Interdental consonants in North-Eastern Neo-Aramaic dialects

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The North-Eastern Neo-Aramaic (NENA) dialects exhibit a wide range of reflexes of the historical interdental consonants *θ* and *ð*. These were originally post-vocalic fricative allophones *[θ] and *[ð] of the stops */t/ and */d/ respectively in earlier Aramaic. In NENA these fricative allophones have become phonemicized. The interdental realization of the consonants has been preserved mainly in dialects in the western sector of NENA. In the eastern sector the interdentals have been replaced by various other consonants or debuccalized under the influence of contact languages.

1. Introduction[1]

The interdental fricative consonants /θ/ and /ð/ of North-Eastern Neo-Aramaic (NENA) are derived historically from post-vocalic allophones fricative allophones *[θ] and *[ð] of the stops */t/ and */d/ respectively in earlier Aramaic. In NENA these fricative allophones became phonemicized, with the result that minimal pairs are found with stops and fricatives, e.g. NENA Qaraqosh (Khan 2002: 33, 35):

> *šata* 'year'—*šaθa* 'fever'
> *guda* 'wall'—*guða* 'churn'

This phonemicization has come about since the phonetic process of lenition of stops to fricatives after vowels ceased to operate at some point in the earlier history of NENA and subsequently by separate processes *bgdkpt* stops developed in post-vocalic position. The processes that had the outcome of a stop after a vowel include (Khan 2002: 33-38):

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[1] This article is a small token of my deep appreciation of the life-long work of Fabrizio Pennacchietti in the field of Semitic linguistics, which has been an inspiration for me throughout my career.

i.   The monophthongization of a diphthong before a stop, e.g.

Qaraqosh   *ganota* 'thief'   < *gannāwta

ii.   Cases where an originally geminated stop has lost its gemination, e.g.

Qaraqosh   *šata*   'year'   < *šattā

iii. Cases where a stop *bgdkpt* root consonant occurring after a consonant in a verbal inflection has been extended to all inflections of the verbal root, including inflections where this root consonant occurs after a vowel, e.g.

Qaraqosh   *štilə* 'he drank,' but *šatə* 'he drinks'

iv.   The shift of a fricative *bgdkpt* to a stop by a process of dissimilation from an adjacent fricative, e.g.

Qaraqosh   *ʾiða* 'hand,' but *ʾidaθa* 'hands'

The interdental phonemes /θ/ and /ð/ are not found in the consonant inventories of all NENA dialects. In many dialects they have been lost by a process of merger with other consonantal phonemes.

2. Reflexes of the interdentals and their distribution

Primary reflexes of /θ/	Primary reflexes of /ð/
/θ/	/ð/
/ð/	
/t/	/d/
/s/	/z/
/l/	/l/
/h/	
/Ø/	

The NENA dialects that have preserved the interdentals are mostly situated in the western half of the NENA region, including those of the Mosul plain, the Duhok region, Sapna valley and Barwar in Iraq, and those of the Ṭyare and Txuma regions of southeastern Turkey. An outlier in the eastern sector of NENA is the dialect of Hawdiyan, which has preserved the interdentals.

In most areas in the eastern part of NENA, the original interdentals have been lost. There are a variety of non-interdental reflexes of the historical interdental consonants across this eastern sector of NENA. The primary reflexes differ according to region and also according to religious community. In many cases the Christian dialects of one region have different reflexes of interdentals from those of the Jewish dialects.[2]

The most common process involves merger of the interdentals with other consonants. These are typically stops (*θ > t, ð > d*), e.g. C. Urmi *beta < beθa* 'house,' *ʾida < ʾiða* 'hand,' or sibilants (*θ > s, ð > z*), e.g. J. Zakho *besa < beθa* 'house,' *ʾiza < ʾiða* 'hand.'

Another process involves debuccalisation, i.e. the loss of articulation in the mouth, resulting in the interdental shifting to a laryngeal fricative *h* or zero (Ø). This process affects mainly the unvoiced interdental *θ.* It is found predominantly in Christian dialects in the north-eastern sector of NENA, e.g.

	θ (< xaθa 'sister')	ð (< ʾiða 'hand')
C. Baz Maha Xtaya	*xaha*	*ʾida*
C. Baz Aruntus	*xa*	*ʾida*

The explanation as to why the voiced interdental was not debuccalised in parallel to that of the unvoiced interdental is likely to be the difference in glottal setting of voiced and unvoiced consonants. When voiced consonants are produced the glottal folds are brought together slightly, causing turbulence in the flow of air, which produces voice. By contrast the glottal folds are further open when an unvoiced consonant is produced, allowing for a free flow of air (Catford 2001: 35-38). The greater degree of closure of the glottal folds in a voiced interdental would have been a constraint against weakening its articulation to /h/ or zero.

Another form of lenition of *θ is its voicing. This is found in the C. Nerwa dialect. As a result the reflexes of *θ and *ð are both /ð/, e.g. C. Nerwa *beða < *bayθa* 'house,' *ʾiða < *ʾiða.*

In the Trans-Zab Jewish Neo-Aramaic dialects both the interdentals /θ/ and /ð/ shift to the lateral l (Mutzafi 2008, 411.412; Khan 2018a, 314; 2018b, 486). There is evidence that in the Neo-Aramaic dialects concerned the two interdentals first shifted to the voiced stop *d before finally becoming a lateral sonorant /l/ (Khan 2008, 29–31). The sonorant /l/ can then be regarded as lenition of the *d.

Within dialects there are often secondary reflexes of the interdentals that are conditioned by specific phonetic environments and/or are restricted to specific lexical items. In Jewish Trans-Zab

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[2] Christian dialects are indicated by the abbreviation C. and Jewish dialects by the abbreviation J.

dialects, for example, where the primary reflex of /θ/ is /l/, the reflex of /θ/ is /h/ in some words, e.g. J. Arbel *ṭḷaha < tlaθa* 'three,' J. Urmi *+ahra < ʾaθra* 'town.' This debuccalised reflex is associated with the environment of a preceding low vowel /a/ and the presence of pharyngealisation in the word. In some Jewish Trans-Zab dialects in the Kurdistan province of Iran and the adjacent region of Iraq the pharyngealisation in the word has developed into a pharyngeal feature that is added to the segment /h/, resulting in the shift of the /h/ to an unvoiced pharyngeal approximant /ḥ/, e.g. J. Sulemaniyya *tlaḥa,* J. Sanandaj *təlḥa < *ṭlaha < *tlaθa* 'three;' J. Sulemaniyya, J. Sanandaj *ʾaḥra < *ʾahra < *ʾaθra* 'town.'

Conversely in the J. Barzani dialect (Mutzafi 2002), /l/ is a secondary reflex of *θ and *ð, the primary reflexes being the debuccalisation of *θ to /h/ or Ø and the shift of *ð to a stop, as in Christian dialects in the northeastern sector of NENA, e.g.

Primary reflexes:

    gdada < *gðaða 'thread'

    ṛaha < *raθa 'lungs'

    momā́ < *momaθa 'oath'

Secondary reflexes:

    klawa < *kθawa 'to write'

    belta < *be ʾiða 'sleeve'

In some dialects north of the Aqra mountain, where the primary reflex of *θ is /h/, the reflex is emphatic (i.e. pharyngealised) /ṣ/ in some words that have adjacent pharyngealised segments, e.g. C. Gerbish (Al-Zebari and Khan 2022)

    bɛha   *< *bayθa* 'house'

    ʾaṣṛa   *< *ʾaθra* 'country'

    qaṛṣa   *< *qarθa* 'cold'

The pharyngealisation of the sibilant reflex /ṣ/ in these words is likely to have arisen by spreading of pharyngealisation from an adjacent pharyngealised consonant. The process of pharyngealisation involves the retraction of the tongue root resulting in the constriction of the upper pharynx with increased muscular tension. The constriction of the pharynx would have obstructed the flow of air of a laryngeal continuant /h/ and, moreover, the muscular tension would have strengthened the articulation of the grooved sibilant. Both of these articulatory conditions blocked the shift to /h/.

In the environment of emphatic /ṛ/ in the C. Gerbish dialect the reflex of *θ is the velar fricative /x/ in some words, e.g.

C. Gerbish

*qǝxṛa < *qǝθra* 'knot'

*qxǝṛṛe < *qθǝrre* 'he knotted'

*baxṛa < *baθra* 'behind'

A similar process is attested marginally in the J. Barzani dialect (Mutzafi 2002) in the word

*nxaṛa < *nθara* 'to fall off (leaves)'

The explanation for this exceptional reflex also is based on the articulatory gestures of the adjacent pharyngealised consonant /ṛ/. The constriction of the pharynx that takes place as a coarticulation of the /ṛ/ would have narrowed the flow of air, which resulted in the velar fricative /x/ rather than /h/. In principle one may have expected the outcome to be /ṣ/ (i.e. *θ > /ṣ/), as in the previous set of examples, which was also induced by the pharyngealised environment. Here we can hypothesise the development *θ > *ṣ > /x/ in a pharyngealised environment, i.e. an pharyngealised *ṣ has lost its coronal articulation by a process of partial debuccalisation.

In some dialects of the Tiyare region an unvoiced interdental /θ/ shifts to the palato-alveolar /š/ in certain environments (Talay 2008: 66-69). These include after the vowel /ɛ/, which is a contraction of the original diphthong *ay, e.g. Upper Tiyare *bɛša < bɛθa < bayθa* 'house.' Another environment is the feminine ending *-iθa of verbal and nominal forms from final-weak roots, e.g. Upper Tiyare *mliša < mliθa* 'full,' *xṭiša < xṭiθa* 'sin.' These two environments both have in common contact with a high vowel, historically in the case of the diphthong *ay.

In many dialects certain reflexes are restricted to specific lexical items. This applies to the complete lenition of unvoiced θ to Ø. In dialects where the primary reflex of *θ is not Ø, the sound is reduced to Ø in certain common words. In J. Sulemaniyya (Khan 2004: 30), for example, where the primary reflex of θ is l, the sound is reduced to Ø in the preposition *bar < *baθar* 'after' and some common verbs, such as , *k-e < *k-aθe* 'he comes' and *k-me < *k-maθe* 'he brings.' Even the voiced reflex *ð is reduced to Ø in some common words, e.g. J. Sulemaniyya *k-ăye < *k-yaðe* 'he knows.' In all of these the original interdental is preceded by a low vowel *a.

When the interdentals merge with other consonants, in many cases this merger is symmetrical, e.g. all the interdentals merge with stops (θ, ð > t, d) or sibilants (θ, ð > s, z). In some dialects, however, there is asymmetry in the merger. In such cases the outcome results in the reflex of the unvoiced

interdental *θ being weaker than that of the voiced interdental. In some dialects the unvoiced interdental is preserved while the voiced one shifts to a stop, e.g. C. Ankawa *xaθa* 'sister,' *ʾida* (< *ʾiða) 'hand,' the unvoiced becomes a sibilant, while the voiced becomes stop, e.g. J. Nerwa *xasa* (< *xaθa) 'sister,' *ʾida* (< *ʾiða) 'hand,' or the unvoiced undergoes debuccalisation while the voiced becomes a stop or a sibilant, e.g. C. Baz Aruntus *xa* (< *xaθa) 'sister,' *ʾida* (< *ʾiða) 'hand,' C. Gerbish *bɛha* 'house' (< *bayθa), *ʾiza* (< *ʾiða) 'hand.'

3. Discussion

As remarked, the preservation of the interdentals /θ/ and /ð/ is found predominantly in dialects of the western sector of NENA, in the Mosul plain, the Duhok region, Sapna valley and Barwar in Iraq, and those of the Ṭyare and Txuma regions of southeastern Turkey. The various innovative reflexes are more widely scattered, in the northwestern sector and across the eastern sector.

The innovative debuccalisation of *θ to /h/ or Ø is located in a cluster of Christian dialects in the northeastern sector of NENA, and in the geographically adjacent Jewish dialect of Barzan. The reflexes of stops (*t, d*) and sibilants (*s, z*) are widely distributed across the NENA area. There are a few geographical clusters of sibilant reflexes, e.g. in the Christian dialects of the Aqra area and the dialects of C. Sulemaniyya and C. Sanandaj.

There is evidence that some innovative reflexes of the interdentals went through various stages of historical development. The /l/ reflex of both the voiced and voiced interdental in the Jewish Trans-Zab dialects appears to have developed from a transitional /d/ reflex. This is shown by isolated /d/ reflexes of both *θ and *ð in some dialects where the primary reflex of both is /l/, e.g. J. Urmi *ade* < *ʾaθe* 'he comes,' *ida* < *ʾiða* 'hand.' The reflex of *θ as /ṣ/ in emphatic environments in C. Gerbish rather than as the debuccalised /h/, which is the normal reflex elsewhere, suggests that a sibilant reflex was a transitional stage of the development of /h/ (i.e. *θ > *s > /h/).

4. Contact languages

One factor that is likely to have contributed to the preservation of the interdentals in the western sector of NENA is contact with spoken Arabic dialects, many of which have interdentals in their sound inventories (Procházka 2018: 247–248). Another factor is that some dialects in remote mountain villages where the interdentals were preserved, such as those in the Upper and Lower Ṭyare regions, appear to have had only limited contact with Kurdish or indeed any other language.

The innovative reflexes reflect a more intense contact with non-Semitic languages that do not have interdentals. Nowadays the major contact language is Kurdish, though at an earlier period the NENA dialects were in contact with Gorani. Gorani is now spoken only in a few isolated pockets in the region (Haig 2018: 297), but it was far more widespread some centuries ago (MacKenzie 1961), and it has left its mark on NENA dialects that are now not in direct contact with it. As remarked, the loss of interdentals in various NENA dialects has brought their phoneme inventories closer to those of the non-Semitic contact languages, all of which lack interdentals. The most common process involves merger of the interdentals with other consonants that have a direct match in the inventories of the contact languages.

Several of the Jewish Trans-Zab dialects that exhibit the shift of the interdentals *θ and *$\eth$ to the lateral /l/ were spoken in areas where in neighbouring Iranian and Turkic languages a /d/ following a vowel or sonorant undergoes lenition, known as 'Zagros *d*,' resulting in it being realised as an approximant or as sonorant (Haig 2018, §3.1.1; Mahmoudveysi and Bailey 2018, §3.1; Anonby and Taheri-Ardali 2018, §2.1). As remarked, there is evidence that in the Neo-Aramaic dialects concerned the two interdentals first shifted to the voiced stop *d* before finally becoming a lateral sonorant /l/ (Khan 2008: 29-31). The sonorant /l/ can then be regarded as lenition of the *d*. Such lenition, therefore, is likely to be due to the 'perceptual magnet effect' (Blevins 2017) of the weakened Zagros *d*, whereby Neo-Aramaic speakers match this perceptually with the sonorant /l/ in their existing sound inventory. It should be noted, however, that the lateral /l/ reflex of the historical interdentals are found in Jewish Trans-Zab dialects outside the Zagros area, for example the Urmi region of northwestern Iran and the Arbel plain in northern Iraq. This may be interpreted as evidence that the speakers of the Trans-Zab dialects in these area migrated from the Zagros region at some earlier period.

It is also noteworthy that interdentals are not only prone to loss through contact but also do not spread by contact. This contrasts with some other sounds in languages that spread into the sound inventories of neighbouring languages. These include pharyngeals and unaspirated stops (Haig and Khan 2018). Their diffusion has resulted in the enrichment of the consonantal inventories of the languages of the region. A factor that may have facilitated their spread is their salience (Blevins 2017). The failure of interdentals to spread, in contrast, can be correlated with their lack of salience (Maddieson 2013).

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