V.S. Rybalkin THE LINGUISTIC LEGACY OF AL-KHAL⁻L IBN A§MAD (719–791)

When one speaks about the early Arabic linguistic thought one can hardly avoid mentioning Szbawayhi's (d. 796) celebrated grammatical treatise entitled "The Book" (*al-KitÅb*). Some writers go so as far as to refer to it as the "Qur'Ån of Arabic grammar." At the same time, it was not Szbawayhi, but his predecessor and teacher al-Khalzl ibn Aämad (719–791), who put Arabic linguistic studies on a solid scholarly foundation. His intellectual legacy is available to us in several recent editions.

There are at least three branches of Arabic linguistics which were systematized and developed by al-Khalal, namely, lexicography, grammar and the doctrine of 'ar 0. In the field of Arabic grammar, Sæbawayhi simply brought to its logical conclusion and final articulation the system that he had inherited from his teacher. Likewise, in the field of Arabic lexicography its purported founder, al-Laith b. al-Muzaffar (d. 805), is said to have simply finalized the lexical theory first introduced by al-Khalal. It also seems that prior to Sabawayhi there had been no such discipline as ar 0, and consequently the first 'ar 0 theory which has come down to us dates back to the 10th century 1991, 189]. T

The earliest treatise on Arabic prosody ("KitÅb al-'ar Ö"), mentioned by many medieval authors [Fihrist, 92; BD I, 495; Buâya, I, 560 etc.] is no longer extant. however, one can gain a general idea about it from some later commentaries and quotations [Frolov 1999]. Two other works of al-Khalæl are thematically similar to this treatise – "KitÅb an-naâm" ("The Book of musical tones") [BD I, 496] and "KitÅb al-'æqÅ'" ("The Book of rhythm") [Fihrist, 92; Buâya I, 560]. However, we know even less about them than about the "Kitab al-'ar Ö".

Today it is obvious that al-Khalæl was the first genuine Arab grammarian. Observations of his predecessors were sporadic and disorganized, and, as it is clear from the sources that have come down to us, al-Khalæl classified and imposed order on this early material. Unfortunately, the authenticity of his grammatical works is sometimes called in doubt by Western Arabists. This is especially true of his recently edited treatise "KitÅb alâumal fæ-n-naäw" ("The Book of [Syntactic?] Units") [1994; Ryding 1992; 1998] and of his versified grammar titled "al-Man ma fæ-n-naäw" ("Didactical poem on grammar") [Man ma].

Al-Khalæ's preface to his dictionary "KitÅb al-'Ayn" [Rybalkin 1987] can also be viewed as an independent grammatical treatise. Hamza b. al-§asan al-IsfÄhÄnæ (893–970) noted that al-Khalæl composed a dictionary which "contains the language of all people; this lexicon became most useful material for Sæbawayhi, because al-Khalæl had supplied him with the grammatical data on the basis of which Sæbawayhi created his well-known "Book". It became an ornament of Islam" [BD I, 495].

"KitÄb al-'Avn"

Arabic lexicography as a scholarly discipline takes its origin in al-Khalæ's lexicon "KitÅb al-'Ayn." It had a profound impact upon all subsequent explanatory dictionaries. This treatise also contains discussions of a number of general theoretical issues without which is difficult to understand some tendencies in the development of medieval Arabic linguistics

1987, 108; 1990, 47, 49].

A complete multi-volume academic edition of al-Khalæl's dictionary was prepared in the 1980s by well-known Iraqi scholars Mahdæal-Mah mæ and IbrÄhæm al-SamarrÄ'æ ['Ayn²]. In their editorial preface, they argue that "the history of the Arabic language testifies that ancient linguistic science was guided by the scientific means, procedures and principles that remain valid until today" ['Ayn² I, 6]. We now have another one-volume edition of the dictionary with the re-arrangement of entries in the standard alphabetic order ['Ayn³].

Al-Khalæl was the first Arab scholar to deal with the entire lexical structure of AL, instead of simply addressing one of its parts (such as, e.g., rare word forms, unusual name patterns, etc.). The main problem that he faced was the necessity to avoid repetitions of Arabic roots, on the one hand, and their omissions – on the other hand. The usual alphabetic order, in Khala's opinion, did not offer the best solution to these two problems; therefore he invented a new phonetic alphabet order. In his preface to his lexicon al-Khala argues that the order of sounds in his work is determined by the positions of their articulation. The guttural sounds, produced in the "deepest" place of the speech organ, come first, while the labial sounds articulated by the lips, i.e. at the very "edge" of the speech organ, appear at the very end of his alphabet. Within the framework of his phonetic alphabet sounds are grouped also in 9 phonetic groups, or articulation zones: 1) ', ä, h, ü, â; 2) q, k; 3) â, , 0; 4 , s, z; 5) d, t; 6, f, t; 7, r, l, n; 8, f, b, m; 9, w, A, *y*, '(*hamza*).

From the phonetic alphabet representing such a clearly defined linear sequence of consonants al-Khalæ selects two, three, four and five letters. They form the foundation of a registry of roots constituting the *lemmata* of "KitÅb al-'Ayn". Al-Khalæ arranges the roots of Arabic words by combining selected letters as described in the final part of the lexicon's preface.

In mathematical science, combinations obtained by rearrangement of discrete elements (they appear as root letters in Khalad's case) are referred to as anagrams, while the process of their combination is called permutation. The application in "KitÅb al-'Ayn" of the phonetic alphabet and permutation can thus be described as "phonetic-permutative". This term, however, does not reflect another initial technique of al-Khalæl's theoretical system, the root classification. According to al-Khalæl, it has the following types:

1. "Doubled biliterals".

2. "Regular triliterals".

3. "Weak triliterals", i.e. which include one "weak" letter.

4. "Doubly weak roots", i.e. which include two "weak" letters in its structure.

5. "Quadriliterals and quinquiliterals".

By selecting roots for his lexicon's wordlist al-Khalæl exhausts all combinations with two letters (the 1st root type): the first in the phonetic alphabet which is 'ayn, with stageby-stage introduction of subsequent letters. Sounds with which 'ayn can not combine by virtue of mutual proximity in their place of articulation are excluded from his repertoire. That is, he excludes the letters and sounds that are located in the 1st phonetic group or the articulation zone of which falls into the same category as the sound '*ayn*. Roots obtained in such a way are mainly geminitive, being in fact tri-literal, and reduplicative. Biliteral particles and prepositions like '*an*, *hal* here are considerably rare in occurrence.

Treating certain letter combinations in this manner, al-Khala looks for specific words with the given root structure. The arrangement of words within the limits of a root entry and their explanation has no further system. After all biliteral combinations of 'ayn with the letters of the phonetic alphabet are exhausted, al-Khalal proceed to discuss not the biliteral combinations of the letters that follow 'ayn in the phonetical alphabet, but the triliteral combinations of 'ayn. His selection of letters follows a clear logical pattern. A strict sequence of selections allows al-Khala to avoid recurrence of sets of letters. Omissions of some of them indicate either the incompatibility of some Arabic sounds, or the absence of such combinations in living language.

Biliteral roots have only two rearrangements: R_1R_2 and R_2R_1 whereas triliteral roots produce six possible anagrams (or rearrangements). Al-Khalad treats them by means of permutation of letters selected from the phonetic alphabet in clearly defined sequences: 1) $R_1R_2R_3$; 2) $R_1R_3R_2$; 3) $R_2R_1R_3$; 4) $R_2R_3R_1$; 5) $R_3R_1R_2$; 6) $R_3R_2R_1$. The assignment of serial numbers to the roots is performed according to the sequence of their order in the phonetic alphabet from the beginning. For example, in the chapter "'ayn, $q\hat{A}f$ and $l\hat{A}m$ " the order of root arrangement is presented in the following manner: 1) (QL; 2)LQ; 3) QL; 4) QL'; 5) LQ; 6) LQ', in thechapter "'ayn, $q\ddot{A}f$ and $b\ddot{A}$ "' - 1) 'QB, 2) 'BQ, 3) Q'B, 4) QB', 5) B'Q, 6) BQ' etc. Those roots that are not attested in the language or which are theoretically possible, but unused (*muhmal*), are omitted from such system.

The necessity to list possible combinations in a coherent sequence is obvious, when we are dealing with hand-written copies of dictionaries. The absence of any indexes in such works significantly complicates word search. The situation becomes even more complicated when it comes to quadriliterals, as the number of such combinations in comparison to triliterals, doubles. In such cases it is obvious that any arbitrary (speculative) combinations may result in repetitions and omissions of roots. Having exhausted all triliteral sets of 'ayn and combinations of letters within the limits of these sets, al-Khalæ proceeds to the root types 3, 4 and 5. After all possible combinations of quinquiliteral roots (type 5) have been exhausted, he proceeds to discuss the next letter of the alphabet – $\ddot{a}\dot{A}$ '. The process of letter selection and their subsequent permutations follows the same procedure as that of 'ayn. Naturally, the letter 'ayn no longer appears in these operations, because all possible combinations with it have already been listed.

As he progresses from one letter to another, he finds an ever decreasing number of possible combinations. Thus, the last letter of the alphabet is completely omitted from this process.

Since the letter 'ayn is the first letter of the phonetic alphabet and serves as the foundation of the largest section of al-Khala's lexicon, he adopted it as the title of his entire work. However, he did not make this decision from the outset. It appears that for sometime he hesitated between 'ayn, hamza and äÅ'. he rejected *hamza* because of its permanent transformations, and placed it among "weak" letters. The letter 'ayn was given preference because this sound, unlike äÄ', is voiced, it is more clear in articulation, and its articulation resembles the bleat of a camel. Finally, the word which serves as the name of this letter, is polysemantic and symbolic. It carries several meanings, including that of the "eye", which penetrates into the essence of things and phenomena, and the "source" or "essence" (of all existence) ['Ayn², 34].

In the remaining "books" of *KitÅb al-Ayn*, all subsequent letters of the phonetic alphabet are used as titles, except the last four, that is, *w*, Å, *y* and '. Al-Khalæ called them *haw*Å'æya ("airy"), indicating, that they cannot be attributed to any specific place of articulation. Therefore, there are only 26 "books" (*kitÅb*) in the lexicon. Each "book" is divided into five sections (*bÅb*), according to the types of roots named above. The title of a section is the name of the corresponding type of the root.

The sections are divided into chapters. The capital letter of the "book" is included in the name of each chapter (*b*Å*b*) in combination with the letters selected from the phonetic alphabet for subsequent permutation, for example: *b*Å*b al-'ayn wa-l-k*Å*f wa-l-mæm* ("the chapter of '*ayn, k*Å*f* and *mæn*"). Finally,

chapters are divided into root families, or root entries whose elements are "bare" roots devoid of any meaning and obtained with the help of permutation of selected letters.

This is the classical form of the phoneticpermutative principle (PPP) used in the first comprehensive Arabic explanatory dictionary. The system introduced by al-Khalæ is not easy to understand and use, but one can hardly overlook its harmony and logic. Therefore, it is not surprising that it is often mentioned and employed in the subsequent development of Arabic linguistics.

The same PPP was used as the arranging principle of the lexicon "al-BÄri' fæ-l-luâa" [BÄri¹; BÄri²] compiled by Andalusian lexicographer Ab 'AlæIsmÄ'æl b. al-QÅsim al-QÅlæ al-BaâdÅdæ (901–967), who was trained in the tradition of the Baghdadi philological school. Following Khalæl's system, al-QÅlæ introduced some variations. He used the following order of letter arrangement in the phonetic alphabet: ', h, ä, ', ü, â, q, k,10, â, , l, r, n, , d, t, , z, s, , , , f, b, m, w, Ä, y [BÅri², 70].

Al-QÂlæ introduced a slightly different classification of roots; he also used different terminology, namely:

1. "Biliterals in writing, but actually triliterals" (that is diminutive).

2. "Regular triliterals".

3. "Triliterals whose structure includes one "weak" letter".

4. "Wild words," or "rubbish" (literally: *al-*ä*aw*Ä *ib 'aw al-'aw* Ä*b*). Al-QÄlæ defines them as words the roots of which contain either two "weak" letters, or those in which letters are repeated in the same word [BÄri⁺², 446], for example: WXY, TXTX, XWXY [BÅri⁺², 447–448].

5. "Quadriliterals". It should be noted that al-QÄlæ placed reduplicatives among them, while al-Khalæ considered this category to be bilateral, for example: XRXR, RXRX, QRQR, NQNQ, QBQB etc.

6. "Quinquiliterals".

Unlike al-Khalæl, al-QÄlælists anagrams in a free sequence: I. X*RB* [BÄri², 301–316]:

1) $XRB = R_1R_2R_3$; 2) $BXR = R_3R_1R_2$; 3) $XBR = R_1R_3R_2$; 4) $RXB = R_2R_1R_3$; 5) $RBX = R_2R_3R_1$; 6) $BRX = R_3R_2R_1$.

II. XLM [BÄri², 276–281]:

1) $XLM = R_1R_2R_3$; 2) $MLX = R_3R_2R_1$; 3) $LXM = R_2R_1R_3$; 4) $XML = R_1R_3R_2$; 5) MXL $= R_3R_1R_2$; 6) $LMX = R_2R_3R_1$ etc.

PPP was also applied in the lexicon "Tah ab al-luâa" the contemporary of al-QÂlæ the lexicographer from Herat Ab Man r Muäammad b. Ahmad al-Azharæ (895–980). In fact, he did not add anything new to Khalad's method, but only separated quinquiliterals from quadriliterals by creating a special section for each of them. Al-Azharæ focused mainly on supplementing "KitÄb al-'Ayn" and the correction of mistakes and discrepancies he discovered in the works of his predecessors. Unlike Khala's lexicon, "Tah ab al-luâa" was widely used by subsequent lexicographers, in particular by Ibn Man r (1232–1311) in his well-known dictionary "LisÄn al-'arab".

PPP was used also in the dictionary "al-Muäæ fæl-luâa" compiled by vizier IsmÄ'æl b. 'AbbÄd, nicknamed al-¹Ääib (938–995).

Ibn 'AbbÄd's phonetic alphabet does not differ from that of al-Khalæ, however, his order of anagrams is arbitrary. He too uses the same classification of roots and linguistic terms as al-Azharæ. In general Ibn 'AbbÅd's interpretation of PPP lays no claim to originality. His task was to complement the dictionary with unusual words (â*aræb*), which had been omitted by his predecessors. To this end, he took data mainly from Ahmad b. Muhammad al-Bu tæ al- arzandûæ's (941– 1017) dictionary "Takmilat KitÅb al-'Ayn" ("Supplement to KitÅb al-'Ayn").

Almost one century later, another Andalusian lexicographer 'Alæ b. IsmÄ'æl b. Sæda (d. after 1066 at the age of 60) employed PPP in his dictionary "al-Muäkam wa-1-muäæ al-'a' am fæ –1-luâa" [Muäkam]. There he presented PPP as a classical example. Ibn Sæda's aim was to collect all lexical units scattered in various dictionaries, and at the same time, to correct mistakes in grammatical explanations made by his predecessors. Ibn Man r considered that dictionary to be the most comprehensive one [LisÄn I, 2] and made extensive use of its data in his famous "LisÄn al-'arab".

The other two lexicographers who used the PPP method were al-Tan åæ (1249–1323) in the dictionary "Tah æb at-tah æb" and al-Fær zÄbÄdæ (1329–1415) in his uncompleted work "al-LÄmi' al-mu'allam al-'uÂÄb al-âÄmi' bayn al-Muäkam wa-l-'UbÅb".

Upon some essential modifications, Khala's system was also borrowed by Ibn Durayd (837–934) in his dictionary "al-9amhara fæ-l-luâa" and Ibn FÄris (d. 1005) in his two lexicons

"al-Muâmal fæ l-luâa" [Muâmal] and "al-MaqÄyæs fæ-l-luâa" [MaqÄyæs], which were arranged according to the same principle. However, the PPP also led to a number of

However, the PPP also led to a number of negative consequences. First of all, having delved into the cumbersome and confusing system of anagrams, lexicographers ended up putting too much emphasis to the techniques of root arrangement. Simultaneously, they paid little attention to the important problems of internal construction of vocabulary entries. Because al-Khala was mainly interested in phonetic experiments and mathematical combinations, he became detached from the living reality of the language he described. In particular, he established rules of incompatibility of certain sounds within the limits of a word and tended to uncritically rely upon them. Already the first pages of his lexicon testify to this phenomenon. Thus, he omitted several roots, such as ' $^{\mathbb{R}}$ ' $^{\mathbb{R}}$ and 'H'H. At the same time, in dealing with some earlier philological authorities (such as al-FarrA', al-NaÖr b. Î umayl, Ab al-Dukay, Ibn Durayd) al-Azharæmentioned specific word-forms with such root skeletons, emphasizing that al-Khalad considered them nonexistent [Tah ab, 50-51].

For the same reason az-Zubaydæ, a disciple of al-QÄlæ, identified 5683 words absent in al-Khalæ's dictionary [BÄri', 72].

Subsequent dictionaries, compiled with the help of the PPP, offered a high possibility of composing nonexistent roots and their invented derivatives. The method itself prompted the lexicographer to engage in their formation. The lexicographer was never quite sure whether the word forms of a given root were indeed present in the language. On the one hand, in these instances, "bare" root forms were emerging in dictionaries, lacking meanings and not proving to be true derivatives (without *awÄhid*). On the other hand, one could find many words with substitution and transposition of root letters [1993, 65–70]. Their initial meaning was mechanically transferred onto derivative which was created by means of permutation (*qalb*) or substitution (*'ibd*Ål).

The dictionaries compiled in accordance with the PPP are not user-friendly, even for individuals who are intimately familiar with the system in question. For example, where could the root XRXR be found? In al-Khalæl's dictionary it is located in the section of doubled biliterals (*a* - *unÄ'æal-mu*ÕÄ'*af*), whereas al-QÅlæplaced it among quadriliterals. Nevertheless, one should take into consideration that PPP enjoyed a much wider acceptance in the Arabic's medieval lexicographic practice than is generally believed [Na Å... 1956; 'Ayn², Darwæ's preface; Hàywîîd 1960, 1975]. Having been in use for more than five centuries, it exerted a profound and lasting influence on the ALT. Many lexicographers did not simply resort to the PPP in order to arrange their *lemmata*. The lexical data accumulated in PPP dictionaries served as a basis for some lexicographic works which relied on other principles of root arrangement – analyticmorphological, regular alphabetic etc.

At the same time one should remember that PPP, to some extent, appeared to be a turning point in so far as it shifted lexicographers' attention from actual lexical data to artificial constructions and theories.

The concept of *musta mal/muhmal* in al-Khala's theoretical system

The permutations of consonant sets that form the basis of any Arabic root led al-Khala to believe that it is possible, in principle, to form a certain part of root skeletons that do not exist in the actual language. His system allowed creating a "reservoir" of some possible combinations that are not yet attested in actual linguistic usage. It seems, that this fact caused him to introduce the concept of musta 'mal ("in use") and muhmal ("not used", "hypothetic"). When applied to lexical units of the AL the term musta'mal means the entire lexicon of the living language. As a grammatical unit musta'mal should meet certain basic requirements. Any deviation from this requirement automatically relegates it to the category of *muhmal*. Words or roots which are not in use (*muhmal*), on the contrary, represent a heterogeneous multitude, because "not using" can be caused by a number of factors, both linguistic, and extra-linguistic.

Having taken permutation as a starting point of root arrangement, al-Khalad "generated" a number of roots *a priori*. However, for letters ', *Q* and *F* among its six combinations F'Qshould be possible. Al-Khalad, however, failed to find a single word form, whose skeleton would represent this root. Therefore the following indication opens the chapter: "*QF*, *'FQ*, *Q'F*, *QF'*, *FQ'* – *musta malatun*". It means that there are real derivatives only from these roots. The root F'Q is omitted.

The usage label *musta* mal introduces almost each chapter of al-Khala's dictionary, e.g.: *HK*[•] – *musta*[•]*malun faqat*["] [[•]Ayn¹, 112, the chapter '*HK*] ("the only root '*HK* is used"); ""
¢*H musta*'malun faqat" ['Ayn¹, 114, the chapter 'CH] ("the only root 'CH is used"); "'ZH, HZ' – musta 'malÄni" ['Ayn¹, 115, the chapter HZ'] ("the two roots 'ZH, HZ' are used"); "'TH - musta'malun" ['Ayn¹, 120, the chapter '*HT*] ("the root '*TH* is used"); "'HL, 'LH, HL', L'H – musta'malÄtun" ['Ayn¹, 123, the chapter 'HL] ("the roots 'HL, 'LH, HL', L'H are used) etc. While in "KitÅb al-'Ayn" only the usage label musta'mal is used, the label *muhmal* (mainly in verbal forms) also is very frequent in Ibn Durayd's dictionary "al-9amhara", e.g.:

"T¹9 – '**uhmila** wa-ka Älika äÄlu-hÄ ma'a -l-äÄ' wa-l-üÄ' wa-d-dÄl wa- - Äl" [9amhara II, 2, the chapter $t\ddot{A}$ ' and \ddot{A} ' in combination with subsequent letters of the alphabet in a regular triliteral root] ("[combination] T and 1[as the actual root] is not used, as well as with s, , , 0, , , and â"); " T^1M – 'uhmilat fr - ulÄ e - aätä" [Ibid, 3] ([combination] T and ¹ with M in a regular triliteral root is not used"); " T^1H – 'uhmilat" [Ibid, 3] ("[combination] T and 1 with H [as a root] is not used"); "THk -*'uhmilat*" [Ibid, 3, chapter T and H with another letters in a regular triliteral root] ("[combination] *TH*k [as a root] is not used"); "R'X – muhmalun" [9amhara II, 380, chapter *R* and 'with another letters] ("[combination] *R* and 'with X [as a root] is not used") etc.

Ibn FÄris described the concept of musta 'mal/muhmal in "the Chapter about the essence of speech" in his treatise "a -1Ääibæ fæ fiqh al-luâa" ("Laws of the language, [devoted] to al-1Ääib [b. 'AbbÄd]") as follows: "People state that speech is that which is heard and understood, like our statements "Zayd stood up", "Amr went". People say: "Speech is the connected sounds which determine the meaning". For us these two statements are very similar, because what we hear and understand, can only exist in [the form] of connected sounds specifying meaning. One expert in Baghdad told me: "Words (kalÄm) are of two kinds: muhmal and musta'mal. A *muhmal* is that which is not invented (*lam*) $yu\ddot{0}a'$) for use, a *musta'mal* is that is established to be useful. I explained to him that his statement was wrong. A muhmal happens to be of two kinds: one is when in the

Arab speech the combinations of some sounds are not allowed, like \hat{a} and k, or, on the contrary, k and \hat{a} ; ' and \hat{a} ; \ddot{a} and h, or \hat{a} etc. Another is when the combinations of some sounds are possible, but Arabs do not use them, for example, if to say 'aÖaüa. Such combination of sounds is theoretically possible, but it is unpleasant: don't you see that out of these three sounds the Arabs use the [combination] $\ddot{u}a\ddot{0}a'a$, but they do not say 'aÖaüa. These are two types of *muhmal*. There is also a third type. It is when somebody wants to produce a word with five [consonant] sounds which does not include any "smooth" (i.e. alveolar and labial) (n, m, l, f, r, b) or velar (, , $\ddot{0}$,) sounds ($\ddot{a}ur f a - alaq 'aw$ al-'i bÄq).

If a word belongs to any of these three kinds, it can not be called a [real] word, even if it is audible and formed by joining letters – it is [still] useless. Lexicologists and lexicographers do not mention *muhmal* among parts of speech, but they mention it among those structures which are not used in the language of Arabs" [¹Ääibæ, 82].

In the treatise "al-" a Ä'i " ("Properties"), Ibn 9innæ describes Ibn Faris's ideas in the following manner: "Non-use is that which is disregarded in versions (qismÅ) of constructions (tarkab) allowed in some imagined or used roots (al-'u l almuta awwara 'aw al-musta'mala). The larger part of such versions is neglected because of difficulty (*li-l-'isti qAl*) in [their] pronunciation, the rest [of the forms] are joined with them and follow them. This applies to those [words], whose use is to be avoided because of the closeness of its sounds, for example: sa, $\tilde{0}as$, a, $\tilde{0}a$, $a\ddot{0}$. This statement makes sense because such combinations can be hardly perceived. Other examples - qaâ, âaq, kaq, kaâ, âak, as well as the guttural sounds placed further from mutual compatibility in comparison with the majority of other sounds because they are articulated in a similar way. I mean oral sounds (äur f al-fam). If two of them are combined, the stronger sound is located before the weaker, for example: 'ahl, 'aãad, 'àü, 'ahd, 'ahr. The same happens, when two relatively articulated sound meet: the stronger is always positioned before the weaker, for example:

'*urul**, *watid*, *wa* &*d*. Evidently, $r\ddot{A}$ ' is stronger than $l\ddot{A}m$, and the 'stop' (*qa* ') on it is stronger than the 'stop' on $l\ddot{A}m$. <...>

I believe that out of two relatively articulated sounds, they have forefronted the stronger one because a combination of close sounds burdens the soul and, when they dare to pronounce them, they have forefronted the stronger of them for two reasons. One is that the rank of the stronger sound is always higher and it is more preferable. The other is that they [Arabs] place the stronger sound in the first position, and the weaker one at the end, because the speaker is more active and stronger in spirit at the beginning of speech, he is in the best condition, – thus, from the two sounds the stronger is forefronted" [a A'i I, 55–56; see also: Muzhir I, 240– 241].

Ibn 9innæsupplemented and elaborated on Ibn Faris's ideas which apply restrictions to the usage of roots. He emphasized that separate, potentially widely used sound combinations are reduced to "bare" roots, not attested in derivatives [" a Å'i I, 56, line 9] and that laws of the use or non-use of a hypothetical sound combination, are similar to logical laws of mutual subordination of predicate and judgment [Ibid, lines 12-13]. In Ibn 9innæ's opinion, it is logically connected with the existence of three types of roots: triliteral, gadriliteral and guinguiliteral. Unlike al-Khala, he omits biliteral roots, but adds the following statement: "the most widely used are triliteral roots, which I consider to be compounded (tarkab)".

Ibn 9innæ argues that this obvious predominance of trilateral roots could be explained by the fact that each root must necessarily have "a letter with which it begins, a letter with which it is been filled (*yuä Ä bihÄ*) and a letter with which it ends" ["a Ä'i I, 56, lines 14–15]. There's little doubt that this is a direct citation from al-Khalæ's "Preface" ['Ayn¹, 55], although the author does not acknowledge his debt to his predecessor.

The predominance of triliteral patterns, in Ibn 9innæ's opinion, may be explained by "obstacle of filling" ($\ddot{a}a\hat{a}z al-\ddot{a}a w$) which is 'ayn (in conventional root pattern F'L-V.R.). It is placed between $f\ddot{A}$ ' and $l\ddot{A}m$ [" a \ddot{A} 'i I, 57]. Ibn 9innæbelieved that 'ayn acts as some

^{*} The name of the mountain. -V.R.

sort of buffer between R_1 and R_3 , which are opposed and "hostile" to each other (ta 'ÅdaläÅl). "Don't you see, that the first letter always happens to be voiced, and the (second) requires "rest" (or quiescence) (suk n). When a mutual contradiction emerges from their positioning, they [Arabs] place 'ayn between them as an obstacle, in order not to "be surprised" by the contrast" [" a Å'i I, 57].

The convenience of a triliteral root was later explained by al-Suy & [Muzhir I, 242] in a very similar way.

Ibn 9innæelaborately analyzed the role of äarakAt (vowels) in the triliteral root. In his opinion, they, too, impose certain restrictions on the use/non use of a word. It is emphasized, in particular, that R₁ under no circumstances can take suk n etc. ["a \ddot{A} 'i I, 57–62]. Clearly, Ibn 9innæborrowed from al-Khalæl his idea of combinations of the initial set of root letters (permutation, or transposition). Evidently, it was taken from the preface to the dictionary "KitÅb al-'Àón". Like al-Khala, Ibn 9innælists all six possible anagrams for given letters, e.g.: 9, $\hat{}$ and L, namely: 9'L, 9L', '9L, 'L9, L9' and L'9. Al-Khalæl perceived such instances as sample anagrams from letters \mathcal{C} , R and B [1987. 118]. But for quadriliteral and quinquiliteral combinations Ibn 9innæused the exact same examples as al-Khala: transpositions from the sets 'QRB and SFR9L. He treated all their possible combinations by means of a similar algebraic operation that is, obtaining a factorial from appropriate figures: 3!=3x2x1=6, 4!=4x3x2x1=24, 5!=5x4x3x2x1x=120["a Å'i I, 62-63].

Ibn 9innæwas guided by the same logic as al-Khalæl. He considered the frequent usage of triliteral combinations (*musta 'mal*) to be natural. Likewise, for him, the fact that some potential combinations are not present in the language (*muhmal*) is an evidence of the opposition between "lightness" and "heaviness" $\ddot{u}iffa/'isti~q\ddot{A}l$). The most frequent type of "heaviness" is incompatibility of sounds, as described above.

The number of combinations used in the language (*musta mal*) greatly decreases with transition from triliteral combinations to quadriliteral and practically comes to naught with the transition to quinquiliteral. The only

attested form of the root SFR9L is *safarâal* ("quince", collective, sing.: *safarâala*), whereas the other 119 forms are labeled *muhmal*.

"Some people may occasionally say *zabadra*â. In this case, the transposition of the initial form of the word was used for specific poetic purposes and cannot serve as a basis for analogy"*.

The excessive length of quinquiliteral combinations in Ibn 9innæ's view, is determined by the fact that Arabs avoided them, giving preference to shorter forms. We may find evidences of quinquiliteral derivatives, in particular, in the diminutive form *sufayraâ* ("small quince" and in the plural form *safĂriâ* ("quinces"). In both cases the last lÅm was omitted for the sake of reduction (*tarüæn*) of the word's length [``a Å'i I, 63–64].

The concept of musta'mal/muhmal appeared to be a continuing phenomenon in Arabic linguistics. Some philologists were engaged in estimating the quantity of theoretically possible anagrams in order to compare them with their actual use in the Arabic language. In al-Zubaydæ's "Muüta ar al-'Ayn" ("Extraction from the "Book of al-'Ayn") the total number of used and unused root combinations was approximately 6,659,400; 5,620 of them are *musta* mal; 6,653,780 - muhmal. The total number of biliteral roots is 750; 489 of them are musta'mal; 261 – muhmal. The total number of triliteral roots is 19,650; 4,269 of them are musta'mal; 15,381 – muhmal. The total number of quadriliteral roots is 303,400 (musta'mal - 820, muhmal - 302,580),quinquiliteral - 6,375,600 (musta mal - 42, muhmal – 6,375,558) [TÄâ I, 6–7].

Similar estimates provided later by the Indian philologist BahÅd r vary insignificantly. According to his data, there is a total of 6,699,400 bi-, tri-, quadri- and quinquiliteral possible roots. Only 5,620 of them are actually used [Haywood 1956, *168*].

"Al-§ur f" ("Letters")

A small treatise attributed to al-Khala "al-§ur f" ("Letters"), or "Ma'Änæ al-§ur f" ("Meanings of letters") was edited by R. 'Abd at-TawwÄb in 1982 and in 1969 [§ur f]. In the first edition notes are placed at the end of

^{*} Fa-'ammÄ qawl ba'Oi-him zabadraâ, fa-qalbun li-äaqq al-kalima Oar ratun fæba'd a - i'r wa-lÄ yuqÄsu [®a Ä'i I, 63]. In general use – zabarâad («chrysolite»).

the text of treatise, in the second—in the footnotes.

In the regular alphabet (*'abtas*), the names of Arabic letters occurring in the AL are listed with other (mainly metaphorical) meanings, for example:

"Alif – a poor, weak person" [$\Sur f, 34$].

" $-\partial m$ – a strong camel" [§ur f, 35].

" $D\ddot{A}l$ – a corpulent woman" [§ur f, 37].

"RA' – little monkey" [§ur f, 38].

" $^{1}\dot{A}d$ – a rooster floundering in a dust" [Sur f, 39].

" $\mathring{A}d$ – a hoopoe" [§ur f, 40].

"Mam – wine" [§ur f, 44].

"*N n* – a big fish" [§ur f, 45].

Al-Khalæl used short fragments (1-2 verses) from poems by various authors as illustrations (*awAhid*) of these meanings. The names of the poets he quoted vary in different manuscripts which R. al-TawwAb used for his edition of "al-§ur f". Very often these citations are not attested in any other written sources. Therefore al-Khalæl's treatise is of great interest for literary and textual criticism.

From the linguistic perspective, "al-Sur f" presents the emerging idea of *tarkæb*. It was only intended for presentation in al-Khalæl's works, but was taken up and developed by Ibn 9innæ(d. 1002) two centuries later. Briefly put, the theory of *tarkæb* suggests that each letter of AL carries certain semantic connotations and that the common meaning of a root is determined by a combination of relative [?] meanings of letters/sounds constituting it.

The idea of composing treatises on the letters of the Arabic alphabet ("al-äur f") appeared to be productive. It was practiced for several centuries in various works composed by al-KisÅ'æ [GAS IX, 131, No 10], al-FarrÅ' [GAS IX, 132, No 4], az-ZaûûÅûæ [GAS IX, 94, No III] and many others. Experimenting with this genre, later philologists on many occasions not only quoted verses from al-Khalæl's work, but also made extensive use of his entire theoretical heritage.

Therefore in later philological writings we find long passages which are very similar to al-Khalæ's preface to his dictionary "al-'Ayn", and even directly borrowed from it. The treatise "al-§ur f" by Aämad b. Muäammad b. al-Mu affar b. al-Mu<u>h</u>tar ar-RÄzæ (d. around 631/1234) is a case in point. In particular, this work draws on the fifth section which contains classification of sounds according to the place of their articulation [äur f, 139]]. The author used not only the same terminology, but also the same sequence of sounds as al-Khalæl ['Ayn³, 10–11]. The only fundamental innovation ar-RÅzæ introduced was that he discarded the "airy" (hawÄ'æya) sounds 'alif, wÄw, yÄ', hamza from Khalæl's classification. he then proceeded to distribute them among the guttural (äalqæya) – 'alif, zayn, labial (afahæya) – wÅw and (aûaræya**) – yÄ'

"KitÄb al-9umal fæ-n-naãw" ("The Book of Syntax Units")

The 1985 Beirut edition of the treatise "KitÅb al-9umal [fæn-naäw]" ("The Book of [syntax] Units" attributed to al-Khalæ [9umal] raised many questions concerning the history of Arabic linguistics. First, was al-Khalæ the author of this book? Many sources have attributed its authorship to Ab Bakr b. Î uqayr (d. 927), a later Kufian grammarian.

The editor of the work F. QabÄwa provides several irrefutable proofs in support of al-Khalæl's authorship. In our opinion, some arguments in favor of al-Khalæl can be found in the text itself. The absence of references to philologists and their treatises from the end of 8^{th} – the first quarter of 10^{th} centuries, the analytical style of the text, the specificity and level of development of terminology places it squarely into the period prior to the 9^{th} century.

The importance of "KitÅb al-9umal fæ–nnaäw" is in the fact that it is the earliest extant work in which the theory of *i* '*r*Åb is articulated for the first time in the history of Arabic linguistics. The main concept of the treatise deals with the problematic of mutual subordination of sentence units in the Arabic syntax – a cornerstone of the subsequent linguistic tradition.

The theory of governing of sentence units was introduced in its final form only in the treatise of 'Abd al-QÄhir al-9urûÄnæ(d. 1078) "al-'AwÄmil al-mi'a" ("The hundred Regents"). Its basic idea is that all syntactic units of the sentence are in the state of mutual subordination. This phenomenon exists due to a number of different types of governing factors. The majority of researchers look for sources of this

^{**} Because they begin at the *a*ûr or side of the mouth, that is, its entrance [Haywood 1960, 35].

concept in Ibn 9innæ(d. 1002); others believe that it appears already in the works of his teacher al-FÅrisæ(d. 987), but nobody traces it back to an earlier period. The main reason is that even today the most important linguistic texts of that period remain unedited. Nonetheless, the editor of "KitAb al-9umal" Z.BadrAwa notes: "One should not forget that intellectual endeavors and theories of this nature were already available in al-Khala's writings" [al-Badràwæ 1987, 45]. Another Egyptian scholar I.¢ayf seems to be the only contemporary Arabic researcher who has come to the unequivocal conclusion that "everyone who studies "The Book" of Sæbawayhi attentively certainly comes to the conclusion that al-Khala had laid the foundations of "the theory of governing factors" [¢ayf 1989, 38]. It is noteworthy that I.Dayf used the term 'awAmil (!), which never occurs in al-Khalad's works. However, it is more appropriate to gather relevant evidence from the text of "KitAb al-9umal" itself:

[33] "In the name of Allah, the merciful, the compassionate! Al-Khala ibn Aämad, may God have mercy on him, says: "This is the book, in which the set of *i* '*r*Åb [is presented] ($\hat{a}umlatu$ -*l*-*i* '*r*Åb), because the entire syntax is limited to the raf^c, na b, $\hat{a}arr$ and $\hat{a}azm$. We have composed this book, collected in it the sets of types ($\hat{a}umlatu$ wu \hat{a} h*i*-) of raf^c, na b, $\hat{a}Årr$ and $\hat{a}azm$ and units ($\hat{a}umalu$ -) [of letters] 'alif, lÅm, hÅ', fÅ', wÄw, as well as that which consists of 'alifs and lÅms. We have explained each meaning in the appropriate section (bÅb) and supported it with illustrations from the Qur'Ån and poetic citations.

Anyone who knows these types ($wu\hat{a} h$) and who has familiarized himself previously with our extractions from the syntax will not have any need for many books on the syntax. Only God has power and force!

We begin with *na b* because in the [science of] $i'r\ddot{A}b$ it has most methods (*uruq*) and types (*wuâ h*).

[34] *Na b* has 51 types: the *na b* of the direct object, the *na b* of the *masdar*... <Then names of all types of *na b* are listed (pages 34–35) and explained in detail in further passages, e.g.>:

[36] The *na b* of a direct object: 'Akramtu Zayd^{an} ("I treated Zayd with respect"); 'a' aytu Muäammad^{an} ("I gave to Muäammad") <...> [37] The *na b* of the [absolute] *masdar*: *haraâtu hur â^{an}* ("I came out [definitely]")"

It is evident from the text just cited that al-Khalæ used the term â*umla* (pl.: â*umal*) in the sense of "set, unit, assembly", and but not in its later meaning, that of "sentence".

"Units" ($\hat{a}umal$) include "types" ($wu\hat{a}h$), but sometimes both terms are used interchangeably. It is obvious that al-Khalæl treated them as synonyms in the same way as al-9urûÄnæused the term 'awÄmil about three centuries later. First, al-Khalæl, listed 51 types of *na b* (pages 34–116) and illustrated its usage with examples. Each type constitutes a separate chapter. Then, he proceeds to list 22 types of *raf* (pages 117–171), followed by 9 types of $\ddot{a}azm$ (pages 190–225). In all, al-Khalæl has identified 94 types of government.

The next stage of the "units" classification which influences the distribution of inflections (now not only in a final position of a word, but also in initial and sometimes in medial), al-Khalæ puts into practice by selecting the nonroot affixes, particles and some prepositions. Once again they are not differentiated or described by special terms which would appear later, namely, zawÄ'id ("affixes"), äur f ("particles, prepositions"). Al-Khalæ perceives them as syncretic "sets, units" (âumal) of appropriate letters, namely:

"sets of 'alifs" (pages 225–248) – 20 types in total;

"sets of *lAms*" (pages 249–264) – 30 in total;

"sets of [letters] $h\dot{A}$ " (pages 264–273) – 10 types in total;

"sets of [letters] *t*Ä"" (pages 274–284) – 15 types;

"sets of [letters] wÄw" (pages 284–295) – 10 types;

"units of [combinations] of [letters] $l\ddot{A}m$ and "alif" (pages 295–304), meaning the ligature $l\ddot{A}m+$ "alif= $l\ddot{A}$ and the combination "alif+ $l\ddot{A}m+$ "alif="ill\ddot{A};

"variety of meanings of *m*Å"" (pages 304– 310) – specific character of the use of particles *m*Å, '*amm*Ä and '*imm*Ä is explained;

"explanation of [versions of letters] f^{A} " (pages 311–313) – 7 types;

"explanation of [versions of letters] n n" (pages 313–315) – 10 types;

"explanation of [versions of letters] bÅ"" (pages 315–316) – 4 types;

"explanation of [versions of letters] yÄ" (pages 316–319) – 8 types; "section [about the adverb] *ruwayda*" (page 319);

"section about difference between '*am* and '*aw*" (pages 319–321).

Al-Khalæl examines each letter mentioned above and each combination of letters, in all possible formal situations regardless of their positions in the word with a view toward their influence on various types of inflection. Let us consider one example from the letter $t\ddot{A}$ ' section. It contains the following explanations:

"1) *t*Å' as part of a root, as in the words *tamr* ("dry dates") or *tan* ("fig");

2) tÅ' as an indicator of the feminine gender [nominal plural forms] can function in this manner only after 'alif and is vocalized with kasra in åafÖ and na b and with Öamma in raf': üalaqa l-lÄhu s-samawÄti wa-l-'arÖa ("God created heavens and earth");

3) tÅ' of a feminine [past tense] verb is always used with â*azm*; before '*alif*—*l*Åm of the definite article it accepts *kasra*: ü*ara*â*at* ("she came out"), *q*Åmat ("she rised"), but: ü*ara*â*ati* -*l*-mar'*atu* ("the woman came out");

4) *t*Å' of the 1st person [past tense, singular] stands always in *raf*': *üaragtu* ("I came out"), *ahabtu* ("I went");

5) tÅ' of the 2nd person [past tense, masculine gender, singular] stands always in *na b: 'anta üaraâta* ("you came out"), '*anta ahabta* ("you went");

6) *t*Å' of the 2nd person feminine gender [past tense] is always vocalized with *kasra*: *'anti haraâti* ("you (female) came out"), *'anti ra'ayti* ("you (female) saw");

7) *t*Å' [as a part of a root], similar to *t*Å' of feminine gender [plural nominal forms] can have any kind of vocalization: *sami'tu* '*aswÄtahum* ("I heard their voices");

8) $t\dot{A}$ of connection: $l\dot{A}ta$ 'awÅna, $l\dot{A}ta$ äwna ("there is no time"), where $l\ddot{A}ta$ is used as the general negation $l\ddot{A}$;

9) *t*Å' which may replace '*alif*: in some dialects they say *tal*Å*na* in the meaning of '*al*'Å*na* ("now");

10) tÅ' which may replace son: tast instead of tass ("basin");

11) $t\hat{A}$ which may replace $d\hat{A}l$ like $t\hat{A}$ in the word *sitta* ("six") where the root letter is *d* and should be: *sidsa*;

12) $t\hat{A}$ which may replace $w\hat{A}w$;

13) *t*Å' of oath: *ta-l-l*Å*hi* ("I swear by Allah");

14) *t*Å' as the verb affix of the presentfuture tense: *ta<u>h</u>ruâu* ("you leave");

15) $t\ddot{A}$ which may replace $\ddot{A}d$; in some dialects of the tribe $\ddot{A}i$ they say $t\ddot{A}$ instead of $\ddot{A}d$, for example, $lu \ t$ instead of lu ("thieves")" [9umal: 274–284].

Other letters are treated in the same manner. However, al-Khalad was forced to deviate from the subject of the treatise since the functions of the letters that form a word are not limited to the task of imposing inflections. Moreover, they often have no influence on their distribution in a word (see, for example, items 1, 9–12, 15 above). Under different "sets" of letters al-Khalal treats not only letters associated with a certain type of inflection, but also those letters, that are being defined by one of three harakats or suk ns (as, for instance, specified in item # 3 above, namely, the " $t\ddot{A}$ ' of the past tense of the feminine verb is always used in âazm"). In some chapters, we find the repetition of one and the same data. It happens, for example, in the situation when the $t\hat{A}$ of oath (item 13) "imposes" the final kasra (aaf0) on a given word. However, it has already been mentioned in the chapter on the "types of üaf0" along with two other functionally identical particles bi- and wa- (page 187). In fact, the latter particle is also mentioned for a second time under the heading "sets of wÄw" and in the subsection the "wÄw of oath". Here it is stated that "this letter belongs to particles (aur f) of ü*af*0" (page 287).

For this reason, it is not easy to calculate the exact number of specific types of government described by al-Khala. Anyhow, due to repetitions, it is not equal to the total sum of all mentioned types or situations of government. In any case, this number exceeds 94, if the "sets of letters" are to be added. Later on, al-9urûÄnædistinguished 100 types of government in order to arrive at a "round" number.

"Al-Man ma fæ – n-naäw" (*"Didactical poem in Syntax"*)

In 1995, Dr. Aämad 'Afæfæ (the University of Cairo) edited the poetic composition "al-Man ma fæ –n-naäw" ("the Didactic poem in Syntax"). It is also attributed to al-Khalæl [Man ma]. In preparing the critical edition of the text A. 'Afæfæ used ten different manuscripts, including some from Oman, the native land of al-Khalæl. As with the dictionary "al-'Ayn" and the treatise on syntax "KitÅb al-âumal", this publication generated heated debates concerning its authenticity and authorship. Afæfæ provided cogent arguments to prove that the work was written by al-Khalæl. Let us consider some of them.

In 1970s I. al-Tan hæ edited an early grammatical treatise "al-Muqaddima fa-nnaäw" ("Introduction into syntax") [at-Tan üæ 1961]. It was attributed to "alaf al-'Aämar (d. 796) [GAS IX, 126], a relatively obscure scholar. The analysis of its content by Ibn 'A r [Ibn 'A r 1963–1964] and the editor himself [at-Tan üz 1964] showed to be a relatively minor contribution to Arabic grammatical theory. However A. 'Afæfæ in al-Ahmar's treatise was aimed at mentioning of the grammatical qa ada of al-Khalal [at-Tan üa 1961, 85–86] and citing from its two verses (entire poem consists of 293 verses) with minimal lexical variations in comparison with the texts which he included in his edition. In the view of al-Ahmar, the younger contemporary of al-Khala, the authorship of "The Didactic poem" was not in doubt.

F. Sezgin [GAS IX, 48], referring to al-Aämar, mentions (this work) under the title "al-Qa ada fa-n-naäw".

In his preface to the edition of the text, A. 'Afæfæ notes, that in al-Khalæl's "KitÄb al-9umal" and "al-Man ma fa -n-naäw" a coherent system of grammatical system was already developed. It was then appropriated by Sæbawayhi in his "Book" [Man ma, 52]. It appears to be homogeneous enough in all three treatises, although it is often interspersed with Kufan grammatical terminology. For instance, the word nasaq (the "order") and its verbal derivatives are known to be employed by Kufian grammarians. This term and its derivatives figure prominently in Khala's writings, especially, in his dictionary "al-'Ayn" (the root article NSQ), "The Book of Units" [9umal, 128–130, 285–286, 302 etc.] and "Didactic Poem" [Man ma, verses 156–158]. As a result, 'Afæfæ came to the conclusion that this term was appropriated by later grammarians from al-Khala's literary heritage.

The same applies to the term $\hat{u}a\ddot{a}d/\hat{u}u\ddot{a} d$ ("denial"), which frequently appears in the works of Kufan grammarians al-FarrÅ' and Sa'lab. Taking into account that they both studied at Basra, 'Afafa proposes to consider this term to be of Basrian origin. In his opinion,

in the early grammatical doctrines this term was synonymous to the term *nafy*, which gradually supplanted it.

Several terms associated with the governing ('*amal*) of final inflections, <u>haf</u>Ö, raf^{*}, na b, ûazm, appear both in titles of some sections from the "Man ma" and in "The Book of Units". Finally, al-Khalæl treated separate letters in "the Didactic poem" in a very formal manner, namely as mere agents influencing the way in which syntactic relations in the sentence are actualized. Therefore it is hard to avoid the conclusion that both treatises are closely related and that the "Man ma" appears to be a versified version of "The Book of Units" in spite of the differences in the structure and contents of these two works.

Furthermore, if al-Khalæl is the real author of "the Didactic poem", he can be seen as the founder of a new genre in the Arab literature, that is, "grammatical poem." This original and convenient method gained wide circulation in the subsequent centuries. As a pedagogical genre a grammatical poem has reached its peak in Ibn MÄlik's (d. 1274) celebrated treatise "'Alfæya" ("Poem in one thousand verses") [1905, 2–48, 263–265].

Thus, al-Khala can be seen a key figure in the history of Arabic philological science. He was simultaneously the founder of the theory of Arabic versification ('ar Ö), the author of the first general explanatory dictionary of AL and the creator of the Arabic grammatical theory.

Although it is tempting to severely criticize al-Khala's dictionary arrangement as somewhat confused and cumbersome, we should give him credit for compiling the first Arabic lexicon. The necessity to develop a certain system of root arrangement was for the first time realized in Arabic linguistics, and the problem of circumscribing the vast realm of lexical units of the language was resolved. Al-Khala's analysis of the peculiarities of the Arabic root and complex phonetic inquiries opened up new vistas of research for Arab linguists.

The linguistic aspect of al-Khalad's literary heritage has remained neglected until recently. A comprehensive study of it is now in order. It will provide us with a better understanding of the principal concepts and ideas of the Arabic linguistic tradition which emerged from al-Khalad's theories and has developed under his influence ever since.

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