Two New Publications
In Nostratic Comparative Linguistics

Allan R. Bomhard
Charleston, SC, USA

Introduction

The year 2008 has been most fortunate for Nostratic comparative linguistics. Not only is it the twentieth anniversary of the First International Interdisciplinary Symposium on Language and Prehistory, two new, extremely important works have appeared. The first is Aharon Dolgopolsky's massive *Nostratic Dictionary* (containing approximately 3,000 putative Nostratic etymologies), which is available online at http://www.dspace.cam.ac.uk/handle/1810/196512 and at http://www.nostratic.ru/index.php?page=authors&id=4. The other is Allan R. Bomhard's *magnum opus* entitled *Reconstructing Proto-Nostratic: Comparative Phonology, Morphology, and Vocabulary* (two volumes, 1,820 pages), which has just been published by E. J. Brill (http://www.brill.nl/product_id30791.htm). Though there are similarities between these two works, such as a large number of common Nostratic etymologies, there are also some very deep differences. In this paper, we will be exploring these similarities and differences. Illič-Svityč's views will also be discussed.

Phonology

According to Dolgopolsky, Proto-Nostratic had a rich system of consonants and seven vowels. Dolgopolsky reconstructs the Proto-Nostratic consonant system as follows:

Stops and Affricates			Fricatives		Central		Lateral	
Voiced	Voiceless	Emphatic	Voiced	Voiceless	Approximants	Nasals	Sonants	Vibrants
b	p	ṗ			w	m		
d	t	ṭ				n	l	
ʒ	c	ç	z	s				
ǯ	č	č̣	ž	š		ṇ (= ɳ)	ḷ	r
ʑ	ć	ć̣	ź	ś	y	ń	Ĺ	ŕ
ʓ̂	ĉ	ĉ̣	ẑ	ŝ				
g	k	ḳ				ŋ		
ɡ	q	q̇	ɣ	χ				
				ħ (= ḥ)	ʕ			
	ʔ			h				

Symbols: ʒ = d͡z; c = t͡s; ǯ = d͡ž; č = t͡š; lateral obstruents ʃ̂, ĉ, ç̣, ẑ, ŝ = lateralized ʒ, c, ç, z, s; palatalized consonants ʒ́, ć, ḉ, ź, ś, ń, ĺ, ŕ = palatalized ʒ, c, ç, z, s, n, l, r; ɭ and ɳ (= ɳ) = cacuminal or retroflex l and n; uvular stops: ɢ (voiced), q (voiceless), q̇ ("emphatic"); uvular fricatives: χ = Spanish j, ɣ = Arabic غ /ġ/; epiglottal (pharyngeal) consonants: voiceless ħ (= ḥ = Arabic ح), voiced ʕ (= Arabic ع).

The system of vowels reconstructed by Dolgopolsky is identical to that previously reconstructed for Proto-Nostratic by Illič-Svityč:

			i				u	ü		
				e		o				
					a	ä				

Bomhard, on the other hand, reconstructs the Proto-Nostratic phonological system as follows:

Stops and Affricates:

p^h	t^h	c^h	$č^h$	t^{yh}	$t͡ɬ^h$	k^h	k^{wh}	q^h		
b	d	ʒ	ǯ	d^y	d͡ɮ (?)	g	g^w	ɢ		
p'	t'	c'	č'	t'^y	t͡ɬ'	k'	k'^w	q'	q'^w	ʔ

Fricatives:

		s	š	s^y					h	ħ
		z	ž (?)	z^y (?)						ʕ

Glides:

w				y						

Nasals and Liquids:

m	n			n^y		ŋ				
	l			l^y						
	r			r^y						

Vowels:

			i (~ e)			u (~ o)				
				e		o				
					(ə ~) a					

Also the sequences:

			iy (~ ey)			uy (~ oy)		ey	oy	(əy ~) ay
			iw (~ ew)			uw (~ ow)		ew	ow	(əw ~) aw

While the actual reconstruction of the Proto-Nostratic phonological system is fairly close, Dolgopolsky and Bomhard arrive at their reconstructions through two different sets of sound correspondences. Though Dolgopolsky mostly adheres to the sound correspondences originally established by Illič-Svityč, he does make some refinements based upon his own research. Illič-Svityč did not prepare a table of Nostratic sound correspondences himself, but the work was done for him by his friend Vladimir Dybo and included at the beginning of volume 1 (pp. 147—171) of Illič-Svityč's posthumous Nostratic Dictionary, *Опыт сравнения ностратических языков (семитохамитский, картвельский, индоевро-пейский, уральский, дравидийский, алтайский) [An Attempt at a Comparison of the Nostratic Languages (Hamito-Semitic, Kartvelian, Indo-European, Uralic, Dravidian, Altaic)]* (Moscow: Nauka [1971—]). The following table is taken from p. 147 of this dictionary and includes only the stops:

Nostratic Initial	Nostratic Medial	Afrasian (Afrasian)	Kartvelian	Indo-European	Uralic	Dravidian	Altaic
p‘-		p	p, ṗ	p	p-	p-	p‘-
	-p‘-	p	p	p	-pp- ~ -p-	-pp- ~ -p-	-p- ~ -b-
p-		p_1	p_1 (p ~ b)	p ~ b	p-	p_1- (p- ~ v-)	p-
	-p-	p_1	p_1 (p ~ b)	p ~ b	-p-	-pp- ~ -v-	-b-
b-		b	b	bh	p-	p-	b
	-b-	b	b	bh	w-	-ʔ- ~ -v-	-b-
ṭ-		ṭ (t)	ṭ	t	t-	t-	t‘-
	-ṭ-	ṭ (t)	ṭ	t	-tt- ~ -t-	-t(t)-	-t-
t-		t	t	d	t-	t-	t-
	-t-	t	t	d	-t-	-t(t)-	-d-
d-		d	d	dh	t-	t-	d-
	-d-	d	d	dh	-δ-	-ṭ(ṭ)-	-d-
ḳ-		q (k)	ḳ	$\hat{k}$, k, k^{u}	k-	k-	k‘-
	-ḳ-	q	ḳ	$\hat{k}$, k, k^{u}	-kk- ~ -k-	-k(k)-	-k- ~ -g-
k-		k	k	$\hat{g}$, g, g^{u}	k-	k-	k-
	-k-	k	k	$\hat{g}$, g, g^{u}	-k-	-k(k)-	-g-
g-		g	g	$\hat{g}$h, gh, g^{u}h	k	k-	g-
	-g-	g	g	$\hat{g}$h, gh, g^{u}h	-γ-	-:Ø-	-g-

Dolgopolsky proposes the following Nostratic sound correspondences (as above, only the stops are given):

Nost.	Sem.	Eg.	Berber	Kart.	IE	Uralic	Turk.	Mong.	Tung.	Drav.
*b-	*b	b	*b	*b	*b^{h}	*p	*b	*b	*b	*p
*-b-	*b	b	*b, *β	*b	*b^{h}	*w, ⊥_/*p	*b	*b	*b	*v
*p-	*p	f	*f	*p	*p, *b	*p	*b, *p‾	*φ, ?*b	*p	*p
*-p-	*p	f	*f	*p, ?*b	*p, *b	*p, ?*w	*Ø	*φ > *ɣ	*b	
*ṗ-	*p	p	*f	*p, *ṗ	*p	*p	*h > *Ø	*φ	*p	*p
*-ṗ-	*p	p	*f	*p, *ṗ	*p	*p	*pp	*p, *b	*b	*pp
*d-	*d	d	*d	*d	*d^{h}	*t	*ȷ	*d,	*d	*t

								_i/*ʒ́		
*-d-	*d	d	*d	*d	*d^h	*δ	*δ	*d	*d	ṭ/ṭṭ
*t-	*t	t	*t	*t	*d	*t	*t‿	*d, _i/*ʒ́	*d	*t
*-t-	*t	t	*t	*t	*d	*t	*t	*d	*d	*ṭ
*ṭ-	*ṭ, *t	d	*ḏ	*ṭ	*t	*t	*t‘	*t, _i/*ć	*t	*t
*-ṭ-	*ṭ, *t	d, t	*ḏ, *t	*ṭ	*t	*tt	*t‘	*t	*t	*tt/t
*g-	*g	g, ʒ	*g	*g	*g^h, *$\hat{g}^h$, *g^{wh}	*k	*k‿	*g, *ɡ	*g	*k
*-g-	*g	g, ʒ	*g	*g	*g^h, *$\hat{g}^h$, *g^{wh}	*γ	*g	*g, *ɡ, *γ, *ɣ	*g	*k
*k-	*k	k, c	*k, *g?	*k	*g, $\hat{g}$, *g^w	*k	*k‿	*k, *q	*k	*k
*-k-	*k	k, c		*k	*g, $\hat{g}$, *g^w	*k	*g, *k	*g, *ɡ, *γ, *ɣ	*g	*k
*ḳ-	*ḳ, *k	q	*ɣ̣, *k	*ḳ	*k, $\hat{k}$, *k^w	*k	*k‘, *k‿	*k, *q	*x	*k
*-ḳ-	*ḳ	ʿ?		*ɣ	*x, *x^w, [*x̂?]	*Ø	*Ø	*Ø	*Ø, ?*g	*Ø

Bomhard faults the above correspondences. He feels that Illič-Svityč and Dolgopolsky made a fundamental mistake in trying to compare the glottalized stops of Proto-Kartvelian and Proto-Afrasian with the traditional plain voiceless stops of Proto-Indo-European. According to Bomhard, their reconstruction would make the glottalized stops the least marked members in the Proto-Nostratic labial series and the most marked in the velar series. Such a reconstruction is thus in contradiction to typological evidence, according to which glottalized stops uniformly have the opposite frequency distribution (most marked in the labial series and least marked in the velar series). The reason that Illič-Svityč's and Dolgopolsky's reconstruction contradicts the typological evidence is as follows: Illič-Svityč posits glottalics and Dolgopolsky emphatics for Proto-Nostratic on the basis of a small number of seemingly solid examples in which glottalics in Proto-Afrasian and/or Proto-Kartvelian appear to correspond to traditional plain voiceless stops in Proto-Indo-European. On the basis of these examples, they assume that, *whenever there is a voiceless stop in the Proto-Indo-European examples they cite, a glottalic/emphatic is to be reconstructed for Proto-Nostratic, even when there are no glottalics in the corresponding Kartvelian and Afrasian forms*! This means that the Proto-Nostratic glottalics/emphatics have the same frequency distribution as the Proto-Indo-European plain voiceless stops in the systems proposed by Illič-Svityč and Dolgopolsky. Bomhard points out that this cannot possibly be correct. The main consequence of the mistaken comparison of the glottalized stops of Proto-Kartvelian and Proto-Afrasian with the traditional plain voiceless stops of Proto-Indo-European is that Illič-Svityč and Dolgopolsky are led to posit forms for Proto-Nostratic on the basis of theoretical considerations but for which there is absolutely no evidence in any of the Nostratic daughter languages. Bomhard notes that his criticisms do not necessarily imply that all of the etymologies proposed by Illič-Svityč and Dolgopolsky on the basis of the mistaken sound

correspondences are invalidated. In many cases, the etymologies are solid, but the Proto-Nostratic reconstructions simply need to be corrected. Other examples adduced by Illič-Svityč and Dolgopolsky admit alternative explanations, while still others are questionable from a semantic point of view and should be abandoned. Once the questionable examples are removed, there is an extremely small number (no more than a handful) left over that appear to support their position. However, compared to the massive counter-evidence advanced by Bomhard in which glottalized stops in Proto-Kartvelian and Proto-Afrasian correspond to similar sounds (the traditional plain voiced stops) in Proto-Indo-European, even these residual examples become suspect (they may be borrowings or simply false cognates). Finally, there are even some examples where the comparison of glottalized stops in Proto-Kartvelian and Proto-Afrasian with plain voiceless stops in Proto-Indo-European is correct. This occurs in the cases where two glottalics originally appeared in a Proto-Nostratic root: **C'VC'-*. Such roots are preserved without change in Proto-Kartvelian and Proto-Afrasian, while in Proto-Indo-European, they have been subject to a rule of regressive deglottalization: **C'VC'- > *CVC'-*. Needless to say, Dolgopolsky rejects Bomhard's criticism.

Bomhard proposes the following Nostratic sound correspondences (only the consonants are given):

Proto-Nostratic	Proto-IE	Proto-Kartvelian	Proto-Afrasian	Proto-Uralic	Proto-Dravidian	Proto-Altaic	Proto-Eskimo
b-	b^h-	b-	b-	p-	p-	b-	p-
-b-	-b^h-	-b-	-b-	-w-	-pp-/-vv-	-b-	-v-
p^h-	p^h-	p-	p-, f-	p-	p-	p^h-	p-
-p^h-	-p^h-	-p-	-p-, -f-	-p-	-pp-/-v-	-p^h-	-p(p)-
p'-	(p'-)	p'-	p'-			p-	
-p'-	(-p'-)	-p'-	-p'-			-p-	
d-	d^h-	d-	d-	t-	t-	d-	t-
-d-	-d^h-	-d-	-d-	-t-	-ṭ(ṭ)-	-d-	-ð-
t^h-	t^h-	t-	t-	t-	t-	t^h-	t-
-t^h-	-t^h-	-t-	-t-	-t(t)-	-tt-	-t^h-	-t(t)-
t'-	t'-	t'-	t'-	t-	t-	t-	t-
-t'-	-t'-	-t'-	-t'-	-t-	-t(t)-	-t-	-t-
d^y-	d^h-	ǯg-	d^y-	t^y-	c-	ǯ-	c-
-d^y-	-d^h-	-ǯg-	-d^y-	-t^y-	-c(c)-/-y-	-ǯ-/-d-	-c-
t^{yh}-	t^h-	čk-	t^y-	t^y-	c-	$č^h$-	c-
-t^{yh}-	-t^h-	-čk-	-t^y-	-t^y-	-c(c)-/-y-	-$č^h$-	-c(c)-
t'^{y}-	t'-	č'k'-	t'^{y}-	t^y-	c-	č-	c-
-t'^{y}-	-t'-	-č'k'-	-t'^{y}-	-t^yt^y-	-c(c)-/-y-	-č-	-c-
s^y-	s-	šk-	s^y-	s^y-	c-	s-	
-s^y-	-s-	-šk-	-s^y-	-s^y-	-c(c)-/-y-	-s-	

Proto-Nostratic	Proto-IE	Proto-Kartvelian	Proto-Afrasian	Proto-Uralic	Proto-Dravidian	Proto-Altaic	Proto-Eskimo
ʒ-	dʰ-	ʒ-	ʒ-	č-	c-	ǯ-	c-
-ʒ-	-dʰ-	-ʒ-	-ʒ-	-č-	-c(c)-	-ǯ-/-d-	-c-
cʰ-	tʰ-	c-	c-	č-	c-	čʰ-	c-
-cʰ-	-tʰ-	-c-	-c-	-č-	-c(c)-	-čʰ-	-c(c)-
c’-	t’-	c’-	c’-	č-	c-	č-	c-
-c’-	-t’-	-c’-	-c’-	-č-	-c(c)-	-č-	-c-
s-	s-	s-	s-	s-	c-	s-	
-s-	-s-	-s-	-s-	-s-	-c(c)-	-s-	
z-	s-	z-	z-	s-		z-	
-z-	-s-	-z-	-z-	-s-			
ǯ-	dʰ-	ǯ-	ʒ-	č-	c-	ǯ-	c-
-ǯ-	-dʰ-	-ǯ-	-ʒ-	-č-	-c(c)-	-ǯ-/-d-	-c-
čʰ-	tʰ-	č-	c-	č-	c-	čʰ-	c-
-čʰ-	-tʰ-	-č-	-c-	-č-	-c(c)-	-čʰ-	-c(c)-
č’-	t’-	č’-	c’-	č-	c-	č-	c-
-č’-	-t’-	-č’-	-c’-	-č-	-c(c)-	-č-	-c-
š-	s-	š-	s-	s-	c-	s-	
-š-	-s-	-š-	-s-	-s-	-c(c)-	-s-	
g-	gʰ-	g-	g-	k-	k-	g-	k- q-
-g-	-gʰ-	-g-	-g-	-x-	-k-	-g-	-γ-
kʰ-	kʰ-	k-	k-	k-	k-	kʰ-	k- q-
-kʰ-	-kʰ-	-k-	-k-	-k(k)-	-k(k)-	-kʰ-	-k(k)- -q(q)-
k’-	k’-	k’-	k’-	k-	k-	k-	k- q-
-k’-	-k’-	-k’-	-k’-	-k-	-k(k)-	-k-	-k- -q-
gʷ-	gʷʰ-	gw/u-	gʷ-	k-	k-	g-	k- q-
-gʷ-	-gʷʰ-	-gw/u-	-gʷ-	-x-	-k-	-g-	-γ-
kʷʰ-	kʷʰ-	kw/u-	kʷ-	k-	k-	kʰ-	k- q-
-kʷʰ-	-kʷʰ-	-kw/u-	-kʷ-	-k(k)-	-k(k)-	-kʰ-	-k(k)- -q(q)-
k’ʷ-	k’ʷ-	k’w/u-	k’ʷ-	k-	k-	k-	k- q-
-k’ʷ-	-k’ʷ-	-k’w/u-	-k’ʷ-	-k-	-k(k)-	-k-	-k- -q-
ɢ-	gʰ-	ɢ-	ɢ- (?)	k-	k-	g-	k- q-
-ɢ-	-gʰ-	-ɢ-	-ɢ- (?)	-x-	-k-	-g-	-γ-
qʰ-	kʰ-	q-	q- (?)	k-	k-	kʰ-	k- q-
-qʰ-	-kʰ-	-q-	-q- (?)	-k(k)-	-k(k)-	-kʰ-	-k(k)- -q(q)-
q’-	k’-	q’-	q’- (?)	k-	k-	k-	k- q-
-q’-	-k’-	-q’-	-q’- (?)	-k	-k(k)-	-k-	-k- -q-
q’ʷ-	k’ʷ-	q’w/u-	q’ʷ- (?)	k-	k-	k-	k- q-
-q’ʷ-	-k’ʷ-	-q’w/u-	-q’ʷ- (?)	-k-	-k(k)-	-k-	-k- -q-
t͡ɬʰ-	kʰ-	x-	t͡ɬ-	sʸ-	c-	š-	ɬ-
-t͡ɬʰ-	-kʰ-	-x-	-t͡ɬ-	-δ-	-k-		-ɬ-

Proto-Nostratic	Proto-IE	Proto-Kartvelian	Proto-Afrasian	Proto-Uralic	Proto-Dravidian	Proto-Altaic	Proto-Eskimo
t͡ɬ’-	k’-		t͡ɬ’-	δʸ-	t-		
-t͡ɬ’-	-k’-		-t͡ɬ’-	-δʸ-	-ṭ(ṭ)-		
ʕ-	ʕh͡-	Ø-	ʕ-	Ø-	Ø-	Ø-	Ø-
-ʕ-	-ʕh͡-	-Ø-	-ʕ-	-Ø-	-Ø-	-Ø-	-Ø-
ħ-	ħ͡h-	x-	ħ-	Ø-	Ø-	Ø-	Ø-
-ħ-	-ħ͡h-	-x-	-ħ-	-Ø-	-Ø-	-Ø-	-Ø-
ʔ-	ʔ-	Ø-	ʔ-	Ø-	Ø-	Ø-	Ø-
-ʔ-	-ʔ-	-Ø-	-ʔ-	-Ø-	-Ø-	-Ø-	-Ø-
h-	h-	Ø-	h-	Ø-	Ø-	Ø-	Ø-
-h-	-h-	-Ø-	-h-	-Ø-	-Ø-	-Ø-	-Ø-
y-	y-	y-/Ø-	y-	y-	y-/Ø-		y-
-y-	-y-		-y-	-y-	-y-	-y-	-y-
w-	w-	w-	w-	w-	v-/Ø-		v-
-w-	-w-	-w-	-w-	-w-	-v-		-v-
m-	m-	m-	m-	m-	m-	m-	m-
-m-	-m-	-m-	-m-	-m-	-m-	-m-	-m-
n-	n-	n-	n-	n-	n-	n-	n-
-n-	-n-	-n-	-n-	-n-	-n-/-n̲-	-n-	-n-
nʸ-	n-		n-	nʸ-	ñ-	nʸ-	
-nʸ-	-n-		-n-	-nʸ-	-ṇ-	-nʸ-	
-ŋ-	-n-		-n-	-ŋ-	-ṇ-	-ŋ-	-ŋ-
l-	l-	l-	l-	l-	l-	l-	
-l-	-l-	-l-	-l-	-l-	-l-	-l-	-l-
-lʸ-	-l-	-l-	-l-	-lʸ-	ḷ-	-lʸ-	
r-	-r-	-r-	-r-	r-			
-r-	-r-	-r-	-r-	-r-	-r-/-r̲-	-r-	-ʀ-
-rʸ-	-r-	-r-	-r-	-rʸ-	-r̤-	-rʸ-	

Bomhard also faults the vowel system reconstructed for Proto-Nostratic by Illič-Svityč and Dolgopolsky, though he feels that Dolgopolsky's system is a modest improvement over Illič-Svityč's.

Root Structure Patterning

According to Dolgopolsky, Proto-Nostratic roots (words) have the structure **CV* (auxiliary words and pronouns only), **CVCV*, **CVCCV*, **CV(C)CVCV*, and **CVCVCCV*.

Illič-Svityč agrees with Dolgopolsky (and Bomhard — see below) that grammatical words (pronominal stems and particles) were monosyllabic and had a **CV* structure, as in: **mi* object pronominal suffix; **ḳo* interrogative pronoun; **ja* relative pronoun. Nouns and verbs, however, were bisyllabic and had the following structures: (1) **CVCV* and (2) **CVCCV*. Illič-Svityč further notes: (1) consonant clusters could not occur in initial position and (2) only vowels could occur in final position (the last syllable of any root was always an open syllable). Dolgopolsky takes the same position, while Bomhard disagrees (see below). Illič-Svityč claims

that the original root structure patterning was best preserved in Uralic, less so in Dravidian and Altaic. Final vowels were partially lost in Altaic and totally lost in Dravidian. Root structure patterning in Proto-Indo-European, Proto-Kartvelian, and Proto-Afrasian underwent additional changes. Finally, Illič-Svityč maintains that derived stems were typically created by way of suffixation (Bomhard agrees).

Bomhard's views on root structure patterning in Proto-Nostratic may be stated as follows:

1. There were no initial vowels in Proto-Nostratic. Therefore, every root began with a consonant.
2. Originally, there were no initial consonant clusters either. Consequently, every root began with one and only one consonant. Medial clusters were permitted, however.
3. Two basic root types existed: (A) **CV* and (B) **CVC*, where *C* = any non-syllabic, and *V* = any vowel. Permissible root forms coincided exactly with these two syllable types.
4. A stem could either be identical with a root or it could consist of a root plus a single derivational morpheme added as a suffix to the root: **CVC*+*CV*-. Any consonant could serve as a suffix.
5. A stem could thus assume any one of the following shapes: (A) **CV*-, (B) **CVC*-, (C) **CVC*+*CV*-, or (D) **CVC*-*CVC*-. As in Proto-Altaic, the undifferentiated stems were real words in themselves and could be used without additional suffixes or grammatical endings. However, when so used, a vowel had to be added to the stem (unless the stem already ended in a vowel or in a semivowel, nasal, or liquid), thus: (A) **CV*- > **CV* (no change), (B) **CVC*- > **CVC*+**V**, (C) **CVC*-*CV*- > (no change), or (D) **CVC*-*CVC*- > **CVC*-*CVC*+**V**. Following Afrasian terminology, this vowel may be called a "terminal vowel" (TV). Not only did terminal vowels exist in Proto-Afrasian, they were also found in Dravidian, where they are called "enunciative vowels". As in Proto-Dravidian, the terminal vowel was only required in stems ending in obstruents, which could not occur in final position.

Bomhard notes that the original root structure patterning was maintained longer in Proto-Dravidian and Proto-Altaic than in the other branches, while the patterning found Proto-Indo-European, Proto-Kartvelian, and Proto-Afrasian is based upon slightly later developments. Bomhard claims that the root structure constraints found in Proto-Indo-European were an innovation, while the rule requiring that all words end in a vowel in Proto-Uralic was also an innovation and arose from the incorporation of the so-called "terminal vowel" into the stem. Bomhard further notes that reduplication was a widespread phenomenon.

On the basis of the evidence of Proto-Indo-European, Proto-Kartvelian, Proto-Afrasian, Proto-Dravidian, and Proto-Altaic, Bomhard assumes that there were three fundamental stem types in Proto-Nostratic: (A) verbal stems, (B) nominal/adjectival stems, and (C) pronominal and indeclinable stems. Some stems were exclusively nominal. In the majority of cases, however, both verbal stems and nominal stems could be built from the same root. In Proto-Nostratic, only pronominal and indeclinable stems could end in a vowel and had the structure **CV*; this is in agreement with Illič-Svityč's and Dolgopolsky's views. Verbal and nominal stems, on the other hand, had to end in a consonant, though, as noted above, when the undifferentiated stems were used as real words in themselves, a "terminal vowel" had to be added to the stem (but only when the stem ended in an obstruent). The terminal vowels were morphologically significant. Illič-Svityč and Dolgopolsky, on the other hand, do not recognize

terminal vowels. Instead, they reconstruct all stem types as ending in a vowel. Finally, Bomhard claims that adjectives did not exist as an independent grammatical category in Proto-Nostratic.

Morphology

Illič-Svityč never published his views on Nostratic morphology during his lifetime. However, his notes were gathered together and published by Vladimir Dybo in 2004 in the proceedings of the Pécs Centennial Conference, edited by Irén Hegedűs and Paul Sidwell. According to Illič-Svityč, Proto-Nostratic was an inflected language, apparently of the accusative type. It had both nouns and adjectives. Nominal declension was only available in the singular. Adjectives were declined only if they were substantivized and used independently. Illič-Svityč reconstructs the nominal paradigm as follows:

1. Nominative-accusative: *-*Ø* (zero); used for subject and unmarked object;
2. Marked object: *-*mʌ*; used if the object had to be topicalized in the sentence if the possibility existed for an ambiguous interpretation of the phrase and if a definite object was indicated;
3. Genitive (connective): *-*n*; possessive, etc.;
4. Instrumental: *-*tʌ*;
5. Local cases: lative *-*ḳa*; ablative *-*da*; and essive (locative) *-*n*.

Plurality was primarily indicated by a special marker: *-*t*. Illič-Svityč also reconstructs an oblique plural marker *-*j*, though he notes that this is less certain.

Illič-Svityč reconstructs the following types of personal pronouns:

1. Independent pronouns — specifically for indicating the pronominal subject;
2. Forms of the subject standing by a verb, primarily in a position preceding a noun;
3. Forms of the direct object of a verb, primarily in a position preceding a noun after the form of the subject;
4. Possessive forms next to nouns, primarily in a position after a noun.

Only the first and second person singular and plural pronouns were represented in these four types.

Illič-Svityč reconstructs the following stems for these types:

1. Independent pronouns; these stems could be extended by a facultative emphatic element *-*na*:

    1st person singular: *ʌke-na;
    2nd person singular: *ṭʌ-na;
    1st person plural: *naHe-na;
    2nd person plural: ?

2. Forms of the subject of verbs:

    1st singular: **a-*;
    2nd singular: **ta-*;
    1st plural: **na-*;
    2nd plural: ?

3. Forms of the direct object:

    1st singular: **mi-*;
    2nd singular: **k-*;
    1st plural: ?
    2nd plural: ?

4. Possessive forms:

    1st singular: **mi-*;
    2nd singular: **si-*;
    1st plural: **mʌn*;
    2nd plural: **sʌn*.

Illič-Svityč also posits the following demonstrative stems (fulfilling the function of 3rd person pronouns): **ta-*, **šä-*, **mu-*; the following interrogative stems: **ḳo* 'who?', **mi* 'what?'; and the following interrogative-relative stems: **ja*, **na* (?).

Illič-Svityč's views on verb morphology were not as well developed. He reconstructs an imperative as well as the following two opposing verb categories: (1) The first designated the action itself (transferred to the object in the case of transitive verbs). This was used with the subject pronoun and (in the case of transitive verbs) with the object pronoun. Here, the nominal direct object was the marked form, and the verb stem coincided with the infinitive. (2) The other verb form was a derived noun ending in **-a*. It indicated the state of the subject. If the verb were transitive, it contained only the prefix of the subject, and, in this case, the object noun could not be marked and thus always appeared in the subjective-objective case. Finally, Illič-Svityč suggests that there existed a temporal (or aspectual) distinction between these two basic verb categories, which was probably realized with the help of deictic particles of pronominal origin.

Dolgopolsky's views on Proto-Nostratic morphology differ from those of Illič-Svityč. According to Dolgopolsky, Proto-Nostratic was a highly analytic language. Dolgopolsky notes that Illič-Svityč, although recognizing the analytical status of many grammatical elements in Proto-Nostratic, still believed that some of them were agglutinated suffixes, specifically, the marker of oblique cases **-n* (= Dolgopolsky's **nu* 'of, from'), the formative of marked accusative **-m[ʌ]* (= Dolgopolsky's **mA*), the plural marker **-NA* (= Dolgopolsky's **n̄[ä]*, used to mark collectivity and plurality), and several others. Dolgopolsky points out that Illič-Svityč's position is unacceptable inasmuch as the Proto-Nostratic formants in question still preserve the following traces of their former analytic status: (1) mobility within a sentence (a feature of separate words rather than suffixes); (2) the fact that several particles are still analytic in some of

the Nostratic descendant languages; and (3) the fact that Proto-Nostratic etyma with grammatical and derivational function are sometimes identical with "autosemantic words".

Though Bomhard mostly agrees with Dolgopolsky that Proto-Nostratic was originally an analytic language, he maintains that, in its latest stage of development, several of the particles were beginning to develop into bound relational markers.

Bomhard devotes two chapters in his book to Proto-Nostratic morphology. In the first chapter (Chapter 16), he presents the evidence, while, in the following chapter (Chapter 17), he attempts a systematic reconstruction of Proto-Nostratic morphology.

Bomhard notes that the assumptions we make about the morphological and syntactical structure of a given proto-language profoundly affect the reconstructions that we propose. According to Bomhard, Proto-Nostratic was an active language. Now, active languages exhibit specific characteristics that set them apart from other morphological types. Therefore, the reconstructions that Bomhard posits conform with an active structure. However, Bomhard stresses that reconstructions should never be driven by theory alone. Rather, they must be fully consistent with the supporting data. Moreover, not only must our reconstructions be consistent with the supporting data, they must be consistent from a typological perspective as well, and they must be able to account for later developments in the descendant languages in as straightforward a manner as possible, without recourse to ad hoc rules. When reconstructions are driven by theory alone, the results can be disastrous.

Several scholars have recently presented persuasive arguments in favor of reconstructing an early phase of Proto-Indo-European as an active language. Proto-Afrasian is also assumed to have been an active language. In active languages, subjects of both transitive and intransitive verbs, when they are agents semantically, are treated identically for grammatical purposes, while non-agent subjects and direct objects are treated differently. An "agent" may be defined as the entity responsible for a particular action or the entity perceived to be the cause of an action.

As in Proto-Dravidian, Bomhard reconstructs *formative vowels* for Proto-Nostratic. He notes that it is curious that the formative vowel can take different shapes in Proto-Dravidian: **a*, **i*, or **u*. This seems to indicate to him that the different formative vowels must have had some sort of morphological significance at one point in time, even though this distinction has been lost in Dravidian. Not only must the formative vowels have had morphological significance, it is even probable that they had different significance depending upon whether a nominal or verbal stem was involved.

For verbal stems, the formative vowels may have been aspect markers, as follows: **a* marked imperfective, **i* marked perfective, and **u* marked subordinate.

For nominal stems, the situation is a bit more complicated. Bomhard reconstructs the following patterning for the earliest period of development in Proto-Nostratic: *-*i*/*-*u* was used to mark the subject in active constructions, while *-*a* was used to mark the direct object in active constructions as well as the subject in stative constructions. *-*a* was also used to mark the so-called "*status indeterminatus*".

According to Bomhard, the above patterning became disrupted in the latest stage of development in the Nostratic parent language, though it may have survived into Proto-Afrasian. In later Proto-Nostratic, the relational markers *-*ma* and *-*na* came to be used to mark the direct object in active constructions as well as the subject in stative constructions. Eventually, these relational markers became the primary means of marking the direct object in active constructions

or the subject in stative constructions, with the result that the older patterning became disrupted. Thus, in the latest stage of the Nostratic parent language, we find the following patterning:

1. *-*i*/*-*u*: used to mark the subject in active constructions:

   (A) *CVC + i/u
   (B) *CVC + i/u + CV_{DF}
   (C) *CVC-CVC + i/u

2. *-*a* ~ *-*ma*/*-*na*: used to mark the direct object in active constructions as well as the subject in stative constructions:

   (A) *CVC + a — plus *-*ma*/*-*na*: *CVC + a + ma/na
   (B) *CVC + a + CV_{DF} — plus *-*ma*/*-*na*: *CVC + a + $C(V)_{DF}$ + ma/na
   (C) *CVC-CVC + a — plus *-*ma*/*-*na*: *CVC-CVC + a + ma/na

   Abbreviations: DF = derivational formative (see above under Root Structure Patterning).

*-*ma*/*-*na* was the first case form (bound relational marker) to develop in Proto-Nostratic. The second was the genitive (in the sense 'belonging to') in *-*nu*. Indeed, these are the only two bound relational markers that can be confidently reconstructed for the latest period of Proto-Nostratic. Finally, it seems likely that unextended *-*a* remained as the indicator of the *status indeterminatus*.

Bomhard reconstructs the following pronominal, deictic, and anaphoric stems for Proto-Nostratic.

First Person Stems:

First person singular (active): **mi*
First person plural (inclusive, active): **ma*
First person (stative): **k^ha*
First person (stative): **Ha*
First person singular: **na*
First person plural (exclusive, active): **na*
First person (postnominal possessive/preverbal agentive): **ʔiya*

Second Person Stems:

Second person (active): **t^hi* (~ * *t^ha*)
Second person: **si* (perhaps originally possessive, as assumed by Illič-Svityč)
Second person: **ni*

Anaphoric and Deictic Stems:

Pronominal base of unclear deictic function: **-gi*/**-ge*
Deictic particle: (A) **ʔa-*/**ʔə-* (distant), (B) **ʔi-*/**ʔe-* (proximate), and (C) **ʔu-*/**ʔo-* (intermediate)
Deictic particle: (A) **k^ha-*/**k^hə-* (proximate), (B) **k^hu-*/**k^ho-* (distant), and (C) **k^hi-*/**k^he-* (intermediate)
Deictic particle: (A) **t^ha-*/**t^hə-* (proximate), (B) **t^hu-*/**t^ho-* (distant), and (C) **t^hi-*/**t^he-* (intermediate)
Deictic particle: **ša-*/**šə-*
Anaphoric pronoun stem: **si-*/**se-*
Anaphoric pronoun stem: **na-*, **ni-*
Deictic particle: **t^{yh}a-* 'that over there, that yonder (not very far)'

Interrogative, Relative, and Indefinite Stems:

Relative: **k^{wh}i-*/**k^{wh}e-*; interrogative: **k^{wh}a-*/**k^{wh}ə-*
Interrogative-relative stem: **ʔay-*, **ʔya-*
Interrogative: **mi-*; relative: **ma-*
Interrogative-relative: **na*
Indefinite: **ma-*, **mi-*, **mu-*
Indefinite: **d^yi-*/**d^ye-* 'this one, that one'

According to Bomhard, the overall structure of nominals (nouns and adjectives) was as follows:

Root + formative vowel (+ derivational suffix)
(+ relational marker) (+ number marker)

A stem could consist of the unextended root or the root extended by a single derivational suffix (preceded, as indicated above, by a formative vowel). As has already been noted, it is necessary to recognize two distinct periods of development in Proto-Nostratic. In the earliest phase of development, the relational markers listed below were free relational morphemes (postpositional particles). In later Proto-Nostratic, however, at least two of them were well on their way to becoming bound relational morphemes (case suffixes).

As already noted, only the following two bound relational markers (case suffixes) can be confidently reconstructed for the latest period of Proto-Nostratic: (A) direct object **-ma*, **-na* and (B) genitive **-nu*. Other case relationships were expressed by postpositions (see below for a complete list), some of which developed into bound case morphemes in the individual daughter languages.

According to Bomhard, adjectives did not exist as a separate grammatical category in Proto-Nostratic. They were differentiated from nouns mainly by syntactical means — "adjectives" preceded the nouns they modified. Moreover, they did not agree with the head noun in number or gender.

Bomhard reconstructs the following relational markers, dual and plural markers, and derivational suffixes for Proto-Nostratic:

Relational markers:

Direct object: **-ma*
Direct object: **-na*
Possessive: **-nu* 'belonging to'
Possessive: **-lV* 'belonging to'
Dative: **-na* 'to, for'
Directive: **-k^ha* 'direction to or towards, motion to or towards'
Directive(-locative): **-ri* 'direction to or towards, motion to or towards (?)'
Locative: **-ni* 'the place in, on, or at which something exists or occurs'
Locative, instrumental-comitative: **-ma* 'in, from, with'
Locative: **-bi* 'in addition to, together with'
Locative: **-i* 'near to, near by' (?)
Comitative-locative: **-da* 'together with'
Oblique: **-t^ha*

Dual and plural markers:

Dual: **k^hi(-nV)*
Plural: **-t^ha*
Plural: **-ri*
Plural: **-k^hu*
Plural (Eurasiatic only): **-sV*
Plural/collective: **-la*
Plural: **-nV*

Note: plurality could also be expressed by reduplication of the root.

Derivational suffixes:

Nominalizer: **-ri*/**-re*
Nominalizer: **-ma*
Nominalizer: **-ya*
Nominalizer: **-t^ha*
Nominalizer: **-na*
Nominalizer: **-la*
Nominalizer: **-k^ha*
Nominalizer: **-k'a*

According to Bomhard, verbs fell into two types of construction in Proto-Nostratic: (1) active and (2) stative. It appears that Illič-Svityč was developing a similar view, though, as noted above, he did not work out a systematic reconstruction of Proto-Nostratic verb

morphology. In active constructions, which usually involved transitive verbs, the grammatical subject of the verb represented the agent performing the action, and the direct object represented the patient, or recipient, of the action. Stative constructions, on the other hand, expressed a state of affairs, rather than an event. According to Bomhard, verbs expressed aspectual contrasts rather than temporal contrasts. Tense relates the time of the situation referred to to some other time, usually to the moment of speaking, while aspect marks the duration or type of temporal activity denoted by the verb. Bomhard sets up two aspects for Proto-Nostratic: (A) perfective (past) and (B) imperfective (non-past). Bomhard also reconstructs the following moods: (A) indicative; (B) imperative; (C) conditional; (D) hortatory-precative; (E) inchoative; and (F) prohibitive. There was also a causative construction.

The overall structure of verbs was as follows:

Root + formative vowel (+ derivational suffix)
(+ mood marker) (+ person marker) (+ number marker)

A stem could consist of the unextended root or the root extended by a single derivational suffix (preceded, as indicated above, by a formative vowel). The position of the number marker seems to have been flexible — it could also be placed before the person marker. Gender was not marked. There were no prefixes in Proto-Nostratic.

Stative verbs were indifferent to number and, therefore, had no plural forms. They also had a special set of person markers different from those of active verbs:

	Active person markers		Stative person markers
	Singular	Plural	
1p.	**mi*	**ma* (inclusive) (+ plural marker)	**k^ha*
	**na*	**na* (exclusive) (+ plural marker)	**Ha*
2p.	**$ṯ^h$i*	**t^hi* (+ plural marker)	**$ṯ^h$i*
	**si*		
	**ni*		
3p.	**ša-/*šə-*	**ša-/*šə-* (+ plural marker)	**Ø*
	**na-*, **ni-*	**na-*, **ni-* (+ plural marker)	

Morphologically, verbs could be either finite or non-finite. Finite forms could be marked for aspect, mood, person, and number, but not for gender or tense. Non-finite forms exhibited nominal inflection. In unmarked word order, the verb occupied the end position of a clause.

The following non-finite verb forms are widespread enough in the Nostratic daughter languages to guarantee their common origin:

Participle: **-na*
Participle: **-t^ha*
Gerundive-participle: **-la*

Bomhard also reconstructs the following mood markers and other finite verb forms:

Mood markers:

Imperative: **-k^ha*, **-k^hi*, **-k^hu*
Conditional: **-ba*
Hortatory-precative: **-li*
Inchoative: **-na*

Note: the bare stem could also serve as imperative.

Other finite verb forms:

Causative: **-sV*

Bomhard also reconstructs the following negative/prohibitive particles and indeclinables for Proto-Nostratic:

Negative particles: **na*, **ni*, **nu*
Prohibitive particle: **ma(ʔ)*
Negative particle: **ʔal-* (~ **ʔəl-*)
Negative particle: **li* (~ **le*) (?)
Negative particle: **ʔe*
Post-positional intensifying and conjoining particle: **k^{wh}a-* (~ **k^{wh}ə-*)
Particle: **k^{wh}ay-* 'when, as, though, also'
Particle: **ħar^y-* 'or; with, and; then, therefore'
Particle: **ʔin-* (~ **ʔen-*), **(-)ni* 'in, into, towards, besides, moreover'
Sentence particle: **wa* (~ **wə*) 'and, also, but; like, as'
Coordinating conjunction: **ʔaw-*, **ʔwa-* (~ **ʔwə-*) 'or'

Note: The *CVC-* root structure patterning of some of these forms points to their ultimate nominal or verbal origin. For example, the negative particle **ʔal-* (~ **ʔəl-*) must ultimately have been a negative verb stem meaning 'to be not so-and-so', as in its Dravidian derivatives, while **ʔin-* (~ **ʔen-*), **(-)ni* was originally a nominal stem meaning 'place, location' (Dolgopolsky assumes the same origin for this form).

Syntax

Both Dolgopolsky and Bomhard agree that Proto-Nostratic syntax was head-final, or left-branching, that is, dependents preceded their heads according to the so-called "rectum-regens rule". In other words, "adverbs" preceded verbs, "adjectives" preceded nouns, and auxiliaries followed the main verb, though it must be emphasized here that, at least according to Bomhard, adjectives did not exist as an independent grammatical category in Proto-Nostratic. The unmarked syntactical order was Subject + Object + Verb (SOV).

Vocabulary

In an article published in 1965, Illič-Svityč listed 607 possible common Nostratic roots, but only 378 have been published to date in his posthumous comparative Nostratic dictionary (1971—). Since the early 1960s, Dolgopolsky has been gathering material for a new Nostratic dictionary and currently has material to support approximately 3,000 common Nostratic roots. His *Nostratic Dictionary* has just (2008) been made available online by the McDonald Institute at: http://www.dspace.cam.ac.uk/handle/1810/196512. In the joint monograph by Bomhard and Kerns (1994), 601 common Nostratic roots were listed, and additional Nostratic roots were proposed by Bomhard in several subsequent works. Volume 2 of Bomhard's most recent work (2008) is devoted to comparative vocabulary. In it, Bomhard supplies a great deal of material to support the reconstruction of 843 common Nostratic roots.

There are many common Nostratic etymologies in the works of Bomhard, Illič-Svityč, and Dolgopolsky, though the fact that Bomhard sets up a different set of sound correspondences means that he proposes etymologies that would not be acceptable to Dolgopolsky and Illič-Svityč. At the same time, a number of the etymologies proposed by these two scholars are rejected by Bomhard, not only because the correspondences on which they are based are not acceptable to him but also because of semantic problems.

Notable among the lexical items uncovered by Illič-Svityč, Dolgopolsky, and Bomhard is a solid core of common pronominal stems. These are listed above in the section dealing with morphology. These pronominal stems have particular importance, since pronouns, being among the most stable elements of a language, are a particularly strong indicator of genetic relationship.

References

Bomhard, Allan R.

2008 *Reconstructing Proto-Nostratic: Comparative Phonology, Morphology, and Vocabulary*. 2 volumes, 1,820 pp. Leiden and Boston, MA: E. J. Brill.

Bomhard, Allan R., and John C. Kerns

1994 *The Nostratic Macrofamily: A Study in Distant Linguistic Relationship*. Berlin, New York, NY, and Amsterdam: Mouton de Gruyter.

Dolgopolsky, Aharon

1984 "On Personal Pronouns in the Nostratic Languages", in: Otto Gschwantler, Károly Rédei, and Hermann Reichert (eds.), *Linguistica et Philologica. Gedenkschrift für Björn Collinder (1894—1983) [Linguistics and Philology. Memorial Volume for Björn Collinder (1894—1983)]*. Vienna: Wilhelm Braumüller, pp. 65—112.

1994 "Nostratic", in: R. E. Asher (ed.), *The Encyclopedia of Language and Linguistics*. Oxford: Pergamon Press, volume 5, p. 2838.

1998 *The Nostratic Hypothesis and Linguistic Paleontology*. Cambridge: The McDonald Institute for Archaeological Research.

2008 *Nostratic Dictionary*. Published online by The McDonald Institute at: http://www.dspace.cam.ac.uk/handle/1810/196512. Also available online at: http://www.nostratic.ru/index.php?page=authors&id=4.

Dybo, Vladimir
2004 "On Illič-Svityč's Study 'Basic Features of the Proto-Language of the Nostratic Language Family'," in: Irén Hegedűs and Paul Sidwell (eds.), *Nostratic Centennial Conference: The Pécs Papers*. Pécs: Lingua Franca Group, pp. 115—119.

Illič-Svityč, Vladislav M.
1965 "Материалы к сравнительному словарю ностратических языков (индоевропейский, алтайский, уральский, дравидский, картвельский, семитохамитский)" [Materials for a Comparative Dictionary of the Nostratic Languages (Indo-European, Altaic, Uralic, Dravidian, Kartvelian, Hamito-Semitic)], *Этимология* (*Ėtimologija*) 1965:321—373.
1971— *Опыт сравнения ностратических языков (семитохамитский, картвельский, индоевропейский, уральский, дравидийский, алтайский) [An Attempt at a Comparison of the Nostratic Languages (Hamito-Semitic, Kartvelian, Indo-European, Uralic, Dravidian, Altaic)]*. 3 volumes (1971, 1976, 1984). Moscow: Nauka.

Published in *Mother Tongue* XIII (2008), pp. 171—189.