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RESEARCH FRONTIERS IN SINO-ISLAMIC LINGUISTICS

PAUL WEXLER

TEL-AVIV UNIVERSITY

0. ABSTRACT. This paper defines the field of Sino-Islamic linguistics—the study of the Arabic and Persian norms of the Chinese-speaking Muslims. Eight topics in Sino-Islamic linguistics are discussed here: (1) diffusion of Arabic and Persian to China; (2) differential impact of Arabic and Persian on Chinese and Uigur; (3) Chinese-Eastern Turkic linguistic contacts; (4) norms of Chinese Arabic and Persian; (5) dialectology of Chinese Arabic and Persian; (6) functional variations of Chinese Arabic and Persian; (7) transcription of Arabic and Persian in Chinese characters; (8) benefits for Chinese linguistics.

1. INTRODUCTION. In the late 1930's, Fang-Kuei Li published an article which has come to be regarded as the standard reference on the subject of the dialects of Chinese and the non-Chinese languages spoken in China. In his article, Li mentioned the Turkic and Iranian languages spoken, and to some extent written, in small areas of Kansu and Tsinghai and throughout Sinkiang; however, he omitted Arabic and Persian, which are respectively the liturgical and literary language of not only most of the Turkic and Iranian speakers and some Mongolian-speaking Muslims, but also of the several million Chinese-speaking Muslims to be found in all the provinces of China. In view of the historical depth and present-day geographical breadth of Islam in China, it is somewhat surprising that Li omitted Arabic and Persian from his discussion. In the forty years since Li's article, the subject has still not been treated to a detailed examination.[1]

The purpose of the present paper is to explore some of the diachronic and synchronic aspects of Sino-Islamic linguistics—i.e., the Arabic and Persian norms which arose among the Chinese-speaking Muslims. Some aspects of Sino-Islamic linguistics are primarily sinological in nature while others can be elucidated fully only with the assistance of Arabic, Turkic, and Iranian linguistics.[2] As a rule, we will not be directly concerned here with the Arabic and Persian norms of the non-Chinese-speaking Muslims in China, except when they can clarify specifically Sino-Islamic topics, e.g., the Turkic impact on the pronunciation norms and lexical corpus of Arabic and Persian in

China proper.

2. GOALS NEAR AND FAR.

2.1. BILINGUAL INTERFERENCE. Perhaps the most obvious point of interest in these two unspoken languages of religious and literary expression is their interaction with various forms of spoken Chinese, as well as with the Chinese Turkic and Iranian languages. Since Chinese-speaking Muslims are for the most part neither bilingual nor literate in Arabic and Persian, and since there is no body of monolingual Arabic or Persian speakers in China to enforce native norms, it is not surprising to find that the norms of Arabic and Persian among the Chinese Muslims have been radically reshaped by the dominant spoken dialects of Chinese. The geographical distribution of a great many of the defining features of Chinese Arabic and Persian can be directly correlated with major isoglosses traversing the Chinese speech territory. For example, whereas a Honan Muslim speaker pronounced Arabic *shayṭān* 'devil' as *shéiduàn*, a Cantonese rendition took the form *sādàn* (for a description of the informants' geographical and linguistic backgrounds, see fn. 4 below).[3] The replacement of Arabic *sh* by *s* in Cantonese Arabic reflects the nondistinction of sibilants in Southern Mandarin and Cantonese dialects, as in Cantonese *sóu* 'brush': Mandarin *shuā*. We also note a tendency towards a metanalysis of Arabic syllable structure based on Chinese norms. In a careful pronunciation of the Arabic expression *subḥānak ʔallāhūmma* 'praise to you, oh Allah', speakers posited a word (i.e., syllable) boundary before rather than after the *k*. Thus the word 'Allah' begins with the syllable *ka-* in this context (though elsewhere the morpheme never begins with the velar plosive): consider, for example, Peking *subuhamaí#kalahumaí*, and the pronunciation given by a Mandarin speaker who learned Arabic from a Cantonese Muslim *subəhána#kalahāma* (both examples pronounced with strong stress rather than with tone; # marks the word boundary). Such an interpretation fits Mandarin norms, where syllables ending in a nonnasal stop are ungrammatical.

2.2. BILINGUAL DIALECTOLOGY. In addition to the two examples given in §2.1 above where the interference in the Arabic norms could be immediately attributed to the Chinese dialect of the Muslim informant, there are also instances where the Chinese impact on Arabic and Persian cannot be localized in the immediately coterritorial Chinese dialects. In other words, the isoglosses of features common to Arabic and Persian on the one hand, and to Chinese on the other, frequently take independent forms. The subject of Sino-Islamic linguistic contacts therefore offers an interesting laboratory for the student of bilingual dialectology. For example, a speaker from Peking offered *sāituān(i)* 'devil' for Arabic *shayṭān* where we would have expected retroflexed *sh*, though the same speaker properly distinguishes *sh* and *s* in speaking Mandarin. This example leads us to suppose that the areas in which the *sh*~*s* distinction was given up in Chinese are not identical with the areas for the collapse of this distinction in the Arabic-Persian lexicon—even though the motivation for the collapse in the latter component is clearly to be sought in neighboring Chinese. The example suggests that perhaps Peking norms of Arabic and Persian may have their origin in South China. A study of such phenomena will provide us with important clues to the respective channels of diffusion of linguistic innovations in Chinese, Arabic and Persian (cf. below, section 5).

2.3. BENEFITS FOR CHINESE HISTORICAL LINGUISTICS. The historical Arabic and Persian records of the Chinese Muslims were very often composed in Chinese characters. In Sinkiang, Chinese was occasionally written in a modified Arabic script. In view of our disproportionate reliance on loan words into and from Chinese and on non-Chinese writing systems as aids for reconstructing the outlines of historical Chinese phonology, Chinese-language documents in Arabic and Arabic-Persian materials written in Chinese characters might provide unique data not available from other, more conventional, sources. However, Sino-Islamic materials cannot be used in a mechanical fashion. The Arabic-Persian data found in Chinese texts written by Muslims very often differ in spelling (and presumably in pronunciation as well) from the Arabic and Persian loans and proper names recorded in Chinese texts written by non-Muslims. This discrepancy suggests that Muslims may have developed some sort of 'communal' dialect or features of Chinese, not identical with the norms of the Chinese-speaking community at large. For further discussion of this topic, cf. p. 52 below.

3. PROBLEMS ENCOUNTERED IN RESEARCH.

3.1. GATHERING THE SPOKEN DATA. The synchronic data in the present study were gleaned from both informants and written sources. The spoken examples were provided by a number of Chinese-speaking Muslims from different parts of

China, as well as from one bilingual Uigur speaker. The informants were presented with a corpus of some fifty Arabic and Persian words relating to Islamic doctrine and culture; they were also invited to submit further items independently.[4]

Since there was no possibility of carrying out field work in the People's Republic of China, we had to restrict ourselves to interviewing residents of Taiwan. We thus run the risk that many of our informants, having been cut off from their native environments for over twenty-five years and thrown together with Muslims from diverse parts of the mainland, might not be able to furnish us with the lexical inventory and pronunciation norms which typified their native regions on the mainland.[5]

3.2. MAPPING THE DATA. In light of these limitations, some aspects of our present study, such as the mapping of the data, cannot be sufficiently explored. The mapping of the data is also hindered by insufficient materials and by the lack of a detailed linguistic atlas for the Chinese dialects. Furthermore, at the present time it is rather difficult to determine where the main traditional centers of Chinese-speaking Muslims are located. Future research in situ should be carried out with an eye towards investigating a number of questions. For example, it might be worth comparing selected points in Yunnan province (which borders on Burma, Laos and Vietnam) with points in the northwest (e.g., Kansu, Shensi); there is evidence both for and against the idea that Muslims in these two areas had little contact with one another.[6] Furthermore, it would be advisable to collect materials from Muslim population centers in a variety of dialect areas. Another consideration in choosing locales for bilingual dialectological research is the proposition that knowledge of Islam and Arabic among the Chinese Muslims decreases from west (e.g., Sinkiang, Kansu) to east.[7] Ultimately, the choice of locales to be mapped should be made against the background of Islam's expansion into China and the potential role of Iranian and Turkic speech communities as centers of diffusion (cf. also section 5 below).[8] Conversely, studies in Sino-Islamic linguistics could be expected to indicate at least some partial answers to the questions of how and when Islam spread to China.[9]

4. FUNCTIONAL VARIATIONS OF CHINESE ARABIC AND PERSIAN: 'WHOLE' VERSUS 'MERGED' NORMS; RISE OF COMMUNAL DIALECTS. Arabic and Persian norms in China vary both geographically

and functionally. Here we will examine only functional differentiation. The question of function becomes especially important for Chinese Arabic norms, since this language can be used both for liturgical as well as limitedly for colloquial purposes. Persian has only a secular function so that any differences in its usage are geographical in character.

The norms of Arabic used in a monolingual context (e.g., in reciting the prayers) frequently differ from the norms of Arabic used in a bilingual context (e.g., Arabic loans used in a Chinese phrase); we will call the first norm 'whole' Chinese Arabic and the second 'merged' Chinese Arabic.[10] Whole Arabic tends to be closer to the original 'pure' Arabic norms, but it must be said that both whole and merged Arabic show considerable Chinese influence. The two-tiered norms for Arabic can often be directly elicited from speakers. For example, speaker B pronounced Arabic *ʔassalām ʕalaykum* 'peace be upon you' as *ansalam ralàikùm/ ərlàikùm* in a formal setting--e.g., inside the mosque (whole Arabic), and as *ansalam ʔalàikūn* as a colloquial greeting in addressing acquaintances outside the mosque (merged Arabic); speaker C's response was an undifferentiated *ənsəliām(u) wălāʔikùm*. Our four informants very often could offer multiple pronunciations reflecting varying degrees of sinicization (or Uigur influence in the case of speaker D). One of the questions for future research will be to ascertain to what extent these variations are in fact functionally coded or a reflection of uncertainty over the proper Islamic norms. In the following pairs, the variant closest to Arabic or Persian is given first: Arabic *ʔalqurʔān* 'Koran', *shaytān* 'devil', *ḥarām* 'ritually forbidden', *muslim* 'Muslim', *fātiḥa* 'opening sura of the Koran', Persian *pīshīn* 'midday (prayer)' > A *kurʔán* ∿ *kurʔáni* (strong stress)[11]; A *sheitán* (strong stress) ∿ *shéiduàn*, B *sāituān* ∿ *sāituāni*; B *hărlām* ∿ *hărlāmu*; A *müsilím* ∿ *muslín* ∿ *müslímu* (strong stress), B *mūslīn* ∿ *mūsəlīn*; D *fátihi* ∿ *patihá*; D *píshin* ∿ *físhin*.

A characteristic feature of the merged Arabic norm is the combination of Arabic words with words in the target language, according to the grammatical norms of the latter. For example, speakers B and C offered *shuō wàrze* 'give a sermon', literally 'tell' (Chinese) + 'sermon' (< Arabic *waʕẓ*): the Chinese model is *shuō jiào* C-1. (Can we assume that the tone assignment of *wàrze* is determined by the Chinese translation equivalent?) The Muslim festival 'Feast of the Sacrifice', called in Persian by the merged Arabic expression *ʔeyde gorban* (< pure Arabic *ʕayd ʔalqurbān* —which is a Christian rather than a Muslim term, 'Feast of

Corpus Christi'; the Muslim term in Arabic is *ʕayd ʔalʔaḍḥa*) appears as A *ēda gúrbani* (strong stress) or simply as B *gǔrbāni*. The Uigur informant has D *qurbán hēd* which follows Turkic word order (cf. Turkish *kurban bayramı*).

In one instance the dichotomy of merged versus whole norms is expressed by Arabic and Persian expressions in complimentary distribution. For example, the name for 'God' in the mosque or in fixed expressions invoking the name of the deity, would be based on Arabic *ʔallāh*, e.g., Arabic *bismi llāhi* 'in the name of Allah' > A *bismi llâhi* (strong stress), B *bīsbīn līa* ∿ *bīsmīn līa*, C *bīsbīn līa*; Arabic *ʔalḥamdu lillāhi* 'praise to Allah' > B *alhəmdu lìngliaxi* ∿ *arhəmdu lìngliaxi* (generally pronounced without tone), C *həmdù lìngliāhi* (with loss of the Arabic determiner *ʔal-* with 'praise'). Outside the mosque, 'God' would be referred to as *hudda* < Persian *xodā*.[12]

The introduction of merged Arabic into their Chinese speech sets the Chinese of the Muslims apart from that of non-Muslim speakers. Otherwise, the only case we encountered where the spoken Chinese of the Muslims differs from the majority norms is in the pronunciation of Islamic religious terms and historical place names derived from Arabic which are generally also known to non-Muslim Chinese. For example, Arabic *ʔalqurʔān* 'the Koran' > C *kélàn* ∿ non-Muslim Chinese *kělán* C-3; Arabic *madīna* 'Medina' > C *mədīnə* (strong stress) ∿ non-Muslim Chinese *màidīnà* C-4;[13] Arabic *muḥammad* 'Mohammad' > C *mòhǎnmòdé* ∿ non-Muslim Chinese *mùhǎnmòdé* C-10 (though *mò* in the first syllable is also possible for some speakers). A topic for future research would be to compare the Arabic and Persian data from Muslim sources with the Arabic and Persian materials found in old Jewish sources.[14]

5. CHANNELS OF EASTWARD DIFFUSION OF ARABIC AND PERSIAN. The original transfer of Arabic and Persian material to Chinese could have taken place theoretically through two channels of diffusion: (a) both Arabic and Persian were introduced to China through the intermediary of a neighboring Turkic community, primarily Uigur (though possibly from Turkish as well in certain periods), (b) Iranian languages (Persian and/or Tadjik) introduced their Arabic components to China directly or via a Turkic intermediary in Sinkiang.[15] Since all of the distinctive Uigur features of merged Arabic are absent in Chinese Arabic, the possibility of a Turkic intermediary for the time being seems rather remote—except possibly for those Chinese dialects in direct contact with Turkic languages in the Sinkiang area (cf. Kalimov's description of Soviet Dungan). We may therefore assume that any similarity between Chinese and Uigur with regard to the acceptance of Persian merged Arabic norms is purely coincidental. Persian norms were simply transmitted to Uigur and Chinese through independent channels of diffusion.

5.1. DIFFERENTIAL IMPACT OF ARABIC AND PERSIAN ON CHINESE AND UIGUR. Our preliminary samplings indicate some important divergences among speakers with regard to both the inventory and function of the Arabic and Persian lexicon. Consider the responses for (a) 'Ramadan', (b) 'hell', (c) 'Muslim religious law' and (d) 'pilgrim to Mekka' presented in table 1; equivalent Chinese expressions which were offered also appear in the table. Only speaker A and the Uigur informant were able to distinguish the Arabic or Persian origin of the terms.

	Chinese			Uigur	Arabic, Persian, Chinese Etyma
	Speaker A	B	C	Speaker D	
(a)	ram(ə)ðána	rɤ̄mæzà lɤ̄mæzà[16]	---	ramazán	Ar. ramaḍān
	---	---	---	ruzá	P. rūze 'fast'
	---	bǎ zhāi	bǎ zhāi	---	Ch. 'fast'
	---	fèng zhāi	---	---	Ch. 'fast'
(b)	zhahánam zhahanán	---	cháihānna[17]	zháhanam	Ar. zhahannam
	---	dǒzihai	---	---	P. dūzex[18]
(c)	sharíati	---	cháilāti[19]	shariʔát	Ar. sharīʕa, P. shariʔat
(d)	házhi	hànzhǐ	---	házhi	Ar. ḥazhz
	---	kǎrbè[20]	---	---	Ar. kaʕba 'Kaaba'

Table 1. Data for four onomasiological maps: (a) 'Ramadan', (b) 'hell', (c) 'Muslim religious law', (d) 'pilgrim to Mekka'
Note: here and in future tables, a blank slot indicates either that the speaker was unfamiliar with the term or that the data were not specifically solicited.

A particularly interesting question is the diffusion of Persian terms to Chinese- and Turkic-speaking Muslims. Table 2 presents the nomenclature of the five Muslim daily

prayers provided by our three Chinese informants. For purposes of comparison, the terms given by our Uigur informant (a speaker of the southern dialect) are also listed, together with the northern Uigur data recorded by von le Coq at Tŭlŭfān (Turfan). Here and in future discussions, von le Coq's data are cited in his transcription.

	Chinese			Uigur	
	speaker A	B	C	Hétién	Tŭlŭfān
1. 'dawn prayer'	bandá, bam(a)dádə	bāngdà	bǎngdā	mamdád	---
2. 'midday prayer'	pishín, pyeshíni	pyěrshəni[21]	shǎng wǔ[22]	píshin, físhin	pēshin
3. 'afternoon prayer'	digár	shāmwo[23]	---	dígar	dīgär
4. 'sundown prayer'	sham	dǐgàyer	---	aγshám	shām
5. 'evening prayer'	huvtán	hǔv(ə)dān	---	xuptém	xúptän[24]

Table 2. Data for an onomasiological map of the five Muslim daily prayers.
Note: the responses of speaker A and Hétién Uigur are given with strong stress; the other Chinese responses are marked with tone.

The Uigur speaker from Hétién (southwest Sinkiang) calls the fourth prayer of the day by a native Turkic word *aγshám* (cf. also Turkish *akşam namazı*, Tatar *axsham namazy* where the root is combined with the Persian word for 'prayer'). The other terms, with the exception of *shǎng wǔ* and possibly *shāmwo*, are from Persian. Thus, the Chinese Muslims would seem to be more exposed (or receptive) to Persian influence than some speakers of Uigur. There is no evidence of Turkic prayer terms among the Chinese Muslims. Divergences in the inventory of Persian among Chinese and Uigurs raise the question of whether the channels of diffusion of Persian differ for Uigur and Chinese. If they do, then the traditional argument that the presence of Persian words among the Chinese Muslims indicates a priori that Islam penetrated China from the northwest rather than by the sea to the southern ports needs to be reexamined.[25] The distribution of Persian in Far Eastern languages is far too complicated to be used without qualification as an indicator for the diffusion of Islam via the northwest. A further question that should be explored is the differential impact of Persian on Chinese

Muslims. In table 1, Arabic *ḥazhzh* 'pilgrim to Mekka' was the immediate source of B *hànzhǐ*. (On the expression of Arabic geminated consonants, cf. section 7.1). The response of speakers A and D, *házhi*, suggests a Persian (or Turkic) pronunciation norm without gemination: cf. Persian *hazhi*, Turkish *hacı*. A comparative study of Persian in Chinese Turkic languages and among the Chinese Muslims will provide more definite answers to the question of diffusion.

A point worth noting is that the Persian terms for the prayers used by the Uigurs and Chinese Muslims have also been borrowed by Western Turkic languages, such as Ottoman-Turkish and Azerbajdzhani, but rarely do these Persian words denote the names of the prayers in the two Western Turkic languages: see Persian *bāmdād* 'morning', *pīshīn* 'former, early', *dīger* 'next, other', *shām* 'evening, supper', *xoften* 'to sleep, lie down'. This fact would suggest that the periods of diffusion of Persian words to Eastern and Western Turkic may have been dissimilar. Unfortunately, the current state of Islamic lexicography does not permit a precise dating of the Persian data in any of the four target languages—Ottoman Turkish, Azerbajdzhani, Uigur and Chinese. Theoretically, we could suppose that the Persian words acquired the function of denoting the Muslim prayers after these roots (with the original Persian meanings) had already been diffused to a number of Western Turkic languages. After the contact of Persian with Western Turkic, the Persian words with the new meanings of prayers (but probably without the original meanings) were borrowed by Chinese (and Uigur?). The fact that the Persian words in the Western Turkic languages are rarely used in the meaning of the prayers lends support to this view, since we can assume that the secondary meanings developed in Persian too late to affect the lexicon of Western Turkic.

As to the relative chronology of the two isoglosses, we may not be entirely without hints. In the late 13th or early 14th century, Crimean Tatars began to settle in areas of southwest Belorussia and northeast Poland which then formed part of the Grand Duchy of Lithuania. These transplanted Turkic dialects, which have generally come to be known as Belorussian Tatar, became extinct about the 16th century as the population assimilated to the local Slavic languages—mainly Belorussian, and partly Polish and Ukrainian. The Islamic nomenclature of Belorussian Tatar apparently includes few Persian loans which suggest that perhaps the initial diffusion of Persian words did not begin until after the Crimean Tatars had settled in the Grand Duchy of Lithuania. On the other hand, it is also conceivable that the Persian words were in fact borrowed

by all of Western Turkic in the first stage, but this cannot be established one way or the other since we are generally ignorant of the Belorussian Tatar lexical corpus. However, it is clear that the second stage of diffusion did not reach this dialect in time to replace the native Turkic terms.

Diagram 1 below suggests the possible paths of diffusion of Arabic and Persian to the Eastern and Western Turkic languages and Chinese. Stage 1 in the diagram represents the transfer of Persian morphemes with their original meanings; stage 2 represents the secondary meanings of prayers widely diffused to the east but only partially to the west. In diagram 1, the unbroken arrow indicates full acceptance of the Persian or Arabic source material, while a broken arrow denotes partial acceptance. A broken line denotes the absence of a shared isogloss between the two contiguous languages on either side.

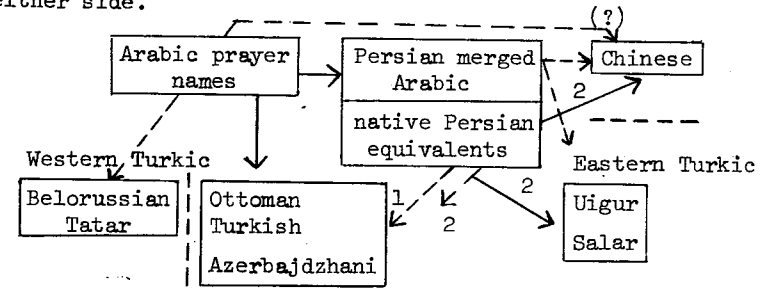

Diagram 1. Probable paths and stages of diffusion of Arabic and Persian prayer names to Chinese, Western and Eastern Turkic.

6. BILINGUAL GRAPHEMICS. There are several kinds of written sources which could conceivably be utilized in reconstructing the historical pronunciation norms of Chinese Arabic and Persian: (1) Arabic and Persian texts written by Chinese Muslims which include a 'transcription' in Chinese characters. Unfortunately, the number of such materials is small and most of the texts fail to indicate date of compilation or place of origin; though sometimes the choice of characters can give a clue to the geographical origin of the scribe. A few fragments from these texts were published at the beginning of the century.[26] (2) There is a modest list of secondary materials containing examples of Arabic and Persian words employed by the Chinese Muslims in speech and in writing from different parts of China; often the original Chinese characters accompany the examples together with a romanized transcription of varying accuracy.[27] (3) The sound value of Arabic graphemes can also be determined from a small number of Chinese-language texts from Sinkiang written in the modified Arabic alphabet traditionally employed by the Uigurs.[28] (4) Finally, Arabic and Persian loans are found in monolingual Chinese-language inscriptions and texts written by non-Muslims. The Muslim and non-Muslim norms appear to differ significantly (cf. also discussion above, p. 52). In this paper we will only discuss the first source. The comparison of Muslim and non-Muslim spellings and pronunciation norms constitutes a separate problem and will not be explored further here.[29]

6.1. USE OF CHINESE CHARACTERS FOR TRANSCRIBING ARABIC AND PERSIAN SOUNDS. The application of the Chinese writing system to non-Chinese languages requires the abandonment of the pan-dialectal principle of writing, since the function of the Chinese characters has now become phonetic only rather than semantic and phonetic. This means that a Chinese transcription of Arabic or Persian could only be properly read by a Chinese who spoke the same dialect as the scribe, since there was no practical way of establishing a common cross-dialectal norm for representing each Arabic and Persian syllable. For example, if the Arabic or Persian syllable *su* is written with the character 素 , then a speaker of Mandarin will read it as *sù*, but for a Cantonese speaker, this character would be read as *sou*. Had the Cantonese speaker intended to select a symbol for Arabic *su*, he would probably have used 數 or 樹 (pronounced as *shǔ*, *shù* respectively in Mandarin). The absence of a common transcriptional system for Arabic and Persian—or for that matter, for any foreign language written with Chinese characters—has important benefits for us, since we can more readily identify the dialect region of the scribes. For example, in an early 13th century text, 'Muhammad' is written in characters which would be read by a Cantonese as *ma-ha-mat*, which is most likely the dialect of the scribe, since a Mandarin reading of the characters would be *má-xiá-wù* C-16 (Himly).[30] In a text published by Farjenel, the transcription of Arabic *subḥānak* 'praise to you' suggests that the scribe spoke a dialect of Mandarin rather than of Cantonese, since the former reading of the characters chosen would be closer to the original (pure) Arabic norms, e.g., Mandarin *sù-bù-hā-naǐ-kàng* ∿ Cantonese *sou-pat-ha-nai-hong* C-17 (Farjenel 1908a:531). Moreover, the choice of characters in this text allows us to postulate in even greater detail the kind of Mandarin spoken by the scribe. For example, the character C-21 chosen for Arabic *lay* in *ʔilayka*

would be read as *nài* by a Peking speaker but as *lài* in other Mandarin dialects (e.g., in the Shansi, Anhui and Kiangsu provinces).[31] Similarly, the character for Arabic *-a-* C-22 in *ʔatūbu* 'I repent' would be read as *ngahm* by a Cantonese and as *yán* by a Mandarin speaker from Peking.

There is no evidence that Muslim scribes ever attempted to select characters with an eye to cross-dialectal comprehension. In order to be able to select characters with a common reading for most dialects, the scribes would have had to be multidialectal. At the moment, we are unable to determine whether each major Muslim center developed its own written norms and, if so, what the geographical range of these norms was. We are also unable to state whether or not the geographical ranges of spoken and written norms coincided. The further question of how long a particular regional transcriptional system was in use and the nature of the changing norms also cannot be determined until more texts have been studied. There is some evidence that Mandarin transcription norms for Arabic may have been utilized in the Cantonese speech territory. For example, in the Chinese inscription from 1350 found in a Canton mosque, the Arabic and Persian loan words are, curiously, more closely matched with Mandarin rather than with Cantonese readings of the characters chosen, e.g., Arabic *muḥammad* 'Muhammad' (line 9, characters 3-6) > Mandarin *mǎ-hó-mó-dé* ∿ Cantonese *ma-həp-mɔk-tək* C-23; Arabic *ṣaḥāba* 'companions of the Prophet' (line 10, characters 4-6) > Mandarin *sā/sǎ-hā-bā* ∿ Cantonese *sat-ha-pat* C-24 (Himly).

Even intradialectally, we find no indication of standardization efforts. For example, the same morpheme is spelled differently by one and the same scribe, as when Arabic *ṭayyiba* 'good' > *tuán-yǐ-bài* C-25 and *tuán-yǐ-bái* C-26 (Mason 1925:174). Scribes apparently speaking the same dialect frequently choose different characters for the same Arabic word, e.g., Arabic *ʔilla* 'except' > *yǐn-lǎng* C-27 (Mason 1925:174) and *yǐn-lüè* C-28 (Farjenel 1908a:531). With regard to the selection of characters only some general tendencies can be identified. For instance, the individual characters chosen seem to be commonly used, with as neutral a meaning as possible; moreover, the resulting combinations of characters have no meaning to a Chinese speaker. Frequently, the *kou* character is written together with the character to erase the semantic functions of the latter. For example, the Arabic or Persian syllable *hu* theoretically could be written by a Mandarin speaker in

no less than forty-seven ways: ten characters read as *hū*, twenty-two read as *hú*, four as *hǔ* and eleven as *hù*. The preference in one text (Farjenel 1908b:547) was for *hū* C-29 'at, in, from, than'; also an interrogative or exclamatory particle. In the same text, of the two candidates for *wai*—*wāi* C-30 'aslant, crooked, evil' and *wài* C-31 'outside, foreign, beyond'—the latter is selected (perhaps because of its broader distribution in compounds?). Often scribes preferred characters which are commonly used by non-Muslim Chinese to transcribe foreign words, e.g., Persian *āxund* 'religious teacher' > *à-hōng* C-32 in non-Muslim texts, and in Muslim texts *à-héng* C-33 (Yunnan) (Cordier 1927:51) and *à-hún/hùn* C-34 (18th century Kansu) (Imbault-Huart 1889:516, [fn. 2])(cf. also A *āhun* [strong stress], B, C *ahùng*); this character for *a* frequently appears in transcriptions of foreign words.

There is some evidence that Chinese Muslim scribes tried to link Arabic and Persian syllables with Chinese characters on both semantic and phonetic grounds. For example, the Arabic syllable *ʔan* in the meaning of 'that' is repeatedly written with the same character in Farjenel (1908a:531)—*àn* C-35, while the homophonous *ʔan* in the word *ʔanta* 'you', which in Arabic has no morphemic status, is written by a different character, *àn* C-36; moreover, the syllable *ta* in *ʔanta* 'you' and *ʔastaγfiruka* 'I ask your forgiveness' is spelled with two separate characters in Farjenel (1908a:531): *tái* C-37 and *tài* C-38 respectively. But scribes are rarely consistent; in the same text the Arabic morpheme *-ka* 'you' is written repeatedly as *kè* C-39, but the same character is also assigned to the *-ka* of *sharīka* 'partner' which has no meaning. The principle of the Chinese writing system, whereby almost every morpheme is assigned a fixed ideographic representation, could not be consistently applied in the transcribing of Arabic and Persian. The preservation of Arabic and Persian morphemes in a constant graphemic (and phonetic) shape was frustrated as soon as the latter underwent morphophonemic alternations. Faced with different forms of the same Arabic or Persian root, Chinese scribes had no choice but to substitute other Chinese syllables to match the corresponding phonetic change. For example, the Arabic discontinuous morpheme *qbr* 'bury, burial', as in Arabic *qubira* 'he was buried' > *gǔ-bì-ʔ* C-40 while *qabruka* 'your grave' > *gài-bù-lù/liù-kè* C-41 (both from Mason 1925:174). In conclusion, the basically nonphonetic principle of the Chinese writing system made it virtually impossible for scribes to maintain a fixed system of correspondences between Arabic or Persian

and Chinese syllables, since (a) the same character could be read differently by speakers of different dialects, and (b) there was no way to prevent the potential linking of many (homophonous and nonhomophonous) Chinese characters with a single Arabic or Persian morpheme (syllable).

7. UNIQUE FEATURES OF CHINESE ARABIC. In section 5 we examined similarities in the distribution of the Persian lexical components between Uigur and Chinese and concluded that the use of Persian in Chinese was probably not a function of the Persian component in Uigur (cf. especially table 2). The probability of Eastern Turkic dialects serving as a carrier of Islamic influence to Chinese becomes even more remote when we examine the integration of Arabic components in Chinese.

A number of features of spoken and written Chinese Arabic are unique to the Chinese speech territory and do not appear to characterize the Uigur or Persian norms of Arabic. In the discussions below, most of the examples will be taken from Arabic since the Persian materials at our disposal were scanty. Three developments will be examined: (a) treatment of Arabic geminated consonants, (b) treatment of Arabic consonant clusters and Arabic and Persian final consonants, and (c) the merger of Persian and Arabic norms. The Chinese norms for Arabic and Persian can shed some light on the character of the original Arabic and Persian received by the Chinese.

7.1. TREATMENT OF ARABIC GEMINATED CONSONANTS. In pure Arabic consonants can be geminated in all positions in the word. Chinese Arabic materials suggest that speakers both preserved and disregarded Arabic geminated consonants. We begin our characterization of Chinese Arabic norms where Arabic gemination is preserved.

Arabic geminated consonants, with the exception of *-nn-*, are not directly preserved in those dialects of written or spoken Chinese Arabic which received the gemination; this is because in Mandarin, gemination is permitted only across syllable boundaries when the last consonant of the first syllable and the first consonant of the second syllable are nasals (in standard Mandarin *n*). Nevertheless, geminated consonants are recoverable from consonant clusters across Chinese syllable boundaries. For example, Arabic *-dd-* would have to be expressed by two syllables (characters) in Chinese, the first ending in *n* or *ng*—the only consonants permitted in Mandarin in syllable-final

position—and the second beginning with *d*, e.g., Arabic *yawmi ddīni* 'of the day of judgement' > *yāo/yào-mǐn-dǐ-yí* C-42 (Mason 1925:189). The choice of nasal is apparently not determined by the point of articulation of the second component in the cluster. Thus, while Arabic *dd* in the example above becomes a homorganic cluster in Chinese Arabic, *nd*, there are numerous cases of nonhomorganic clusters arising in place of Arabic geminated consonants (examples are given in table 3 below). We do not find any attempt to preserve gemination through dissimilation in word initial position, since here the Chinese speaker would have to prefix an extra syllable to the Arabic morpheme. Instead, in initial position, the Arabic geminated consonant undergoes simplification. The rules for Arabic geminated consonants can be formulated as follows:

initial position: Arabic C_1C_1- > Chinese C_1-

medial, final position: Arabic -C_1C_1(-) > Chinese -n/ngC_1(-)

Consider the following examples:

	Arabic	Chinese
Initial gemination		
1a. *ll-* > *l-*	*llaðīna* 'who'	*lái-nà-nǎi* C-43 (Farjenel 1908b:547)
1b. *ll-* > *n-*	*llāhu* 'God'	*nā/ná/nǎ-hū* C-44 (Mason 1925:174)
2. *rr-* > *n-*	*(r)raḥmāni* 'of (the) merciful (God)'	*nài-hā-mǎ-níng/nìng* C-45 (Mason 1925:189) (with loss of the determiner [ʔi]*r-*)
Medial gemination		
1a. *-ll-* > *-nl-*	ʔ*allāhu* 'God'	Dungan *ænlaxw, ən-lā-hú* C-46 (Hartmann 1907:706)[32]
	ʔ*illa* 'except'	*yǐn-lǎng* C-27 (Mason 1925:174)
	bismi llāhi 'in the name of God'	C *bīsbīn līa*[33]
1b. *-ll-* > *-ngl-*	*lillāhi* 'to God'	C *lǐnglīahi*[33]

1c. *-ll-* > *-ngn-*	*ʔallāhu* 'God'	*wáng/wàng-nā/nǎ/nà-hū* C-48 (from a Persian passage: Farjenel 1908a:532)
2. *-nn-* > *-nn-*	*zhahannam* 'hell'	C *cháihānna*
3a. *-mm-* > *-nm-*	*muḥammad* 'Muhammad'	C *mòhǎnmòdé*
3b. *-mm-* > *-ngm-*	*subḥānak ʔallāhumma* 'praise to you, God'	*sù-bù-hā-naǐ-kàng-nā/nǎ/nà-hōng/hǒng-mò* C-49 (Farjenel 1908a:531)
4a. *-bb-* > *-nb-*	*nabbiyuka*[34] 'your prophet'	*lǎn-bǐ-yóu-kè* C-50 (Mason 1925:174)
4b. *-bb-* > *-ngb-*	*rabbi* 'of the master'	*láng/làng-bǐ* C-51 (Mason 1925:174); *láng/làng-bǐ* C-52 (Mason 1925:189)
5a. *-yy-* > *-ny-*	*ʔalmayyitu* 'the dead one'	*lǐ-mǎn-yī-tú* C-53 (Mason 1925:174)
5b. *-yy-* > *-ngy-*	*wanabbiyun*[35] 'and a prophet'	*wài-nǎi-bǐng-yóu* C-54 (Mason 1925:174)
6. *-rr-* > *-ngl-*	*(r)raḥmāni rraḥīmi* 'of (the) merciful and compassionate (God)'	*nài-hā-mǎ-níng/nǐng-lái-xīng-méi* C-55 (Mason 1925:189)(with loss of the first Arabic determiner [*ʔi*]*r-*)
7. *-dd-* > *-nd-*	*yawmi ddīni* 'of the day of judgement'	*yāo/yào-mǐn-dǐ-yí* C-42 (Mason 1925:189)
8a. *-ss-* > *-ns-*	*ʔassalāmu* 'the peace'	C *ānsəliām(u)*[33]
8b. *-ss-* > *-ngs-/ -ngsh-*	*(ʕalay)hi ssalāmu* 'peace be upon him'	*-xīng-sè/shǎi-lüè-mù* C-56 (Mason 1925:174)
9. *-ṣṣ-* > *-nsh-*	*(wayuqīmū)na ssalāta* 'and they perform the prayer'	*(wài-yǒu-gé-mù)-lǎn-shuài-lüè-tái* C-57 (Farjenel 1908b:547)
10. *-kk-* > *-nk-*	*makka* 'Mekka'	Dungan *mɜnki*[36]

Final gemination		
1. *-zhzh* > *-nzh-*	*hazhzh* 'pilgrim to Mekka'	B *hànzhǐ* (cf. also pp. 53, 55)
2. *-ll* > *-nl-*	*kull* 'all'	*koun-lai* (Majerczak 1914:138, [fn. 2], his transcription)

Table 3. Treatment of Arabic geminated consonants in Chinese Arabic

There are three types of exceptions to the dissimilation rules in those dialects where Arabic gemination was received and preserved. (1) When a voiced pharyngeal fricative ʕ (*ʕayin*) appears in the syllable preceding a geminated consonant, the dissimilation rule is blocked, e.g., Arabic *fayuʕaḏḏibāni* 'and the two of them torture' > *fā/fá/fǎ/fà-yóu-ěr-nà-ʔ-yī* C-58 (Mason 1925:174). Here *-ʕaḏḏi-* > *ěrnà-* since in Chinese a nasal cannot follow the reflex of *ʕayin* -- *er*: ***ern***, ***erng***.[37] The dissimilation rule is not blocked, however, when the pharyngeal fricative in the preceding syllable is voiceless, e.g., Arabic *muḥammad* 'Muhammad' > C *mòhǎnmòdé*, *mǎ-hó-mó-dé* C-23 (1350, Canton)(Himly 1887:141), but never ***mo-har-mo-de***.[38] (2) Similarly, when an Arabic sibilant is matched with a Chinese retroflexed sibilant there is no nasal dissimilation and gemination remains unmarked in Chinese; moreover, the Arabic vowel preceding the geminated consonant is replaced by *i*, e.g., Arabic *zha* ∿ Chinese *zhi* as in *lilzhannati* 'to (the) paradise' > *lǐ-zhǐ-nǎi-tí* C-60 (Mason 1925:174, with loss of the Arabic determiner *-il-*). The link between Chinese *zhi* and Arabic *zh(a)* was considered fixed and hence Arabic *-nn-* was not replaceable with the syllable *zh-n/zh-ng*—e.g., *zhan, zhang, zhen, zheng, zhuan, zhuang, zhun, zhong*. (3) Arabic *lilmuttaqīna* 'to the God-fearing' > *lì-lǐ-mǒu-tái-gé-lǎn* C-61 (Farjenel 1908b:547, with Arabic determiner preserved) without the expected *-ngt-* or *-nt-* in the Chinese form. The reason seems to be that the addition of *ng* or *n* before *tái* would have necessitated a change in the vowel after *m*. For Arabic *-mutta-* the Chinese scribes had to choose between conveying the simple fit *mou* (why not *mu* which would also have been possible?) for the Arabic vowel *mu* (i.e., *mouta*) or reflecting gemination through the formula *mVng/n* + C where V could not be *u* or *o* since the syllables available in Chinese of the type *m-n* or *m-ng* occur only with the vowels *i, e, a*. The expression of gemination in Chinese Arabic would have resulted in a distortion of the Arabic-

Chinese vowel fits, which are ordinarily, though not always, based on the shortest phonetic path between the two languages. Apparently, the scribes preferred to preserve the phonetic links established between syllables with nongeminated consonants foregoing gemination (through dissimilation) whenever gemination would damage the basic phonetic correspondences. These examples suggest that Arabic morphophonemic alternations (like gemination) which threaten the basic matching of syllables are rejected.

In light of these exceptions, the rules for marking noninitial Arabic gemination have to be reformulated to reflect the three blocking factors discussed above. Namely, geminated consonants cannot be expressed in Chinese by dissimilation to a nasal if (a) Arabic C_1 (as in the formula below) is ʕ which becomes *r* in Chinese, or (b) the Chinese equivalent of Arabic V_1 cannot stand before a nasal consonant, or (c) Arabic $C_1(V_1)$ is matched with a retroflexed syllable in Chinese in which case nasal dissimilation, while theoretically possible, is not attested. The second restriction in effect operates on $-V_1C_2C_2-$ groups following a labial since the syllables *bong, pong, mong, fong, wong, bung,* etc. are all ungrammatical in Mandarin. The gemination rule is thus restated as follows:

Arabic $-C_1V_1C_2C_2(-)$ > Chinese $-C_1(V_1)n/ngC_2(-)$ where

Chinese C_1 is not retroflexed or labial and V_1 is not back rounded (after the labial).

Not all possible types of Arabic gemination turn up in the texts or in the spoken responses, so it is not yet possible to state whether there are restrictions on the kinds of consonants in the position C_2 which can undergo dissimilation in Chinese (e.g., additional segments unknown to Chinese). In any case, dissimilation of medial geminated consonants is a feature broadly characterizing the written texts. However, in many of the spoken responses of our Chinese informants, as well as infrequently in some published transcriptions, there was simplification of the Arabic geminated consonants instead of partial dissimilation to a nasal segment. For example, Arabic *-ww-*, as in *shawwāl* 'tenth month of the Muslim lunar calendar', does not appear in the form *-Nw-* in written Chinese but as *shá-à-lǐ* C-62 (text dated 1851)(Tazaka 1964b:1615). Absence of gemination in this example may reflect an Uigur intermediary, since in the latter language Arabic geminated consonants are very often simplified, e.g., Uigur *shəval* (but Persian *shevvāl*). Conceivably, Uigur could serve as a potential filter for a selected Arabic lexical corpus, e.g., the

names of the Muslim months—even though we were disinclined to posit widespread Uigur influence on Chinese Arabic and Persian norms. For a spoken response without gemination, cf. Arabic *subḥānak ʔallāhūmma* 'praise to you, God' > C *subəhána kalahūma* (strong stress)(vs. item 3b in table 3 above). Topics for future research will be to determine (a) whether the tendency towards forming clusters beginning with a nasal is more typical of written than of spoken Chinese Arabic and what, if any, the role of the written norm is in determining spoken norms, and (b) whether different treatments of Arabic gemination reflect diverse sources and/or chronological strata.

7.2. TREATMENT OF CONSONANT CLUSTERS AND FINAL CONSONANTS. The Chinese intolerance for consonant clusters (across a morpheme boundary) whose first component is a nonnasal was noted above in our discussion of Arabic geminated consonants. Most Arabic consonant clusters are broken up by the insertion of a vowel, whose quality, to some extent, can be predicted. The treatment of medial consonant clusters and final clusters is important for elucidating the status of pharyngealized consonants in the Arabic received by the Chinese Muslims.

Kalimov observed that in spoken Soviet Dungan, a high back rounded vowel or semivowel was inserted after a labial consonant, and a high front unrounded segment elsewhere. Our spoken data support Kalimov's observations with regard to *u(w)* after labials; however, *u* is also possible in written texts after a pharyngealized consonant. The vowel insertion rule offers further evidence that some, if not all, Chinese Muslims, in contrast to the Persians, often distinguished between Arabic pharyngealized and nonpharyngealized consonants. Moreover, some Chinese Muslim speakers retain consonant clusters intact without any vowel insertion. The rules given below for the retention and abolition of consonant clusters represent a composite picture of all the data available; at the moment it is difficult to posit dialect groupings with any geographical exactitude. The written and spoken examples are presented separately, since the mechanics for treating clusters by written characters are much more restricted than for spoken adaptations.

Retention of medial consonant clusters

(a) Arabic $-C_1C_2-$ > Chinese $-C_1C_2-$ if C_1 in Arabic is a nasal (or lateral in some spoken responses) or a consonant which is matchable by a Chinese retroflexed sibilant (e.g., Arabic ʕ or a pharyngealized consonant)

spoken examples:
ḥamdu 'praise' > C *həmdù*
ʔalḥamdu 'the praise' > B *alhámdu* (strong stress)

written examples:
munkar angel's name > *mēn/mèn-kè-ěr* C-63 (Mason 1925:174)
naʕbudu 'we will worship' > *nài-ér-bù-dú* C-64 (Mason 1925:189)

Simplification of medial consonant clusters by replacement of the first consonant

(b) Arabic $-C_1C_2-$ > Chinese $-wuC_2-$ if C_1 is γ

spoken examples: none

written examples:
waastaγfiruka 'and I ask your forgiveness' > *wài-āi-sī-tài-wù-féi-liù-kè* C-65 (Farjenel 1908a:531)

Simplification of medial consonant clusters by omission of the second consonant

(c) Arabic $-C_1C_2-$ > Chinese $-C_1-$ if C_2 is γ or ʔ

spoken example:
ʔalqurʔān 'the Koran' > C *kélàn* (with loss of the Arabic determiner)

written example:
bilγaybi 'in the absence' > *bǐ-lǐ-ǎi-bǐ* C-66 (Farjenel 1908b:547)

Simplification of medial consonant clusters by vowel insertion

(d) Arabic $-C_1C_2-$ > Chinese $-C_1u/ɪC_2-$ if C_1 is a labial or a pharyngealized consonant which is not matched in Chinese with a retroflexed sibilant (see partial contradiction of rule a)

spoken example:
wabiḥamdika 'and by your grace' > B *wobíherbɪdíkai* (strong stresses)

written examples:
subḥānak 'praise to you' > *sù-bù-hā-nǎi-kàng* C-17 (Farjenel 1908a:531)
ʕabduka 'your servant' > *èr-bù-dú-kè* C-67 (Farjenel 1908a:531)
ʔalmuṭlub male name > *lǐ-ʔ-tú*(or *tuán*)*-lái-bǐ* C-68 (Mason 1925:174)
muṣṭafa male name > *mù-sū-tǒ-fā/fǎ/fà/fà* C-69 (1724, Nanking)(Pelliot 1922:418)

(e) In all other cases, Arabic $-C_1C_2-$ > Chinese $-C_1VC_2-$ where V is ə/*a*/*o*/*i*. The choice of the vowel seems to be unpredictable, except that *a* is preferred in clusters beginning with *ḥ*.

spoken examples:
furqān epithet for the Koran > A *furəqāni* (strong stress)
zhumʕa 'Friday' > B *zhūmár*[39]

written examples:
rraḥmāni 'of the merciful (God)' > *nài-hā-mǎ-níng/nǐng* C-45 (Mason 1925:189)(with loss of the Arabic determiner)
waḥdaka 'you alone' > *wài-hā-dé-kè* C-73 (Farjenel 1908a:531)
waʔixwānī 'and of my brethern' > *wài-yè-hó-wā-yí-yān/yàn* C-74 (Mason 1925:174)

Table 4. Treatment of Arabic consonant clusters in medial position

In word-final position, the consonant tends to acquire a vowel, whose quality again depends on whether the word ends in a labial or pharyngealized consonant.

(a) Arabic -C > Chinese -C*u* if C is labial or pharyngealized. This rule characterizes spoken responses only. In written forms, *-b* > *-bi*.

spoken examples:
xāṭib (?) 'preacher'[40] > A *xátɪbu* (strong stress)
maγrab 'evening prayer' > A *máγarabu* (strong stress) (from Arabic)
ḥarām 'ritually forbidden' > Dungan *xaramu* (Kalimov's transcription) but Salar *xāmidu* male name < Arabic *ḥamīd*, presumably introduced through Chinese (Tenišev 1963:17, in his transcription).
waʕẓ 'sermon' > A *wáazu* (strong stress), but C *wàrze*, which suggests an underlying nonpharyngealized final consonant (cf. type c below).

written examples:
ʔalmuṭlub male name > *lǐ-ʔ-tú*(or *tuán*)*-lái-bǐ* C-68 (Mason 1925:174)

An interesting deviation from these generalizations in a written text is *ʔibrāhīm* 'Abraham' > *yǐ-bǔ-lai-xīn-wèi* C-75 (Devéria 1895:339) where *-m* is accommodated through unbundling of the features; such a treatment suggests that the dialect of the scribe perhaps lacked *-m*:

m > *n* + *w*

{labial nasal} {dental nasal} {labial glide}

(b1) Arabic and Persian -C > Chinese -C*er* if C is a pharyngeal or laryngeal fricative. There are no written examples.

spoken examples:
Arabic *rūḥ* 'spirit' > C *lōher*
Persian *gunāh* 'guilt, sin' > B *gǔnāher*

(b2) Arabic -C > Chinese -*r* if C is a laryngeal fricative. There are no written examples. The multiple treatment of -*h* requires further study.

spoken examples:
sūrah 'chapter of the Koran' > B *sǔlir* (with change in the second vowel)
qubbah 'tomb' > B *kungbar* (speaker unclear about the tones)[41]

(c) Arabic and Persian -C > Chinese -C*i*, *e*, *a* if C is not a labial, laryngeal, or pharyngeal(ized) consonant. The quality of the vowel is not predictable.

spoken examples:
Arabic *ʔīmān* 'faith' > B *ìmāni*
Arabic *maszhid* 'mosque' > A *maszhīda* (strong stress), B *mǐsəzhǐdi*
Arabic *ʔiblīs* 'devil' > A *iblise* (strong stress)
Persian *nemāz* 'prayer' > B *naimàze*
Persian *pīshīn* 'midday prayer' > A *pyeshíni* (strong stress), B *pyěrshēni*[21]

written example:
Persian *nemāz* 'prayer' > *nǎi-mǎ-zè* C-76 (Farjenel 1908a:532)

The treatment of final nasals and -*r* varies. For some speakers, these final segments are retained; for others, the segments are lost.

(d1) Arabic -C is retained in Chinese if -C is a nasal consonant (all of which become -*n* in Mandarin) or -*r*.

spoken examples:
ʔalqurʔān 'the Koran' > C *kélàn*
muslim 'Muslim' > A *muslín* (strong stress)(in free variation with *múslimu*—cf. type (a) above)

written examples:
nakīr angel's name > *nǎi-kè-ěr* C-77 (Mason 1925:174)

(d2) Arabic -C > ∅ when -C is a nasal consonant or -*r*

spoken examples:
ramadān 'Ramadan' > B *rēmæzà, lǣmæzà*
zhahannam 'hell' > C *chaíhānna* (but see also *tchai-han-nan* in fn. 17)

written examples:
ʕanbar 'amber' > *à-mò* C-78 (13th c.)(Hirth 1886: 219-220)

wanabiyyun[35] 'and a prophet' > *wài-nǎi-bǐng-yóu* C-54 (Mason 1925:174). The -*un* is the nominative singular masculine case marker. The transfer of Arabic and Persian syntactic categories to Chinese deserves special study. Cf. also the movement of the syllable boundary in *subhānak ʔallāhūma* resulting in the loss of final -*k* (p. 48 above).

(e) Persian -*nd* > -*n* or -*ng*

spoken example:
ăxund 'teacher, master' > A *ǎhun* (strong stress); B, C *ahùng*[42]

written example:
ăxund > *à-héng* C-33 (Yunnan)(Cordier 1927:51); *à-hún/hùn* C-34 (18th c. Kansu)(Imbault-Huart 1889:516, [fn. 2])

Table 5. Treatment of Arabic and Persian final consonants

The rules suggested for the integration of Arabic and Persian final consonants are only applicable so long as there is no need to mark originally geminated consonants. Where gemination has to be expressed by nasal dissimilation, the rules for final consonants cannot be applied. For example, Arabic *subḥānak* 'praise to you' in isolation could conceivably be integrated according to rule (c)—i.e., an unrounded vowel could be added to produce -*ki*. On the other hand, in the phrase *subḥānak ʔallāhūma* 'praise to you, oh Allah', the need to express the gemination of *l* results in *sùbùhānǎikàng nā/nǎ/nàhōng/hǒngmò* C-49 where -*kāngnā* reflects Arabic -*kʔallā*-.

7.3. MERGER OF PERSIAN AND ARABIC NORMS. Two Arabic loans in Persian provide evidence of the merger of Arabic and Persian pronunciation norms. The Persian (merged Arabic) *rekʔet* 'prayer at genuflection' and *keʔbe* 'Kaaba' (< pure Arabic *rakʕa* and *kaʕba*) are reflected in Chinese as *lâi-kè-ér-tí* C-79 and *kè-ér-bái* C-15 (Farjenel 1908a:532). The curious point here is that while *er* is the characteristic

treatment in written texts and in many spoken responses of Arabic ʕ (e.g., *naʕbudu* 'we will worship' > *nài-ér-bù-dú* C-64 [Mason 1925:189]; *waʕaḏ* 'sermon' > C *warze*) we do not anticipate an underlying ʕ in Persian. In Persian merged Arabic ʕ > ʔ or ∅. A glottal stop in Chinese would have been lost entirely, as in Arabic *ʔalqurʔān* 'the Koran' > C *kélàn* (cf. Persian pronunciation *gorʔan*). These examples suggest that for one scribe, Arabic and Persian norms could merge in favor of the former. In effect, the Chinese scribe passed Persian back through the filter of Arabic, at least with regard to the treatment of ʕ :

Arabic ʕ
Persian ʔ < ʕ > Chinese *er*

The ability to apply Arabic integration rules to Persian loans is facilitated by the common alphabet in use for both languages and suggests that the Islamic languages were mainly transmitted to China in their written rather than spoken forms. A related question for future research is to determine whether Arabic and Persian norms were received by the Chinese Muslims at the same time.

8. CONCLUSIONS. On the basis of our investigations of Chinese Arabic and Persian we reach the following conclusions: (1) Our Chinese Muslim informants frequently differ (among themselves and from the written sources) in the integration of Arabic material. (2) They also differ in their receptivity towards Arabic and Persian lexical, phonetic, and grammatical material. (3) Chinese-speaking Muslims may be more open to Persian lexical influence than Turkic-speaking Muslims in Sinkiang. (4) The Arabic norms of the Chinese Muslims reflect features of both pure Arabic and Persian merged Arabic. (5) Where separate pronunciation norms for Arabic and Persian are not maintained by Chinese Muslims, Persian loans are integrated according to Arabic pronunciation norms—despite the long-standing function of Persian as a cultural lingua franca in Islamic Asia and the strong possibility that Persian was an important carrier of Arabic lexical material to China. (6) Chinese Muslims are usually not affected by Turkic pronunciation norms of Arabic and Persian. (7) The geography of Chinese features in the Arabic and Persian lexicon is at times distinct from that of the corresponding features in the native Chinese lexicon. (8) The matching of Arabic and Persian with the available Chinese sounds is usually done on a fixed syllable to syllable basis; as a result, morphophonemic alternations from the host language cannot be accepted if they threaten to distort the basic matching relationship.

FOOTNOTES

1. The study of Arabic and Arabic-derived scripts in China was also ignored by scholars before Li (e.g., de Lacouperie 1891). There are also about 39,000 Chinese-speaking Muslims (called Dungans) who have been residing in Soviet Central Asia (Kazakh and Kirghiz SSR) since the 1880's (Rimsky-Korsakoff 1967). On the Taiwanese Muslims, cf. fn. 5 below.
2. Cf. also Loewenthal (1963:212).
3. Mandarin examples are cited in the standard pronunciation and transcribed according to the Pinyin system; our transcription of Cantonese follows Huang (1970). Examples in the literature which appear in other romanization systems have not been adjusted. Chinese Arabic and Persian examples are given with tones whenever they were pronounced. Absence of a tone symbol above a syllable in a word which otherwise has tones marked, indicates a neutral tone. Where strong stress was heard rather than tone, we will add the expression 'strong stress' after the transcription. Chinese-Arabic, Chinese-Persian and pure Arabic and Persian examples are also transcribed according to the Pinyin system as far as possible with additional symbols supplied for non-Chinese sounds. Alveopalatal segments in Arabic and Persian and in the responses of speaker A (for description of speakers cf. fn. 4 below), unlike Chinese, are not retroflexed; a dot under a consonant for Arabic denotes pharyngealization (emphaticity). In non-Chinese examples, *x* denotes a voiceless velar fricative, and *z* a voiced dental fricative. The Chinese characters transcribed in the text are listed at the end of the article by the number appearing after C (Chinese).
4. Henceforth, in citing examples we will use letters to designate the speakers: speaker A—middle aged, born in Honan province, studied Arabic and Persian formally; speaker B—middle aged, born in Peking, had some formal study of Arabic; speaker C—middle twenties, born in Kianghsi province, acquired knowledge of Arabic from a Cantonese religious teacher, illiterate in Arabic; speaker D—elderly Uigur speaker born in Hétíen (Khotan), Sinkiang, had formal training in Arabic and Persian. Speakers A, B, and C all spoke Mandarin as their native language. Speaker A's Arabic and Persian responses are almost always pronounced without tone; speakers B and C could identify vocabulary as 'Islamic' but rarely could distinguish Arabic from Persian. Speaker B could read prayers in Arabic, but rarely could give a word for word translation.
Many Chinese-speaking Muslims, in part because of their

general ignorance of Arabic, were reluctant to act as informants and I frequently had difficulties finding willing subjects. I am therefore especially grateful to Miss C. Ding, who, besides serving as an informant, was instrumental in introducing me to other cooperative informants. I also wish to thank James E. Dew for his comments on Chinese dialectology and Ben Elman for his aid in researching the Taiwanese Muslims. The National Taiwan University Library kindly allowed me to utilize the important Huart Islamic collection now in their possession. Published word lists such as Mason (1928), Andrews (1932a, for Persian terms) and Pickens (especially 8 [1934:8, 28, 54, 74] and 9 [1935:16]) were, unfortunately, not available to me. For additional word lists, cf. items #628 and 675 in Chang (1960).

5. Theoretically, the indigenous Taiwanese Muslim community could offer us an example of an uninterrupted settlement of three hundred years. Of the approximately 40,000 Muslims now on Taiwan, about half are descended from the first wave of Chinese Muslims who came over in the 17th century, mainly from Fukien province. Unfortunately, the Taiwanese Muslims cannot assist us since they seem to have lost most of their Muslim traditions and today are almost entirely ignorant of Arabic. For a brief discussion of the original Taiwanese Muslims and their present state, see Cai (1973).
6. For a negative view, cf. Ristelhueber (1908a:515) and Warren (1920:268). On the other hand, Andrews (1932b: 99) reports the view popular among Kansu Muslims to the effect that Yunnan Islam was strongly influenced by Kansu. The Arabic norms of Yunnan, an area where Mandarin has been introduced only recently, should be studied in conjunction with those of Indochina, and possibly even with those of Kwangdung province. Cf. the Arabic prayer transcribed by Cabaton (1907:141) as well as Benedict (1941).
7. Nigârèndé (1907:394). According to Hartmann (1900:77), Arabic is poorly studied in South China. Cf. also Hayward (1933). On the revival of Arabic studies at the beginning of this century, cf. 'The Use of Arabic in China' (1911).
8. Cf. Huart (1913:488); Mason (1933:684).
9. Hartmann (1907:707) also seems to be hinting at this goal without explicitly calling for a linguo-geographical study of Chinese Arabic.
10. For further discussion of two-tiered pronunciation norms, cf. Wexler (1974).
11. Cf. also *kou-eul-a-ni* (1862, Nanking) cited by d'Ollone et al. (1911:397, his transcription).
12. The Persian form is cited by Andrews (1932b:91), whose transcription we follow here. The gemination is probably unjustified. Cf. also the spelling *hù-dà* C-2 (Tazaka 1964b:1258). The word is also attested in Salar (see Poppe 1953:461). On the Chinese treatment of geminated consonants, see section 7.1.
13. Speaker C is not consistent, since she pronounces 'Mekka' as *màijiā* C-5, the same as the non-Muslim Chinese. In a thirteenth century text we find *má-jiā* C-6 (= *ma-ka* in the pronunciation of Amoy, Canton) (Hirth 1894:28, 33). A mid-19th century source from Yunnan has *măn-kè* C-7 (Devéria 1895:338). Cf. also Tazaka (1964a:802, 805) and table 3, item 10 below. For 'Medina', cf. also *mò-dé-nā/nă/nà* C-8 (Fukien and Yunnan)(Vissière 1914:167 [fn. 5] and Cordier 1927:18). Cf. also non-Muslim *gŭ-lán* 'Koran' C-9 (Ivanov 1973:80). Broomhall (1910:233ff.), without citing examples, claims that a distinct 'Muslim' pronunciation of Chinese exists. Hartmann (1913:849) disagrees. Ekvall limits the distinguishing features of 'Muslim' Chinese to the use of merged Arabic and Semitic personal names (1939:9).
14. For some discussion of the pronunciation norms of Hebrew among the Chinese-speaking Jews, cf. Leslie (1962, 1965-6; 1972:19, 119-120, 122ff.), MacGillivray (1927) and White (1942). The norms of Syriac, a third Chinese Semitic liturgical language, used by the Nestorian Christians and their converts in China, should also be researched. On this topic, cf. Pauthier (1858).
15. For some discussion of Tadjik and Persian, cf. Kouznietsov (1912). The differences between Tadjik and Persian are probably too slight to be recovered from Chinese Muslim texts. For example, Kouznietsov (1912:3-4) claims that a Tadjik pronunciation of the Arabic male name *sulaymān* would be *soulaîmon* ∿ Persian *souleîman*. The spelling *sù-lái-mán* C-11 (1349, Touenhouang)(cited by Pelliot [1913:455]) might suggest an underlying Tadjik pronunciation since Chinese could equally well have substituted the syllable *-lei-*, but this argument is at best very shaky. Salar has *suleimane* [sic](Tenišev 1963: 17).
16. Cf. also *lè-măi-cán-nĭ* C-12 (1851)(Tazaka 1964b:1615).
17. Cf. also *tchai-han-nan* (Majerczak in his transcription, 1914:150 [fn. 4]).
18. The Persian word is also known in Uigur (Forke 1907b:45).
19. Cf. also *chai-lair-ti* (Majerczak in his transcription, 1914:159 [fn. 5]).
20. Cf. also *kă-ĕr-bái* C-13 (Mason 1925:214); *kăi-ĕr-bái* C-14 (mid-19th century Yunnan)(Devéria 1895:338); in a Persian text we find *kè-ér-bái* C-15 (Farjenel 1908a:

532). Cf. also discussion above, section 7.3.

21. Note the palatalization of the *p* in the Honan and Peking responses (speakers A and B). Cf. also fn. 33 below.
22. Could this prayer name have been influenced by Chinese *shàng-wǔ* 'forenoon'?
23. The different meanings for *shāmwo/shǎngwǔ* and *digár/dǐgàyer* may reflect ignorance on the part of some Muslim speakers or in fact different norms.
24. Forke (1907b:31) gives the form *khuftan*. For further discussion, cf. Farjenel and Bouvat (1908:559 [fn. 3], 560 [fn. 1]); Tazaka (1964b:1259, 1269).
25. Cf. for example, Mason (1933:669, 684). The Iranian impact on Turkic languages also remains a relatively unexplored topic (cf. Poppe 1965:168-9).
26. See Farjenel (1908a:531-2): part of a text dated 1888, possibly from Szechuan; Farjenel (1908b:547): no place or date given for the text; Himly (1887:141): Canton 1350; Mason (1925:174): no place, no date; Mason (1925: 189): no place, preface dated 1886; Mason (1925:214): no place, no date; Zwemer (1934): Chinese Muslim calendar for 1934. A number of bibliographies of Chinese Muslim literature list items which contain some Chinese transcriptions of Arabic and Persian. They are Blochet (1909:587): an 18th century Kansu text; *Catalogue de la collection de...Schefer* (1900): items #578, 1465, 6040; Chang (1960): items #628, 641, 650, 653, 675, 731, 763, 766-7, 782, 795, 839; Mason (1925): items #4, 34, 60, 119, 121, 124, 128, 133, 204, 223, 227, 295; Ogilvie and Zwemer (1917); Ristelhueber (1908a). For a description of relevant books brought back to Paris by the d'Ollone mission just before World War I, cf. Hartmann (1900) and Vissière (1911): items #7, 19, 36, 46. There is some overlap among these bibliographies. An important source for Sino-Islamic materials (but rarely in the form of connected texts) is Tazaka (1964a, 1964b).
27. Andrews (1932b); Cordier (1927:17-18, 51); Ekvall (1939: 9, 19); Farjenel (1908a); Farjenel and Bouvat (1908); Forke (1907a); Grenard (1898); Hartmann (1900, 1907) (the latter was reviewed by Schlegel [1901]); Kalimov (1965); Majerczak (1914); Mason (1928); Nigârèndé (1907); Pickens (1934-5); Ristelhueber (1908b); Vissière (1912, 1913).
28. These texts are described by Blochet (1909:587); Forke (1907b); Hartmann (1903, 1910) (the latter reviewed by Aurousseau 1910). For Chinese proper names in Hebrew script from the 17th century, cf. Leslie (1965-6:8, 10). A version of the Arabic script was also used for both secular and religious functions by the Soviet Chinese Muslims (Dungans) until 1928.

29. For Arabic and Persian terms in Chinese sources, see Chen (1969); Devéria (1895); Ferrand (1913-14); de Harlez (1888); Hirth (1886, 1894); Imbault-Huart (1889:502, 506, 516; 1902); Pelliot (1913: especially 455, 457); Schlegel (1900); Shiratori (1923).
30. Other variant spellings of 'Muhammad' are *mǎ-hā-má* C-18 (1407, Fukien) (Vissière 1914:166); *mù-hǎn-mò-dé* C-10 (1710, Nanking) (Forke 1907a:701)—also the modern spelling; *mù-hǎn-mái-dài* C-19 (Hartmann 1907:706). In a non-Muslim text from the late 13th or early 14th century we have *mǎ-hā-mò-dé* C-20 (Needham 1954:478). For discussion of this example and other variant readings depending on the dialect of the speaker, cf. Hirth (1886:216-7, 219 [fn. 2], 220, 222; 1894:28, 33, 50); Schlegel (1901:205-6); Hartmann (1907:706).
31. Cf. discussion of this isogloss in Forke (1895:197); Yuan (1965:18ff.).
32. Forke (1907a:700) gives the variant *ào-lǒ(lè)-hū* C-47 (from a 1710 text from Nanking, reprinted 1894) (our transcription).
33. Note that the Arabic syllable *la* is palatalized in speaker C's pronunciation. Cf. also the Soviet Dungan examples *ərl'amw* 'world' < Arabic *ʿālam* and *xarl'alí* 'ritually permitted' < Arabic *ḥalāl* (Kalimov 1965:613 —in his transcription). Cf. also fn. 21 above.
34. The Arabic spelling in the bilingual text is incorrect; the word should read *nabiy(y)uka*.
35. This is an error for correct Arabic *wanabiy(y)un*.
36. Cf. our discussion above, fn. 13. Tazaka (1964a:802, 805) gives written variants of this place name without gemination.
37. Throughout we have been giving the standard Mandarin readings for the characters. In this example, the standard Mandarin norms are irrelevant, since the scribe was apparently a speaker of a dialect in which the fourth character of C-58 was pronounced as an alveo-palatal affricate or *r*. Cf. also the Arabic *naʿūðu* 'we take refuge' > *nǎi-èr-rú* C-59 in the same text. For a discussion of the *r/n* isogloss, cf. Yuan (1965:18ff.).
38. The sequence *-ha/er*C- is, however, attested in the spoken responses in other morphemes—but not in response to gemination: e.g., Arabic *wabiḥamdika* 'and by your grace' > B *wobíherbɪdíkai* (strong stresses). There are also instances of Chinese clusters corresponding to a single Arabic or Persian segment; in all cases the Chinese cluster involves *r* as the initial segment in response to an Arabic pharyngeal fricative (ʕ or *ḥ*) in the preceding syllable: e.g., Arabic *subḥāna(k)* 'praise to you' > B *sumuharnaí* (strong stress).

39. The word appears in written texts as *zhǔ-mā-ér* C-70 (Ching dynasty text)(Tazaka 1964b:1269), *zhǔ-mǎ-ér* C-71 (Hang-chow)(Vissière 1913:60) and *zhǔ-má-ér* C-72 (1934) (Zwemer 1934).
40. The stress pattern of Chinese Arabic suggests an underlying Arabic *xāṭib*, which is possible in pure Arabic but only in the meaning of 'suitor'. Pure Arabic 'preacher' is *xaṭīb*.
41. Cf. also the discussion of this example in d'Ollone et al. (1911:216 [fn. 2]) and Pelliot (1928:452). The question of tone assignment requires further study. Theoretically, tone may be determined by the phonetic environment, syllable structure or by the written character selected.
42. Cf. also p. 59 above. It is not clear whether the Chinese received the Persian root with final *-n* or in fact with the original pure cluster *-nd*.

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Abbreviated forms of journals:
FOM = Friends of Moslems (Hankow)
HJAS = Harvard Journal of Asiatic Studies (Cambridge, Massachusetts)
JA = Journal asiatique (Paris)
JCBRAS = Journal of the China Branch of the Royal Asiatic Society (Shanghai)
MS = Monumenta serica (Peking, Nagoya)
MW = The Moslem World (Hartford)
RMM = Revue du monde musulman (Paris)
TP = T'oung Pao (Leiden)
ZDMG = Zeitschrift der Deutschen Morgenländischen Gesellschaft (Wiesbaden)

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Chinese characters listed in the text

C-1 說教
C-2 尸大
C-3 可蘭
C-4 麥地那
C-5 麥加
C-6 麻嘉
C-7 滿克
C-8 默德那
C-9 古蘭
C-10 穆罕默德
C-11 速來蠻
C-12 勒買咱你
C-13 咔爾白
C-14 凱爾白
C-15 客而白
C-16 麻霞勿
C-17 素不哈乃亢
C-18 馬哈麻
C-19 穆罕埋代
C-20 瑪哈默德
C-21 耐
C-22 喏
C-23 馬合謨德
C-24 撒哈八
C-25 圍以拜
C-26 嚕以白
C-27 引朗
C-28 引畧
C-29 乎
C-30 歪
C-31 外
C-32 阿吽
C-33 阿衡
C-34 阿渾
C-35 嗦
C-36 按
C-37 台
C-38 太
C-39 客
C-40 菁必
C-41 蓋不缺克
C-42 要敏地宜
C-43 來吶乃
C-44 那乎
C-45 鋼哈嗎嚀
C-46 按拉胡

C-47 奧 樂 乎

C-48 旺 那 乎

C-49 素 不 哈 乃 亢 那 哄 黙

C-50 懶 必 由 克

C-51 餉 必

C-52 餉 閉

C-53 力 滿 一 徒

C-54 吵 乃 丙 由

C-55 鋤 哈 嗎 嚀 硃 啥 眉

C-56 腥 色 畧 目

C-57 懶 唧 畧 台

C-58 咊 法 由 耳 吶 宜

C-59 乃 二 如

C-60 力 軟 乃 提

C-61 利 力 某 台 格 懶

C-62 舍 阿 里

C-63 悶 克 餌

C-64 耐 而 不 獨

C-65 吵 艾 思 太 物 肥 缺 客

C-66 閉 力 噯 必

C-67 二 不 獨 客

C-68 力 圖(圍)來 必

C-69 穆 蘇 托 法

C-70 主 媽 兒

C-71 主 瑪 兒

C-72 主 麻 而

C-73 吵 哈 得 客

C-74 吵 夜 合 控 宜 燕

C-75 以 補 咪 欣 位

C-76 乃 嗎 自

C-77 乃 嗌 餌

C-78 阿 末

C-79 硃 客 而 提

THE LITERARY DIALECT OF TAO QIAN: RHYMES AND FINALS

ROBERT A. JUHL
MADISON, WISCONSIN

0. ABSTRACT. This paper presents an exhaustive analysis of the rhyming employed by the late Jin poet Tao Qian (b. 365). A summary of his rhymes and finals and a reconstruction conforming to this is included. The phonological evolution of two rhymes is traced from the Jin into the (Liu) Song and compared with the rhyming of Yan Yanzhi (b. 384). The question of whether Tao Qian's imitation of the ancients included the use of archaic rhymes is answered negatively, and a few cases in which rhyming helps choose between variant characters are discussed.

1. INTRODUCTION. The poetry of Tao Qian陶潛 (b. 365 A.D. in Xunyang尋陽, modern Jiangxi Province) is of some interest to the historical linguist, as his poetic corpus is large enough and varied enough to allow reconstruction of the rhymes in his poetic dialect.[1] In addition, he is the last poetic representative of the Eastern Jin Dynasty (317-419 A.D.). Poets such as Yan Yanzhi顏延之 (b. 384 in Langye 琅琊, modern Shandong Province), born only nineteen years later in a different part of China, already show a number of changes in their rhyming, which reflect phonological changes which had taken place. Some of these more interesting changes will be discussed here.[2] Tao Qian wrote a number of poems utilizing a four word line, imitative of the *Shih Ching*. We will also answer the question as to whether Tao Qian's imitation of the ancients went beyond mere imitation of style and included imitation in rhyming, i.e., the use of archaic rhymes. Finally, in a few cases, a knowledge of the poet's rhyming enables us to choose between variant characters. These will be noted below.

The appendix (p.93 to 104) lists the rhymes employed by Tao Qian, rhyme words, cross rhymes, and the sources from which these are taken.[3] Chart 1 summarizes the rhyming of Tao Qian. A few finals are enclosed in parentheses; words from these finals do not occur in rhyming position in Tao Qian's poetry. These finals are tentatively inserted following the usage of other poets. However, in the *-m* series of finals only the single final (and, at the same time, rhyme) *-iɛm* appears in Tao's poetry. No guesses are made here as to the way Tao Qian perceived the remaining absent rhymes of the series.