrow u - u -$).

U - - - + U - ~ U , U - - - + U - U U , - - U - + U - U - ,
 - - U - + - U U - , - - U - + U U U - , - U - - + U U - - ,
 - U - - + - U - U , - U - - + U U - U).

(3) Deletion: A short syllable may be deleted if it occurs (a) initially in the foot before a long syllable or (b) medially in the foot between two long syllables; a long syllable may be deleted if it occurs finally in the foot after another long syllable. The following are examples:

- (a) U - - + - - , U - - - + - - - , U - w - + - w -
- (b) - U - + - - , - U - - + - - - , w - U - + w - -
- (c) U - - + U - , U - - - + U - - , - U - - - U -
- (d) U - - + -
- (e) - U - - + - -

For the purposes of Level III reduction and deletion, w patterns as a long syllable, although such patterning results in rare variants (e.g., U - w - + U - U - , w - U - + w U U - , U - w - + U - w).

(4) Addition: Occasionally a syllable is added to the foot (e.g., w - U - + w - U - -).

In each of the following transformations, two rules operate simultaneously:

- (a) U - - + - U
- (b) - U - + U U - -
- (c) - U - - + U U -

In the following transformation, three rules operate simultaneously:

U - w - + - - U

Of the four rules, the least productive is addition. The common transformations involving addition are the following (the input of the first transformation is the

line-final foot of majzū[?]u lmutadaarak, and the input of the second transformation is the line-final foot of majzū[?]u lkaamil):

- (a) - u - + u u - -
- (b) w - u - + w - u - - , - - u - - , u - u - - ,
or - u u - -

The present writer believes that the above rules attest the presence of a basic principle which characterizes Level III; the discussion below is intended to shed light on that principle.

It is interesting to notice that Level III changes can produce syllabic symmetry, including simple periodicity, in the entire hemistich or in a shorter string (such as a foot).¹⁸

Simple periodicity is achieved when a single syllable of the one type occurs between each two of the other type. The following examples show how a string can acquire simple periodicity through Level III changes:

- - u - - - u - - - u - + u - u - - - u - - - u - +
u - u - u , u - - - u - + u - u - u - u - u - u -

u - - + u - u

u - - - + u - u -

- u - - + - u - u

- - u - + u - u -

- u - - + - u -

Even the most cursory examination confirms the assertion that simple periodicity is not the only form of syllabic symmetry which occurs on Level III: for example, the string $u u - -$ (derived by Level III reduction from the string $- u - -$) is symmetrical although devoid of simple periodicity; the same is true of the string $- - u - -$ (derived by amalgamation and addition from the string $u - u -$).

Syllabic symmetry may be durational but not structural: for example, there is no structural symmetry in $u u -$ (as compared with $u - u$), but there is durational symmetry since the sequence is divisible into two durationally equal halves.

There are, then, four rules which operate on Level III and which can produce syllabic symmetry. It must be emphasized that a given form of syllabic symmetry may be attainable through the application of one rule but not through the application of another, and that symmetrizing a given string may be facilitated by one rule but not by another. Two examples are given below.

(1) Consider string (a) below (the standard form of majzuu²u rramal):

(a) $- u - - - u - -$

Simple periodicity throughout the hemistich cannot be achieved by deletion alone; it can be achieved by changing each foot (through Level III reduction) to $- u - u$:

$- u - u - u - u$

On the other hand, the second foot of (a) may be subjected to a deletion transformation which drops the final long syllable; as a result, the hemistich would acquire a form of symmetry which cannot be achieved through Level III reduction alone:

$- u - - - u -$

(2) Consider hemistich (b) below (the standard form of arrajaz):

(b) -- u - -- u - -- u -

The hemistich cannot be symmetrized through deletion (see item 5 under "Restrictions on application"); it can be symmetrized by changing each foot in turn (through Level III reduction) to u - u - :

u - u - u - u - u - u -

It is important at this point to discuss four aspects of Level III changes; those aspects are: effect on strings, purpose of application, restrictions on application, and domain of application.

Effect on strings

(1) As explained above, Level III changes can produce syllabic symmetry in the entire hemistich or in a shorter string.

Achieving syllabic symmetry in a given string may require no more than one change or it may require several changes. What must be emphasized is that asymmetrical sequences generated on the path to syllabic symmetry are legitimate strings (thus each output in the following transformation is a legitimate hemistich: -- u - -- u - -- u - + u - u - -- u - -- u - + u - u - u - u - -- u - + u - u - u - u - u - u -); one may therefore conclude that the principle which characterizes Level III is a tendency to achieve syllabic symmetry in the entire hemistich or in a portion thereof.

Symmetrizing a foot may cause a longer string to become symmetrical (such would be the case if the first foot of - u - - - u - is changed to - u - u); on the other hand, Level III changes may symmetrize a string without producing symmetry in the individual feet which constitute that string (such would be the case if the sequence u - - - u - - , the last two feet of the standard meter u - - - u - - - u - - , is changed to u - - u - -).

Rather than symmetrizing asymmetrical strings, Level III changes often substitute one form of symmetry for another; such is the case in the following transformation:

- u - - - u - + - u - u - u -

So strong is the tendency to achieve syllabic symmetry that one occasionally encounters Level III changes which are not governed by general rules but which result in syllabic symmetry. Consider, for example, the following transformations:

(a) - u - u - - u - - u - u + - u - u - - u u - u - u
 (b) - u - - - - u - - u - - + - u - - u - / u u - u - -
 (c) u - u - u u / - - - u - - - +
 u u - u - u u / - - - u - - -

Transformation (a) produces a totally symmetrical hemistich, and transformation (b) produces a hemistich consisting of two symmetrical halves (separated by a slanting line). Notice, however, that shortening the final syllable of - - u - violates the general rule of Level III reduction. It might be mentioned in passing that the output of the first transformation displays a rather interesting form of syllabic symmetry: beginning from the ends and moving towards the middle, we find that the corresponding syllables are consistently dissimilar; the same form of symmetry

characterizes the sequence which follows the slanting line in the output of the second transformation.

In the input of transformation (c) the sequence which precedes the slanting line is not symmetrical, while in the output the sequence which precedes the slanting line is symmetrical. The latter sequence consists of the former plus the syllable added by the transformation; in other words, the syllable added by the transformation serves the purpose of "balancing" the medial syllable of $v\ v -$. Significantly, the addition of syllables in hemistich-initial position is a rare phenomenon.

The process illustrated by transformation (c) is known to Arab prosodists as alxazm. Its function obscured by al-Khalil's theory, alxazm has been considered so pointless and unexplainable a phenomenon that some scholars dismiss it as a fabrication.¹⁹ In the context of our theory, alxazm is altogether plausible, and we therefore need not resort to claims of fabrication.

(2) Level III changes produce type assonance--a relationship which holds between a Level III foot and each variant of that foot. Type assonance is divisible into "major type assonance" and "minor type assonance":

(a) Major type assonance exists when, without exception or with a maximum of two exceptions, every constituent of the variant is identical to the corresponding constituent of the Level II foot (in this context, a constituent is ω , v , or $-$). For example, major type assonance relates the Level II foot $v - - -$ to each of the variants $v - -$ and $v - v -$: $v - - -$ and $v - -$ are related to each other by major type assonance since every constituent of the latter is identical to the corresponding constituent of the former; $v - - -$ and $v - v -$ are related to each other by major type assonance since only one constituent of the latter

(the medial *u*) is different from the corresponding constituent of the former. Major type assonance also relates the Level II foot *--u-* to the variant *uuu-* since only two constituents (the first and the second) of the latter are different from the corresponding constituents of the former. We shall say that a given variant is related to the Level II foot by "optimum" major type assonance when every constituent of the former is identical to the corresponding constituent of the latter.

Where two constituents of the variant are not identical to the corresponding constituents, the variant is usually quadripartite.

(b) Minor type assonance exists when the sequence *u-* of the Level II foot corresponds to *u-* in the variant (for example, minor type assonance relates the Level II foot *-u--* to each of the variants *uu--*, *-u-u*, *uu-u*, and *-u-*). Major type assonance may include or even constitute minor type assonance, but such is not always the case; compare, for example, the forms of type assonance displayed by the following pairs:

- u - - , u u - -
 - u - - , u u - u
 - u - - , - - -

For the purposes of major type assonance, ω patterns as a long syllable;²⁰ thus the variant *--u-* is related to the source (Level II) foot $\omega - u -$ by optimum major type assonance.

Type assonance does not necessarily produce "meter";²¹ its function is to produce an auditory effect which relates variant feet to the feet of Level II, thereby helping to

identify the standard hemistich from which a given string is derived.

In most instances, major type assonance (as an auditory effect) is not sufficient to identify the Level II foot from which a given variant is derived; in each of the following examples, the variant which precedes the colon is related by major type assonance to both of the Level II feet which follow the colon:

- (a) u u u - : - - u - , - u - -
- (b) - u u - : - - u - , - u - -
- (c) u u u - : - - u - , u - - -
- (d) u u - : - u - , u - -

Generally speaking, variants are related to the source (Level II) feet by minor as well as major type assonance. In each of the above examples, the variant is related by major and minor type assonance to the first Level II foot and by major type assonance alone to the second Level II foot; therefore it is with the first Level II foot that the variant must be identified.

A variant which is related by major and minor type assonance to a set of Level II feet is usually identifiable with any member of the set (e.g., u - u - is identifiable with u - - - , u - w - , or w - u -).

Occasionally a variant is related by major type assonance to a set of Level II feet, and by minor type assonance to no member of the set; here the variant is usually identifiable with a Level II foot if the pair can be said to display optimum major type assonance. The variant - - - , for example, is related by major type assonance to each foot in the following set: - u - - , - - u - , w - u - , u - - - , u - - , - u - ; nevertheless,

the variant in question is identifiable only with the first four members of the set. Optimum major type assonance holds between --- and - u - - because the first constituent of each foot is long, the penultimate constituent is long, and the final constituent is long; optimum major type assonance holds between --- and - - u - as well as between --- and u - u - because in each of the three feet the first constituent is long, the second constituent is long, and the last constituent is long; optimum major type assonance holds between --- and u - - - when the first constituent of the former is lined up with the second constituent of the latter.

When type assonance makes it possible to identify a variant with more than one Level II foot, the ambiguity can be resolved by studying the hemistich as a whole or by studying other hemistichs of the same ode (remember that, as a rule, the hemistichs of an ancient Arabic ode are monometric). Consider, for example, the following hemistichs (both of which occur in the same ode):

(a) u - u - - - u - - - u -

(b) - - u - u u u - - - u -

The initial foot of (a) must be identified with the Level II foot - - u - although it is related by type assonance to u - - - as well as to - - u - : this conclusion is facilitated by the fact that u - - - - - u - - - u - is not a standard meter; it is also facilitated by the fact that the initial foot of (b) is - - u - .

Purpose of application

Level III changes introduce metric variety; for example, all of the following sequences are variants of majzuu² u lkaamil:

- - u -	w - u -
w - u -	- - u -
w - u -	w - -
w - u -	w - u - -
- - u -	w - u - -
w - u -	- - u - -

Not only do these variants differ one from the other, but they also differ from the standard form of the hemistich (w - u - w - u -). The availability of such alternatives on Level III gives the poet some freedom in choosing words.

By promoting syllabic symmetry, Level III changes promote variety. Consider, for example, the following strings:

- (a) - u - - - u - - - u -
 (b) - u - u - u - u - u -

String (a) is the standard hemistich of arramal; string (b) is derived from (a) by Level III reduction. Both strings are symmetrical, but each embodies a distinct form of syllabic symmetry. Occurrence in the same ode of both forms contributes to variety.

Variety, then, is the primary purpose of Level III changes. The type of variety involved, however, is one which aspires to and gains from syllabic symmetry; it is, furthermore, one which is moulded by type assonance in the interest of preserving the identity of the standard meter.

Restrictions on application

(1) Level III changes are restricted by type assonance in the following ways:

(a) As was stated earlier, a given Level II foot is usually transformed by a single rule. A Level II foot is not transformed by two or more rules operating simultaneously if such transformation would produce no type-assonance; thus $v - - -$ does not yield $- v v$.

(b) Some variants display less major type-assonance than others; for example, there is less major type-assonance between $v v - v$ and the Level II foot $- v - -$ than there is between $v v - -$ and the same Level II foot. The variants which display less major type-assonance are relatively few and of relatively infrequent occurrence; in other words, Level III changes are not usually permitted to apply in a manner which would produce a minimum of major type-assonance.

(c) In the case of some variants, major type-assonance is not readily perceptible; for example, the major type-assonance which relates the variant $- - v$ to the source foot $v - - -$ becomes obvious only when the first constituent of the former is lined up with the second constituent of the latter. Level III changes are not usually permitted to apply in a manner which would produce unclear major type-assonance.

In this study, "clear" type-assonance is opposed to "unclear" type-assonance; the former exists when type-assonance can be established without the necessity of skipping a syllable.

(d) As was stated earlier, a variant is usually derived from a Level II foot. A variant is derived from another variant only when such derivation does not reduce clear major type-assonance; in other words, variant c is derived from variant b only when the clear type-assonance which relates c to the Level II foot a is no less than that which relates b to a (e.g., the Level II foot $\omega - v -$

yields ω - - which in turn yields ω -).

(2) Level III changes are usually blocked when they would result in confusing one meter with another. Two examples are given below.

(a) The following transformation is usually blocked since it would result in confusing alkaamil with arrajaz:

- - u - - - u - ω - u - + - - u - -' - u - - - u -

(b) The following transformations are usually blocked since they would convert the standard form of arramal and that of majzū² u lbsaiit to indistinguishable strings:

- u - - - u - - - u - + - - - - u - - - u -
 - - u - - u - - - u - + - - - - u - - - u -

Transformations are sometimes blocked to keep different meters clearly--rather than minimally--distinct; for example, the following transformation is usually blocked since the output would be considerably similar to the standard form of almutaqaarib (the input is the standard form of aṭṭawiil):

u - - u - - - u - - u - - - +
 u - - u - - u - - u - - -

Again, the following transformation is usually blocked because the output would be considerably similar to the sequence u - - u - - u - which constitutes a variant of majzū² u lmutaqaarib (the input is a variant of almutaqaarib):

u - - u - - u - - - + u - - u - - u - u -

When obscured in a given hemistich by Level III changes, the identity of the meter can be determined by studying other

hemistichs of the same ode.

(3) Level III changes must facilitate the pattern of number assonance described below, and must be blocked if they would violate that pattern.

An ancient Arabic ode usually consists of divided lines; in other words, an ancient Arabic ode usually comprises two columns of hemistichs. In each column, the final feet are related to each other by number assonance: i.e., they all have the same number of constituents.²² The first hemistich-final foot in the first column may violate number assonance since that foot must have the same number of constituents as its counterpart in the second column.²³ The following are examples.²⁴

- U - -	U U - -	- U - -	U U - -	- U - -	U U - -
U U - -	- U - -	- U - -	U U - -	U U - -	- U - -
- U - -	U U - -	U U - -	- U - -	- U - -	- U - -
- U - -	U U - -	U U - -	U U - -	- U - -	- U - -
- U - -	- U - -	U U - -	U U - -	- U - -	U U - -
- U - -	- U - -	- U - -	U U - -	- U - -	U U - -
U U - -	- U - -	- U - -	- U - -	U U - -	- U - -
- U - -	- U - -	- U - -	- U - -	U U - -	- U - -
- U - -	U U - -	- U - -	- U - -	- U - -	- U - -
- U - -	- U - -	- U - -	- U - -	U U - -	- U - -

(4) In general, Level III changes do not obliterate all "meter"-producing patterning. Consider the following transformations:

ω - U -	ω - U -	ω - U -	→	- - U -	ω - U -	ω - U -
- U - -	- U - -	- U - -	→	U U - U	- U - -	- U - -

In the first transformation, the change does not

obliterate pre-existing forms of patterning: both before and after the change, the hemistich may be represented by BBB (where B stands for a quadripartite foot); besides, the change does not alter the similarity among the three feet as concerns the positioning of u relative to the long syllables. The situation is analogous in the second transformation: both before and after the change, the hemistich may be represented by BBA (where B stands for a quadripartite foot and A stands for a tripartite foot); besides, the change does not alter the similarity between the last two feet as concerns the positioning of u relative to the long syllables. Both transformations are legitimate since they enhance variety without robbing the hemistich of "meter"-producing patterning.

Unless prevented from doing so by some restriction, Level III changes can rob the hemistich of "meter" as demonstrated by the following transformation:

-- u - - u - - + -- u - - - -

The hemistich -- u - - - - is devoid of Level I and Level II patterning; furthermore, syllabic symmetry is not sufficient to endow the hemistich with "meter".²⁵ The fact that hemistichs such as -- u - - - - are rare in Arabic poetry suggests that Level III changes are not usually permitted to apply in a manner that would eliminate all "meter"-producing patterning. Some form of syllabic symmetry is usually substituted for whatever patterning is obliterated by Level III changes.

(5) Level III changes must not cause the hemistich to contain more than three consecutive short syllables,²⁶ and they must not cause the hemistich to contain more than four consecutive long syllables.²⁷ Accordingly the fol-

lowing transformation is blocked:

-- u - - u - - - - u - + - - u - - - - - u -

It is possible that almunsariḥ (-- u - - - - u - - u -) represents an attempt to carry out the transformation without violating the restriction.

Although sequences of three short syllables do occur in variant hemistichs, there is a strong preference for sequences of only two short syllables. The following examples substantiate this statement:

(a) As variants of u - - - u - - -, the first of the following sequences is rare while the second is common:

u - u u u - - -
u - - u u - - -

(b) u u u - is a relatively uncommon foot.

(6) Because it is followed by a pause, and in order to emphasize the rhyme, the last syllable of each line is always long;²⁸ therefore, Level III changes must not result in the occurrence of a short syllable at the end of the line. The first hemistich of a divided line is followed by a pause, and for that reason its last syllable is usually long; here, however, the stipulation regarding length is less binding than it is at the end of the line.²⁹

Domain of application

In section 3.1 it was shown that the domain of Level I patterning is the hemistich; given the nature of Level I patterning, the domain cannot be a shorter string. Level II and Level III are characterized by syllabic patterning. The domain of syllabic patterning may be the entire hemistich or a portion of the hemistich (whether that portion be one foot or more than one). On Level II, the domain of syllabic patterning is the hemistich; on Level III, the domain may be all or part of the hemistich.

The rules which produce Level III patterning apply to the individual foot; this means that feet are transformed consecutively not simultaneously, and that the foot being transformed should reach its ultimate form before another foot undergoes any change.

Transforming one foot does not usually become a compelling reason for transforming another foot. There are, however, rare cases where such entailment does occur:

(1) Consider the following hemistich (the standard form of aṭṭawiil):

U - - U - - - U - - U - - -

Changing the last foot to U - - would, in the absence of any other change, make the hemistich minimally rather than clearly distinct from almutaqaarib; for this reason, the change in question entails another change: the penultimate foot becomes U - U . Significantly, the penultimate foot of almutaqaarib is almost never changed to U - U ³⁰

(2) Consider the following hemistich (the standard form of almujtaθθ):

- - U - - U - -

The string manifests Level I patterning (since it may be represented by BB, where B stands for a quadripartite foot) as well as Level II patterning (since its two feet are similar in regard to the positioning of U); both types of patterning can be obliterated by Level III changes:

(a) - - U - - U - - + - - U - - - -
 (b) - - U - - U - - + U - U - - U - - +
 U - U - - - -

The transformation labelled (a) produces a hemistich which lacks Level I and Level II patterning; furthermore, syllabic symmetry is not sufficient to endow the hemistich in question with "meter". The transformations labelled (b), on the other hand, produce a hemistich which (although devoid of Level I and Level II patterning) manifests "meter" because both feet are symmetrical. Therefore, (a) is less likely to occur than (b). A maṭla^C ³¹ whose meter is almujtaθθ and whose first hemistich ends in - - - provides a case in point (- - - is a symmetrical variant of the foot - u - -): it is desirable to end such a maṭla^C with - - -; ³² if the termination - - - is chosen, the second hemistich of the maṭla^C is more likely to be u - u - - - than - - u - - - (notice that u - u - is a symmetrical variant of - - u -). ³³ Here, then, is a situation where changing one foot of the standard hemistich entails a change in another foot.

In summary, a change in one foot is not likely to impose a change on another foot unless the hemistich--but for the latter change--would violate a restriction or would be robbed of "meter".

3.3.2 Compensation

Besides the ones discussed above, there is an important rule which operates on Level III: namely, compensation. The rule states that the total duration of a standard meter tends to be unalterable. Thus when a long syllable is reduced, the durational balance is added to an adjacent long syllable in the same foot. ³⁴ Such addition is possible when there is a neighboring syllable whose vowel is long or one whose final consonant is a continuant; otherwise compensation takes the form of a rest.

The fact that compensation tends to preserve the total durational value of a standard meter suggests that Level II has intuitive, as well as descriptive, priority over Level III.