The Neo-Aramaic dialects are modern vernacular forms of Aramaic, which has a documented history in the Middle East of over 3,000 years. Due to upheavals in the Middle East over the last one hundred years, thousands of speakers of Neo-Aramaic dialects have been forced to migrate from their homes or have perished in massacres. As a result, the dialects are now highly endangered. The dialects exhibit a remarkable diversity of structures. Moreover, the considerable depth of attestation of Aramaic from earlier periods provides evidence for the pathways of change. For these reasons the research of Neo-Aramaic is of importance for more general fields of linguistics, in particular language typology and historical linguistics. The papers in this volume represent the full range of research that is currently being carried out on Neo-Aramaic dialects. They advance the field in numerous ways. In order to allow linguists who are not specialists in Neo-Aramaic to benefit from the papers, the examples are fully glossed.
1. Introduction

Linguistic theories, as perhaps theories in general, are neat and helpful constructs, but they represent a state well beyond the basic data analysis. This is true, for example, of the traditional binary classification of sounds into phonemes and allophones. Whereas this division allows us to organise the material in a transparent way, it requires compromises and simplifications to a smaller or larger extent (cf. Lyons 1971, 68; Jung and Himmelmann 2011, 204). The tension between the theory and the description of the empirical data results in the need to find a balance between presenting the material in a coherent way and presenting it in a faithful way. This issue is familiar to any field linguist who faces the challenge of transcribing audio material. In practical terms, the dilemma consists in deciding how much of the rich repertoire of each speaker should be represented, typically what is identified as phonemic, and how much should be left out, typically what is identified as allophonic variation? The question is even more complex when the data come from a linguistic community that has a background of dialect mixing. The North-Eastern Neo-Aramaic (NENA) dialect of Azran dealt with in the present paper is a case in point. I wish to propose a way to deal with the aforementioned challenge by suggesting an alternative way of analysing phonetic empirical data,
employing not the traditional units of phonemes, but rather gestures involved in speech production.¹

2. The Dialect and the Data

Azran is a NENA dialect whose speakers now live in the town of Diyana in northern Iraqi Kurdistan. Azran was a village in the Turkish area of Gardi in the vicinity of Shemizdin. I was not able to identify its precise location. The Azran speakers regard themselves as belonging to the Gargarnaye tribe, which includes also the speakers of other dialects, such as Hawdiyan. The dialect of Azran is close to the Christian Diyana-Zariwaw (CDZ) variety described by Napiorkowska (2015a; 2015b). They, however, exhibit distinct features and so should be classified as separate varieties. The Azran examples presented below are based on the author’s own fieldwork (Napiorkowska 2015c).

It needs to be borne in mind that the Azran community, as is the case with many other Neo-Aramaic communities, has experienced displacement and migration. This combined with the factor of language contact, mainly with Kurmanji Kurdish, has resulted in a substantial degree of linguistic variation. Both a ‘horizontal’ and a ‘vertical’ variation can be identified. The horizontal variation arises from contact with other languages and NENA varieties. The vertical variation, on the other hand, has arisen from different degrees of linguistic change across different generations and groups of speakers. Variation is a conspicuous phenomenon in Azran, which needs to be accommodated in the description of the dialect if it is to reflect the linguistic reality.

¹ The data on this variety were gathered during the project ‘The Documentation of the Neo-Aramaic Cluster of Gargarnaye’, IPF 0203 funded by the Endangered Languages Documentation Programme, SOAS, and carried out at the University of Cambridge.
3. Transcription Challenges

A commonly adopted transcription practice, following from the two-way distinction mentioned in §1, is to represent phonemic contrasts and exclude phonetic features that are identified as allophonic. For instance, in the Azran word ‘scattered (fs.)’ [bʊr.'bəs.tʰa] from barbuzē ‘to scatter’, the devoicing of /z/ to [s] occurs under the influence of /t/ as a predictable process; consequently, the word is transcribed as burbəzta. Many properties of speech, however, are not easily sifted out in the same way, since they do not occur regularly. In this paper, I shall consider the cases of phonological fronting, and to a smaller extent also phonological emphasis, whose distribution is far from regular in Azran.

Consider the word ṭəḷḷa < *ṭəllā [ˈtˁə̱lˁ.lˁa] ‘shade’, where the former emphatic, i.e. pharyngealised, *t developed into an unaspirated /t/, influencing also the neighbouring segments.2 Historical emphasis is, however, very different in the case of words like ṭinten realised as [ˈtən.t͡sʰən] ‘I have become pregnant (f.)’ < *ṭ-ʾ-n ‘to carry’. Here there is lack of aspiration in the segment in the onset of the first syllable, reflecting historical emphasis, but heavy aspiration in the second /t/, resulting in an affricate. The affrication in this word is conditioned by a process that is different from the loss of historical emphasis. Should such a process that has led to the emergence of an affricate be represented, or is the marking of the lack of emphasis sufficient in the transcription? Furthermore, a word such as ‘stone, rock’ *kēp̄ā > čipa involves a range of interchangeable realisations, i.e. [ˈkʲiːpʰa]~ [ˈt͡ʃʰiːpʰa]~[ˈt͡sʰiːpʰa], which do not seem to be conditioned variants. They all represent the word ‘stone’ for the Azran speakers, the latter being considered a hallmark of the dialect.3 The different realisations of the same word are

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2 For the discussion of phonological emphasis in the dialects of Diyana see Napiorkowska (2015a) where it is argued that the lack of aspiration in /t/ in CDZ is a reflex of the former emphasis in *t. This is also the case in Christian Urm (Khan 2016).

3 The Azran speakers are apparently often teased about their rendition of the historical velar stops.
perceptible to the speakers. How should then the word ‘stone’ be represented in the transcription? One way would be to treat the alveolar affricate [tˢʰ] as an allophone of a postalveolar phoneme, which can be represented /č/, based on its diachronic derivation. Then, however, the perceived reality of Azran would be compromised. Could we perhaps find grounds for regarding [tˢʰ] as a separate phoneme, which could be represented /c/?

The examples above illustrate the transcription challenges based on linear approaches where phonemes are strung one after another and transitions between units are largely ignored. These transitions, however, produce phonetic output that do not necessarily match the phonological representation. In order to diminish this gap between phonology and phonetics let us consider a dynamic model that combines the two.

4. Articulatory Phonology

Articulatory Phonology (ArtP) is a model of phonological description developed mainly by Browman and Goldstein in a series of articles (inter alia 1986; 1989; 1991; 1992). The fundamental assumption of ArtP is the organisation of speech into gestures, i.e. degrees of constriction in particular locations within the vocal tract. These are the velum (VEL), tongue body (TB), tongue tip (TT), lips (LIPS) and glottis (GLO). Each gesture is specified for the location and degree of constriction. In addition, it has an inherent duration. ArtP is a non-linear model since it construes speech as overlapping spatio-temporal events. According to this model, the Azran word čipa ‘stone’ could be represented as displayed in Illustration 1.

The leftmost boxes represent the major gestural actors (called ‘vocal trajectories’) and the values within the boxes specify the constriction location and degree (closure, critical, narrow, middle or wide). The closure (clo) gesture is mainly associated with the TT, TB and LIPS and the production of stops, whereas the gesture critical (crit) is responsible for creating friction. Vowels and approximants are determined by the middle (mid), narrow or wide gestures.
Finally, the glottis and the velum may be defined as wide open for the productions of devoicing and nasals, respectively.

The size of each box represents the duration of gesture with respect to a particular sound. The temporal parameter of ArtP predicts that the retiming of a specific gesture results in the overlapping or disjoining of gestures.

This retiming, in turn, gives rise to processes, such as, for example, fronting of the place of articulation. Another important implication of the spatio-temporal parameter of ArtP is that the magnitude of each gesture may be increased or reduced, depending on the phonetic, but also pragmatic factors, and due to individual conditioning of the speaker. ArtP is, thus, a model which has ample room for accommodating variation and changes in progress, such as those encountered in Azran.

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4 In this article it is represented in a purely impressionistic manner, rather than based on gesture duration measurement.

5 Some cases of partial or total overlapping of gestures are no different from the well-known process of assimilation. Here, however, the focus is on the mechanics of the processes and their immediate outcomes, for which assimilation is only a label.
5. ArtP and the NENA Data

Using the set of grids (called ‘scores’ in ArtP) we can visualise the way in which the shift in Azran from the form *kipa (< *kēpā) to čipa is likely to have occurred. It is here assumed that first the narrow alveopalatal gesture responsible for the production of the vowel /i/ was retimed, i.e. produced before the completion of the previous gesture, and so it overlapped with the velar gesture of the tongue body constriction in /k/. As a result, a shift of the velar /k/ to the alveopalatal /č/ took place. This is represented in (1a) and (1b), where the relevant areas have been shaded.

Building on this assumption it may be postulated that in the third variant of pronunciation encountered in Azran (1c) a further retiming of /i/ influences the constriction of the tongue body responsible for the production of /č/. The narrow vocalic gesture spreads from the alveopalate to the alveolar ridge and so the closure is advanced to the alveolar region. The result is realised as an affricate /c/ [t͡sʰ]. Note also the spreading of lips associated with this pronunciation.

(1) Palatalisation and advancement to alveolar ridge with vowel opening

čipa ‘stone’ < *kēpā

(1a) [ˈkʲiːpʰa] 7

<table>
<thead>
<tr>
<th></th>
<th>/č</th>
<th></th>
<th>i</th>
<th>p</th>
<th>a/</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB</td>
<td>clo, velar</td>
<td>narrow, alvpal</td>
<td></td>
<td>wide, phar</td>
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<tr>
<td>TT</td>
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<tr>
<td>LIPS</td>
<td>middle</td>
<td></td>
<td>clo, lab</td>
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<tr>
<td>GLO</td>
<td></td>
<td>wide</td>
<td></td>
<td>wide</td>
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</tbody>
</table>

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6 Cf. the characterisation of the alveopalatal sounds by Ladefoged as those produced with the blade of the tongue ‘always close to the back part of the alveolar ridge (…), made farther in the mouth’ than the alveolars (Ladefoged 2006, 12).

7 Within the scores the following abbreviations were used: alv for alveolar, alvpal for alveopalatal, pal for palatal, phar for pharyngeal, lab for labial
(1b) \([\text{t}\text{ʃʰ}\text{i:pʰa}]\)

\[
\begin{array}{cccc}
\text{TB} & /\text{č}/ & i & p & a/ \\
\text{narrow,} & \text{narrow,} & \text{wide,} \\
\text{alvpal} & \text{alvpal} & \text{phar} \\
\text{TT} & \text{clo, alvpal} & \\
\text{LIPS} & \text{middle} & \text{clo,} & \text{lab} \\
\text{GLO} & \text{wide} & \text{wide} \\
\end{array}
\]

(1c) \([\text{t}\text{sʰ}\text{i:pʰa}]\)

\[
\begin{array}{cccc}
\text{TB} & /\text{c}/ & i & p & a/ \\
\text{narrow,} & \text{narrow,} & \text{wide,} \\
\text{alv} & \text{alvpal} & \text{phar} \\
\text{TT} & \text{clo, alv} & \\
\text{LIPS} & \text{narrow} & \text{clo,} & \text{lab} \\
\text{GLO} & \text{wide} & \text{wide} \\
\end{array}
\]

(Within the ArtP framework, the variation of /k~ č~ c/ \(\rightarrow [kʲ > \text{t}\text{ʃʰ} > \text{t}\text{sʰ}]\) in *kēp̄ā > kipa > čipa > cipa ‘stone’ is easily handled as a spectrum of articulations triggered by the anticipation of the alveopalatal vowel gesture. Moreover, such a representation bypasses the stage of categorical phonemic vs. allophonic division between /k~ č~ c/\. I have, therefore, decided to represent [tʃʰ] with a separate symbol /c/. It is not claimed that /c/ constitutes a separate phoneme in its canonical sense; rather, introducing /c/ represents a significant perceived auditory feature of Azran. In other words, differentiating between /č/ and /c/ in transcription does not mark a transgression of boundaries between phonemes, but rather mirrors the linguistic reality of the dialect with such internal variation.

and uvu-phar for uvular-pharyngeal.
6. Further Examples

The ArtP model may further be employed to represent the feature called emphasis spread. In Azran, as mentioned above (§3.0.), the reflex of earlier emphatic (pharyngealised) *\( t \) is a non-pharyngealised unaspirated /\( t \)/. The gesture of tongue tip closure for /\( t \)/ is, thus, accompanied by glottal closure. If this gesture is retimed, the following relevant segments are rendered unaspirated, such as /\( p̌ \)/ in \( \text{	extipa{ ṭəp̌ṛa}} \) ‘fingernail’ in (2):

(2) Emphasis spread or retiming of closed glottis gesture

\[
\text{	extipa{ ṭəp̌ṛa}} \text{ ‘fingernail’ } [ˈtəp.rˁa] < ^{*}ṭəprā
\]

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<tr>
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<th>/( t )</th>
<th>/( o )</th>
<th>/( p̌ )</th>
<th>/( r )</th>
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<td>narrow(^8)</td>
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<tr>
<td>TB</td>
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<td>mid,</td>
<td></td>
<td></td>
<td>wide, phar</td>
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<tr>
<td></td>
<td></td>
<td>uvu-phar</td>
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<tr>
<td>TT</td>
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<td>clo,</td>
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<td></td>
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<td>alv</td>
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<td>LIPS</td>
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<tr>
<td>GLO</td>
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</table>

The gesture of the closed glottis appears here as almost a continuum, pertaining to the relevant segments. The approach of ArtP has, therefore, an advantage over a linear approach, where we would have two segments specified each for the feature of nonaspiration.

---

\(^8\) The ArtP model is yet to develop a unified way of representing the tongue root gestures. Here, the TR narrow gesture is equivalent to the [+ RTR] feature and stands for the articulatory setting generally assumed in NENA for the production of the emphatic consonants, i.e. the constriction of the upper pharynx (cf. Khan 2013, 112).
The next example (3) is similar to (1), but involves the voiced counterpart. It is likewise assumed that the retiming of /i/ is responsible for the shift from the alveopalatal /j/ [dʒ] to alveolar [dz]. Consequently, [dz] is represented by a separate symbol /j/.

The final example (4) illustrates not the strictly temporal, but rather the gradable parameter of gesture magnitude. Here, the first segment is the unaspirated reflex of the earlier emphatic *ṭ, whereas the final consonant /t/ is the aspirated stop of the feminine suffix. In (4a), /ṭ/ is still pronounced with some emphasis, i.e. constriction of the pharynx and retraction of the tongue root. It is, thus, sufficiently different from the pronunciation of the aspirated /t/ where no tongue root gesture is involved. In (4b), by contrast, where the only reflex of the earlier emphasis is the lack of aspiration, there is a need to magnify the difference between /ṭ/ and /t/. As a result, the shift of the tongue tip from closure in /t/ in (4a) to a critical position in (4b) renders the affricate [tˢʰ], whereby the contrast between the two consonants in question is maximised.

(3) Advancement to alveolar ridge with vowel opening

jiya ‘tired’ (ms.) < g-h-y

(3a) [dʒiːja]

<table>
<thead>
<tr>
<th></th>
<th>/j</th>
<th>i</th>
<th>y</th>
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<tr>
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<tr>
<td>LA</td>
<td>mid</td>
<td>narrow</td>
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<tr>
<td>GLO</td>
<td>clo</td>
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(3b) \[\text{\textipa{dzi:ja}}\]

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<td></td>
<td>clo</td>
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(4) The maximisation of glottalic gesture contrast

\textit{tinta} ‘pregnant’

(4a) \[\text{\textipa{t\textsuperscript{s}ən.tʰa}}\]

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<thead>
<tr>
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<th>/tʰ</th>
<th>i</th>
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<th>t</th>
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<td>narrow, alvpal</td>
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<tr>
<td>TT</td>
<td>clo, alv</td>
<td></td>
<td>clo, alv</td>
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<td>GLO</td>
<td></td>
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(4b) \[\text{\textipa{tən.tsʰa}}\]

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<tr>
<th></th>
<th>/tʰ</th>
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<th>n</th>
<th>t</th>
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<td>clo, alv</td>
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<td>GLO</td>
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<td>clo</td>
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</table>

9 The spread of nasality was ignored in this example.
7. ArtP and Language Contact

The palatalisation of the velar stops, presented in the Azran examples in (1) and (3), is not unique to this dialect (see also Christian Urmi in Khan 2016) and appears to be an areal feature of the Eastern Anatolian and Caucasian Sprachbünde. The NENA dialects have undoubtedly been heavily influenced by the surrounding varieties, mainly Kurmanji Kurdish, in which palatalisation is well attested (Kapeliuk 2011, 737). Nonetheless, it should be borne in mind that external influence is rarely the sole factor responsible for linguistic change. Rather, it is coupled with an internal potential of the language to accommodate the influence. In the light of ArtP, we may observe how the shift /k/> /č ~ c/ emerges as an innovation independently of external influence. Furthermore, similar developments of the velar stops are typologically wide-spread, for example, among the Bantu varieties (Hyman and Moxley 1996) where no external motivation for change has been postulated. Among internal factors one could also include sociolinguistics and the rather low prestige of Azran compared to other NENA varieties, such as the Iraqi koine. According to Trudgill (2011), the non-standard or isolated varieties tend to employ more casual and careless speech, which results in reduction processes in pronunciation and grammar. The speakers of Azran indeed constitute a rather small and tightly-knit community. This would be expected to licence a less careful pronunciation, leading to a phonological shift.

It is not claimed here that the fronting and palatalisation in Azran, or indeed in NENA, is totally unconnected with the similar processes in Kurdish. Rather, it is suggested that there is a need to recognise both the external and the internal motivations for a change. Acknowledging equally the role that the input from the inside and outside play in shaping the language is a more satisfactory approach to the study of sound change. In the case of the palatalisation and affricativisation in Azran, we may say that the mechanism of gesture retiming is a development that is reinforced by language contact rather than primarily conditioned by it.
8. Conclusions

ArtP is a model enabling us to observe how the reorganisation of gestures results in allophonic variation ranges, which pass seamlessly across boundaries delimited by phonemes in linear approaches (ex. 1, 2 and 3). It is, therefore, an efficient means of capturing variation. Moreover, it handles well some cases of the so-called ‘mixed-words’, i.e. former emphatic words containing front segments (example 4), which are otherwise problematic within the approach of vowel harmony and autosegmental phonology. Lastly, giving credit to the internal mechanism of sound shift together with language contact allows us to identify the multiple causation of linguistic change with greater precision.

Returning to the initial question of tension between theory and empirical data in the creation of transcriptions, it must be admitted that ArtP is impractical for documentation purposes. Some critics have judged it to be inconclusive or in many respects inadequate (e.g. McMahon, Foulkes and Tollfree 1994; Clements 1992). Nevertheless, it is here argued that ArtP is highly valuable as a model for the interface between phonology and phonetics. Including a few selected ArtP scores in a phonological description of a language would help to justify the transcription convention that is adopted in the documentation, such as introducing /c/ and /j/ here. In practical terms, ArtP allows us to achieve a deeper understanding of what it is that we are trying to represent through a highly conventionalised transcription system.

Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>alv</td>
<td>alveolar</td>
</tr>
<tr>
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<td>alveopalatal,</td>
</tr>
<tr>
<td>ArtP</td>
<td>Articulatory Phonology</td>
</tr>
<tr>
<td>clo</td>
<td>closure</td>
</tr>
<tr>
<td>crit</td>
<td>critical</td>
</tr>
<tr>
<td>GLO</td>
<td>glottis</td>
</tr>
</tbody>
</table>


lab labial
pal palatal,
phar pharyngeal
TB tongue body
TT tongue tip
uvu-phar uvular-pharyngeal
VEL velum

References


