# Affricated *Ṣade*
# in the Semitic Languages

BY

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*To my dear parents*

 יאריך ה׳ את ימיהם בטובה

# Acknowledgments

וּבָרוּךְ שֶׁהִסְפִּיק
בְּיָדִי לְהַעֲמִיק
מַסְקָנָה לְהַסִּיק
אֲשֶׁר לֹא נֶהְגֶּה־רִיק
כִּי הַצַּדֵּ"י נָפִיק
בְּמִבְטָא דֵּי עַתִּיק
אֶלְחֶם לֹא אַפְסִיק
עַד אַצְדִּיק הַצַּדֵּ"יק

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# 1. Introduction

## 1.1 The Affricate Hypothesis — Past and Present

Most Semitists today believe that in ancient times the Hebrew צ was pronounced as an emphatic [s] rather than an emphatic [t͜s],[1] but this has not always been the case. Until the second quarter of the nineteenth century, Semitists transcribed and described צ as an affricate. Gesenius (1817:21), for example, held that both צ and ז were originally affricates, the former being composed of ט plus *s*. Ewald (1827:27–28) also espoused this theory at first, explaining the (allegedly) fricative צ of the Septuagint and Jerome and the fricative *ṣ* of modern Syriac and Arabic as a later development.

Less than twenty years later, however, Ewald (1844:55) was describing צ as a fricative, although he left it to others (e.g. Böttcher 1866–85) to explicitly reject his earlier view. By the last quarter of the century, the affricated realization of צ had lost all credibility in scholarly circles. In the words of Olshausen (1879:565–66): "Auch wird diese Aussprache zur Zeit ziemlich allgemein als eine unberechtige, ausgeartete angesehen."

Olshausen (ibid., 565–70) attempted to soften this negative view by presenting a collection of nine names and loanwords in which

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[1] In this monograph, affricates are represented as [t͜s], [d͜z], [t͜š], and [d͜ž] in phonetic notation. In graphemic and phonemic notation, I use *c* for [t͜s], *č* for [t͜š], (even in Middle Iranian and Sanskrit) and *ǧ* or *ǰ* for [d͜ž], except in transliterating Egyptian, where *ǧ* has the value [t͜š] and *č* has the value [t͜šʿ]. Greek, Arabic and, in some places, New Persian are given in their own scripts, but Syriac, like other Aramaic dialects and Hebrew, is given in square script. All other languages are transliterated, except in quotations and in the rare instances where the untransliterated forms are more revealing.

Semitic *ṣ* renders or is rendered by Iranian *č*, Egyptian *g̱*, or Greek *τ*. Additional evidence of this type was later to be adduced by Vilenchik (1930:91–92, 1931:505–6), Cantineau ([1951–52] 1960:283), and Cardona (1968:5–13).

A few years later, Haupt (1890:261–62) reviewed Olshausen's evidence in a long footnote, adding very little of a concrete nature except for a parenthetical allusion to the affricated[2] *ṣ* of Ethiopian Semitic. On the theoretical level, however, Haupt's contribution (ibid., 261) was considerable. He was the first to posit the existence of a connection between what we may call the "affricate hypothesis" (the hypothesis that ancient Hebrew צ had an affricated realization) and what we may call the "ejective hypothesis" (the hypothesis that *ṣ* and the other emphatic consonants were produced with glottalic pressure in all of the Semitic languages except Arabic):

> Die Zugehörigkeit des צ zu den "emphatischen" [read "glottalic"[3]] Consonanten ט, ק etc. wird nur dann begreiflich wenn man annimmt, dass die Aussprache צ bei den deutsch-polnischen Juden (und des א und ፀ bei den Abessiniern) etwas ursprüngliches ist.

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[2] This term is not entirely satisfactory inasmuch as it suggests to some people that a diachronic process of affrication is involved. Nevertheless, after much obsessing, I have decided to use this term for want of anything better. The use of *affricate* as an adjective, found in some works, can lead at times to confusion. The term *affricative* is disqualified by the fact that it used to be employed as a synonym of *fricative*.

[3] I use this term instead of the usual *glottalized*, for the reasons given by Catford (1977:70):

> American writers most commonly use the term 'glottalized'. This last is an unfortunate term since in phonetic terminology adjectives ending in *-ized* normally refer to secondary articulation. It is misleading to use such a term to describe instead an initiation type, which is one of the basic components of speech production. Such inconsistency in scientific terminology is not to be recommended. Moreover, having pre-empted the term 'glottalized' for a basic initiation type, it is no longer available for possible use in the sense of 'with some kind of glottalic modification'.

I also follow Catford in using the term *glottalic pressure initiation* instead of *glottalization*, and *glottalic pressure sound* instead of *ejective*.

This revolutionary (and overstated[4]) concept was later to be developed by Vilenchik (1930:91–92) and Martinet (1953:71).

The work of Olshausen, Haupt, and later (1907) Hüsing made no impression on the authors of the monumental Hebrew grammars published in the first quarter of the twentieth century. Joüon (1923:16) was still able to denounce the affricated צ as un-Semitic,[5] and Bergsträsser (1918:41–42) was still able to ignore it completely. Indeed some scholars succeeded in overlooking not only the work of their predecessors in this area but their own as well. Nöldeke (1898:4), for example, made a point of warning students of Syriac not to pronounce צ like German *z*, despite the fact that on two earlier occasions (1879a:148 fn, 1879b:396 fn) he himself had pointed out that the usual Syriac equivalent of *č* in Persian names and loanwords is צ. A few years later (1904:127 fn), he called attention to the transcription of צדי as *τιαδη* in the Vatican Codex of the Septuagint, but he could find nothing more enlightening to say

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[4] Haupt, like Yushmanov (1925:57) and Martinet (1953:71), assumed that all glottalic pressure sounds have a double occlusion (in the mouth as well as in the glottis) and are perceived as a double popping sound. For criticism of this assumption, see below, pp. 86–87.

[5] Joüon (loc. cit.) gives two arguments:

> (a) si צ = *ts* = *t* + *s*, un mot pourrait commencer, en fait, par deux consonnes, ce qui répugne au sémitique.
>
> (b) on évite précisément le groupe *ts*: ainsi *\*hitṣaddeq* devient par méthathèse הצטדק

Joüon's first point overlooks both the Ethiopian evidence mentioned above and the very real phonetic and phonemic difference between affricates and homorganic clusters in several languages of the world. In Squamish, for example, "the dental affricate /c/ differs from a sequence /ts/ by the shorter duration of its fricative element and by the lesser energy of its explosive component" (Kuipers 1967:24). In Chontal, "the *ts* and *tš* clusters are distinguished from the *c* and *č* phonemes in that in the clusters there is open transition (aspiration), syllable division, morpheme division, and potential pause between the stop and the sibilant" (Keller 1959:45). Joüon's second point ignores the fact that the metathesis rule in question is a very minor one, which had ceased to be productive by the Achaemenid period (cf. פתשגן) and probably long before.

about it than: "d.h. wohl, dass ein Schreiber den Laut des **צ** durch τι wiederzugeben suchte." This despite the fact that less than five pages later (1904:132) he transcribes Ethiopian *ṣadai* as *tsadai*! Similarly, Yushmanov's characterization (1925:57) of the affricated Hebrew **צ** as an artificial creation of Ashkenazic Jewry comes only a few lines after his equation of Ethiopian *ṣ* with tš' and his declaration that "les consonnes glottalisées ne sont ni spirantes ni sonores, mais occlusives ou affriquées, toujours sourdes."

After Haupt, the affricate hypothesis gradually broadened its scope. Hüsing (1907:469) revived Gesenius' version of the hypothesis, arguing that sporadic alternation between **צ** and **ז** in Hebrew made it necessary to assume that if the former was an affricate, the latter was an affricate as well. (Recent work on Ethiopian Semitic has diminished the force of this argument.[6]) Albright (1928:232) pointed to renderings of Canaanite **ס** with Egyptian *č* in the second millennium B.C.E. as evidence that **ס** was an affricate in that period. Vilenchik (1930:91–93, 1931:505–6) attempted to prove that the entire *s-z-ṣ* triad was affricated not only in Canaanite but also in Akkadian and even Arabic.

Vilenchik's claims about Arabic have been largely forgotten (although cf. Cardona 1968:10–13 and Corriente 1976:76), but his other contributions to the affricate hypothesis have been kept alive by his countrymen (e.g. Diakonoff 1965:20–21 and Dolgopolsky 1977:2) and by French linguists of the Prague school (e.g. Cantineau [1941] 1960:46, Martinet 1953:68, 71, Haudricourt 1951–54:37, and Cohen 1968:1304). Many of these scholars have followed Albright (1946:317) in stressing the use of cuneiform *Z*-signs to represent Hittite *ts,* with the aim of shoring up two of the extensions of the affricate hypothesis proposed by Vilenchik: the Akkadian extension and the *s-z* extension. Some scholars (e.g. Martinet 1953:68, 71 and Voigt 1979:98) have proposed additional extensions attributing affricated realizations to such Proto-Semitic consonants as *ś, ṣ́ (ḍ), ṭ, ḍ, ṭ, ġ,* and *ḫ.*

[6] See below, pp. 84–85.

Nevertheless, it is clear that these extensions have lagged far behind the core of the affricate theory (i.e. the part which deals with Northwest Semitic *ṣ*) in plausibility. Even Vilenchik's supporters have admitted the weakness of the *s-z* extension. Thus, ten years after stating in no uncertain terms that "le sémitique possédait une triade d'occlusives dentales affriquées . . . ," Cantineau was forced to recant. In "Le consonantisme du sémitique" ([1951–52] 1960:283), after presenting evidence that PS *ṣ* was an affricate, he writes:

> Mais par contre les témoignages manquent sur une prononciation mi-occlusive des deux consonnes non emphatiques *s* et *z*. Vilenčik . . . a énuméré quelques faits qui paraissent en faveur d'une prononciation affriquée; mais ces faits proviennent soit de langues anciennes dont la prononciation est mal connue comme l'égyptien, soit de transcription en écriture arabe de langues non sémitiques (transcription souvent approximatives), soit de prononciations dialectales arabes très récentes qui risquent d'être secondaires. Cela leur enlève une partie de leur valeur probante.

Similarly, Diakonoff (1965:20–21) distinguishes between the case for affricated *ṣ* in Northwest Semitic and Akkadian, which he considers "prove[n]," and the case for affricated *s* and *z,* which he labels "not impossible." And Cardona (1968) does not even mention the possibility that *s* and *z* were affricates.

Outside of the Soviet Union and France, even the core of the affricate hypothesis is mentioned with caution (cf. Claassen 1971:302, Levin 1971:121, and Wild 1973:29) if at all. This lack of acceptance and/or awareness of the affricate hypothesis has at least two major causes:

(1) The evidence which has hitherto been adduced in support of it provides at best a very fragmentary picture of the chronological and geographical distribution of affricated *ṣ* in the Semitic languages. There are frequently huge gaps in time and space between one attestation and the next. (It should also be noted that, in addition to being incomplete, the evidence is sometimes incorrect, particularly in the area of modern Jewish reading traditions.)

(2) The methodology used to interpret the abovementioned evidence has frequently been rather loose, particularly in the area of transcriptions.

The first of these points is self-explanatory, but the second is not. We turn, therefore, to a discussion of the methodology to be employed in this investigation.

## 1.2 Methodology

How does one go about proving that **ץ** was an affricate rather than a fricative at a given place and time in the past, before the invention of the phonograph? The answer is two-fold: *tradition* and *transcription*.

By *tradition* I mean that **ץ** is still an affricate in the modern descendant of the Semitic language or reading tradition in question and/or in *related* languages or reading traditions. In other words, the modern reflex of the sound is available for study.

By *transcription* I mean that **ץ** is consistently rendered by a proven[7] affricate (or a sign for one) in a given non-Semitic[8] language. This, however, is not sufficient. Since renderings are frequently only approximate, one occasionally finds proven affricates rendering proven fricatives,[9] just as one finds proven fricatives rendering proven affricates.[10]

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[7] I.e. proven by the method outlined here. It goes without saying that one must be careful to avoid circularity.

[8] If the rendering phoneme is also a reflex of Proto-Semitic *ṣ*, the proof is invalid, since the rendering may be based on etymology (or, more precisely, correspondences deduced from obvious cognates) rather than acoustic similarity. Renderings of **ץ** by non-corresponding Semitic affricates are, of course, not disqualified.

[9] Cf. the use of Old Spanish *ç-z* to render Arabic ص and س discussed below, pp. 7–8.

[10] Cf. the use of Syriac dotted *ḍ* and *ṫ* to render the Armenian dental affricates, and the use of Greek *σ* to render *č* in various languages, both discussed below pp. 47, 62–63.

It follows that what is needed is not simply transcription but *controlled transcription*.[11] By this I mean that one must provide proof that a *fricative* **ץ** would *not* have been rendered by an affricate in the non-Semitic language in question.

There are two ways of doing this. One way is to show that proven fricatives are not in fact rendered by the affricate(s) in that language. In practice, this means showing that ס and ص (Arabic *ṣ*) are consistently rendered by a fricative in that language. This approach is exemplified in our discussion of the Georgian, Armenian, and Iranian evidence for affricated Aramaic **ץ**, below.[12]

The second way is to show that if **ץ** had been a fricative, the closest phoneme to it would certainly not have been the affricate actually used to render it. For example, if a language which had a *č* and an *s* used the former to render a **ץ** known to be a voiceless dental, we would certainly conclude that **ץ** was an affricate, because if it had been a fricative, there is little doubt that *s* would have been chosen to render it. Even if the values conventionally assigned to *č* and *s* in that language are inaccurate, the chances are that this error will not be great enough to make *č* as close to fricative **ץ** as *s* is.

Renderings with *c* are much less reliable. *C* and *s* are so similar that there is no safety margin: slight phonetic alterations can make *c* as close to fricative **ץ** as *s* is. This point can be illustrated with an example from Spanish. Arabic ص and س (like Hebrew **ץ** and ס) are consistently rendered in that language not by *s* but by *ç* or *z* (Steiger 1932:166–69, 138–43).[13] These renderings, which go back to a period in which it is universally agreed that *ç and z* represented /ts/,

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[11] A notorious example of flagrant disregard for this principle is discussed by Kutscher (1965:39). The need for this principle would be less acute if the major transcribing language of the ancient Near East were, say, Ubykh with its 80 consonants rather than Greek. Indeed, if Alexander the Great had spoken that language, the major problems of Semitic phonology would have been solved long ago. But since we are stuck with a transcribing language whose phonemic inventory is not as rich as we might like, we must constantly look for controls.

[12] Pp. 46, 48, 55.

[13] I am indebted to Prof. J. Blau for calling this to my attention.

have led Corriente (1976:76) to suggest that Arabic ص and س were affricates in medieval Spain (cf. also Cardona 1968:10). However, recent research (Galmes de Fuentes 1962, Adams 1975:284–85) has shown that Old Spanish *ç-z* and *s* differed not only in manner of articulation but also in place of articulation and tongue shape, the former being predorso-dental and the latter being apico-alveolar, i.e. slightly retroflex and acoustically quite different from the fricative ص and س in use today. In other words, Old Spanish *s* was no closer to fricative ص and س than *ç-z* was, and thus its presence in the language does not turn the above-mentioned renderings into controlled renderings.

The dangers of uncontrolled transcription are in most cases even greater when the renderings adduced as evidence have צ as the transcribing, rather than the transcribed, phoneme. When a non-Semitic language which has an *s* uses *c* to render צ, the control is merely questionable; when Hebrew or Aramaic uses צ to render *c* there is no control at all.[14] In other words, even if we assume that צ was a fricative, it is still as close to *c* as any other Hebrew or Aramaic phoneme is. On the other hand, when צ renders *č*, one may ask why, if צ was merely a type of [s], שׁ was not chosen instead; and when צ renders *ǧ* = *ǰ*[15]—why שׁ or ז was not chosen. In the present investigation, renderings of *c* with צ will normally be used only in conjunction with later, more reliable evidence (e.g. renderings of *č* with צ), to show that the affricated realization of צ in a given area is an old one.

On the other hand, the use of uncontrolled transcription can at times be perfectly legitimate, i.e. when it can be shown that צ would have been provided with a diacritic if its normal Hebrew value had been different from its transcriptional value in this instance. The use of diacritics in the Hebrew orthographies of some Jewish languages

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[14] Of course, a sequence of ט or ת plus ס, צ, or שׁ would be closer to *c* than a fricative צ would be, but one can never be sure that such digraphs were a viable option for the Jews of a given area.

[15] This rendering is attested in Iran and sporadically in Greece and Spain; see below, pp. 13–14, 24, 39.

to call attention to this difference eliminates the need for a control because it eliminates the possibility that a given rendering is only approximate.

Another pitfall to be avoided is *etymological* rendering. No phonetic conclusions can be drawn from the use of Arabic ج to render Aramaic ג or the use of Geez *ṣ* (alongside *s*) to render Arabic ص (Leslau 1958:151), because these renderings may be based on awareness of etymological correspondence rather than phonetic similarity.

A more serious problem is *indirect* rendering, especially when combined with etymological rendering, as in Arabic سراج = Persian چراغ 'lamp' and Arabic كسرى = Persian خسرو 'Chosroes'. It would be easy to conclude from this evidence that Arabic had neither a غ nor a خ! Since this is obviously not the case, we must conclude that these words did not come to Arabic directly from Persian but rather indirectly, via Aramaic (cf. Siddiqi 1919:72, Kamil 1957:65). And indeed, in the first case, the Persian etymon is known to have been borrowed by Aramaic at a rather early date (cf. שרגא attested already in the Peshiṭta). Unlike the use of Arabic ج to render Persian غ, the use of Arabic ج to render Aramaic ג makes perfect sense (as an etymological rendering), as does the use of Aramaic ג to render Persian غ. So it is with many indirect renderings—they do not make sense until they are broken down into their component direct renderings.

Indirect renderings may, at times, involve the borrowing of an orthographical convention rather than of individual lexical items. The Jews of Spain, for example, used 'ג to represent Spanish [tš] and [ž] in addition to [dž] (Spiegel 1952:69–70), even though this usage, at first glance, makes no sense from the point of view of their Hebrew pronunciation. (From that point of view, [ž] ought to be represented by 'ז, as indeed it is in some texts.) This usage, however, makes perfect sense once it is broken down into its component parts, viz. the rendering of Spanish [tš] and [ž] with Arabic ج and the etymological rendering of Arabic ج with Hebrew 'ג.

A phenomenon much rarer than indirect rendering but equally dangerous is *reverse* rendering, where phoneme *a* in language *A*

renders phoneme *b* in language *B* not because language *A* has no closer approximation but because there has been a previous history of using *b* to render *a*. Cases of this type must be interpreted as if the rendering phone were the rendered phone and vice versa. An example will be provided in our discussion of Arabic ص.

We turn now to an examination of the evidence, which we will take up in the following order: Hebrew (fourteen subheadings in geographical order), Aramaic (five subheadings in geographical order), Canaanite (three subheadings in geographical and reverse chronological order), Akkadian, Arabic, Ethiopian Semitic. In order to facilitate the reading of the more involved chapters, I will preface each of them with a short abstract, which I will repeat in the Conclusions.

# 2. Hebrew

Hebrew צ was an affricate in the Middle Ages in virtually all non-arabophone areas for which we have evidence: Iran, southern Russia, Turkey, Greece, Italy, Bohemia, Germany, northern France, and most probably, southern France and northern Spain. In late Antiquity, it was an affricate in Egypt, and, though the evidence from Palestine is inconclusive, it stands to reason that it was an affricate (at least sometimes) there as well.

## 2.1 Hebrew — China

A clear indication that צ was realized [s] by the Jews of China is found in the Judeo-Persian colophons to the Pentateuch of the Kaifeng Jews, written in 1620–25. In these texts the word *sāl-e* "year of" is written צלי (Leslie 1968–69:11). The normal spelling of this word in Afghanistan and Iran is with ס (loc. cit.).

Earlier evidence for this realization of צ in China comes from the name *Yi-ssu-ha-ke* = יצחק "Isaac" in the Kaifeng synagogue inscription of 1512 (Leslie 1962:348). The rendering of צ with *ss* in this name points clearly to a fricative צ (ibid., fn. 10), since an affricated צ would certainly have been rendered with *tz'* (cf. the rendering of ז with unaspirated *tz* in *Ai-tzu-la* = עזרא "Ezra", for want of a *z* in Chinese, ibid., 349). It should be noted that Chinese *ss* is the normal equivalent of foreign *s* (personal communication from Prof. S. R. Ramsey), including Hebrew ש (e.g. *Yi-ssu-lo-yeh* = ישראל "Israel") and Arabic س (ibid., 348–49).

There can be little doubt that the pronunciation of Hebrew used in Kaifeng during the seventeenth and eighteenth centuries was

Iranian in origin. The frequent use of Judeo-Persian during that period (Leslie 1972:118–19) fits perfectly with the evidence of the vowel system of Chinese Hebrew. The transcriptions made by a Jesuit visitor (Domenge) show a "Sephardic" merger of *sere, segol* and *šewa* (all *ié*), but a contrast between *pattaḥ* (*a*) and *ḳameṣ* (*o*) (ibid., 123). Similarly, there is a great deal of confusion between *sere, segol,* and *šewa* in the passage from the Jewish New Year's liturgy published in White 1966 (part II, 170), but none between *pattaḥ* and *ḳameṣ*. This pattern is not found in any Jewish community other than some Persian-speaking ones (Morag 1972:1136, 1138). And as we shall see in the next section, צ has been realized as [s] in Iran since at least the fourteenth century.

The origin of the earlier vowel system exhibited by the Biblical names in the Kaifeng synagogue inscriptions of 1489 and 1512 is more problematic. In those texts *ḥolem* is rendered not by Chinese *o, uo, iu,* or *u,* but by *ü* (*Nü-wa* = נח 'Noah'), *üeh* (*Ya-ho-kʻüeh-wu* = יעקב 'Jacob', Yüeh-shu-wo[16] = יהושע 'Joshua') and *ieh* (*Mieh-she* = משה 'Moses', *A-ho-lien* = אהרן 'Aaron') (Leslie 1962:348), the last of these vowels (*ieh*) being used to render *sere* as well (*Lieh-wei* = לוי 'Levi', ibid., 361). The use of Chinese *o* to render *ḥolem* is not attested until the inscription of 1663 and the slightly later vertical tablets, where the form *Mo-she* = משה 'Moses' stands in striking contrast to the form *Mieh-she* found in 1489 and 1512 (ibid., 348, White 1966:part II, 8, 43, 58, 146).

It seems clear that the earlier renderings of *ḥolem* point to the value [ö]. This value of *ḥolem* is not found in the Hebrew of Persian-speaking Jews (although it should be noted that, in Qir-qisani's time, Iranian Jews used the Babylonian reading tradition and that some variants of this tradition realized *ḥolem* as [e]), but it is well known (alongside [e]) in Yemen (Morag 1963:92–94, 96). Since a Yemenite origin for the Kaifeng community has already

[16] I am indebted to Prof. S. R. Ramsey for informing me that the modern Mandarin value of *yüeh* obtained already at the time of the Kaifeng inscriptions and that there is no basis for Leslie's transliteration *Yo-shu-wo*. Prof. Ramsey checked the history of most of the characters upon which my conclusions are based.

been suggested on other grounds (Leslie 1968–69:3–4, 1972:20), it is possible that the Kaifeng Jews had a Yemenite reading tradition until the seventeenth century, when it was replaced by an Iranian one.

It hardly needs to be said that the Yemenite reading tradition realizes צ as a pharyngealized [s]. It must be stressed, however, that *the realization of* צ *in Arabic-speaking communities has little or no evidentiary value,* because its identification with Arabic ص may well have been made on etymological grounds rather than phonetic ones. Accordingly, nothing more will be said in this monograph about צ in Arab countries except in cases where pre-Islamic evidence is available.

## 2.2 Hebrew — Iran

The Jews of modern Iran pronounce both צ and ס as [s] (Garbell 1946–47:70, Ben-Ḥayyim 1971:86). The only exception found by Garbell was a reader from Hamadan who pronounced צ as [ts], a pronunciation which he had learned from his teacher, but which he admitted was atypical even in his own city (loc. cit.). Accordingly, the entry צ = *t* + *s* in Idelsohn's Hebrew pronunciation chart for Persia (1913:542) appears to be inaccurate, or, at best, a gross exaggeration. The confusion of צ and ס in manuscripts from this area points in the same direction (Garbell 1946–47:70). There is reason to believe, however, that this pronunciation does not go back further than the Middle Ages (cf. Garbell 1968:453).

That the Jews of Iran originally had an affricated צ ([ts] or [tš]) is apparent from the orthography of the oldest Judeo-Persian documents. One of these is a business letter found at Dandan Uiliq, 70 miles northeast of Khotan in Chinese Turkestan. This letter, which most scholars date to the eighth century C.E., may have been left there by a Jewish merchant from Persia. In this document, צ is used to represent *č* and even its voiced counterpart, *j*, e.g. צי = *čē* 'what,

how', צון = *čūn* 'like, as', and צמה = *jāmah* 'material' (Utas 1968:125,[17] Lazard 1968:82).

Similarly, in a summary report of a Karaite court dated 951, a similar summary report from Ahvaz dated 1020, and an early Karaite apologetic fragment, צ represents Persian *č* and (except in the first-named document) some instances of *j̃* (Asmussen 1965: passim, Lazard 1968:82, MacKenzie 1968:249, Shaked 1971–72:54 and passim) as well as ص and ض in Arabic loanwords.

It is important to note that the orthography of these documents does not appear to be a descendant of, or otherwise dependent upon, those Middle Persian orthographies which use Aramaic צ to represent *č*. The following chart, based on Lazard 1968:83 and Dresden 1970:49, shows some of the more striking differences between two such Middle Persian orthographies and the oldest Judeo-Persian system:

|  | Dandan Uiliq | Zoroastrian Book Pehlevi | Manichean Middle Persian |
|---|---|---|---|
| /j̃/ | צ | ׳ | new symbol |
| /k/ | ק | כ | ק, כ |
| /x/ | כ | ח | ڬ |

Furthermore, alphabets have always been so bound up with religion in the Middle East that it is unlikely that the Jews would have adopted, or even been aware of, the orthographical usages of their pagan neighbors.[18] Finally, it is highly doubtful that they could have adopted these usages even if they had wanted to. There is no recognizable similarity between the Hebrew alphabet used in early Judeo-Persian documents and the various Middle Persian alphabets. The correspondence between them can be ascertained

[17] I am indebted to Prof. H. Paper for this reference and for his translations of the examples given immediately above.

[18] It is true that the Jews of Iran did eventually adopt certain orthographical usages of their *Muslim* neighbors, gradually replacing צ with ג (the etymological equivalent of Arabic ج) as the representative of *j̃* and later (in Bukhara) even *č* (Lazard 1968:82–83), but it should be kept in mind that Jewish-Muslim relations were much warmer than Jewish-pagan relations had been.

only through a study of ideograms (in the case of Book Pehlevi and the inscriptions) or epigraphy (in the case of Manichean Middle Persian). We conclude, therefore, that the early Judeo-Persian orthography is an independent creation of Persian Jewry and thus a reliable witness to the Hebrew pronunciation of its creators.

It is not difficult to explain how the original realization of צ came to be replaced by [s]. Already in the summary report of the Karaite court dated 951, צ represents not only *č* but also ص in Arabic loanwords, e.g. אנצרפא, תחצלא (Shaked 1971–72:52). This is merely a short-hand way of saying that צ represents Persian *s* when the letter is spelled with ص in the standard Arabo-Persian orthography. It seems likely that subsequently this sibilant value of צ was simply transferred from Judeo-Persian to Hebrew. The close ties between the Jewish communities of Iran and Iraq and the consequent familiarity with the Iraqi pronunciation of Hebrew may have provided the impetus for the transfer.

It is likely that this change occurred before the fourteenth century, since the Judeo-Persian Pentateuch of 1319 uses a dotted צ to represent *č* but a plain צ to represent ص (Paper 1972:xiv). This would seem to show that the normal pronunciation of צ (i.e. the pronunciation used in reading *Hebrew* texts) was [s]. A more direct proof is the fact that the word צדוקים 'Sadducees' is spelled סדוקים in the *Sefer pitron hatorah* preserved in a Persian ms. dated 1328 (Urbach 1978:64).[19]

## 2.3 Hebrew — Caucasus

Idelsohn (1913:544) reports that the Jews of Daghestan, i.e. the mountain or Tat(i) Jews, pronounce צ as *t* + *z*, and this report has been cited by Vilenchik (1930:92) and Weinreich (1963–64:328) in their discussions of צ; however, this report appears to be just as unreliable as the report about the Persian צ. According to Garbell (1968:453) and Ben-Ḥayyim (1971:86) (and a personal communica-

[19] I am indebted to Prof. H. Dimitrovsky for calling this spelling to my attention.

tion from Prof. M. Zand), the mountain Jews pronounce צ as [s], which is not surprising in view of their Iranian origin.

The pronunciation of the Georgian Jews is another story. The Hebrew University Language Traditions Project has tapes of four Georgian rabbis from Kutaisi and Oni recorded shortly after their arrival in Israel (so that Israeli influence is out of the question). As I was able to hear for myself,[20] all of them consistently pronounce צ as a plain [t͡s][21] (Georgian also has a glottalic [t͡sʼ]).

Nevertheless, there is reason to believe that this pronunciation is not original. When I asked Mr. Gershon Tsitsuashwili of the Hebrew University about Garbell's report (1954b:236, 1968:453) that צ is realized [s] in Georgia, he explained to me that the uniformity of the normative reading tradition ('whole Hebrew') is misleading, because צ is often realized [s] in conversation ("merged Hebrew") and prayer. Thus, the words *mása* 'unleavened bread', *mísva* 'commandment', *sadík̄* 'righteous', and *misráyim* 'Egypt' are always pronounced with an *s* except by rabbis and orthoepists. Mr. Tsitsuashwili recalls correcting his father on several occasions when the latter pronounced צ as [s] in traditional Sabbath songs; however, he now feels that the normative pronunciation of צ may be a recent importation from Eastern Europe (cf. also Babalikashvili 1979–80:70). He points out that after the Russian conquest of Georgia in 1801, the chief rabbis of Georgia began to study in Eastern European yeshivas. Professor M. Zand adds that the Lubavitscher Hasidim active in Georgia may have also contributed to the change.

Some evidence for the pronunciation of צ in nineteenth century Georgia may be gleaned from a Hebrew-Georgian dictionary (Simon ben Moses 1892) published in Jerusalem called *Ḥinnux hane'arim*, in which the Georgian glosses are written in Hebrew letters. In this work, צ represents both *c'* (e.g. צְצְחְלִי = *c'ec'xli* 'fire', צְחְוִירִי = *c'xviri* 'nose') and *ç* (e.g. צִיגְנִי = *çigni* 'book', סַצְעְלִי =

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[20] I am indebted to Prof. Sh. Morag for making these tapes available to me.
[21] I am indebted to Mr. N. Koziashvili for confirming this for me; cf. now Babalikashvili 1979–80:70.

*saçq̄ali* 'poor'), which would seem to point to an affricated realization for צ. In the introduction (p. 6), on the other hand, the author states that צ (not plain צ) represents *c'* and *ç*. The use of the dot would seem to indicate that the normal value of צ was something else, just as the normal value of שׁ in the Georgian reading tradition is different from the value of dotted שׁ given in the introduction, viz. *č*. It is, therefore, quite possible that the normal pronunciation of צ at this time was still [s].

## 2.4 Hebrew — Southern Russia (Khazars, Karaites, Krimchaks)

The earliest evidence for affricated צ in southern Russia and/or the Balkans comes from the Cyrillic alphabet, created in the ninth or tenth century C.E. It has long been accepted (cf. already Minns 1925) that several letters of this alphabet, representing sounds which the Greek alphabet could express only digraphically or not at all, are borrowed from Hebrew: Ш = *š* from שׁ = *š*, ц (modern Ц) = *c* and Ҁ (modern Ч) = *č* both from צ = *ṣ*.[22]

Both the values and the shapes of these additional letters seem to point to the Crimea as the area in which they were borrowed. Many Karaite tombstones of the Crimea, admittedly from a much later period,[23] have a flat-based שׁ reminiscent of Cyrillic Ш. One instance of שׁ (Firkovich 1872: picture 88, line 4) has a flat base with all three downstrokes meeting it at right angles, just like Ш. In the same inscription (line 2), there are examples of final צ with a symmetrical V-shaped head which are close to some of the early lapidary forms of Cyrillic Ҁ.

The use of צ as a sign for *č* is another link to the Crimea, as will become apparent in the next few paragraphs. It is true that the

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[22] I am indebted to Prof. Sh. Shaked for pointing this out to me.
[23] Firkovich altered the dates on many of these tombstones to make them appear older (Harkavy 1877), but it is clear that all or most of them are later than the Byzantine period.

evidence for צ realized as [tš] in this region is from a much later period, and from Karaites and Krimchaks rather than Khazars, but it seems reasonable to assume that the affricated צ of the Khazar Jews was assimilated to the *č* of their Turkic vernacular (*c* being non-existent in Turkic) just as was later the case with the צ of the Karaites and Krimchaks.

Given these Crimean connections, it is interesting to note that Cyril's biography, the *Vita Constantini*, asserts that Cyril learned Hebrew in Cherson (the Byzantine outpost in Crimea) while on a mission to the Khazars (Minns 1925:94). Thus, our findings would seem to support those scholars who still believe that Cyril was the creator of the alphabet which bears his name rather than the Glagolitic alphabet.

Later evidence for affricated צ in this area is found in the Cambridge Khazar document (T-S Loan 38), an eleventh- or twelfth-century copy of a letter written by a Khazar Jew, apparently in the tenth century. At the end of line 66 (Schechter 1912–13:208), the form בולשצי appears, which according to Kokovtsov, Zajaczkowski, Minorsky, and Pritsak, is a corruption of בליגצי = Khazar *baliγči* 'governor' (lit. 'fisherman') (Pritsak 1978:264–65 fns).[24] Even if this interpretation is not correct, the letters צי must certainly represent the Turkic *nomen actoris* suffix *-či*, which occurs at the end of many Khazar names (Golden 1970:282).[25]

With the close of the Byzantine era, evidence for affricated צ in the Crimea becomes more and more abundant. A Karaite tombstone, apparently[26] from 1477, in the cemetery of Chufut-Kale has

[24] I am indebted to Prof. O. Pritsak for calling this evidence to my attention and for sending me a copy of his article.

[25] In the long version of the letter purportedly sent to Ḥisdai Ibn Shaprut by Joseph, king of the Khazars, *č* is rendered by צ in צרמיס = *Čeremis* (Kokovtsov 1932:31, 98), but by ש in ורשאן = *Varač'an* (Dunlop 1967:119fn). However, even if the letter is genuine, it would be unwise to rely too heavily on the former rendering, since many of the names in this letter show signs of Arabic mediation and therefore constitute indirect renderings (see above, p. 9).

[26] Assuming that the ת in the date was altered by Firkovich from ה (cf. Harkavy 1877:188–90).

the feminine name אמצי (Firkovich 1872:19, #67); another, apparently[27] from 1601, has the feminine name ביכצה (ibid., 36, #132). According to Chwolson (apud Harkavy 1877:194) these are genuine Tatar names: Emče and Bikeče. In the Karaite prayerbook published in Chufut-Kale in 1734, Turkic (East Karaim) *č* is represented by צ, e.g. נֶצִךְ *nečik* 'how', נוצון *nučún* 'why', בַּרְצָא *barča* 'all' (Sulimowicz 1972: passim). And for the modern period, we have the explicit testimony of several scholars (Harkavy 1877:64fn, Kowalski 1930:5fn, Sulimowicz 1972:38) that the Crimean Karaites pronounced צ as [tš].

That the Rabbinites of Crimea (Krimchaks) had this pronunciation as well is shown by a petition presented by them to Czar Alexander I in 1818. The language of the petition is a Turkic dialect close to North Crimean Tatar, but it contains a number of Hebrew expressions written, like the rest, in Cyrillic characters. Its second paragraph ends with the words *amen ken en* (sic!) *račon* = אמן כן אין רצון "Amen, such is *not* [God's] will" (Filonenko 1972:8,11).[28] Since the Russian alphabet also has a *c,* this rendering proves that the Krimchak צ was a palato-alveolar affricate.

## 2.5 Hebrew — Turkey (Romaniotes)

The Romaniote (Greek-speaking) community of Turkey no longer exists; all of the Rabbinites of this area are Sephardim. The Karaites, however, less affected by the huge influx of Spanish and Portuguese Jews in the sixteenth century, have managed to hold on to their Byzantine heritage (Rosanes 1930:206), and it is therefore of interest to note that they realize צ as [tš] (ibid., 207).

That the Rabbinites of this area also had an affricated צ is shown by the use of צ (alongside Sephardic ג') to render Turkish (Old

[27] See preceding note.

[28] I am indebted to Prof. M. Zand for calling this evidence to my attention. The *real* meaning of the phrase eluded Filonenko and, hopefully, the Czar as well.

Osmanli) ç (= č) in the sixteenth century. The well-known title çelebi 'gentleman', written ג׳יליבי in some texts (Danon 1926–27:273, 274, 282), appears as צלבי in sixteenth century sources mentioning Elija Çelebi of Anatolia (Fuenn 1871–72:507, Markon 1922–23, Margoliouth 1965:251). The family name Çiprut (probably meaning 'Cypriote'[29]) used by Turkish Jews to this day (personal communication from Mrs. E. Skolnik and Prof. D. Bunis) appears as צפרוט (alongside ג׳יפרוט) in responsum 40 of Elija ben Ḥayyim (1609–10:71a) written in 1563. The bearer of this name was a Jew from Bursa, in western Anatolia.

The clearest evidence, however, comes from responsum 87 of the above-mentioned rabbi (1609–10:132a), a Romaniote born in Adrianople who became chief rabbi of Constantinople in 1575. The responsum deals with the correct spelling of non-Hebrew names in bills of divorce:

מכל מקום יש קצת מבטאות בלשונות הלעז שאין לנו באותיות אות מורה
עליהם כשאנו באין לכותבם מניחים במקום המבטא ההוא אות אחרת
שהמבטא שלה קרוב אל המבטא המבוקש . . . וכן ענין השוכב יאמרו
המבטא בלעז לשון איג׳אר מבטאו קרוב לגימל ולא לגמרי אלא מבטא
אחר קרוב לצדי וכן יאמרו המושלים גסו רדונדו

Nevertheless, there are a few pronunciations and articulations in the Romance/foreign languages for which we have no letter in our alphabet. When we come to write them, we put in place of that pronunciation another letter whose pronunciation is close to the desired pronunciation. . . . And similarly, 'lying down' in Romance (Ladino) is *echar*.[30] Its pronunciation [= the pronunciation of *ch*] is close to *gimel*[31] but not completely; it is rather a different pronunciation close

to ṣade. And similarly, proverb-tellers use the expression[32] *chasso redondo* 'round cup'.[33]

We see from this passage that Ladino *ch* (= č) struck at least one Romaniote ear as being similar to צ. Clearly his צ was not [s] but [ts]—otherwise he would have compared *ch* to שׁ.

The earliest evidence I have found for this pronunciation of צ in Constantinople is the Greek gloss צִיבִּידִין, which occurs in Hillel ben Eliakim's commentary on the Sifra (twelfth century, preserved in a manuscript dated 1212) at the end of a definition of the word מלקט:

היינו שיש לצורפים מעין צבת קטנה ומלקטין בו פירורין של כסף וזהב
וקורין אתו בל׳ יוון ציבִּידִין

I.e., that which smiths have—something like a small pair of pincers—which they use to pick up specks of silver and gold, and in Greek they call it צִיבִּידִין (Perles 1893:578).

The word צִיבִּידִין, which Perles was unable to identify, is equivalent to modern Greek τσιμπίδι, dialectal τσιμπίδιν[34] (pronounced [tsibiðin]) 'nippers, small pincers, tweezers'. The use of צ to render Greek τσ in this word is not conclusive in and of itself,[35] but it may be used, in conjunction with later, more reliable evidence, to show that the affricated realization of צ in this area is an old one.

It should be admitted, however, that there is also evidence pointing to a *fricative* realization of צ in the Romaniote reading tradition of Constantinople. In the Judeo-Greek translation printed in the Pentateuchus Quadriling (Constantinople 1547), צ and ס are in free variation. Two examples of this phenomenon were pointed out already by Hesseling (1897:xii)[36]:

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[29] This etymology, given by Rosanes (1930:277) has much to commend it. Cyprus is called ג׳יפרי by Elija ben Ḥayyim in responsa 31 and 74. The ending of צפרוט / ג׳יפרוט is also attested in the term רומניוט 'Romaniote', which appears in responsum 11 of Trani 1645, and the family name קפסוט, which appears in responsum 310 of Adarbi 1586–87.

[30] For the use of this word in the Ladino translation of the Pentateuchus Quadriling (Constantinople, 1547), cf. Sephiha 1973:326–27.

[31] Here he is simply influenced by the Ladino orthography.

[32] The phrase כן יאמרו המושלים is borrowed from Numbers 21:27.

[33] I am indebted to Rabbi Dr. S. Gaon for his interpretation of this Ladino expression.

[34] I am indebted to Prof. K. Kazazis for calling this dialectal variant to my attention.

[35] See p. 8 above.

[36] All of the forms in Greek letters given below are from this edition. I am indebted to Prof. R. Dalven for this reference.

(1) וישבת: νὰ κάτσῃς 'you shall dwell'

נָא קָסִיש (Gen 27:44) — נָקְצִיש (Deut 19:1)

(2) ערל שפתים: τσιμπρόγλωσσος 'pinched of tongue?'

צִיבִּירוֹגְלוֹשׁוֹש (Ex 6:30) — סִיבְּרוֹגְלוֹשׁוֹש (Ex 6:12)

Additional examples in the text are:

(3) כן: ἔτσι 'thus, so'

אִיצִי (Gen 1:7,9,11) — אָסִי (Gen 29:26,28)

(4) עז: κατσίκα 'goat'

קָצִיקָא (Nu 15:27) — קָסִיקָא (Gen 27:9,16)

(5) מס: χαράτσι 'tax, tribute'

כַּרָצִי (Deut 20:11) — כָּרָסִי (Gen 49:15)

(6) שרט/גדד: τσαγουρνισ-/τσαγρουνισ- 'scratch'

צְגוּרְנִיש- (Deut 14:1) — סַגְרוּנִיש- (Lev 21:5)

There is even an example of τσ being rendered in two different ways
within the same verse (Nu 6:4): קוּקוּצִי = κουκούτσι 'pit, seed' but
סִיפּוּרָא = τσίπουρα 'grape-skins'.[37]

Taken by themselves, these pairs show nothing more than that צ
and ס had the same pronunciation. They do not tell us whether that
pronunciation was [ts] or [s]. Some evidence for the latter alterna-
tive may be provided by the form קָצִי, assuming that it represents
κάτσῃς, but there may well have been a vulgar pronunciation
κάτσῃτς.[38]

How are we to explain this phenomenon? If we are correct in
assuming that צ and ס were originally distinct in the Romaniote
reading tradition—and it should be noted that in earlier Greek
glosses, ס occasionally replaces ש (as a rendering of σ) but not צ—
then a theory of Sephardic influence, such as that of Belleli
(1897:144, 134–35), might provide the answer. The precise nature of
this influence cannot, of course, be determined at present. The fact
that our Judeo-Greek translation is printed in the Pentateuchus

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[37] Other forms with צ are: פָּפּוּצִי = παπούτσι 'shoe' (Deut 25:9,10), פְּצֵנְיוֹ ≈ πέτ-
σινος 'leathern' (Lev 13:53, 57–59), צְבוּדוֹלוִישִׁיש = τσαμπουδολογήσῃς 'you shall
glean grapes' (Lev 19:10).

[38] Cf. the assimilation-at-a-distance which produced Judeo-Provençal סִיסְטֶרְנָא =
cisterna (p. 95, below) and the common form צִיצִילְיָא = Sicilia, alongside of the
expected שִׁיצִילְיָא.

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Quadriling opposite a Ladino translation led Belleli (loc. cit.) to
claim that a Sephardic *printer* was responsible. On the other hand,
the Sephardic cultural onslaught throughout the Ottoman Empire
was so overwhelming that it is not impossible that by the middle of
the sixteenth century there were already some Romaniotes who had
abandoned their own reading tradition. A study of other Judeo-
Greek translations published in Constantinople in the sixteenth
century (e.g. those of Moses Fobian or P(h)obian[39]) should help to
solve this problem.

## 2.6 Hebrew — Greece and Crete (Romaniotes)

The Romaniote Jews of Yanina (Ioanina) and Arta pronounce צ
as [ts] as I learned from several interviews and a visit to the Yanina
congregation in the Kingsbridge section of the Bronx. The evidence
for earlier periods is somewhat mixed, no doubt because of the
mixed composition of the Jewish population of this area during the
periods in question.

On the one hand, צ is used to render Turkish (Old Osmanli) ç (=
č) and Ladino *ch* (= č). A deposition from Arta dated 1562, for
example, discusses the activities of the local צֵעוּס = çauş 'sheriff'[40] in
investigating the murder of one Gershon ben Eliaḳim (Ḳal'i 1599–
1600:68b-c, responsum 78). Three depositions from Patras in the
same year describe the arrest and imprisonment of one Siman Tov
Shaḳi by two Turkish officials: מוּשְׁטַפָּא צִילִיבִּי = Mustafa Çelebi (lit.
'gentleman') and מַחְמוּט צֵעוּס = Mahmud Çauş (ibid., 57b-c,
responsum 72).

One of the depositions from Patras is signed by—or rather
for[41]—מֹשֶׁה מוּצְצוֹן ר' יְהוּדָה מוּגְ'גֹ'וֹן, no doubt a relative of of

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[39] Neither אִיוֹב עִם תַּרְגּוּם רוֹמִי (Constantinople (Ya'aveṣ) 1576) nor מִשְׁלֵי עִם תַּרְגּוּם
רוֹמִי (Constantinople (Soncino) 1548) is available to me. If P(h)obian is also the
author of our Pentateuch translation, as Fürst (1863:286) assumes, then examination
of the Job translation—handled by a different printer—would probably settle the
question.

[40] I am indebted to Prof. R. Hetzron for identifying this Turkish word.

[41] The signature reads בְּמְסִירַת קוֹלְמוֹס צֵוָה לַחְתּוֹם מֹשֶׁה מוּצְצוֹן.

Lepanto, who gave testimony in Patras in 1560 (ibid., 174a, responsum 127; Adarbi 1617:6c, responsum 6). Both מוצצון and מוג׳ג׳ין are renderings of Muchachón (lit. 'big boy'), a surname which is still in use among Sephardim (personal communication from Rabbi Dr. Solomon Gaon; cf. also *Encyclopaedia Judaica* xiv, 871 for the surname Muchacho in Salonika). Since the name is Ladino, the spelling with ג׳ is the original one, but the man who signed for משה מוצצון may not have known that. In any event, he spelled the name in the Romaniote fashion.

The same convention was employed by the Romaniotes of Crete. Seder Eliyahu Zuṭa, a history of the Ottoman empire written in 1523 by Elija Capsali of Candia, chronicles in some detail the intrigues of the יניצרי = *yeniçeri* 'Janissaries' (lit. 'new troops') (Capsali 1975:124-5, 128-9 and passim).

There is even an example of צ being used to render [dž]. A deposition made by Maimon Cresque in 1541 before the *dayyanim* of Moskolori Fair describes the garment worn by a Jew from Corfu who was murdered on his way to Prague as a ייפוני = *giuppone*[42] 'vest, jacket' (Ḳal'i 1599–1600:75a, responsum 81). Here [dž] is represented by י, in the Italian fashion. A nearly identical deposition recorded by the *dayyanim* of Yanina a year later from the month of the same witness calls the garment worn by the victim a ציפוני[43] (ibid., 75b). This rendering provides unusually strong evidence for affricated צ.

On the other hand, צ is also used (alongside ס) to render Greek σ in three toponyms: פטרץ = Πάτρας 'Patras' (ibid., 68c-d, responsum

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[42] *Giuppone* is a variant of the more common *giubbone*. The former appears elsewhere as יופן (Isserlein 1519: responsum 296) and זפון (loc. cit., table of contents); the latter as זיבון (Adarbi 1586–87:147a responsum 281, Elija Halevy [1733–34] 1969–70:65a responsum 103, Elija ben Ḥayyim 1609–10:118c responsum 75). The deletion of final *e* and the shift from *ğ* to *z* are both characteristic of North Italian (personal communication from Prof. G. Jochnowitz). Both of these changes are attested in *Seder Eliyahu Zuṭa*, e.g. זיניראל = *generale* (Capsali 1975:99).

[43] The י in the first syllable of this word (instead of the expected ו) shows that it was probably borrowed from a dialect in which *u* had shifted to *ü*, e.g. Piedmont (personal communication from Prof. G. Jochnowitz).

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72, and passim), לרצו = Λάρισσα 'Larissa' (ibid., 68d), and תיביץ = *Θῆβες 'Thebes' (Mizraḥi 1559–61:125c, responsum 70 [71 in later editions]). In view of the overwhelming evidence presented above for an affricated צ in the Romaniote reading tradition, we have no choice but to consider these spellings to be Sephardic (cf. also the o-vowel at the end of לרצו). Still, it is puzzling to find πάτρας spelled פטרץ in the very depositions in which Çelebi is written צ׳יליבי and Çauṣ is written צ׳עוס.

## 2.7 Hebrew — Italy

The official (i.e. whole) pronunciation of צ is [ts] everywhere in Italy today; the popular (i.e. merged) pronunciation is also [ts] except in the north, where [ts] has disappeared from Italian itself (Artom 1946–47:56). The hypothesis, considered by Artom (loc. cit.), that צ was originally realized [s] in Italy is not supported by the evidence.

There is abundant transcriptional evidence showing that the Italian צ has been an affricate for many centuries. A Hebrew song in Latin letters published in Italy in 1681 has צ rendered by *zz* (*razzon* = רצון 'will, favor'), the Italian grapheme for [ts] and [dz] (Tur-Sinai 1954:177). Conversely, in Judeo-Italian texts and *le'azim* reaching back into the Middle Ages, צ is used to represent [ts], [tš], and [dz] (Freedman 1972:54, Cuomo 1974:108,114). Thus, in the *'Arukh,* the well-known Talmudic dictionary compiled by Nathan ben Yeḥiel of Rome at the end of the eleventh century, we find scores of examples like:

דרצין: צינמו = *cennamo* 'cinnamon' (Cuomo 1974:430)
כרשן: ביצי = *vecce, becce* 'vetch' (ibid., 525)
אסטטיון: אסתציאו = *estazio* 'guard, guard-station' (ibid., 244)
לונכי: לנצא = *lancia, lanza* 'lance' (ibid., 543)

The last two examples are interesting in that they show us a lexical item at two different stages of its history, the earlier stage being represented by the Jewish Aramaic (< Greek) lemmas and the

later stage being represented by the Judeo-Italian glosses. We see immediately that the Italian affricates have come from palatalized stops. The fate of צ in Romance-speaking countries has generally depended on the fate of affricates created by palatalization.

Even earlier than the *le'azim* of the *'Arukh* are the names in *Sefer Yosippon*, written in southern Italy no later than 953. The following is a list of all the personal and place names containing צ or an Italian affricate in that work, cited according to Flusser 1978a and (in parentheses) Flusser 1978b:

| | | | |
|---|---|---|---|
| 9 | א | פרנצא (פרנקוס) | = *France* |
| 14,12 | א | פיצינק[44] (פיצנק) | = *Pečeneg*, Πατζινάκοι |
| 12 | א | תולמץ[44] (תולמץ) | = *Tolmač*,[45] Τουλμάτζοι |
| 21 | א | טיציאו (טיציאו) | = *Ticino* |
| 30 | א | לוצנין (לוצנין) | = *Lučanin* |
| 15 | ב | אריצא (אריצא) | = *Ariccia* |
| 92 | ב | לוציפרי (לוקיפרי) | = *Luciferi* |
| 96 | ב | אביציאוס (אביציאנוס) | = ? |
| 110 | ב | צורינטו (סורינטו) | = *Surrento* |
| 125 | ב | מרציוס (missing) | = *Marcius* |
| 58 | כא | קינציאוס (קינציאוס) | = *Quintius < Quintus* |
| 59 | כא | טיציאוס (מציאוס) | = *Titius < Titus* |
| 10 | לה | קינציאוס (קינציאוס) | = *Quintius < Quintus* |
| 10 | לה | אורתינציאוס (ארתיניניאוס)[46] | = *Hortensius* |
| 26 | מז | אקציאו (אקציאו) | = *Actium* |
| 39 | סח | בוציאו (בוציאו) | = *Butius* |
| 53 | עז | קצטור (קצטור) | = *Castor* |

If we take into account only those forms which have a צ in both Flusser 1978a (critical edition) and Flusser 1978b (the most reliable manuscript in Flusser's judgment but unavailable to him until the

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[44] I am indebted to Prof. D. Flusser for supplying the readings for this name before his edition appeared, and to Prof. D. Boyarin for relaying this information to me. For a discussion of these names, cf. Cardona 1966:22–23, 26–27.

[45] A Pečeneg tribal name given as Ταλματ by Constantine Porphyrogenitus (Golden 1970:366).

[46] יב and צ are almost identical.

edition was nearly complete), we may say that every affricate is rendered by צ, and that every צ renders an affricate, with the exception of קצטור = *Castor* and אורתינציאוס = *Hortensius*. The latter is not really an exception since it was probably pronounced [Ortentsius], with a parasitic (excrescent) *t*.[47] As for *Castor*, the fact that the bearers of this name (in Josephus' story and in Roman mythology) were outstanding warriors may perhaps have brought about contamination with Rabbinic קצטרא (alongside קסטרא and קצרא) = *castra* 'military camp'. In any event, one example of צ rendering [s] can hardly cancel out a half dozen examples of צ rendering [t͡s].

### 2.8 Hebrew — Bohemia

The Jews of Bohemia pronounce צ as [t͡s] and, judging from the spelling of the Old Czech glosses in the *Or zarua'* and the *'Arugat habośem*, already did so in the thirteenth century. In these glosses, צ is used to represent Old Czech *c* and *č*,[48] e.g. פוטץ:מקום חילוק שערות = *poutec* 'part (in hair)' (Urbach 1963:292, Markon 1905:717, Harkavy 1867:59), נוגביצי:אנפלייה = *nohavice* 'stockings' (Markon 1905:715, Kupfer and Lewicki 1956:245), פיוצי:עלוקות = *pijěvice* 'leeches' (Markon 1905:718, Kupfer and Lewicki 1956:251–52), צטוירט:רביע = *čtvrt* 'quarter' (Markon 1905:718, Kupfer and Lewicki 1956:250–51).

### 2.9 Hebrew — Germany

The Jews of Germany pronounce צ as [t͡s], and this pronunciation can be traced back many centuries. In the Judeo-German poems of the Cambridge Codex from the Cairo Geniza, צ is used to render *z*

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[47] See below, p. 36

[48] Contrast Rashi's use of פ̌ to represent Old Czech *č* in one instance, discussed in the next footnote.

(= c) (e.g. הולץ = holz 'wood', ציט = zit 'time') and, when supplied with a diacritic, tsch (= č) as well (e.g. טוֹצְ֘ = tiutsch 'German') (Fuks 1957:xxxiv and passim). This fourteenth-century document is generally believed to have been written in Upper Franconia near the boundary of Thuringia (Trost 1972:74).

Even earlier evidence comes from the French (and Slavic) glosses in the eleventh century Talmudic commentaries from Mainz attributed to Rabbenu Gershom. In these glosses, צ is used to represent Old French c and z when pronounced [ts], e.g. צימבש = צלצול: cymbes 'cymbals' (Koenigsberger 1896:29–30, Brandin 1901:97), צינגלא: חבק = cengle 'cinch (of saddle or pack)' (Brandin 1901:97, Koenigsberger 1896:16), אפנדיץ: לופתא = apendiz 'annex of a building' (Brandin 1901:242). We also find צ used to render c in a Slavic gloss, viz. פלצא (< כתפא): כפא = pleca 'shoulder-blade' (ibid., 87; Kupfer and Lewicki 1956:27). Brandin's use of this evidence to prove that צ was an affricate in "Rabbenu Gershom's" pronunciation (1901:69) is legitimate because of the later evidence for affricated צ in this area.

## 2.10 Hebrew — Northern France

The clearest evidence for affricated צ in northern France comes from a transliteration of Psalms 45 and 2:8–12 appended to a tenth-century triplex Psalter (Codex Carnutensis 30), last owned (before its destruction in World War II) by the public library of Chartres (Gumpertz 1953:24). The only published edition based directly on the manuscript is that of Martianay (1699: appendix, i–vi). The editions of Lagarde (1874: xv–xvi), Migne (1890:1523–28), Berger (1893:7), and Gumpertz (1953:24–25) are all based directly or indirectly on Martianay's edition and are full of errors.

As noted already by Martianay in his scholia to the text (p. vi), the usual renderings of צ in this text are c in initial position (celaH = צלח 'succeed', cedek = צדק 'righteousness', cor = צר 'Tyre') and medial position (jocer = יוצר 'potter', tenapecem = תנפצם 'you shall

smash them', kciaoth = קציעות 'cassia', Niceva = נצבה 'she stands', mimifbcot = ממשבצות 'from plaited settings') and z in final position (arez = ארץ 'land' 3x). In Old French orthography, c represents initial and medial [ts] (as well as [k]) and z represents final [ts] (as well as [dz]) (Pope 1934:276).

Our text also contains two instances of tc used to render צ: hutcak = הוצק 'was poured' and Heitcecha = חציך 'your arrows'. This digraph is used (alongside cz) in the earliest Old French texts to represent [ts] (loc. cit.).

The treatment of צ in this text contrasts sharply with that of ס, which is rendered with S and f, but never (in Martianay's edition) with c or tc. This detail would seem to clinch the argument. There can be very little doubt that the system of transliteration in this text points to an affricated צ.

Two more transliterated Hebrew texts from medieval France should be mentioned. Both are transliterations of Matthew 6:9ff (Pater nostrum) in Latin characters. The first, found in the oldest Essen sacramentary (Essen, ms. Dl, fol. 216v) dated to the second half of the ninth century (Thiel 1973:204), has two instances of צ: arez = ארץ 'earth' and rokonag = Mishnaic Hebrew רצונך 'thy will' (Nostits-Rieneck 1888:733, Schulte 1908:48, Lapide 1976:20). The former exhibits the same rendering of final ץ with z that we saw in Codex Carnutensis 30 (indeed it is the very same word), while the latter calls to mind the rendering of non-final צ in that text with c, except that here a later copyist with little or no knowledge of Hebrew (presumably the same one who is responsible for the many other errors in this text) has mistakenly substituted k for c. This error is perfectly natural in view of the fact that there are two 'types' of c in Old French—one of them equivalent to k (cf. cudessa 'holiness' alongside kauassa·amaim 'as in the heavens' in this text, and the many examples in Codex Carnutensis) and the other equivalent to tc—and both of them can occur before o.

The second Pater nostrum is found at the end (fol. 64r) of the triplex Psalter from Cusa, dated by Lapide (1976:21) to the late ninth or early tenth century. In this text, we find צ rendered by ts

(*vaatsilinu* = והצילנו 'and save us') and *zh* (*hephzhak* = חפצך 'your desire') but also by *s* (*ares* = ארץ 'land'). The contradiction between these renderings is resolved by a number of other renderings which, at first glance, seem to be truly anomalous: *benitselom* (sic, read *benitseiom*) = בנסיון 'into temptation', *Sebacamaim* = שבשמים 'who art in heaven', *acadec* = אקדש 'I shall sanctify'. The rendering of ס with *ts* and שׁ with *c*, unparalleled in the texts discussed above, clearly reflects the merger of /ts/ with /s/ in late Old French. It follows that this text is at least three centuries younger than the Psalter to which it is appended. It belongs to a period which will be discussed below.

We turn now to Old French written in Hebrew characters, specifically to the *le'azim* found in Rashi's commentaries on the Bible and the Talmud, which have the advantage of being early (eleventh century), extremely numerous (1300 in the Bible and 3500 in the Talmud) and critically edited. In these *le'azim*, we find that Old French [ts] is regularly represented by צ e.g. נוציש כלולות = *noces* 'nuptials' (Darmesteter 1909:79), צינטפיידׁ(ש): מרבה רגלים = *cent-pied(s)* 'centipede' (ibid., 30), טרצש עקב: = *traces* 'tracks, traces' (ibid., 14), ויצש כרשינין: = *veces* 'vetches' (Darmesteter and Blondheim 1929:144). The same rule obtains in the *le'azim* of Rashi's student, Joseph Kara, e.g. אשטנצלא שביב: = *estencele* 'spark' (Ahrend 1978:139), ינציבש חניכי שניו = *gencives* 'gums' (ibid., 140), צלוי = *celui* 'he who' (ibid., 125), and those of his grandson, Samuel ben Meir, e.g. בירציל ערש: = *bercel* 'cradle' (Rosin 1882:202), לוצש נרות: = *luces* (ibid., 126).

It is important to note that צ appears in such examples without a diacritic, even in manuscripts where a diacritic is added to ק when it represents an Old French sound (viz. [tš])[49] which did not exist in

[49] The clearest proof that the value of קׄ was in fact [tš] is the fact that Rashi, or a later scribe of French origin, uses it to represent Old Czech *č* in a gloss on חיפושׁתא ('Avoda Zara 28b): ובלשון כנען קרוקים. Harkavy (1867:46) has identified קרוקים with Czech *čerwiki* 'worms'. The final consonant, whether or not it is original, presumably represents the Hebrew plural suffix.

French Hebrew.[50] This would seem to prove that צ had the same value in French Hebrew as in Judeo-French.

צ did not remain an affricate in northern France. When /ts/ merged with /s/ in French at the end of the twelfth century, Hebrew צ followed suit, merging with the previously distinct ס,[51] just as Hebrew י had earlier followed French /y/ in its conditioned shift to [dž].[52] We know that צ and ס were pronounced the same in thirteenth-century France from misspellings in the Basel glossary (צפרד for ספרד and בחוסן for בחצן; Banitt 1967:206) and from an explicit statement to that effect in the Latin protocol to the Paris disputation on the Talmud (Gumpertz 1953:12). Similarly, in Hebrew deeds and charters ("starrs") from thirteenth-century England, we find that צ is used (alongside שׁ) to represent not only *s < c* (e.g. צירוגרפירש = *cirographers* 'chirographers', נורגיץ = *Norwyz*[53] 'Norwich') but also etymological *s* (e.g. ציינט alongside שיינט *Saint* 'Saint') (Davis 1888:x, Abrahams, Stokes, and Loewe 1930:xxx). And it is almost certainly this merger which the twelfth or thirteenth century Ashkenazic grammarian Yeḳutiel ha-kohen had in mind when he wrote (Eldar 1975–76:191): וגם את מוצא הצד"י שנו הצרפתים "The French have changed the pronunciation of צ as well."

[50] That Hebrew כ and ק did not have an affricated realization before *e* and *i* is clear from the fact that in Codex Carnutensis all nine instances of כ and ק before these vowels are represented by *k* (*ki* 4x, *alken* 2x, *hazkilu*, *kevudda*, *azkira*) whereas all four instances of כ and ק before back vowels are represented by *c* (*col* 3x, *Nascu*). This distinction is quite meaningful, since, in Old French, *c* has the value [ts] before *e* and *i*, while *k* represents a stop in that position. There is also one instance of ק before *a* in this text (*lirkamoth*), and the fact that it is not rendered by *ch* proves that it was not realized [tš] in this position.

[51] As noted above, Martianay's edition of Codex Carnutensis consistently distinguishes between them.

[52] Cf. for example *gippolu* = יפלו 'they will fall' in the transliteration of Psalms 45:6 (Martianay 1699: appendix, iii) and *gessiva* = ישיבה 'yeshiva' in the Latin protocol of the Paris disputation of 1240 (Gumpertz 1953:13).

[53] This spelling, attested in an Anglo-Norman document reproduced in Lipman 1967, is partially Anglicized or Latinized. One would have expected a spelling like *Norguiz*, since foreign [w] was rendered *gu* in words borrowed during the Gallo-Romance period.

## 2.11 Hebrew — Southern France

The Hebrew of southern France did not distinguish צ from שׂ-ס. In the merged Hebrew of Judeo-Provençal (Shuadit), both are realized [f], e.g. *furah* = צורה 'form', *mefilah* = מסילה 'road', *bafar* = בשׂר 'meat, flesh' (Guttel 1972:441). In *Minḥat ḳena'ot*, written by Abba Mari Astruc of Lunel at the end of the thirteenth century, they rhyme with each other (personal communication from Prof. H. Dimitrovsky). And Profiat Duran, who lived in Perpignan for about 12 years after 1391–92 and probably was born there, states four times in his *Ma'aśe 'efod* that there is no difference in pronunciation between בֿ and ו, ק and כֿ, ט and תֿ, or צ and ס (Yalon 1928–29:71–72).

What was the realization common to צ and ס in this area? This question can be answered, at least tentatively, with the help of a fourteenth-century Provençal poem in Hebrew characters by Crescas de Caylar, published from a sixteenth-century manuscript by Neubauer and Meyer (1892) and more recently by Silberstein (1973).[54] In this poem, צ is generally used to write etymological /tS̱/, frequently from Latin *c* (Silberstein 1973:97, Neubauer and Meyer 1892:200–1); but in one word (צירירון = *serviron* 'served'), צ replaces שׂ as the representative of etymological /s/ (ibid., 201). This exceptional spelling seems to indicate that for the author of this poem—or a later copyist—צ was a sibilant rather than an affricate.

Was צ always a homophone of ס in southern France? Was it always a sibilant? The high correlation between צ and etymological /tS̱/ in Crescas' poem hints at a negative answer to these questions. But this poem was written, not to mention copied, long after /tS̱/ had merged with /s/ in Provençal, and thus cannot be expected to provide a definitive answer. Fortunately, a large corpus of earlier evidence is available: the Old Provençal *le'azim* in David Ḳimḥi's *Sefer haśoraśim* (late twelfth century).

[54] I am indebted to Prof. G. Jochnowitz for this reference and also for being kind enough to lend me a copy of the work.

Since virtually no serious work has been done on these glosses[55] I was forced to edit them myself, using the following method. I first compiled a list of *le'azim* containing either etymological /ts/ or צ in the edition of Biesenthal and Lebrecht (1847). I then checked the spelling of these *le'azim* in the four oldest dated manuscripts of *Sefer haśoraśim* in the Institute of Microfilmed Hebrew Manuscripts of the Jewish National and University Library, viz. a Portuguese MS dated 1278 (Oxford, Bodleian Library MS Can. Or. 67 = Catalogue Neubauer 2391), an Italian MS dated 1286 (Padua, Biblioteca del Seminario Vescovile MS ebraico 210), a Spanish (?)[56] MS dated 1292 (Paris, Bibliothèque Nationale Ms. héb. 1233), and a Swiss (?)[57] MS dated 1322 (Parma, Biblioteca Palatina MS 2476 = De Rossi 1101). Finally, I eliminated those *le'azim* whose rendering of etymological /ts/ was not the same in at least three of the four manuscripts. The remaining *le'azim* are given below[58] with Old Provençal equivalents in Latin characters from Raynouard 1836–45 or Levy 1894–1924, and with cognate *le'azim* from the Talmudic commentary attributed to Rabbenu Gershom (Brandin 1901), Rashi's commentaries (Darmesteter 1907–8, Darmesteter and Blondheim 1929), and the *'Arukh* (Cuomo 1974):

INITIAL

(1) סי(ס)(ס)טרנא = *ci(s)terna* 'cistern' < Lat. *cisterna*
    בור

(2) אזור של בהמה (s.v. חבש): סינגלא = *singla* 'cinch' < Lat. *cingula*; cf. Rabbenu Gershom and Rashi חבק: צינגלא, *'Arukh* צינגולו: זון

(3) סד: סיפש = pl. of *cep, sep* 'stock, fetter' < Lat. *cippus*; cf. Rashi סד: ציפ(א)

[55] The edition of Ḳimḥi's dictionary by Biesenthal and Lebrecht (1847) was not based on manuscripts.

[56] For a description of this manuscript, cf. *Manuscrits médiévaux* (I, 18).

[57] The manuscript was written in זולותור by a scribe with the surname דקונקייש. The files of the Institute of Microfilmed Hebrew Manuscripts identify זולותור with Salodorum in Northwest Switzerland.

[58] A full table of readings, including some of the eliminated *le'azim*, is given in Appendix B, below.

MEDIAL AFTER *n*

(4) קרדנצא :אמן = *credensa* 'trust, belief' < V. Lat. *\*credentia*

(5) פרמנצא :ערבה = *fermansa, fermensa* 'security, pledge' < V. Lat. *\*firmentia;* cf. Rashi פרמנצא :ערבון *firmentia*

(6) פרנצא :צרפת = *\*Fransa* 'France' < Lat. *Francia;* cf. Rashi פרנצא :צרפת

(7) רונצא :קמט = *\*ronsa* 'wrinkle' (unattested by-form of *rons*) < Frankish *\*hrunkja;* cf. Rashi פרונצש :קמטין = *fronces* 'wrinkles'

(8) אגילנציר :עקרב = *aguilancier* 'wild rose' < V. Lat. *aquilentu* + *ier;* cf. Rashi עקרבים and אטד :אייגלנטייר = *aiglentier* 'wild rose'

MEDIAL EXCEPT AFTER *n*

(9) אגסא :איה = *agassa* 'magpie' < OHG *agaza*

(10) לימסא :חמט = *limassa* 'slug, snail' < V. Lat. *limacea;* cf. Rashi לימצא :חמט and Rabbenu Gershom לימץ :חלזון

(11) אסייר :עשות = *acier, assier* 'steel' < V. Lat. *aciarium;* cf. Rashi אצייר :אסטמא, *'Arukh* אסטמא :אצרו

(12) אצייר :נחוש = same as (11)

(13) פצייר :פרס = *peceiar, pesseiar* 'break' < V. Lat. *pettia*

(14) אילוצדש :חזיזים = pl. of *\*elhuciada* 'lightning bolt' (unattested by-form of *eslhuciada*) < Lat. *lucere*

(15) s.v. שמח: מנאצא = *menassa* 'threat' < Lat. *minatia*

FINAL

(16) פרץ :מחיר = *pretz* 'price' < Lat. *pretium*

(17) טמריץ :אשל = *tamaris* 'tamarisk' < Lat. *tamariciu* (by-form of *tamarix*)

(18) וידץ :לולים = pl. of *\*videt* 'spiral staircase' (unattested by-form of *videta*) < Lat. *vitis* 'vine'; cf. Rashi לולים :וויץ and וידיץ :שריגים

(19) רטץ :דברות = pl. of *rat* 'raft' < Lat. *ratis;* cf. Rashi ריץ :דברות

(20) רפסודות: same as (19)

(21) גלנטץ :לוט = pl. of *glant* 'acorn' < Lat. *glandem;* cf. Rashi גלנט :בלוטי and אלון :גלנץ

(22) גיניניץ :משקרות = *guinians* 'winking' < Frankish *\*wingjan*

(23) גנטץ :מטפחות = pl. of *gan* 'glove' < Frankish *\*want*

(24) פלוטש :מחלפות = pl. of *pellut* 'tress, strand' < Lat. *pilus*

(25) אנדץ :שפתים = *andes, endes* 'iron tripod used to support a kettle' < Lat.?[59]

In the above examples, there is no contrast between צ and ס. Initially, we find only ס; medially after *n* and finally, only צ. Medially except after *n*, there is free variation between צ and ס. This is hardly the type of distribution we would expect if צ and ס were identical. There is too much complementary distribution here, too little free variation. I propose, therefore, that the explanation for the lack of contrast between צ and ס in these *le'azim* is to be sought in Ḳimḥi's *Provençal* dialect rather than his Hebrew—that the Provençal sound rendered by ס was an allophone of the sound rendered by צ. I propose further that this allophony was the product of a twelfth-century phonetic shift—[ts] > [s] or [θ]—whose progress in Ḳimḥi's dialect is revealed in some detail by the relative distribution of צ and ס. In other words, the environments in which only צ appears are precisely those in which there is reason to believe that [ts] still existed in Ḳimḥi's time. In final position, for example, Provençal [ts] has survived to the present day (Seguy 1953:71). Thus, the descendant of Latin *pretium* 'price', written פרץ by Ḳimḥi, is pronounced [prets] in modern Narbonnais (Salow 1912: 86).

The fate of medial [nts] in Ḳimḥi's time is more difficult to establish. In modern Provençal, the [t] (and, in some cases, also the [n]) is lost, and in the twelfth-century charters published by Brunel (1926 and 1952: indices) there is no lack of free variation between medial *s* and *z* (= [ts]) after *n* (e.g. *fermanza* 29x / *fermansa* 3x, *tenenza* 21x / *tenensa* 3x, *fi(d/z)anza* 30x / *fi(d/z)ans(s)a* 9x). Nevertheless, there are good reasons for supposing that deaffrication took place later after [n] than in other non-final positions.

[59] The word also appears as *enders*, which may have been pronounced [enderts] with a parasitic (excrescent) *t*, cf. *chartz* < *carrus* (Chabaneau 1879:113), *acorderz, coregerz, Azemarz* (alongside *Azemars*), and *emparadorz* (alongside *amparadors*) (Grafström 1958:230).

It has frequently been pointed out that Old Provençal, like many other Romance languages of the Middle Ages, inserted a [t] between [n] and [s],[60] e.g. *annus* > *antz* 'years', *min(i)us* > *mentz* 'less' (Chabaneau 1874:333–34, Bertoni 1917, Grafström 1958: 230–31). This change is a common one in the languages of the world, since a "clean" transition from [n] to [s] requires that the necessary adjustments in the position of the tongue, velum, and vocal bands be made precisely at the same time—an ideal which is difficult to achieve in rapid speech (Anttila 1972:68). Excrescent consonants arise automatically when this ideal is not achieved, and if they are retained in the language, it is no doubt because speakers wish to be relieved of the burden of striving towards this ideal.

That being the case, it seems reasonable to expect that, all other things being equal, an excrescent [t] or indeed any [t] in a sequence like [nts] would be more resistant to deletion than [t] in a sequence like [Vts] or [#ts]. And in fact, this is precisely what we find in the Raeto-Romance dialects of Switzerland, where the reflex of Latin $c^{i,e}$ is *č* after *n* and *l*[61] but *š* after *r*, *š* word-finally after a vowel, *ž* word-medially after a vowel, and *č* or *š* (in some dialects only *š*) word-initially (Schorta 1938: 67, 86, 97–98, 109; Walberg 1907: 72, 85–86, 108, 112, 122–23; Caduff 1952: 79–80, 97–98, 116–17). It therefore seems reasonable to suppose that the consistent use of **צ** to render etymological affricates occurring medially after *n* reflects the preservation of those affricates in Ḳimḥi's dialect.

If this be the case, then it is natural to conclude that Ḳimḥi used **צ** to represent only [ts]. Even the **צ** in **אצייר** need not be an exception to this rule. The fluctuation between **אצייר** and **אסייר** should probably be taken as reflecting competition between two pronunciations of the word for 'steel': [aṭsier] and [asier]. If so, we may confidently conclude that **צ** was an affricate in the Hebrew of southern France until de-affrication ran its course in the thirteenth century, for if it had been realized [s] there would have been no need to represent the de-affricated co-allophone of [ts] with **ס**.

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[60] I am indebted to Prof. G. Jochnowitz for calling this to my attention.

[61] In these dialects, as elsewhere in Romance, *t* is inserted between *l* and *s* as well as between *n* and *s*.

## 2.12 Hebrew — Christian Spain and Portugal

The modern Sephardic pronunciation of **צ** varies from community to community and from style to style. In the merged Hebrew of Salonika and Skopje, **צ** is [s], but in Bosnia and Bucharest it is [ts] (Crews 1962:89).[62] We learn of the competition between these two pronunciations in nineteenth-century Bosnia from Eliezer Papo of Sarajevo (1859–60:104a):

סי אקאבֿידי אה . . . . דיקלאראר לה הא די המוציא אי לה צדיק . . . אי
בעונות איי מונג'וס קי דיזין קון פריסה גראנדי . . . המוסיא לחי
מינאריס.

One should take care to pronounce the ה of המוציא and the **צ** . . . but, because of our sins, there are many who say it with great haste . . . *hamosi lexe minares.*

In Amsterdam and London, whole Hebrew **צ** is realized [ts] (Yalon 1928–29:76, Corré 1956:86, Morag 1972:1141), but merged Hebrew **צ** is, in at least one lexical item, [s] (Yalon 1928–29:76fn).

Which of these pronunciations is the original Sephardic one? Many scholars (Yalon 1928–29:76fn, Corré 1956:88, Crews 1962:90fn) have raised the possibility that the affricated pronunciation is an Italian and/or Ashkenazic borrowing. Garbell (1954a: 670) holds that the earliest Sephardic pronunciation of **צ** is [ts], but since she also holds that this pronunciation was replaced by [s] in the thirteenth-fourteenth centuries (loc. cit.) and since she mentions only [s] as the pronunciation of **צ** in the Balkans (1954b:236), it is likely that she too holds that the modern affricated realization is a borrowing.

One thing is fairly clear. The distinction between **צ** and **ס** which exists today in those Sephardic reading traditions which have an affricated **צ** cannot be original. If anything is known about the Hebrew sibilants in Christian Spain and Portugal, it is that **צ** and **ס** were not distinguished. Profiat Duran, who moved to Catalonia

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[62] I am indebted to Prof. D. Bunis for this reference and the one that follows, and for his help in translating the latter.

Thus, it is possible that Sephardic reading traditions in which צ is a fricative derive in part from Catalan-speaking areas. Indeed, the fact that in one such tradition, ש has the same pronunciation as שׂ, ס, and צ (Crews 1962:89) makes this possibility a realistic one.

## 2.13  Hebrew — Egypt

In the overwhelming majority of cases, the Septuagint renders צ with a non-committal σ,[69] but Cantineau ([1951–52] 1960:283) has called attention to an exception which seems to show that צ was an affricate in Alexandrian Hebrew. The exception occurs only in the fourth-century C.E. Vatican Codex of the Septuagint, a manuscript which most authorities believe to be of Alexandrian origin. According to Cantineau and many other scholars before and after him (cf. already Böttcher 1866:85 and Stade 1879:32), the name of the letter צ is given there (Lam 1:18, 2:18, 3:52, and 4:18) as τσαδη. This is not correct, however.[70] The real reading, given by Nöldeke (1904:127fn), Levin (1971:121), and Wild (1973:29fn) is τιαδη; other manuscripts have σαδη.

This correction is not at all fatal to Cantineau's argument. The use of Greek τ to render voiceless affricates is attested in many parts of the world;[71] and θι seems to render Old Ossetic č in Scytho-Sarmatian inscriptions from southern Russia, the clearest examples

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[69] I consider this rendering non-committal because Greek σ is used to render foreign affricates as well as fricatives; see pp. 62–63, below.

[70] The source of this error can be seen clearly in the facsimile of Codex Vaticanus (Bibliorum SS. Graecorum 1907) which I consulted. Every one of the four instances of τιαδη written by the original scribe has been corrected by a later scribe to σαδη in conformity with other mss. of the Septuagint. In one case (p. 1136), the letters τι are totally erased, but in the other three cases, they are only partially erased or not erased at all. In one of these cases (p. 1137), the σ is added above the τ of τιαδη, but in the other two (pp. 1134 and 1139), it appears above the ι, and it is therefore easy to make the mistake of concluding that the second scribe intended his σ to replace only the ι of τιαδη.

[71] See pp. 62–63, below.

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being Θια[ρ]μακος = *čarmak 'tanner' (cf. modern Ossetic carm 'hide, leather') and Θιάγαρον (acc.) = *čagār 'slave' (cf. mod. Ossetic cagar 'slave') (Abaev 1949:161,206, Dumézil 1960:201, but cf. Zgusta 1955:193).[72] The closest parallel of all may come from Alexandria itself since, according to Stein (1937:1370): "Anlautendes Ti bei Ptolemaios entspricht einem indischen C(a)." If the above rule (called to my attention by Prof. D. Gershenson) is correct, it sheds a great deal of light on the form τιαδη, but the only example given by Stein—Τιμουλα = Sanskrit Čemūla—shows τ = č rather than τι = č. (Greek ι renders Sanskrit e, just as in Σιμυλλα = Čemūla, the transcription given by Marinos of Tyre [Stein 1937:1369]). Moreover, I have been unable to find any other examples of Stein's rule in Ptolemy.

In any event, the use of τι to render צ must be interpreted in the light of the palatalization of τ before ι which seems to have occurred several times in the history of Greek (cf. Buck 1933:122–23 and Mirambel 1942–45:96). That it occurred in Egyptian Koine is shown clearly by loanwords and transcriptions. The oldest Greek loanwords in Coptic have č for Greek τ before ι, e.g. čikris = τίγρις 'tiger' (Crum 1939a:764a), elekočinos = ὁλικόττινος 'solidus' (ibid., 745a).[73] And the Demotic magical papyrus of London and Leiden (third or early fourth century C.E.) renders Greek τ, ϑ and δ with Demotic ts "when and only when the letter in question is immediately followed by the vowel i" (Johnson 1977:123–25). It is clear, therefore, that the use of Egyptian Koine τι to render צ proves that the latter was an affricate.

## 2.14  Hebrew — Palestine

Although it stands to reason that the affricated צ of Egypt, Italy, and other areas was brought there from Palestine, I am not aware of any convincing evidence for affricated צ from Palestine itself.

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[72] Cf. also the rendering of ζ, pronounced [ǰ], by Latin di in oridia = ὄρυζα (first century B.C.E.), *baptidiare = βαπτίζειν, etc. (Fouché 1961:910).

[73] I am indebted to Prof. K. Baer for calling this evidence to my attention.

It is true that MH צ occasionally renders Greek στ or Latin st e.g. כצוצרה (alongside כסוסטרא, etc.)[74] = ἐξώστρα 'balcony', גצרה (alongside גסטרא, etc.)[75] = γάστρα 'the lower part of a vessel bulging out like a paunch', קצרה cf. Arabic قصر (alongside קסטרא, etc.) = castra 'fortress' (Krauss 1898:128); but this has nothing to do with affrication. All of the reliable examples of this rendering have ר immediately following צ, a restriction which calls to mind the use of Greek στρ and Latin str to render צר in Βοστρα, Bostra = בצרה (Krauss 1898:129), Μεστραϊμ = מצרים (Hübschmann [1897] 1962:294, cf. also Krauss 1898:129), 'Αστρών = חצרון (Gershenson 1978:169fn). This restriction proves beyond a shadow of a doubt that what we are dealing with here is not affrication (pace Cardona 1968:10–11) but excrescence—the insertion of a homorganic stop (presumably ט) between צ and ר. (We may recall that s___r is one of the classic environments for excrescence [Anttila 1972:68]). Furthermore this phonological rule affects not only צר but also סר (e.g. אסרתגא = στρατηγός 'strategus', Cantineau 1932:66; אסרטיא = στρατία 'army', Krauss 1898:128; אסרטא cf. صراط [76] = strata 'street', loc. cit.; סוסרטא, ססרתס = Σώστρατος, loc. cit., Kornfeld 1978:34, 118; 'Ιστραήλ = ישראל, Preisendanz 1928:128,184) and even זר (e.g. 'Εσδρας = עזרא, Hasdrubal, etc. = עזרבעל, Harris 1936:131).[77] It is clear, therefore, that renderings equating צ with στ and st do not point to an affricated צ; if anything they point in the opposite direction (but see below).

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[74] Codex Kaufmann has both forms.

[75] Codex Parma A (De Rossi 138) has both forms.

[76] I am indebted to Prof. D. Edzard for reminding me of this loanword.

[77] This phonological rule re-appears later in the Balkans (among speakers of Greek (!) and speakers of Ladino) and possibly also in Spain. In the Sefer ha'ošer (Jacob ben Reuben 1836:8a to Ez 21:26), the word ἀστρολάβια 'astrolabes' appears as אסרלבייא (seminar paper of Dr. Moshe Bernstein); in responsum 66 of Elija Mizrahi (1559–1561:115d), Österreich 'Austria' is written אושריק (sic!), אישריך alongside אושתריך (ibid., p. 116a, cf. אושטריך in responsum 231 of Terumat hadešen (Isserlein 1519), the one which Mizrahi is referring to); and in responsum 11 of Joseph Trani (1645:12d–13a), the name ישראל is said to be pronounced ישטראל apparently by Greek-speaking Jews (although it must be admitted that a pronunciation יסט for יוסף is also reported there), and the Romaniote name אסטרופולה is said to be derived

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Somewhat more relevant to our problem is the tantalizing description of צ in fifth-century Palestine found in Jerome's commentary to Isaiah (11:1):

> Cuius proprietatem et sonum inter z et s Latinus sermo non exprimit; est enim stridulus et strictis dentibus uix linguae impressione profertur.

> The Latin language does not express its peculiarity and sound, between z and s. It is shrill, and with the teeth clenched it is barely articulated by pressing the tongue [against them] (Levin 1971:120).

Our interpretation of this description will naturally depend to a great extent on the value of z we assume that Jerome had in mind: [z] or [dz]. There is plenty of evidence for the existence of the latter realization (Sturtevant 1940:176), and it is not even necessary to assume that it was the usual value of z in Jerome's day, as does Siegfried (1884:67); it is enough that such a value existed.

If Jerome did have this value in mind, then the phrase "between z and s" should mean either [ts] or [z]. The former combines the manner of articulation of [dz] with the glottal state of [s], while the latter combines the manner of articulation of [s] with the glottal state of [dz]. It is obvious, however, that [z] is not the sound Jerome was trying to describe, since that is one of the values of Latin z. Thus, one interpretation of Jerome's description leads us directly to [ts] (cf. also Cardona 1968:9).

It is clear, however, that other interpretations are possible. If Jerome's z was [z] then his צ was a partially voiced sibilant. Finally, it is possible that the expression "between z and s" means nothing more than "neither z nor s". This interpretation is supported by the fact that Jerome actually uses the latter phrase to describe צ in another place (Onomasticon, Matthew 2:23):

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from שרה. The Ladino-speaking Jews of Salonica have preserved the rule, at least in their merged Hebrew, to this day, e.g. Istraél = ישראל 'Israel', arbábestrí[n] = ארבע ועשרים 'twenty-four', Mistráy[n] = מצרים 'Egypt', mizdráh = מזרח 'east', etc. (Crews 1962:91). Old Spanish transcriptions of Hebrew names sometimes show the same rule, e.g. Istrael = ישראל 'Israel', Esdra/Ezdra/Azdra = עזרא 'Ezra', Asdriello = עזריאל 'Azriel' (Garbell 1954a:684), but there is no guarantee that personal names used in Spanish were representative of normal Hebrew pronunciation.

Nazareth: . . . scribitur autem non per z litteram sed per hebraeum sade quod nec s nec z litteram sonat.

Nazareth: . . . it is written, however, not with the letter z but with the Hebrew צ which sounds like neither s nor z.

If this is the meaning of Jerome's description, then it is of very little use to us.

Additional evidence for the pronunciation of צ in the Roman and/or Byzantine periods comes from the use of צ (alongside or instead of the usual ס) to render Greek σ and Latin s in environments other than the one mentioned above (Krauss 1898:9–10, 109, Ginsberg 1953:26fn, Kutscher 1961–62:17, Fitzmyer and Harrington 1978:182–83) and from צ/ס spelling variants in Rabbinic manuscripts e.g. צבר, צוור, etc./סוור, etc. 'heap' (Epstein 1948: 1224–25), עוקסיהן/עוקציהן 'they strain, filter', מסנין/מצנין 'their stems', המנפסו/המנפצו 'he who hatchels it' (Yalon 1971:414fn, cf. pp. 87, 401), סלקן/צלקן[78] 'pressed them', מסטער/מצטער 'troubled', נסטווה/נצטווה 'was commanded' (Sokoloff 1968–69:31). At first glance, this evidence would seem to prove that צ was a fricative, but, in actual fact, it is no more conclusive than Jerome's description. As pointed out below,[79] the ṣ of Amharic is realized [ts'] and yet native speakers are not aware that it is an affricate, presumably because the initial occlusion is, from a synchronic point of view at least, merely a by-product of glottalization. It is quite possible that the same was true of Hebrew צ in late Antiquity.

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[78] Cf. צלק in Geonic literature (Epstein 1960:19).
[79] Pp. 84–88

# 3. Aramaic

Syriac צ was an affricate in Iran and Central Asia and an affricate or an ejective in Georgia and Armenia, until it came under the influence of Arabic ص. The affricated realization of צ was also common by the third century C.E. in *Mesopotamian* dialects of Aramaic. Indeed, it was already in use in the Persian and Hellenistic periods, as shown by *Nabukudračara* = נבוכדראצר (Iran, late sixth century), מתרצתר = *Miθračiθra* (Armenia?, fourth or third century), צפנא = תסאפאנא (Egypt, second century).

## 3.1 Aramaic — Georgia

Evidence for the pronunciation of Syriac צ in Georgia comes from two tenth-century Georgian manuscripts. One of them is a manuscript of the Georgian Psalter (Georgian Government Museum A 38) from 904 or 974 C.E., which gives the names (mainly in Syriac form) of the Aramaic alphabet in its translation of Psalm 119. The name of our letter is *çadey* (Tsereteli 1941:16, Shanidze 1957:160). The second is the Atoni or Oshki Bible written in 978, which goes through the Syriac alphabet four times in Lamentations. In chapters 1 and 3, our letter appears as *çadey,* in chapter 4 it appears as *ça . . . ,* while in chapter 2 it is missing (Shanidze 1957:164).

There is also an Aramaic loanword in Georgian with *ç* for צ: *çinçila* = צצלא 'cymbal' (Tsereteli 1941:16). It is conceivable, however, that this is an indirect loan, with Armenian *çnclay* 'cymbal' (Hübschmann 1892:239) as the intermediary. Indeed, it is not impossible that *çadey* and the other letter-names are also indirect borrowings.

The significance of the above evidence is greatly enhanced by the fact that neither Syriac ס nor Arabic ص is ever rendered by Georgian ç. Thus, the name of the letter ס is given as *samkat* in the Georgian Psalter and *samkat* (2x), *samakt, samkt* in the Atoni Bible (Shanidze 1957:160, 164). In the Georgian transcription of the Arabic alphabet found in a St. Catherine's monastery manuscript from 1031, the name of the letter ص is given as *sad*[80] (Megrelidze 1953:40). Similarly, in Arabic loan-words, ص is rendered by Georgian *s* and *z* (Fähnrich 1964:158, 1966:453), although here the probability of indirect borrowing is quite high (Fähnrich 1964:155).

It is clear, therefore, that Syriac צ was different from both Syriac ס and Arabic ص, but it is not clear that it was an affricate. Since Georgian had no glottalic *ṣ*, it might well have used ç to render glottalic צ even if the latter was a fricative. Thus, our renderings, assuming that they are direct, prove that Syriac צ was affricated or glottalic or both.

Earlier evidence for the pronunciation of Aramaic צ in Georgia is of dubious validity. Tsereteli (1941:16) argued that the sign for ç in the Georgian ecclesiastical script (also known as *nusxa-xutsuri* or *nusxuri*) was derived from the Aramaic צ found in the second-century Aramaic inscription from Armazi (the ancient capital of Georgia), but chronological considerations make this theory highly implausible (personal communication from Prof. M. Stone). The *nusxuri* script does not appear until the ninth century, the oldest Georgian inscriptions and manuscripts being written in the *mtavruli* script (Vogt 1971:7; for further criticism of Tsereteli's views on this matter, cf. Perikhanian 1971:6fn).

On the other hand, the rendering of Georgian ç (in the toponym *Mçxeta*) by Aramaic ס (in מסיכית, מסכית) in the first century C.E. Aramaic inscription from Mçxeta (Altheim and Stiehl 1963:244) does not prove that Aramaic צ was not an affricate there at that time, since this rendering may be indirect, the intermediary being Greek *Μεσχίθα* (cf. Altheim and Stiehl 1963:256). As evidence for

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[80] The initial *s* is erased, but there are traces which show it existed (Megrelidze 1953:41).

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the use of Greek names in Mçxeta, we might mention the personal name סערפיט = *Σηραπεῖτις* in the bilingual inscription from that city.

## 3.2 Aramaic — Armenia

The Syro-Armenian translation of Bar Bahlul's lexicon (with admixtures from other lexica)[81] preserved in a manuscript (Harvard Syriac 54) dated 1657-60 C.E. shows clearly that Syriac צ was not realized as an affricate near the western border of Greater Armenia (probably in the region between Malatya and Samsat; Margoliouth 1898: 842) in the seventeenth century. In this manuscript, the Armenian dental affricates, probably reduced to two in this dialect, are represented (with rare exceptions) not by Syriac צ but by dotted ṫ and ṡ (ibid., 856). Presumably, צ was a voiceless spirant as it is in Assyrian today.

Earlier evidence for the pronunciation of צ in Armenia comes from the many Syriac names (some originally Hebrew) and loan-words found in fifth-century Armenian translations of Christian classics. In these works, צ is consistently rendered by Armenian *c*, e.g. *com* 'fast' = צומא, *crar* 'bundle' = צררא (the former renders the latter in I Sam 25:29), *cnclay* 'cymbal' = צצלא (the former renders the latter in I Sam 18:6),[82] *nacr-ac'i* 'Christian' = נצריא (Hübschmann 1892: 239, 245), *bucin* 'wick' (ibid., 234) = בוצינא,[83] *Cedekia* 'Sedekiah' = צדקיא, *Bardecan* 'Bardesanes' = ברדיצן, *Barcumay* 'Barsauma' = ברצומא, *Cbavut'* 'Sabaoth' = צבאות, *Cur* 'Tyre' = צור, *Mecrayim* 'Egypt' = מצרים (Hebrew), *Mcbin* 'Nisibis' = נציבין

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[81] I am indebted to Prof. M. Goshen-Gottstein for telling me of the existence of this manuscript.

[82] This word and the following one are also adduced by Cardona (1968:5), whose work I learned of while reading the proofs of this monograph.

[83] Hübschmann's derivation (loc. cit.) from Pehlevi *būčīnā* is impossible for two reasons: (a) Pehlevi *č* is always rendered by *č* in Armenian, e.g. Armenian *daričenik* 'cinnamon' = Pehlevi *\*dār-i čēnik*, (b) Pehlevi *būčīnā* is a ghost word (Krauss 1937:100a).

(Hübschmann [1897] 1962:290–95). Syriac ܣ, on the other hand, is consistently rendered by Armenian s (Hübschmann 1892:229, 249–50). Armenian s is also used to render Arabic ص in medieval loanwords: *sakṛ* 'falcon'[84] (twelfth century) = صقر, *sabr* 'aloe juice' (twelfth century) = صبر, *sapᶜray* 'gall' (thirteenth-fifteenth century) = صفراء, *snduk* 'box' (tenth century) = صندوق (Hübschmann 1892:266–67). This contrast proves that Syriac ܨ was different from Syriac ܣ and Arabic ص, but not that it was necessarily an affricate. If Old Armenian c was glottalic, as some scholars believe (e.g. Catford 1974:28 fn), and if Syriac ܨ was glottalic, the former might have been used to render the latter, even if the latter was a fricative, for want of a glottalic s in Old Armenian. We conclude, therefore, that Syriac ܨ was affricated or glottalic or both in the spoken dialect (probably Edessan; Hübschmann 1892:227) which formed the basis of the Armenian reading tradition.

An Aramaic seal in the Hermitage Museum which may come from Armenia provides earlier and clearer evidence for affricated ܨ. At the top of this seal, the name מתרצתר = *Miθra-čiθra-* appears (Levy 1869:17, Justi 1895:216, Vinnikov 1965:19, Bowman 1970:107 fn). This reading is certain, since both *Miθra-* 'Mithra' and *čiθra-* 'lineage; appearance' occur very frequently as components of Iranian personal names (Levy 1869:17, Bowman 1970:107, cf. now Hinz 1975: 74–75, 166–68).[85]

As for the date of this seal, the artwork (i.e. the representation of a running boar) points to the late fifth or early fourth century B.C.E. (personal communication from Prof. E. Porada) and the writing points to the fourth or third centuries B.C.E. (personal communication from Prof. J. Naveh) or, more precisely, to the end of the fourth century B.C.E. or the beginning of the third (personal communication from Prof. F. Cross).[86]

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[84] This word, at least, must come directly from Arabic, since it was never used in Persian (Greppin 1977:11).

[85] Herr (1978:13) accepts the reading מתרצתר proposed by *Corpus Inscriptionum Semiticarum* II, no. 102, but he is clearly unaware of the literature cited here.

[86] None of these scholars was told of the date given by any of the others.

The use of ܨ to render č in this period is, as pointed out by Bogolyubov (1976:211),[87] highly unusual. It will be shown in the next section that the regular Aramaic equivalent of Iranian č before the Sassanian period is ש. Indeed, *čiθra-* itself appears in other Aramaic inscriptions as שתר- (cf. Sassanian Parthian שיתר, Nyberg 1923:195) and in Akkadian texts as *Ši-dir-, Ši-id/t-ra-, ši-tir,* and *Ši-id/t-ri.*[88] Now all or most of these standard renderings come from Iran and Mesopotamia. Accordingly, the exceptional rendering of č on our seal confirms the judgment of Prof. E. Porada (personal communication) that the representation on this seal comes from the western part of the Persian empire (or, in any case, not from Iran or Mesopotamia), and the opinion of Vinnikov (1965:19) that the inscription is "West-Aramaic." Armenia is a likely guess, since the seal was originally owned by the Russian consul in Erzurum (Blau 1864:299, cf. also Vinnikov 1965:18).

Now, Bogolyubov (1976:211) has claimed that the use of ܨ to render č in this seal demonstrates the existence of a school of Aramaic scribes with traditions rooted in Elam rather than Mesopotamia, since Elamite scribes of the Achaemenid period regularly used cuneiform *za* and *zí* (sometimes preceded by *iz*) to render Old Persian č (cf. Mayrhofer 1973:65 and Hinz 1975:69–75). However, the probable western provenience of our seal makes this theory unlikely. Moreover, to prove such a theory it would be necessary to establish that the New Elamite scribes (1) were conscious of the precise Akkadian values of the cuneiform sibilant-signs, despite the fact that "there is no evidence to indicate that they themselves read, wrote, or understood Akkadian" (Cameron 1948:22) and the fact that they use some *Š*-signs and *S*-signs as *Z*-signs but other *Š*-signs and *S*-signs in opposition to the *Z*-signs (Hallock 1958:259, 1969:83–86), (2) perceived *za, zí,* and *iz* as representing Akkadian ṣ rather than z, (3) were sufficiently aware of the correspondence between Akkadian ṣ and Aramaic ܨ to identify the latter with their *Z*-signs and use it to render Old Persian č, and (4) wrote Aramaic

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[87] I am indebted to Prof. Sh. Shaked for this reference.

[88] See p. 51, below.

frequently enough for this usage to be picked up by non-Elamite scribes. Until all of this is proved, we may safely assume that the use of צ to render *č* was a more or less local phenomenon, pointing to an affricated צ in the time and at the place in which the seal was produced—probably fourth-third century B.C.E. Armenia.


## 3.3 Aramaic — Mesopotamia and Iran

The oldest piece of evidence for affricated צ in this area was adduced already by Olshausen (1879:568) followed by Haupt (1890:262), Hüsing (1907:467), Vilenchik (1930:94), and others. It is the name *N-b-u-ku-(u-)d-r-č-r* = נבוכדראצר, נבוכדנצר which occurs several times in the Behistun inscription of Darius I from c. 517 B.C.E. The fact that this Old Persian rendering has a *č* rather than an *s* was considered by the abovementioned scholars as evidence for the pronunciation of Akkadian *ṣ*, but, for the reasons spelled out below,[89] it is more likely that we are dealing here with Aramaic צ.

Before turning to the later evidence for affricated צ in this area, is interesting to note that the reverse phenomenon, i.e. the use of צ to render *č*, is not found here (as opposed to Armenia (?) and Egypt) until the beginning of the Sassanian period more than seven centuries later.[90] From the Neo-Assyrian period up to and including

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[89] Pp. 70–71.

[90] It is true that Elamite scribes of the Achaemenid period regularly used cuneiform *za* and *zí* (sometimes preceded by *iz*) to render Old Persian *č*, but, despite the claims of Eilers (1959:250fn, 1971:608) and Bogolyubov (1976:210–11), this usage cannot be connected with the later use of צ to render *č* for the reasons given on p. 49, above. There is, therefore, a real asymmetry in the relationship between צ and *č*, but this asymmetry does not, pace Müller (1907:359), destroy the evidentiary value of *Nabukudračara* (cf. also Cardona 1968:6). It is possible that speakers of Aramaic, like speakers of modern Amharic (see below, p. 85), were less aware of the initial occlusion of their צ than foreign observers were, and that that is why the use of צ to render *č* came later than the use of *č* to render צ.

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the Arsacid period, Iranian *č* is consistently rendered by Akkadian and Aramaic *š* (with one dubious exception, listed first below):

### Neo-Assyrian Period

ESARHADDON PRISMS:

*Te-uš-pa* = *Č-i-š-p-i-s*? (Justi 1895:152, Brandenstein and Mayrhofer 1964:5, but cf. Zgusta 1955:17 and Schramm 1973:214)

*Ši-dir-pa-ar-na* = *\*Čiθra-farnah-* (Justi 1895:164, Hinz 1975:74)

### Achaemenid Period

TRILINGUAL ROYAL INSCRIPTIONS (DARIUS!):

*Ši-iš-pi-iš* = *Č-i-š-p-i-š* (Kent 1953:184, Paper 1955:29)
*Ši-in-ša-aḫ-ri-iš* = *Č-i-č-i-x-r-i-š* (loc. cit.)
*Ši-id/t-ra-an-taḫ-ma* = *Č-i-ç-t-x-m* with *ç* < *tr* (loc. cit.)
*A-ku-pi-i-iš* = *A-k-u-f-č-i-y-a* (Herzfeld 1938: 27, 30, 192)
*ar-ri-i ši-tir* = *a-r-i-y-č-i-ç* with *ç* < *tr* (loc. cit.)
*ar-ta-šá-'* = *a-r-t-a-č-a* (ibid., 28, 31, 192)

BABYLONIAN TABLETS:

*Ba-ga-ru-uš* = *\*Baga-rauča-* (Zadok 1977:94)
*Ap-pi-e-šú* = *\*Āpaiča-* (ibid., 99)
*Ši-id/t-ri-en-na-'* = *\*Čiθraina-* (ibid., 103; cf. Hinz 1975:75 s.v. *\*čiθrina-*)
*Ku-pi-e-šú* = *\*Kaufaiča-* (ibid., 105; cf. Hinz 1975:151)

PERSEPOLIS BOWLS:

בגשתר = *\*Baga-čiθra-* (Bowman 1970:64)
מזדשתר = *\*Mazda-čiθra-* (loc. cit.)
ארתשנא = *\*Arta-čanah-* (loc. cit.)[91]

ELEPHANTINE PAPYRI:

אופשר 'outfit?, means?' = *\*upačāra-* (Henning 1958:39fn, Driver 1965:81fn, Hinz 1975 s.v.)

אשרנ(א) 'instruments?, building materials?, furnishings?' = *\*āčarna-* (loc. cit.)

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[91] Justi (1895:37) reconstructed an Old Persian *\*Artašin*, but the Elamite rendering *Irdazana* (Mayrhofer 1973:166) makes this impossible, since Elamite *z* renders Old Persian *z, d, č,* and *ǰ* (ibid., 60, 65, 71) but not *š*.

EZRA:

אשרנא—see immediately above

פרשגן 'copy' (Hebrew פתשגן) = *patičagnya-* (Hinz 1975:186)

*Arsacid Period*

QUMRAN WAR SCROLL:

נחשיר 'slaughter' = *naxčir*[92]

OLD SYRIAC AND PARTHIAN INSCRIPTIONS:

מניש = *Manēč* (Henning 1958:42, Segal 1954:26)

MISHNAH:

דרגש[93] = 'a type of bed' = *dargič* or *darguč*

PESHIṬTA TO PENTATEUCH:

שרגא 'lamp' = *čirāy* (Widengren 1960:102)

Another Iranian loanword dated by Widengren (1960:94) to the Arsacid period—Mandaic כאביצא 'a measure' = *kapīč*—is not attested in a text from that period.

The year 224 C.E. marks a turning point not only in the history of Iran but also in the history of צ. Suddenly, renderings of *č* with צ are everywhere. The new Sassanian rulers record their achievements in trilingual inscriptions in which (Parthian *č* is still represented by שׁ but) Middle Persian *č* is written with צ.[94] (The importance of this

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[92] The Parthian etymon of this word used to be uncontroversial, the earliest studies giving it as *naxčir* (Lagarde 1866:65, Benveniste 1934:182, Telegdi 1935:205). More recently, however, *naxžir* (Widengren 1958:55) and *naxšir* (Benveniste 1966:16) have been suggested. It turns out that *naxčir* was right all along. The word is attested with a *č* in the unambiguous Manichean Parthian script (personal communication from Prof. C. Brunner), a fact which Widengren, at least, seems to have been unaware of (cf. Widengren 1960:95).

[93] This word is vocalized *dargeš* in Codices Kaufmann and Parma A (De Rossi 138).

[94] The sign for *č* in Middle Persian does not resemble צ, but its identity is clear from its occasional use in Aramaic ideograms, e.g. *čwlh* (read *griv* 'neck, form, body') = Common Aramaic צורא 'neck'. The use of *l* instead of *r* in this ideogram is explained by the fact that these two characters are homophones in the Middle Persian orthography (personal communication from Prof. C. Brunner, who also supplied the example).

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usage is underscored by the fact that neither the symbols which represent the other two emphatic consonants of Aramaic nor ע is used in this new orthography except in ideograms (Henning 1958:60)). Mani (216–74 C.E.) devises a second Aramaic-based orthography, unconnected with the first (personal communication from Prof. C. Brunner), in which *č* is, once again, represented by צ.[95] Rav (d. 247 C.E.) or, according to another tradition, his pupil Rav Yehudah (d. 299 C.E.) enacts a standard bill of sale for slaves (preserved in Giṭṭin 86a and two collections of *šṭarot*) in which the slave is warranted against boils צחר עד[96]—which, according to a Geonic responsum, means 'for four (*čahār*) years' (Kutscher 1972:7). And Karder, the chief of the Zoroastrian Magi, sets up monuments in which he boasts of having suppressed seven religious groups,

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[95] The above evidence is also adduced by Cardona (1968:5), whose work I learned of while reading the proofs of this monograph.

[96] This is the reading of the model text incorporated by Hai Gaon (939–1038) into his *Sefer hašṭarot* (Assaf 1929–30:28), a work intended as a guide for Jewish courts. A slightly different reading—צהר—is found in a responsum of Paltoi Gaon (d. 857) cited in a Geniza fragment of *Sefer hamikṣo'ot* and in the first edition of Alfasi's *Halakhot rabbati* (Assaf 1929–30:29); however, the JTS ms. of the latter has צהב, a reading known also from Judah al-Bargeloni's *Sefer hašṭarot* (1898:69). Against all of the geonic and Sephardic sources which have צ = *č* are the Ashkenazic (Rashi and Tosafot) and Italian ('Arukh and Isaiah of Trani 1977:242) sources and all extant editions and manuscripts of the Talmud which have טצ = *č* (טצהר). The *Sefer 'iṭṭur* by Isaac ben Abba Mari of Marseilles (1955:134) has both the geonic reading (צחר) and a corruption of the Ashkenazic reading (שצהר < טצהר), as befits a work written in southern France.

The Ashkenazic reading cannot simply be dismissed as an error, because טצ is used to render *č* in another Jewish Babylonian word (טצרקי 'subterfuge' = Iranian *čārak*) and in two Syriac words (דוטצובג 'staff' = Iranian *dūčōbag* and טצגרא 'falcon' = Turkic *čakir*), but it is almost certainly later than the geonic-Sephardic reading. The Jewish Babylonian example of טצ = *č* cited immediately above (טצרקי) occurs in anonymous—and hence late—Talmudic passages, while the one clear example of צ = *č* ((י)דרצינ 'cinnamon' = *dār-i čīn(i)*) is one of a series of short lexical glosses on the Mishnah and is, therefore, like the rendering of *čahar*, very early (personal communication from Prof. H. Dimitrovsky). In fact, it is likely that טצ = *č* presupposes the prior existence of צ = *č*. Had there not been a prior tradition of rendering *č* with צ, it is inconceivable that שׁצ would not have been the consistent choice of digraph users. In other words, טצ = *č* must be an outgrowth of צ = *č*, just as the occasional

including the *n'čl'y*[97], i.e. the Nazarenes (Syriac נצריא) (Gignoux 1968:395).

The above evidence proves that some dialect(s) of Aramaic had an affricated צ in the third century C.E. It is not difficult to guess the location of the dialect(s) in question. Mani was born in southern Babylonia (personal communication from Prof. Sh. Shaked) and so was Rav (*Encyclopaedia Judaica* xiii, 1576), and the Middle Persian script, according to a tradition reported in the ninth century by Ishodad of Merv, was invented by a man of Mesene in southern Babylonia (Coxon 1970:16–17).

Other evidence for affricated צ is more difficult to locate in space and time. This is the case with most of the Persian loanwords found in Brockelmann 1928,[98] since they are attested in late works from the Middle Ages, and, for the most part, are not known from other Aramaic dialects:

דרציני 'cinnamon' (Jewish Babylonian (דרצינ(י) = *dār-i čīni*
צמברא 'crescent-shaped ornament' = *čanbar*
צנגא 'cymbal' = *čang*
צנדל 'sandal wood' = *čandal*
צנר 'oriental plane tree' = *čanār*

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טש = *č* in Manichean Parthian (but not Manichean Middle Persian or Manichean Sogdian!) must be an outgrowth of ש = *č* in Arsacid and Sassanian Parthian.

The question remains, however, why one would add ט to צ, if the latter was already an affricate. One possibility is that in some dialects of Aramaic, the initial occlusion of צ may have been weak, optional, or totally non-existent. Another possibility is that native speakers were simply unaware of it (see above, p. 50 fn. 90; and below, p. 85).

[97] It is true that, in Book Pehlevi, due to a sound change, medial *č* represents /z/ (Dresden 1970:49), but *n'čl'y* must represent *nāčrā(y)*, because the word is attested in the Sogdian St. George Passion as *n'č[r]'y-* (Hansen 1941:13) and the *č* of Christian Sogdian cannot represent /z/ (Dresden 1970:52). It cannot be claimed that the spelling of the Christian Sogdian form is merely transferred from Syriac, because in that language the word is spelled without *alefs*. On the other hand, Prof. R. Frye informs me that there is a possibility that *n'čl'y* is to be connected with Syriac נזירא 'Nazirites' rather than Syriac נצריא 'Nazarenes'. In that case, this form would no longer constitute evidence for affricated צ.

[98] I am indebted to Prof. Sh. Shaked for eliminating four dubious items from the list I collected.

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The same problem exists, albeit in a less acute form, with regard to two Aramaic loanwords in Iranian: Christian Sogdian *člyb'*, New Persian *čalīpā* 'cross' = Syriac צליבא and Pehlevi Pazend–New Persian *gač* 'lime' = Syriac גצא (=? Mishnaic Hebrew (יווני) גץ 'a type of mud which is not easily washed off the skin').

In the case of *čalīpā* = צליבא, Fraenkel (1886:276) assumed that the direction of borrowing was from Persian to Syriac, a view which Eilers (1960:206, 1971:606) reports with great hesitation; but Nöldeke (1892:36) included *čalīpā* = צליבא in a discussion of "Griechische und aramäische Fremdwörter in Persischen," Weryho (1971:306) included it in an article on "Syriac influence on Islamic Iran," and Cardona (1968:5) included it among borrowings *from* Semitic. In a letter to Lidzbarski (published in Lidzbarski 1908:123), Nöldeke was more explicit: "Ich habe längst eingesehen, dass جليبا aus dem aram. צליבא stammt, nicht umgekehrt." Since the word is not attested in Middle Iranian outside of Christian Sogdian, which contains many Syriac loanwords (Hansen 1966:96), and since Christian Sogdian has a second word for 'cross', with a clear Iranian pedigree (*pačang,* loc. cit.), it seems that Nöldeke was right.

In the case of *gač* = גצא, Fraenkel (1886:10) again considered the possibility of a Persian borrowing by Syriac. Today, however, it is clear that the etymon of Syriac גצא is Akkadian *gaṣṣu*,[99] attested already in the Old Babylonian period (CAD s.v.). This, of course, means that the Persian form comes from Aramaic rather than vice versa.

To fully appreciate the significance of this evidence it is important to note that neither Aramaic ס nor (with rare exceptions due to factors which will be discussed below[100]) Arabic ص is ever rendered by Iranian *č*. In Arabic loanwords, ص is rendered by Persian *s* (Rubinchik 1965:588). We conclude, therefore, that an affricated צ existed in Mesopotamia and Iran from the Achaemenid period to the beginning of the Islamic period.

[99] This loanword does not appear in Kaufman 1974.
[100] P. 80

If so, why is it that none of the Neo-Aramaic dialects of this area has an affricated צ? As in the case of Armenian Syriac and Iranian Hebrew, our answer must be Arabic influence. This influence was presumably exerted first on coterritorial dialects of Neo-Aramaic, later spreading to dialects in non-arabophone areas.

## 3.4 Aramaic — Central Asia and China

The earliest evidence for affricated צ in Central Asia comes from the Buddhist Sogdian orthography, attested already in the fourth century C.E. This orthography, like the Middle Persian orthography discussed above, uses Aramaic צ to represent *č*.[101] As in the case of the Middle Persian orthography, this usage contrasts sharply with the treatment of the other two letters representing emphatics (ק and ט) and of ע.

The Christian Sogdian orthography also provides evidence for affricated צ. Here, however, it is *Syriac* צ which is used to represent *č*. Syriac צ is also used to represent *č* in a fragment of the New Persian Psalter found at Bulayïq, north of Turfan (Müller 1915:216), and in the Nestorian monument from Hsian (China) dated 781, where we find צינסתאן = *Čīnastān* (Saeki 1937: 53, 70 fig. 1A, 82).[102]

Even more significant is the use of Iranian *č* to render Syriac צ. In a Middle Persian translation of the Psalter from Bulayïq (the same site where the New Persian translation was found), preserved in fragments from the seventh or eighth century C.E., Syriac צהיין 'Zion' is rendered *Čhydwny* (with *d* as a pseudo-historical representation of /y/), and Syriac מצרין 'Egypt' appears as *Mčlyny* (Andreas

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[101] The sign for *č* in Sogdian does not resemble Aramaic צ, but its identity is clear from its occasional use in Aramaic ideograms e.g. *čwlh* (read *griv* 'neck, form, body') = Common Aramaic צורא 'neck'. The use of *l* instead of *r* in this ideogram is explained by the fact that these two characters are homophones in the Sogdian orthography (personal communication from Prof. C. Brunner, who also supplied the example).

[102] I am indebted to Professors M. Bernstein and H. Sober for this reference.

and Barr 1933: 147, 138). In the latter case, however, the *č* is medial and, therefore, we cannot rule out the possibility that it was read as a /z/ in this word. A final instance of Iranian *č* rendering Syriac צ is Christian Sogdian *n'č[r]'y-* 'Nazarene' = נצריא (Hansen 1941:13); however, if this is the descendent of inscriptional Middle Persian *n'čl'y,* as we assumed above,[103] then it naturally tells us nothing about the *Central Asian* pronunciation of צ.

It is interesting to note that at a much later period, Syriac צ was used to represent Middle *Turkic* *č* in Central Asia. Thus, in tombstones from the Nestorian cemetery at Pishpek (in use 1249–1345), we find date formulae containing the terms סצכא(י)ן = *sičqan* 'mouse' and פצי(י)ן = *pičin* 'ape' (Radloff 1890:154–55). We also have an inscription from 1336 found in the village of Saru containing the words ייתינצ = *yitinč* 'seventh' and סיצקאן = *sičqan* 'mouse' (Dzhumagulov 1968:477), and a seal found on two letters sent by the Nestorian patriarch Yahballaha III to popes Boniface VIII (in 1302) and Benedict XI (in 1304) containing the words כויצינטא = *küčintä* 'by dint of' and אויצון = *üčün* 'because of' (Hamilton 1972:159).

Finally, the Book of Honored Ones (i.e., venerated men and books), composed by Chinese Nestorians before 1036, lists a *Tz'u-li-po Sûtra,* which Saeki (1937: 256, 275) plausibly interprets as the Cross (צליבא) Book. The use of Chinese *tz'* to render Syriac צ contrasts with the frequent use of *s(s)* to render ס in this work (Saeki 1937:273–74).

## 3.5 Aramaic - Egypt

The pronunciation of צ in this area is plainly indicated in a remarkable second-century B.C.E. Aramaic[104] religious text written in Demotic script,[105] a text which was described and

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[103] Fn. 97

[104] Sarna (1971:749) mistakenly refers to the text as Phoenician.

[105] I am indebted to Prof. J. Blau for calling this evidence to my attention. My present involvement with the entire text is, thus, due in part to him.

excerpted by Bowman in 1944 and which I am now preparing for publication in collaboration with Professors C. Nims and G. Hughes of the Oriental Institute (Chicago). In the passage published by Bowman (1944: 227), six deities are listed—three male and three female. Each male deity is asked to bless the listener from the place where his temple is located (cf. Ps 128:5, 134:3):

 יברכאכא בער מן תסאפאנא . . .
יבראכאכא בר מן באבאר . . .
יאברכאכא נבוי מן באר סאף . . .

Bowman had no difficulty in recognizing that בר, בער, and נבוי are Baʿal, Bêl, and Nabû, and that באבאר and באר סאף are Babylon and Borsippa, but the identity of תסאפאנא seems to have eluded him at first (ibid., fn):

> The word is difficult at the beginning because of the ת. The other consonants and association with Baʿal suggest that the word is Ṣapān, 'North'. Dr. Hughes has suggested that the combination ת and s represent the pronunciation of the sound ṣ. The vocalization is supported by the ṣapānu of the Amarna Letters (J. A. Knudtzon, Die El-Amarna Tafeln, Leipzig 1907 ff., No. 147, 1.10) and is what might be expected in Aramaic.

The connection between Baʿal and Ṣpn cannot be stressed too strongly, especially since this is not the only place in the text where the two co-occur. In Ugaritic mythology, Ṣpn is the name of the mountain where Baʿal's permanent residence was located (Sarna 1971:748, Van Zijl 1972:332–33). In neo-Assyrian texts, the mountain is called Baʾliṣapuna and Baʾilṣapuna (loc. cit.). The connection between Baʿal and Ṣpn was well known in Egypt, as the toponym בעל צפון (Ex 14: 2, 9) shows. Indeed, the deity בעל צפון is mentioned in many Egyptian sources (Albright 1950).

As for problem of the vocalization of תסאפאנא, Bowman's solution is unnecessary, because in the passages I have deciphered, there are many instances in which א stands for a high vowel or even ∅—a fact which raises serious questions about the function of א in this text.

It is clear, therefore, that the proposed identification of תסאפאנא with צפן is correct (Albright 1950:10), and that Aramaic צ is indeed rendered here by Demotic t + s. (It would be premature to discuss, at this stage, other probable and possible examples of this rendering in the text; however, it can be stated with some degree of certainty that Aramaic ס and ז are consistently rendered by Demotic s—not t + s.) This fits quite nicely with the use of Aramaic צ to render č and ǧ in Egyptian names from an earlier period, e.g., צחפמו (alongside שחפ(י)מו) = $č$ꜣ$y$-$ḥp$-$lm.w$ (Kornfeld 1978:28), פעצב = $pꜣ$-ʾꜣ-$čb$ (loc. cit.), חרוץ = $ḥr(w)$-$wǧꜣ$ (Grelot 1972:474), and possibly צחא = $ǧd$-$ḥr$ (ibid., 490–91, Donner and Röllig 1973:325, but cf. Kornfeld 1978:94). It seems clear, then, that Aramaic צ had an affricated realization in Egypt.

# 4. Canaanite

Phoenician **צ** was an affricate in the first century C.E. in North Africa, and may have already been an affricate in the Aegean area in the sixth-fifth centuries B.C.E. Indeed, Egyptian transcriptions of Canaanite **צ** seem to show that it was already an affricate in the second millennium B.C.E., and that **ס** and **ז** were also affricates at that time.

## 4.1 Canaanite — North Africa and Sardinia

For over 300 years, textbooks and dictionaries of Phoenician (Bochart 1646: 835, 837, 839, 845, 846, Gesenius 1837:385–86, Schröder 1869:11, Harris 1936:23, Jean and Hoftijzer 1965 s.v., Friedrich and Röllig 1970:19) have pointed out that a number of Punic plant names in Dioscorides' *De Materia Medica* (77 C.E.) and Apuleius Barbarus' *Herbarium* (probably compiled in the fifth century C.E.) begin with a transliteration of *חציר** 'herb'. The most suggestive of these names is the one quoted by Bochart (1646:845; cf. also 1675:651) from Apuleius: "Batrachium Punici Atzicurur appellant."[106] Unfortunately, this form (changed to *Atzikurur* by Gesenius 1837:386 and Schröder 1869:111) does not inspire confidence. The Bodleian manuscript from c. 1100 C.E., which represents a different recension, reads *Libii Atircorif* (Gunther 1925:39r). Now, the rendering of *חציר** with *ατιρ* is quite common in Diosco-

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[106] In the critical edition of Howald and Sigerist (1927:41), the passage reads:

Interpolationes (cf. Diosc. I 243, 9)
Flore auroso, quam Punici atzicurur appellant.

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rides (see immediately below), and since it is likely that the plant names in Apuleius are drawn from the same source as those in Dioscorides (Wellmann 1898:369)—indeed *atircoris* is suspiciously similar to Dioscorides' *ατιρτοπουρρις*—we must conclude that the rendering of **צ** with *tz* is due to textual corruption.

In Dioscorides, the plant-names in question are always labeled *αφροι* 'African', rather than 'Punic' or 'Libyan'. In general, they are quite corrupt, but somewhat less so in the magnificent Codex Constantinopolitanus (Austrian National Library Medicus Graecus 1),[107] prepared before 512 C.E. for the Byzantine princess Anicia Juliana. The following is a complete list of the examples found in that manuscript:[108]

> *αστειρ'χιλλοϑ'* (25r)
> *ατιειρ'κοκ'* (30r)
> *ατιερσισοει* (40r)
> *ασιρ'ρισοι* (41r)
> *ατειρ'νοιχλαμ'* (97v)
> *ατιρσιττη* (179r)
> *ατιερβιτριε* (271v)
> *ατιερ'περζοια* (274v)
> *αστιρ'κοκ'* (281v)
> *ατιρ'σμουνιμ'* (293r)
> *ατιρ'τοπουρ'ρις* (335v)

In addition to the above, Dioscorides gives the African name of *ὀξυλάπαϑον τὸ μέγα* as *αμουτιμ* (243v), a name which Blau (1873:522–23) reconstructed as *חמוצים** on the basis of Arabic حمّاض 'sorrel' derived from the root *ḥmḍ* 'sour'. Löw (1881:169–70, 402–3) confirmed this identification by showing that in several later sources (Asaf, Bar Bahlul, the Syriac translation of Galen), Arabic حمّاض, Aramaic חומעא and (Syriac) חמועתא—all cognates of Punic

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[107] Two facsimile editions exist: a black-and-white edition in *Codices Graeci et Latini photographice depicti*, vol. 10, and a dazzling color edition by Akademische Druck- u. Veraganstalt, Graz. I used the latter.

[108] For variant readings (mostly insignificant or inferior) and full discussion, cf. Löw 1881:401–12.

חמוץ*—are equated with Greek λάπαϑον. It should also be noted that on f. 245r of Codex Constantinopolitanus, a later hand has added the Arabic name حَمَاض next to the picture of ὀξυλάπαϑον τὸ μικρὸν[109] = African αμουζεγαραϕ 'little sorrel'.

Now it is true that Phoenician **צ** is usually rendered with Greek σ (Harris 1936:23) and that the two instances of **צ** rendered with τ—חציר and חמוץ—happen to be descended from PS *ṣ́ (ḍ). It is also true that Epigraphic South Arabian *ṣ́ (ḍ)* is rendered with Greek τ in Χατραμωτ- = Ḥḍrmt 'Hadhramut' (Olshausen 1879:573). But it is difficult to believe that *ṣ́ and *ṣ were still unmerged in late Punic. Moreover, the appearance of ασιρ alongside ατιρ makes the distinction between the renderings of **צ** < *ṣ and **צ** < *ṣ́ less clearcut.

The three-fold rendering of **צ** with τ, στ and σ leads most naturally to the conclusion that Punic **צ** was an affricate (Meister 1905–6:80–81). Most varieties of ancient Greek did not have a [t͡s], and the use of the digraphs τζ and τσ is extremely rare before the Byzantine period;[110] thus the closest approximations to [t͡s] would be σ, τ, στ (and ζ in those dialects in which it was realized [d͡z]). The first two are well-attested as renderings of affricates:

(1) σ = č
   (a) Σεββεννυτος = Egyptian Čb-ntr, Coptic (S) Čebenoute (Czermak 1931:253, Lexa 1949:27)
   (b) Αρτασινης = Old Persian *Ṛta-čanah- (Hinz 1975:209)

(2) τ = č
   (a) Ψαμειτιχος, etc. = Egyptian P-s-mčk, Aramaic פסמשך (Griffith 1909:201)
   (b) Τανις = Egyptian Ǧ'n.t, Coptic (S) Čaane (Olshausen 1879:569)

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[109] The last two words are erased and covered by a later addition, but they can be reconstructed with the help of Codex Neapolitanus (Löw 1881:402), the second (original) table of contents in Codex Constantinopolitanus, and traces of the erased words visible in the facsimile.

[110] I am indebted to Prof. D. Gershenson for pointing this out to me at a very early stage of this investigation; cf. also Cardona 1968:7.

(c) Τεῖσπης/Τίσπης = Old Persian Č-i-š-p-i-š (loc. cit., Schmitt 1967:121)
(d) Τιθραύστης = Old Iranian *Čiϑra-vahišta- (Hinz 1975:75)
(e) Οὐαταϕάρνης = Old Ossetic (Scytho-Sarmatian) *Wāča-farnah- (Abaev 1949:205)
(f) Ταλματ = Pecheneg Talmač (Cardona 1966:27, Golden 1970:366).

And the dual rendering ασιρ/ατιρ is matched by dual renderings like Σισιϕερνης/Τισσαϕερνης = Old Persian *Čiça-farnah- (Mayrhofer 1973:258), Σισοις/Τιτοι(ς) (later Τζιτζοι) = Egyptian Ǧ:ǧ:.yy, Coptic Čičōi (Ranke 1935 vol. 1:405, vol. 2:401; Preisigke 1922: 386), Σαμῶϋς/Ταμῶς = Egyptian Č:y-im.w, Aramaic צמו (Kornfeld 1978:28, 94), and Τίμουλα/Σίμυλλα = Sanskrit Čemūla (Stein 1937:1369, Gershenson 1978:168fn).

The rendering στ is less familiar, but it is attested in Μεστχῆτα (alongside Μεσχίθα) = Georgian Mçxeta (Altheim and Stiehl 1963:256) and Ταυγαστ = Turkic Tabġač (Cardona 1968:11). Moreover, it makes perfect sense as an attempt to capture both segments of an affricate without violating the phonotactic constraints of classical Greek.

The same type of evidence for affricated **צ** is provided by the special sign -S- which occurs in the "Latino-Libyan" inscriptions from Tripolitania. It has been pointed out that this sign is used as a ligature of Latin *st* (Reynolds 1955:128fn) and as a representation of Punic **צ** (Levi della Vida 1963:72), but the significance of this usage has been missed.[111] We suggest that, like Dioscorides' στ = **צ**, it should be seen as evidence for affricated **צ** in Punic.

Finally, Cardona (1968:11) has called attention to an etymology proposed by Wagner (1957:105–6) and modified by Friedrich (1957:223), according to which Sardinian *mittsa, mintsa* 'spring, fountain' (medieval *miza, mizza, mitza*)—attested only in southern dialects (i.e. those which were exposed to Punic) and lacking a

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[111] With the exception of Cardona (1968:10), whose work I learned of while reading the proofs of this monograph.

convincing Romance etymology—is to be derived from a Punic מוצא* in which the first vowel was realized [ü]. Friedrich (loc. cit.) compares Punic *mysehi* 'my going out' (Poenulus V, 931) and Hebrew מוצא מים (II Kings 2:21, etc.). The toponym המֹצָה (Josh 18:26) or מוצא (MSukkah 4:5), belonging to a Benjamite village located near a spring (cf. Avi-Yonah 1972:494), shows that the word in question could mean 'spring' even in the absence of the qualifier מים.

On the other hand, it must be kept in mind that the earliest source of Sardinian *ts* is a Vulgar Latin palatalization first attested in the third century C.E. (Sturtevant 1940:172),[112] whereas Carthaginian domination of Sardinia ended in the third century B.C.E. Hence, if *mittsa* is really from Punic, it must have come to Vulgar Latin or Sardinian (the Romance language of Sardinia) via Sardo (the aboriginal language of Sardinia). The dangers of relying upon such indirect renderings have already been pointed out.[113]

A second reason for not relying on this rendering is that it is uncontrolled. Even if Punic צ were a fricative, it might still be rendered with *tz* in Vulgar Latin or Old Sardinian (cf. the rendering of Arabic ص and س with Old Spanish *ç-z*[114]), because the only alternative, *s,* was slightly retroflex in the Romance languages of the Middle Ages (Adams 1975) and presumably in Vulgar Latin as well.

A third reason for not relying on the rendering in question is that, in the second Punic etymology proposed by Wagner (1975:104–5) and accepted by Friedrich (1957:222), Sardinian *ts* derives from Punic ש—not an affricate in anyone's book! Wagner is certainly right in connecting southern Sardinian *tsikkiria* 'dill' (Spanish *zicchiria*) with σικκιρια, the "African" name for ἄνηϑον 'dill' according to Dioscorides. The latter, however, cannot be connected with σίκερα = שכר 'beer', as Wagner, following Blau (1873:527), assumed,

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[112] However, the palatalization which produced [dʒ] is attested already in the first century B.C.E. (see fn. 69, above), so it seems likely that [ts] came into existence several centuries before the date when it first shows up in our inscriptions.

[113] See p. 9, above.

[114] See pp. 7–8, above.

because the word divider in Codex Constantinopolus' σικ᾽κιρια (28v) and comparison with σιχκιριαμ (ibid., 311r) and σιχ᾽χαμ (loc. cit. and 312r) show that σικκιρια is made up of *two* Punic words. The first of these, pace Löw (1881:410, s.v. σιχκιριαμ), is certainly cognate to Hebrew שׂיח 'bush, shrub', Syriac סיח, etc. In Punic, the initial sibilant would be ש. This shows clearly that a rendering with Sardinian *ts* is no guarantee of an affricated Vorlage.

## 4.2 Canaanite — Aegean Region

There is some evidence from the Aegean region that Phoenician צ—called *san* by the Greeks—had an affricated realization already in the sixth-fifth centuries B.C.E. The first to point this out was Karl Meister. Meister (1905–6:80–82) showed that the sign Ͷ, a simplified form of Ϻ (*san*), is used to write the affricated reflex of Proto-Greek *\*kw* in a fifth-century Arcadian inscription from Mantineia. To prove that this phone was in fact an affricate, Meister pointed to the form τζετρακάτιαι = τετρακάτιαι 'four hundred' in the Xuthias inscription (ibid., 82), which contains a number of Arcadian forms due to its having been copied (from a Laconian original) in Tegea (ibid., 77). To prove that Ͷ was in fact derived from the Phoenician צ-sign, he pointed to its occurrence between *pi* and *rho* (*qoppa* is missing) in the Etruscan abecedary from Caere (ibid., 80; cf. Roehl 1882:154). Meister (ibid., 80–81) concluded from this and from the Punic evidence presented above that:

> Das Ṣade hat also in der phönikischen Sprache einen Laut ausgedrückt, für den das ionische Alphabet kein passendes Zeichen hatte, und der spirantisch und doch zugleich den dentalen Explosivlauten verwandt gewesen sein muss.

Another sign which is often assumed to be derived from the Phoenician צ-sign is Ͳ (Larfeld 1914:225–27, Lejeune 1955:76fn). If this assumption could be proven, then the use of this sign in the sixth century B.C.E. and, alongside σσ, in the fifth century B.C.E. to represent the reflex of Early Proto-Greek *\*ky, \*khy,* and *\*tw* in

inscriptions from Hallicarnassus, Teos, Ephesus, Erythrae, Cyzicus, Naucratis, and Selinus could be adduced as evidence for affricated צ in Phoenician,[115] since that reflex was, in all likelihood, an affricate (Blass 1888:117fn, Hamp 1960:190, Wyatt 1968:11, Allen 1957–58:115, 1974:57). For the time being, however, it cannot.

As for Greek renderings of Phoenician צ, the most usual is the noncommittal σ (Olshausen 1879:561, Harris 1936:23). There are, however, several exceptions to this rule, all of which seem to point to an affricated realization of צ in the Aegean area. (It should be noted that the distinction between the latter and Phoenicia proper has been introduced here only in order to make the material more manageable, and that the decision to include evidence in this section rather than the next has, in some cases, been arbitrary.)

The first exception is the rendering of צ in βύσσος = ב(ו)ץ 'linen' and κασσία (alongside κασία and Ionic κασίη) = קצ(י)עה* 'cassia'. This rendering is discussed by Masson (1967:116) in rather general terms: "Enfin dans le cas de la sifflante emphatique *tsadé (ṣ),* le grec a fait un effort pour lui trouver une équivalence en utilisant un double σ." This notion can be made more precise. The σσ of most ancient Greek dialects comes mainly from a Late Proto-Greek phone (itself the reflex of Early Proto-Greek *ky, *khy,* and *tw*) which survived in East Ionia, for example, until the end of the sixth century B.C.E. (Buck 1933:140). As noted immediately above, this phone was, in all likelihood, an affricate. Another source of σσ in many dialects is Proto-Greek *ts* (Buck 1933:145). It is therefore possible that κασ(σ)ία (used already by Sappho at the end of the seventh century or the beginning of the sixth) and βύσσος (not attested until the fifth century but probably older) were actually pronounced [kat͡ʃia] and [but͡ʃos] at the time when they were borrowed.

A second exceptional rendering of צ which may be based on Aegean Phoenician is Τύρος (first attested in Herodotus, but, judging from the vowel, considerably older) alongside Philistus' Σῶρος (Fleming 1915:31) and later forms like Ζωρος, Σορ, and

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[115] I am indebted to Prof. D. Gershenson for calling this evidence to my attention.

Ζορ[116] (Harris 1936:142) = צר 'Tyre'. This rendering has more than once been interpreted as possibly pointing to an affricate at the beginning of the Phoenician name (Olshausen 1879:565 ff, Fraenkel 1888:53, Claassen 1971:302, Wild 1973:284–85) or some non-Semitic predecessor of the latter (Harris 1936:23 fn).[117] As shown above,[118] the use of Greek τ alongside σ to render foreign affricates is well attested.

Finally, we should mention Gershenson's recent suggestion (1978) that the name Ἀστέριον borne by two mythical figures with strong links to the ancient Cretan bull-motif (the Minotaur and the aboriginal Cretan king) is to be derived not from Greek ἀστήρ 'star, heavenly body' but rather from Phoenician חציר* 'grass' (Ἀστέριον[119] = 'grass-eating'). In support of this thesis, Gershenson adduces historical and mythological evidence plus a statement of Pausanius, the Greek traveler of the second century C.E., that the word ἀστέριος meant 'grass' in Argos (ibid., 169). Gershenson also points out that ἀστερ- is highly reminiscent of Dioscorides' ασtiρ (a form which is universally taken to be a rendering of חציר*[120]). If Gershenson's hypothesis is correct, then we have another example of στ being used to render Phoenician צ (cf. also the 'Latino-Libyan'

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[116] This is the form given by *Corpus Inscriptionum Graecarum* (8628), not Ζορ as stated in Wild 1973:282. Moreover, the date of the inscription is 521 C.E., not 521 B.C.E. as stated there.

[117] Others believe that this rendering goes back to a time when the initial consonant of the name was still *ṭ,* but this theory is rightly rejected by Wild (1973:282) on the grounds that the Ugaritic name of Tyre is Ṣr. It is hardly likely that Greek could have preserved an older form of the name than Ugaritic did. (Wild's other argument—that Hebrew צור 'rock, crag' is related to Mehri *sewwer* 'stone' rather than Aramaic טוּרָא 'mountain' and hence never had an initial *ṭ—is at best irrelevant, since, as Wild himself points out, the toponym צֹר (Akkadian Ṣur-ru) is to be connected, prima facie, not with צור but with צֹר 'flint'. The Arabic and Aramaic cognates of the latter— ظل and טנרא—make it difficult to deny that it once had an initial *ṭ.)

[118] Pp, 62–63

[119] As noted by Gershenson (ibid., 169), the ε in this word is due to contamination with Greek ἀστέριος.

[120] See pp. 60–61, above.

sign -S- discussed above[121]). This example, however, must be centuries earlier. According to Gershenson (ibid., 169fn), it goes back to the early part of the first millennium.

None of the evidence presented above is conclusive, since in each case alternative explanations are available. All we can say is that צ may well have had an affricated realization in the Phoenician spoken in the Aegean region in the middle of the first millennium B.C.E.

## 4.3 Canaanite — Canaan

It has frequently been pointed out (Albright 1928:232, Vilenchik 1930:91–92, Diakonoff 1965:20–21) that Canaanite loanwords and names in Egyptian seem to show that in the second millennium B.C.E. not only צ but also ס and ז were affricates. The evidence, collected by Burchardt (1910: I 47, 49; II 58–59, 61–63) and Helck (1971: 525–27, 536–37), shows צ rendered by ǧ, ס rendered by č, and ז rendered by ǧ or, less frequently, č.

According to this hypothesis, צ remained an affricate because of its glottalized articulation, while ס and ז turned into fricatives (Vilenchik 1930:92). The change in ס is reflected in Egyptian transcriptions: after c. 1000 B.C.E., ס is regularly rendered by Egyptian s rather than č (Albright 1928:232fn, Worrell 1934:48).

My initial reaction to this theory was one of extreme skepticism, but a review of the evidence has changed my mind. There is no reason to doubt that the Coptic reflexes of ǧ and č were palato-alveolar affricates ([tš] and [tṣ̌] in Bohairic).[122] Indeed, there is evidence that these phonetic values obtained already in early

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[121] P. 63.

[122] In both Bohairic and Sahidic, the sign which represents the reflex of ǧ is also used to represent the sequence t + š in causative verbs (Vergote 1945:39). In sixth and seventh century C.E. Theban documents, additional instances of t + š are represented by that sign (Worrell 1934:107). Furthermore, the reflexes of ǧ and č are represented by Arabic ج and ش respectively in a late Bohairic text in Arabic letters (Satzinger 1972:54), and the reflex of ǧ is represented by τζ in late Bohairic texts in Greek letters (Crum 1939a:250).

Demotic.[123] Nor is there any reason to doubt that ǧ and č were palatalized dental stops in Old Egyptian ([tʸ] and [tʸ]).[124] Thus the value of č in the second millennium could have been [tʸ], [tṣ̌], or even [tṣ̌ʸ], but in no case could it have been more similar to ס than was Egyptian s—unless ס was an affricate.

It should be added that there is nothing implausible about Vilenchik's assumption that the glottalization of צ made it immune to de-affrication. Parallels from other languages and a phonetic explanation will be supplied below.

Evidence for an affricated realization of Canaanite צ in a much later period (first century B.C.E.) has been adduced by Wild (1973:284fn) from Strabo's τὰ ξίμυρα[125] = Phoenician צמר* (cf. Hebrew צמר-, Neo-Assyrian Ṣi-mir-ra,[126] etc., and Amarna Ṣu-mur, Ṣu-mu-ra).

The use of ξ = κσ to render [tṣ] would make a good deal of sense, but is not, to my knowledge, attested elsewhere. (The sequence χσ is used in the Vatican Codex of the Septuagint (Lam 1:20, 21; 2:20, 21; 3:58, 61; 4:20, 21) to render שׁ.)

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[123] In Aramaic papyri of the fifth century B.C.E., Egyptian č is rendered sometimes by צ and sometimes by שׁ (Kornfeld 1978:28). If, as argued above (p. 59), the rendering with צ captures the manner of articulation, the rendering with שׁ must capture the place of articulation.

[124] The partial merger of ǧ and č with d and t respectively is first attested in this period (Vergote 1945:36).

[125] Wild gives the form Ξίμυρος, but Kramer (1852:291), the only variorum edition of book XVI (ii, 12) available at present, has no such variant.

[126] This is the most usual form. Other forms given by Parpola (1970:323–24) are Ṣi-me-er, Ṣi-me-ra, Ṣi-mi-ri, Ṣi-mir, (Ṣ)i-me-er-ra, and Ṣi-mir-aya.

# 5. Akkadian

Cuneiform *Z*-signs render or are rendered by affricates in Old Persian, Elamite, Hittite, and Hurrian, but all of these renderings are indirect and/or uncontrolled, and therefore can provide no support to claims that Akkadian *ṣ*, *z*, and/or *s* were affricates.

## 5.1 Akkadian — Iran

Much of the evidence which has been adduced for an affricated realization of *ṣ* in Akkadian comes from the inscription which gave rise to cuneiform studies in the first place—the trilingual inscription carved in the rock at Behistun (Bīsitūn, Bagistan), which commemorates the victories of Darius I over his enemies. Among the latter were two pretenders to the Babylonian throne who claimed to be Nebuchadnezzar, son of Nabonidus. As a result, this name appears several times in the inscription in its original Akkadian form (*Nabū₂-kudurri-uṣur*), in Old Persian transcription (*N-b-u-ku-d-r-č-r, N-b-u-ku-u-d-r-č-r*), and in New Elamite transcription (*Nab-ku-tur-ru-sir, Nab-ku-tur-ra-sir, Nab-ku-tur-sir*).

The fact that the Old Persian version of this name has a *č* rather than an *s* has often been adduced as evidence for an affricated realization of Akkadian *ṣ* (Olshausen 1879:568, Haupt 1890:262, Hüsing 1907:467, Vilenchik 1930:94, and Diakonoff 1980:10), but it is doubtful that we are dealing here with a direct rendering of the Akkadian name. One would have expected such a rendering to be something like *N-b-u-ku-u-du-u-ru-u-č-u-r*. The actually attested Old Persian form, normalized by all authorities as *Nabukudra-čara*,[127] agrees with Biblical Aramaic נְבוּכַדְנֶצַּר in several tell-tale

[127] Pace Cardona (1968:5).

respects: (1) *a* < *u* before final *r* (unless the *č*-sign stands here for /č/ rather than /ča/)—an *Aramaic* sound-change (Bauer and Leander 1927:42), (2) syncope of ante-pretonic vowel (unless the *d*-sign stands here for /da/ rather than /d/). It seems likely, therefore, that this name was transmitted to the Persians via Aramaic.

And even if it turns out that Iranian *Nabukudračara* is a direct rendering of Akkadian *Nabū-kudurri-uṣur* preserved by tradition within Iran from the time of Nebuchadnezzar II (whose wife was Iranian), it may be that the phonology of Akkadian in that late period was Aramaized and that we are still dealing with an Aramaic **צ**.

The Elamite versions of our name have also been adduced as evidence for an affricated realization of Akkadian *ṣ* (Vilenchik 1931:506, cf. Diakonoff 1965:20fn, 1980:10) as has the Elamite word for 'Egypt(ian)' (loc. cit.). The latter is attested in Achaemenid texts as *Mu-iz-ra, Mu-iz-ri, Mi-iz-ri-, Mu-iz-ri-ya, Mu-iz-za-ri-ya-, ⌈Mu⌉-iz-zi-ra-ya, Mu-sir-ya-, Mu-sir-ra-ya*, etc. (Hallock 1969:735); 'Nebuchadnezzar', as we have seen, is written *Nab-ku-tur-ru-sir, Nab-ku-tur-ra-sir*, and *Nab-ku-tur-sir*. These latter forms could be as late as Darius or as early as Nebuchadnezzar I, who conquered Elam in the late twelfth century B.C.E. The word for 'Egypt(ian)', on the other hand, must be ancient, and, indeed, forms like *Mu-iz-ra* which have no 'dual' suffix (even though they have no *nisba* suffix) show that the name comes from Akkadian *Muṣur/Muṣru/Miṣir* rather than Aramaic מצרין.

It is universally agreed that the *s* of *sir (ŠUD)* represents the same Elamite phoneme as the *z* of *za, zí*, and *iz*. And because *za, zí*, and *iz* are the normal Elamite equivalent of Old Persian *č* and *ǰ*, it has long been assumed that the phoneme in question was an affricate (Hüsing 1898:13–14, Vilenchik 1931:505, Paper 1955:30). Hallock's discovery of pairs like *ku-ti-iš/ku-iz, ku-ti-iš-šá/ku-iz-za*, and *ku-ti-iš-da/ku-iz-da* (1969:719) and his interpretation of them as variant spellings of /kutš/, etc. (ibid., 72) provided much-needed confirmation of this assumption.

Hallock's pairs seem, at first glance, to show that the only phonetic difference between the Elamite phoneme written with cunei-

form Š-signs and the one written with Z-signs (including *sir*) is the *t*-onset of the latter. If so, the use of the Z-signs rather than the Š-signs to render any foreign phoneme (including Akkadian ṣ) would seem to be an ideal controlled rendering[128]—a clear proof that the foreign phone was an affricate. The problem is that Elamite *za, zí,* and *iz* are used regularly to render not only Old Persian *č* and *j* but also *z* (Paper 1955:29, Mayrhofer 1973:88, Hinz 1975:276–79). Now it is true that most instances of Old Persian *z* developed from Proto-Indo-European *dz* and palatal stops (Kent 1953:49), but there is at least one example from PIE *s* and another which developed further into *š* (ibid., 42), so there is no reason to question the conventional description of this phoneme as a fricative rather than an affricate. It follows that the argument presented above about renderings with Elamite Z-signs was fallacious.

The fallacy in our argument was the assumption that Elamite *š* and *z* were identical except for manner of articulation—specifically, that they were both voiceless. The use of Elamite *z* to render Old Persian *z* shows that Vilenchik (1931:505) was right in taking the former to be voiced. That is probably the reason why Old Persian *č* is sometimes rendered by Elamite phonemes other than *z*, e.g. *Ti-iš-šá* (alongside *Zí-iš-šá-, Zí-šá-,* and *Zí-iš-še-*) = *\*Čiça-* (Hinz 1975: 72), *Ti-iš-šá-an-tams-ma* = *\*Čiça^n-ta^h ma-* (alongside *Zí-iš-šá-in-tak-ma* = *\*Č-i-ç-t-x-m*) (loc. cit., Mayrhofer 1973: 65, 240), *Še-is-be-iš* (alongside *Zí-iš-pi-iš* and *Za-iš-pi-iš-ši-*) = *Č-i-š-p-i-š* (Hinz 1975:70). These exceptions to the rule would be incomprehensible if Elamite *z* were really identical to the voiceless Old Persian *č*. Conversely, a voiced Elamite *z* is not excluded by Hallock's demonstration that a Z-sign may be equivalent to a *T*-sign plus an Š-sign, because Elamite orthography does not distinguish between voiced and voiceless consonants (Hallock 1969:70), and thus the phoneme which is represented by *T*-signs and is conventionally transcribed as *t* may have been voiced, and caused a following *š* to be voiced as well.

We conclude that a voiced Akkadian ṣ would be just as likely as an affricated one to be rendered by Elamite *z*.

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[128] See pp. 7–8, above.

## 5.2 Akkadian — Anatolia and Northern Mesopotamia

A number of scholars have argued that the manner in which the cuneiform syllabary was adapted to Hittite or Hurrian points to the existence of affricates other than ṣ in Akkadian.

In Hittite, the cuneiform Š-signs are used to represent *s,* while the Z-signs are used for *ts,* which comes from several sources: (a) Proto-Indo-European *t* before *ī* and *ē* (Sturtevant and Hahn 1951:60–61), and (b) clusters of *t* or *d* plus *s* (ibid., 25). This use of the Z-signs has been adduced as evidence for an affricated realization of Akkadian *s* by Albright (1946:317), of Akkadian *z* by Martinet (1953:71), Cohen (1968:1304), and Diakonoff (1980:10), and of both Akkadian *s* and *z* by Haudricourt (1951–54:37). All of these interpretations are possible, but they have an arbitrary quality. The Z-signs at Boghazköi represent ṣ, *z,* and *s* (Labat 1932:33–36), and there is no basis in the data for favoring one value over the others.

More fundamental objections to the abovementioned theories concern the type of rendering upon which they are based. First of all, it is not at all clear that the choice of Z-signs to represent Hittite *ts* qualifies as a controlled rendering.[129] Even if Akkadian *s* was not an affricate, it was still closer to Hittite *ts* than any other Akkadian phoneme (including *š*) was—assuming, of course, that our conventional descriptions of Hittite *ts* and Akkadian *š* are correct. (Whether or not the use of Š-signs to represent Hittite *s* undermines these conventional descriptions must be left for some future investigator.) Secondly, it is generally accepted that the rendering in question is indirect[130]—that the Hittite syllabary is based on the Hurrian syllabary, which in turn is based on the Old Akkadian syllabary (Speiser 1941:13–14, Sturtevant and Hahn 1951:2–3, Labat 1976:17). Thus, it is the Hurrian use of the cuneiform syllabary—not the Hittite use—which must be examined for insights into Akkadian phonology.

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[129] See pp. 7–8, above.
[130] See p. 9, above.

In syllabic Hurrian texts, the Z-signs are used to represent a phoneme which in alphabetic Hurrian texts from Ras Shamra is represented by z (Speiser 1941:30). Diakonoff's view (1965:21) that this phoneme was realized [ʤ] seems superior to Speiser's assumption that it was realized [z], in view of the Hittite borrowing of the Hurrian Z-signs to represent [ts]. Nonetheless, it is clear that, pace Diakonoff (loc. cit.), the Hurrian use of the Z-signs to represent [ʤ] does not prove that Akkadian z was an affricate, because even as a fricative it is still the Akkadian phoneme which is closest to [ʤ].

Finally, two Akkadian words in Hittite have been adduced by Cardona (1968:5–6) as evidence that Akkadian ṣ had an affricated realization: ḫazzizzi- 'hearing, intelligence' and ḫalzi- 'fortress'. The first of these is derived by Cardona, following Mayer (1960: 82, 83), from a non-existent ḫaṣīṣu. The real etymon, given by Mayer's source (Fronzaroli 1955:35), is ḫasīsu. Moreover, it is surprising that Cardona would deduce phonetic data from a rendering which he himself, following Fronzaroli (loc. cit.), admits may be indirect (cf. Hurrian ḫazzizzi-). As for ḫalzi-, its Akkadian etymon is correctly given as ḫalṣu, but according to CAD this is not a real Akkadian loanword in Hittite but rather an Akkadogram. As such, it has no evidentiary value at all.

# 6. Arabic

Arabic ص frequently renders č in loanwords and names from Iranian, Coptic, Turkic, Armenian, Sanskrit and Chinese, but this usage may have been borrowed from Syriac by the Christian Arabs of al-Ḥīra without regard for phonetic similarity. The opposite rendering is much rarer, attested only in Arabo-Sassanian coin legends of the seventh century C.E., where it may be a reverse rendering. The evidence of Νεστᾱνα = نصان in seventh-century Byzantine papyri is more difficult to explain away, but it is contradicted by Sībawaihi's description of ص.

The first to adduce Persian loanwords in Arabic as evidence for an affricated realization of ص was Olshausen (1879:570). Olshausen listed three loanwords in which Arabic ص renders Persian č:[131]

صنار = čanār 'plane tree'
صندل = čandal 'sandalwood'
صنج = čang 'harp'

Other examples mentioned in the literature[132] are:

دارصيني = dār-i čīnī 'cinnamon (lit. Chinese wood)' (Lagarde 1878:60–61)
صاروج = čārū < *čārūg 'plaster' (Siddiqi 1919:72)
صولجان = čūlgān 'polo mallet' (loc. cit.)
صاء = čāy 'tea' (Cardona 1968:12fn)
صرم = čarm 'hide' (Eilers 1971: 590, 607)

[131] I am indebted to Prof. J. Blau for bringing this problem to my attention.

[132] Two other Arabic words which have sometimes been considered Persian borrowings are جصّ 'gypsum' and صليب 'cross'. For a discussion of these words, see p. 55, above. Eilers (1971:585, 607) has also supplied Iranian etymologies for رصاص 'lead', صنوبر 'stone pine', and صهريج 'cistern', but they are not totally convincing.

Taken alone, these words do not mean very much, since they may have come to Arabic via an Aramaic dialect in which ץ was an affricate. This would not be anything out of the ordinary. Siddiqi's study (1919:75) of Persian loanwords in Old Arabic led him to conclude that "Persische Wörter machten ihren Weg ins Arabische grösstenteils durch das Aramäische." Nöldeke (1921:267) went even further, suggesting that Siddiqi's "grösstenteils" be amended to "zum allergrössten Teil." Kamil (1957:66) agreed that "most of the Persian words that occur in ancient Arabic passed through Syriac before they came to Arabia." Eilers (1971:594) has now[133] come to that conclusion, as well: "Direkte Übernahme aus dem Iranischen scheint verhältnismässig selten, obwohl dazu immer . . . Gelegenheit genug war. . . . Das Gros der älteren Lehnwörter entstammt dem Aramäischen."

There is other evidence, however, which cannot be dismissed so easily. According to Lambdin (1953:153), Arabic صوف البحر 'seaweed' is probably a borrowing of Coptic (S) čouf 'papyrus'. Here there is no special reason to suspect an indirect borrowing.

The same is true of the many proper nouns in which Arabic ص renders č. Most of these were collected by Ferrand (1913:9–10), who adduced them as evidence that Old Arabic ص was a palatal; subsequently, they were used by Vilenchik (1931:505) and Cardona (1968:11–12) to prove that ص was an affricate:

    قفص = *Kofič* (> *Kōč*), a tribe in the mountains of Kirmān
        in Iran (literally 'mountaineer')
    بلوص = *Baloč*, a tribe in the mountains of Kirmān in Iran
        (cf. Jaffrey 1967)
    صغان = *Čaγān*, a village in Marw-i Šāhigān in Central Asia
    صغانيان = *Čaγāniyān*, the district of the Čaγān-Rūd valley in
        Central Asia
    صول = *Čöl*, a Turkic tribe in the steppes of Dehistān in
        Central Asia (literally 'sand') (cf. Marquart 1901:51,
        73)

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[133] Eilers' earlier view (1960:203) was very different. I am indebted to Prof. G. Windfuhr for both of these references.

by the late seventh century, the favored form of the name is Νεστᾶνα
(Kraemer 1958:13). In his introduction to *Excavations at Nessana
III*, Kraemer (1958:13–14) gives the following explanation of this
fluctuation:

> The variants probably do not reflect indifference, carelessness or con-
> fusion, but are deliberate, and reveal various attempts to cope with the
> problem (still almost hopelessly unsolved) of representing Arabic
> sounds by Greek letters. As C. C. Torrey pointed out to me by letter,
> the Arabic documents (e.g. 60–67) give the name as Neṣṣān and σ, σσ
> and στ are different ways of reproducing the Arabic sibilant.

Strangely enough, when one turns from the introduction to the
texts themselves, the form نصان is nowhere to be found. Instead, we
find نصتان in text 60 (p. 180)—the only fully preserved attestation in
Kraemer's texts—and some hopelessly misprinted reconstructions
in texts 61 and 62 that bear no resemblance to the fragmentary
forms which I examined in the Pierpont Morgan Library.

This bizarre case of "Kraemer vs. Kraemer"—which misled
Naveh (1979:117fn) into thinking that there are *two* Arabic forms
of the name—is explained by the fact that the real editor of the
Arabic papyri in Kraemer 1958 is Florence Day. There is simply a
disagreement between her and Torrey about whether the form in
text 60 is to be read نصتان or نصان.

The experts I consulted are suspicious of the reading نصتان. Prof.
F. Rosenthal writes that "the Arabic may rather be *nṣ'n*, without
the strange *t*. (Why not *ṭ*?)" Prof. S. Hopkins assures me that
none of the Nessana papyri (including those in Jerusalem) has the
form نصتان. He points out that "Grohmann, the greatest Arabic
palaeographer . . . unhesitatingly points نصان and mentions no
other reading" in his edition of text 60 (1960:6) and in his *Arabic
Papyri from Ḥirbet el-Mird* (1963:x).

If so, we are forced to conclude that Torrey was right in taking στ
as a rendering of ص in this name. This rendering (alongside the
earlier σ = ص) is reminiscent of the rendering of Punic 𐤑 with
Greek στ (alongside σ and τ), which we interpreted above[136] as
pointing to an affricated realization of 𐤑.

[136] Pp. 62–63.

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All of this adds up to a surprisingly strong case for an affricated
realization of ص at the very beginning of the Islamic period. But
there is counter-evidence as well. If the Arab conquerors imported
an affricated ص into Iran, why does the Persian grammarian Sība-
waihi (1889:452), writing only 60–70 years after the fall of صغانیان =
*Čayāniyān* to the Muslims, know only three varieties of Arabic
ص—all of them fricative (as opposed to ج (*ǧ*), classified as a stop
on account of its initial segment)? Why does he not include
الصاد التی کالجیم "the ص which is [affricated] like ج (*ǧ*)" in his list of
approved but secondary pronunciations (alongside الصاد التی تکون
کالزای "the ص which is [voiced] like ز (*z*)") or in his list of
unapproved pronunciations (alongside الصاد التی کالسین "the ص
which is [unemphatic] like س (*s*)")?

Another reason to avoid jumping to conclusions about ص is that
its use in rendering *č* may have nothing to do with its pronuncia-
tion. To be sure, we have already ruled out the possibility that the
individual names in which this rendering appears came into Arabic
via Aramaic, but it is still possible to assume that the convention of
representing *č* with *ṣ* was borrowed from Aramaic, just as the much
later Syriac convention of representing Armenian *č* and *čʻ* with ܨ
(Margoliouth 1898:856) was borrowed ultimately, if not directly,
from Arabic.

Where and when did Arabs have sufficient contact with both
Aramaic and Persian to borrow this convention and sufficient pres-
tige to propagate it to the Arab tribes who were later to conquer
Iran and Central Asia? The Christian Arabs (*'Ibād*) of al-Ḥīra,
whose kings were vassals of Sassanian Persia, would seem to fit this
description extremely well. In the words of Hitti (1970:84):

> The Arabs of al-Ḥīrah spoke Arabic as a daily language but used
> Syriac in writing, just as the Nabateans and Palmyrenes spoke Arabic
> and wrote in Aramaic. The Christians in the lower valley of the Eu-
> phrates acted as the teachers of the heathen Arabs in reading, writing
> and religion. From al-Ḥīrah the beneficent influences spread into Ara-
> bia proper. . . . According to traditions preserved in Ibn Rustah it was
> from al-Ḥīrah that the Quraysh acquired the art of writing and the
> system of false belief. From this it is clear that Persian cultural influ-

ences likewise found their way into the Peninsula through the Lakhmid kingdom.

The Christians of al-Ḥira were Nestorians, and, as mentioned above,[137] the Nestorians of Central Asia used Syriac ܨ to represent *č* in Sogdian, New Persian, and Middle Turkic. Moreover, two Middle Persian orthographies using Aramaic ܨ to represent *č* originated in the general vicinity of al-Ḥira.[138] It can hardly be doubted that the Nestorians of al-Ḥira had the same convention. Thus, the cultural context is perfect for an orthographical borrowing of the type described above.

The extreme rarity of the opposite rendering—*č* for ص—is perhaps an argument in favor of this theory. At any rate, the examples of *č* for ص which *are* attested (in the Arabo-Sassanian coin legends) are not evidence *against* it. To understand why this is so, we must first examine another peculiar rendering attested in the Arabo-Sassanian coin legends.

In several coins, the name حجاج is written *Hakak* (Gaube 1973:36), where the *k*-sign represents /g/. The use of /g/ to render foreign [dž] would not be surprising in a language without a [dž] of its own, but Middle Persian does have a [dž] and it is represented not by the *k*-sign but by the *y*-sign. Now, a Persian would certainly have known this, but an Arab might easily have assumed that if /dž/ was the closest Arabic equivalent of Persian /g/, then /g/ was the closest Persian equivalent of Arabic /dž/. A rendering of this sort (referred to above[139] as a 'reverse' rendering) must be interpreted in the light of the phonemic inventory of the transcribed language rather than that of the transcribing language as is generally the case.

If it is true that *Hakak* is a reverse rendering, then we cannot exclude the possibility that *Bčra* is one as well. In that case, of course, *Bčra* could be viewed as simply another product of the borrowed orthographical convention which we have been discussing.

[137] Pp. 56–57.
[138] Pp. 52–53, above.
[139] Pp. 9–10.

After all is said and done, however, it must be admitted that we have not proved that such a borrowing *did* take place, but only that it *could* have taken place. Accordingly, it remains possible that the renderings of *č* with ص and ص with *č* are as significant as Olshausen and Vilenchik supposed them to be, and that, taken together with *Neστᾶva* = نصان, they show that Arabic ص had an affricated realization until the end of the seventh century C.E.

On the other hand, it is difficult to attach any importance to the fact that Arabic ز and ظ are realized as affricates in a bedouin dialect of inner Africa (Vilenchik 1930:93), given our ignorance of the history of that dialect. Similarly, the use of Arabic س to render Spanish [ts] (Corriente 1976:76) cannot be adduced as evidence that the former was an affricate, since Arabic س, even as conventionally described, is as close to [ts] as any other Arabic phoneme is.[140]

[140] In other words, this in an *un*controlled rendering; cf. pp. 7–8, above.

# 7. Ethiopian Semitic

Ethiopian ṣ has been an affricate (at least optionally)
since the third century C.E.

It has long been recognized that ṣ has an affricated variant in the
Semitic languages of Ethiopia. Ludolf (1702:2, 7) transcribed Geez ṣ
as t'z and compared it to various European affricates.

More recently Cohen (1939:27) has written:

En 1930 j'ai observé la prononciation de Abba Jérome Gabra Mousyé
qui possède ṣ dans sa langue maternelle, le tigrigna. . . . Dans la
majorité des cas j'ai noté s'; mais assez souvent j'ai noté une petite
occlusion initiale, donc 's'.

The existence of an affricated ṣ has been confirmed for Tigrinya
through the use of palatograms and kymograms (Palmer
1957:146fn) and for Amharic through the use of spectrograms
(Sumner 1957:6–7). In the latter language, possibly unlike the
former, the plosive segment represents a full half of the total dura-
tion of ṣ (Sumner 1957:7); indeed in most dialects, ungeminated ṣ
has gone all the way to ṭ (Strelcyn 1968).

As noted by Müller (1907:358) and Cardona (1968:8), the affri-
cated realization of Ethiopian ṣ is quite old—as old as the trilingual
inscription of 'Ezana, king of Aksum (fourth century C.E.), and the
Adulis monument (probably third century C.E.). 'Ezana's inscrip-
tion begins with a list of lands and peoples over which he ruled,
among them Greek Τιαμω = South Arabian Ṣymm (with mimation)
= Old Ethiopic Ṣym (Littmann 1913: 4, 9, 11). In the vocalized Geez
inscriptions of 'Ezana, the name appears as Ṣiyamo (Müller 1894:
39, 44). The Adulis monument, a royal Aksumite inscription pre-

# 8. Affricated Ṣade
## and the Triadic System of Semitic

Although Amharic ṣ is an affricate, native speakers perceive it as belonging to the sibilant triad, because, from a synchronic point of view, its initial occlusion is merely a by-product of its glottalic articulation. From a diachronic point of view, the intial occlusion may be either an innovation or a retention, but in either case it owes its *present* existence to its glottalic articulation, since glottalic fricatives are *personae non gratae* in the languages of the world. It is claimed that the same was true originally of the initial occlusion of צ in Hebrew, Aramaic, and Canaanite.

It is well known that the Semitic consonant system is largely a system of triads. Each triad consists of a voiced member, a voiceless member, and an emphatic member, e.g. *d-t-ṭ*. It is also well known that ṣ belongs to the sibilant triad: *z-s-ṣ*. Alternation of ṣ with z and s is well attested in the Semitic languages[143] and may even have existed in Proto-Semitic.[144]

Is it possible that the emphatic member of the sibilant triad was an affricate at the same time that the non-emphatic members were fricatives? Most scholars have assumed that the triads were incapable of accommodating differences in manner of articulation; however, Ethiopian Semitic shows that this assumption is only partially correct.

In the preceding section, it was pointed out that the Amharic reflex of PS ṣ is an affricate. The Amharic reflexes of PS s and z, on the other hand, are fricatives. This difference in manner of articula-

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[143] Cf. p. 44 above, and Steiner 1977:118.

[144] Possible examples are *ṣʿk/*zʿḳ 'shout' and *ṣġr/*zġr 'small'.

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tion has no structural consequences, however, for the simple reason that native speakers do not hear it. In the words of Ferguson (1976:66–67fn):

> Speakers of Amharic and foreign observers often differ in their recognition of the affricate value. To many foreign observers the affricate pronunciation seems frequent and in some sense more striking than the glottalization (witness the frequent use of *ts* and similar transcriptions). The native speaker, even when a trained phonetician, usually does not perceive any affrication and will reject a foreigner's pronunciation which is affricated but not glottalized.

This unusual state of affairs cries out for an explanation. How did it arise? What is the force which has countered the structural pressure to iron out differences in manner of articulation between members of the same triad?

The answer to the first question depends on one's view of the *z-s-ṣ* triad in Proto-Semitic. Those scholars who subscribe to the conventional view, that these three phonemes were sibilants, will assert that the affricated ṣ of Ethiopian Semitic represents an innovation. Those scholars who follow Vilenchik (1930:91–93, 1931), Cantineau ([1941] 1960:46),[145] and Martinet (1953: 68, 71) in seeing PS *z-s-ṣ* as affricates will hold that the affricated ṣ of Ethiopian Semitic is a retention.

The second question has been answered by Vilenchik (1930:92): "*dz* [= *ts'*] war nämlich dank dem Kehlkopfverschluss als Affrikata erhalten, während *ts* und *dz* bereits zu Zischlauten geworden waren."[146] This is a very plausible explanation which may be supported by parallels from other language families. Thus, Hoijer (1963:10) has shown that Proto-Athapaskan *ts* becomes a fricative in most Pacific Coast languages, whereas *ts'*, its glottalic correlate, is almost always preserved unchanged. Similarly, Trubetskoy (1926:29) points out that

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[145] As pointed out above (p. 5), Cantineau himself later retreated from this position.

[146] Actually, this explanation is given for Hebrew, but it is equally applicable to the Ethiopian situation.

das ç in allen awaroandischen Sprachen [Northeast Caucasian] als Affrikate bewahrt bleibt . . . und nirgends seinen Verschlussteil verliert, während die entsprechende Affrikate infraglottaler Exspiration mit "weit offener" Stimmritze c′ in den meisten awaroand. Sprachen zu s′ geworden ist. . . . Ebenso bleibt im Čamal [one of the Avaro-Andian languages under discussion] das ç̌ unverändert . . . während č′ in dieser Sprache zu š′ wird. . . .

Vilenchik's answer to this question presupposes that PS z-s-ṣ were affricates, but it can easily be adapted to the view that they were sibilants. There is good reason to suppose that the tendency of glottalic pressure initiation to prevent de-affrication (i.e. affricate > fricative) is matched by a tendency of glottalic pressure initiation to promote affrication (i.e., fricative > affricate).

The latter tendency may be seen, for example, in Tenango Otomi (spoken in Hidalgo, Mexico), where the following rules obtain (Blight and Pike 1976:52):

> A sequence in which a consonant is followed by a glottal stop is actualized as a voiceless glottalized contoid. . . . The voiceless alveolar and alveopalatal spirants /s, š/ have stop onsets when preceding /′/, unless the /′/, in turn, precedes a voiced continuant.

It can also be seen in Kabardian (Northwest Caucasian), where the glottalic fricative-lateral has developed an affricated variant (Henderson 1970:9, cf. Kuipers 1960:20).[147]

The two tendencies discussed above have a common goal, viz. the avoidance of glottalic pressure fricatives. Indeed, some scholars (Haupt 1890:261, Martinet 1953:71, and even Yushmanov 1925:57) have found the existence of such fricatives difficult to imagine. This position is a bit extreme. Glottalic pressure fricatives have been reported for a number of languages, most reliably perhaps for Kabardian (Catford 1942:16, Kuipers 1960:19, Henderson 1970:94),

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[147] We might also note Sapir's report (1938:255) that the glottalic variant of Kwakiutl s is an affricate, viz. ts′. Unfortunately, he neglected to mention that the 'sonantized' variant of s is also an affricate, viz. dz (Boas 1947:208), thus creating the false impression that there is a special connection between affrication and glottalic pressure initiation in that language.

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Tlingit (Sapir 1938:249, Boas 1947:208), and Mehri (Johnstone 1975). In the case of the latter language, I have been able to hear for myself, on a tape which Professor Johnstone was kind enough to provide,[148] that glottalic ṣ has no initial occlusion.

Nevertheless, glottalic pressure fricatives are certainly rare, as pointed out by Malmberg (1963:29) and Aoki (1970:66). My own investigation shows that, of the 205 languages represented in the Stanford University Phonology Archive,[149] seventy have glottalic pressure consonants, but only seven of these,[150] at most, have glottalic pressure fricatives (as compared to thirty-one which have glottalic pressure affricates). These figures suggest that there is a cross-linguistic tendency to discourage the formation and retention of glottalic pressure fricatives.

An additional manifestation of this tendency, pointed out by Dolgopolsky (1977:5), is the failure of פ and ת to follow כ and ב in undergoing post-vocalic spirantization:

> Glottalized stops practically never undergo lenition, which can be explained by the way they are formed. A glottalized ejective is a two-focused consonant. The two obstructions (one oral and the other glottal) produce a closed cavity in the mouth and in the throat, and the acoustic effect of ejective glottalization is obtained by raising air pressure in this closed cavity. . . . If the stop has been fricativized, the cavity is no longer closed, and raising air pressure in such a cavity requires *more* muscular effort than in the case of non-fricativized ejectives. Therefore *relaxation* of muscular effort, which causes lenition of voiced and/or voiceless non-glottalized consonants (as in Spanish, Celtic languages, Modern Greek, Berber dialects, Proto-

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[148] I would like to take this opportunity to thank him for making the tape available. Many thanks also to Prof. R. Hetzron for acting as a go-between.

[149] I am indebted to the Archive staff for sending me, free of charge, computer print-outs of the phonemic inventories of seventy languages with ejective consonants, and to Prof. D. Boyarin for telling me about this very valuable resource.

[150] Amharic, Walamo, Hausa, Kabardian, Dakota, Yuchi, and Mazuha. However, it is not at all clear from Levin 1964:5 and from Ballard 1975:64 that Dakota and Yuchi respectively have glottalic pressure fricatives. Aoki (1970:66) lists five additional languages.

Germanic, Danish, Amharic, in Hebrew and Aramaic בג ד כ פ ת,
etc.), does not produce lenition of glottalized stops.

Several hypotheses have been offered to explain this tendency. In
the passage quoted immediately above, Dolgopolsky argues that
glottalic pressure fricatives require more muscular effort than glot-
talic pressure stops and affricates. Henderson (1970:98) writes that
the affricated variant of the Kabardian glottalic fricative-lateral
"presumably arises because the supra-glottal constriction needed to
enclose and compress the body of air is so narrow that it may on
occasion involve complete closure." Malmberg (1963:29) holds that
glottalic pressure fricatives are "rare because of their reduced dura-
tion and audibility."

These facts suggest that the initial occlusion of ṣ in Ethiopian
Semitic is, from a synchronic point of view at least, merely a by-
product of glottalic pressure initiation, a secondary and perhaps
even accidental feature. That is no doubt the reason why speakers
of Amharic are not aware of its existence.

The importance of this conclusion for Semitic phonology cannot
be overestimated. If we have succeeded in showing that צ had an
affricated realization in Hebrew, Aramaic and Phoenician, then
that realization must inevitably be compared to—and explained in
the same way as—the affricated realization of ṣ in Ethiopian
Semitic, since, to the best of my knowledge, affricated ص is not
attested in any modern Arabic dialect, let alone classical Arabic.
Thus, the affricated realization of צ in various Northwest Semitic
languages points directly to glottalic pressure initiation—a feature
which many Semitists have argued for on other grounds.

The analogy of Ethiopian Semitic suggests that the initial occlu-
sion of צ in Northwest Semitic was, from a synchronic point of
view, a secondary feature. It was probably only in cases where
glottalic pressure initiation was lost (i.e. replaced by normal, pul-
monic, pressure initiation) that this secondary feature became, in
some instances, the primary—indeed the only—means of distin-
guishing צ from ס.[151]

[151] This proposal is quite similar to the hypothesis that a change from glottalic to
pulmonic pressure initiation brought about the phonologization of pharyngalization

From a *diachronic* point of view, on the other hand, the initial
occlusion of צ may or may not be primary, depending on whether
or not Egyptian transcriptions of Canaanite צ, ס, and ז prove that
these phonemes were affricates in the second millennium B.C.E. If
they do, then the affricated realization of צ is a retention, and we
must accept the Albright-Vilenchik theory that the glottalic articu-
lation of צ made it immune to the process which turned ס and ז into
affricates at the beginning of the first millennium B.C.E. If they do
not, then the affricated realization of צ is an innovation brought
about by its glottalic articulation.

In conclusion, it must be stressed that in arguing for the existence
of an affricated realization of צ in various Northwest Semitic lan-
guages, we are not denying the possibility that a fricative realization
existed as well. There is evidence for the latter realization in all of
them, though not as much as is generally believed. There is no
reason why these two realizations could not have co-existed in
Northwest Semitic as allophones and/or dialectal variants for long
periods of time, just as they apparently did in Ethiopian Semitic.

in Arabic. According to this hypothesis, pharyngal compression was originally an
automatic concomitant of glottalic pressure initiation (Martinet 1964:113–14, Cat-
ford 1974:26). We might add that the lack of aspiration which characterizes Arabic ط
and ق can also be interpreted as a remnant of glottalic initiation, since unaspirated
consonants are produced with a narrowed glottis (Catford 1977:114), which is fairly
close to the closed glottis which characterizes glottalic consonants. This similarity
explains why ancient Semitic ṭ and ḳ almost always render—and are rendered
by—Greek unaspirated τ and κ rather than θ and χ.

# 9. Conclusions

1. Hebrew צ was an affricate in the Middle Ages in virtually all non-arabophone areas for which we have evidence: Iran, southern Russia, Turkey, Greece, Italy, Bohemia, Germany, northern France, and most probably, southern France and northern Spain. In late Antiquity, it was an affricate in Egypt, and, though the evidence from Palestine is inconclusive, it stands to reason that it was an affricate (at least sometimes) there as well.

2. Syriac צ was an affricate in Iran and Central Asia and an affricate or an ejective in Georgia and Armenia, until it came under the influence of Arabic ص. The affricated realization of צ was also common by the third century C.E. in *Mesopotamian* dialects of Aramaic. Indeed, it was already in use in the Persian and Hellenistic periods, as is shown by *Nabukudračara* = נבוכדראצר (Iran, late sixth century), מתרצתר = *Miθračiθra* (Armenia?, fourth or third century), תסאפאאנא = צפנא (Egypt, second century).

3. Phoenician צ was an affricate in the first century C.E. in North Africa, and may have already been an affricate in the Aegean area in the sixth-fifth centuries B.C.E. Indeed, Egyptian transcriptions of Canaanite צ seem to show that it was already an affricate in the second millennium B.C.E., and that ס and ז were also affricates at that time.

4. Cuneiform *Z*-signs render or are rendered by affricates in Old Persian, Elamite, Hittite, and Hurrian, but all of these renderings are indirect and/or uncontrolled, and therefore can provide no support to claims that Akkadian ṣ, z, and/or s were affricates.

5. Arabic ص frequently renders č in loanwords and names from Iranian, Coptic, Turkic, Armenian, Sanskrit and Chinese, but this usage may have been borrowed from Syriac by the Christian Arabs of al-Ḥīra without regard for phonetic similarity. The opposite rendering is much rarer, attested only in Arabo-Sassanian coin legends of the seventh century C.E., where it may be a reverse rendering. The evidence of *Νεστᾶνα* = نصان in seventh-century Byzantine papyri is more difficult to explain away, but it is contradicted by Sibawaihi's description of ص.

6. Ethiopian ṣ has been an affricate (at least optionally) since the third century C.E.

7. Although Amharic ṣ is an affricate, native speakers perceive it as belonging to the sibilant triad, because, from a synchronic point of view, its initial occlusion is merely a by-product of its glottalic articulation. From a diachronic point of view, the initial occlusion may be either an innovation or a retention, but in either case it owes its *present* existence to its glottalic articulation, since glottalic fricatives are *personae non gratae* in the languages of the world. It is claimed that the same was true originally of the initial occlusion of צ in Hebrew, Aramaic, and Phoenician.

# Appendix A

The following chart shows how Jews in various countries solved the problem of representing *č* and *ǧ* with Hebrew letters. It is based on the usage of the earliest available sources:

|          | *č*          | *ǧ*       |
|----------|--------------|-----------|
| Spain    | 'ג           | 'ג , י    |
| France   | פ̌ , י        | י , ג     |
| Germany  | פ (later ש̆)  | י , ג     |
| Italy    | ץ            | י         |
| Crimea   | ץ            | ג̈        |
| Iran     | ץ (later ג)  | ץ , ר , ג |
| China    | ג            | —         |

The use of פ to represent *č* in France and Germany is explained by the fact that Romance *č* developed from and alternated with *c* which was phonetically equivalent to פ.

The use of ג to represent *ǧ* in France and Germany has a similar explanation, but in Spain, Crimea, and Iran, this usage, like the use of ג to represent *č* (which spread all the way to China[152]), is due to indirect Arabic influence.

The use of י to represent *ǧ* in Spain, France, and Italy is explained by the fact that, in those countries, י was itself pronounced [ǯ] in certain positions (Gumpertz 1943–44:143 ff).[153]

[152] As shown by a seventeenth-century ms. from Kaifeng (White 1966: part III, 80).

[153] Examples from Spain are rare, either because of the influence of the Judeo-Arabic orthography (in which *ǧ* is represented by 'ג) or because Spanish Jews restored the original pronunciation of י, viz. [y]. In addition to the example men-

The use of ' to represent *č* in the commentaries of Rashi (occasionally) and Kara (always)[154] is explained by the fact that in some areas of southern France, ' was pronounced [t͡š] in certain positions (Jochnowitz 1978:66–67). It seems likely, therefore, that Kara was born and/or educated in southern France.

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tioned by Gumpertz (ירונדי derived from Latin *Gerunda* or Arabic *Ǵerunda*), I have found יירברת = *Gerberto* (Miret y Sans and Schwab 1914:62), יוספריד = *Gaucefredus* (Schwab and Miret y Sans 1916a:576–77), and יאקא = *Jaca* (Baer 1929:753fn), יאקישיאה = *jaqesia* 'coins minted in Jaca' (ibid., 736fn).

[154] Cf. Ahrend 1978:122, keeping in mind, however, that in Kara's time, *ch* was still realized [t͡š].

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# Appendix B

The following is a list of manuscript readings for *le'azim* in David Ḳimḥi's *Sefer hašorašim* which contain either צ or etymological /t͡s/:

| | | Oxford 2391 | Padua 210 | Paris 1233 | Parma 2476 |
|---|---|---|---|---|---|
| 1) | בור | סיסטרנא | סיטרנא | סיסטרנא | סיטרנא |
| 2) | אזור של בהמה | סינגלא | סינגלא | סינגלא | סינגלא |
| 3) | סד | סיפש | סָיפָּש | סיפא | סיפש |
| 4) | אמן | קרדנסא | קרדנצא | קרדנצה | קרדנצא |
| 5) | ערבה | פרמנציר | פרמנצא | — | פרמנצא |
| 6) | צרפת | פרנצה[155] | פרנצה | פרנצא | פרנצא |
| 7) | קמט | מנצא[156] | רונצא | רונצא | רוצנ'[157] |
| 8) | עקרב | איגילנציר | איגילנציר | אגלנציר | אגילנצייר |
| 9) | אי | אגסא, אגאסא, אגאסש | — | אגסה | אגסין |
| 10) | חמט | לימסא | לימסא | למסא | לימצא |
| 11) | עשות | אצייר | אסייר | אסייר | אסייד |
| 12) | נחוש | אציירו | אצייר | אצייר | אצייר |
| 13) | פרס | פצייר | פצייר | פצייר | פצייר |
| 14) | חזזים | איליצש | איילוצרש | אלוצדש | אילוצדרש |
| 15) | s.v. שמח | — | מנצא | מנאצא | מנאצא |
| 16) | מחיר | — | פְּרֶץ | פרץ | פרץ |
| 17) | אשל | טמריץ | טמריץ | טמריץ | טמריץ |

[155] The ה in this form is slightly odd.

[156] The א in this form has a special line-final shape which appears elsewhere in the manuscript. The מ is identical to a sequence of ר plus ו, written too close together.

[157] The צ in this form is odd.

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| | | Oxford 2391 | Padua 210 | Paris 1233 | Parma 2476 |
|---|---|---|---|---|---|
| 18) | לולים | וריך | וידך | וידך | ויריך |
| 19) | דברות | רטך | רטך | רטך | רטין[158] |
| 20) | רפסודות | רטך | רטך | רטך | רטך |
| 21) | לוט | גלנט | גלנטך | גלנטך | גלנטך |
| 22) | משקרות | — | גיניטך | גונינטך | גינינטך[159] |
| 23) | מטפחות | גנטך | גנטך | גנטך | גנאך |
| 24) | מחלפות | פלוטש | פלוטש | פלוטש | פלוטש |
| 25) | שפתים | — | אנדך | אנדך | אנדך[159] |
| 26) | אלון | — | גלנך | גלנך | גלן |
| 27) | אפיקים | קורייוטש | קרינטך | קרוך | קורנך |
| 28) | מהפכת | צֵפּוּ | סיפש | סיפש | ציפש |
| 29) | זפת | פֵּז | פז | פז | פיך |
| 30) | ללאות | — | לאציש | לוציש | לאסיש[160] |
| 31) | קרא | פרדיך | פרדיז | פרדיס | פרדיס |
| 32) | רגבים | מושש | מוטש | מוטש | מטש[159] |
| 33) | שבלול | לימצא | לימסא | לימסא | למצא[161] |

[158] The sequence ךֿ, when written with no space in between, is identical to ך.
[159] I am indebted to Dr. B. Richler, acting director of the Institute of Microfilmed Hebrew Manuscripts, for supplying this reading
[160] The ס in this form is slightly irregular.
[161] The מ in this form is slightly irregular.

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