A CRITICAL INVESTIGATION OF CLICK SYMBOLISM

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Click material from its first recorded instance 333 years ago (Herbert 1634:16) to our days can be divided into two major groups:

(1) Books, manuscripts and/or notes containing a description of the click phenomenon without introducing any click symbolism.

(2) Material giving click descriptions and introducing an original, hitherto unknown, click symbolism, or using and/or modifying and/or adding to existing transcription symbols.

In group one, we find a number of European travellers who give an account of the click phenomenon which to them was a puzzle, intranscribable it appears (cf. Figure 1).

Johann Jacob Saar (1662) and O. Dapper (1668) compare the click sounds with what they call clucks made by turkeys. Dapper thinks that the Hottentots suffer from a speech "handicap and unheard-of stammering" (1668:276). Whether Dapper had read Saar's publication or not is immaterial. What is remarkable is that he compares the unknown click sounds to phenomena he knows. Thus his comparison with turkey clucks, the snapping of a thumb or a speech defect. He experiences the fact that what is normal phonetic usage in one language may constitute a disorder in another and vice versa.

Three more authors who handle the phenomenon of clicks in a similar vein, describing but refraining from transcribing clicks, are G.F. Wrede (1664) (see Grey's Library), ten Rhyne (1686) and Bövingh (1714). Although ten Rhyne gives short lists of words in his text, he does not insert any click symbols. Bövingh states that "there are many *linguales* and *gutturales* in their (Hottentot) language which cause the smacking". (1714:15). But he does not attempt to demonstrate this in any kind of transcription.

Among the authors, describing but not transcribing click phenomena, one figure stands out, a scientist of different calibre from the preceding travel writers: E.F.F. Chladni in 1824. Chladni appears to be the first author to give a precise and concise description of the major characteristics of click sounds (1824:211), i.e.:

PUBLICATIONS & MANUSCRIPTS ON CLICKS

			B	Ɀ	D	A	A_	P	R	
	1971	Proposed-phonetic-Symbols	Bilabial	Labio-Dental	Dental	Alveolar	Lateral Alveolar	(Pre) Palatal	Retroflex	Symbols of undefined sounds
		and their Definitions	Bilabial	Labio-Dental	Dental	Alveolar	Lateral Alveolar	(Pre) Palatal	Retroflex	
		Historical Definitions	Labial	Denti-labial	Dental	Palatal	Lateral	Cerebral Guttural (Cacuminal)	Retroflex	
		Orthography	··	ꝛ	·	’	;	!	///	

N.B.: In the following items from "Sir George Grey's Library" in Capetown are preceded by (G).

			B	Ɀ	D	A	A_	P	R	
(G)	1638	Sir Th. Herbert				i s t				
	1662	J.J. Saar								
(G)	1664	G.F. Wrede								
	1668	O. Dapper								
	1686	W. ten Rhyne								
	1691	N. Witsen	inconsistent:			T, t’, k’				
	1695	J.G. Grevenbroek	inconsistent:			Ch, Kh, Nh, nh				
	1714	J.G. Böving (Bövingh)								
(G)	1717	G.G. Leibnitz				t?		k?		
(G)	1719	P. Kolb				∩	or	~		
(G)	1782	A. Sparman				t’				
	1790	F. le Vaillant			ʌ	△	∨			
(G)	1798	C.P. Thunberg			a		ʌ	a’		
(G)	1801	J. Barrow						∪		
(G)	1905	van der Kemp								
	1808	H. Lichtenstein			t’1	t’3	t’2			
	1824	E.F.F. Chladni								
(G)	1824	Kafir Books			c	(qc)	x	q		
(G)	1824	W.G. Burchell			’	‘‘	’			
(G)	1829	J.L. Ebner				—				
(G)	1830	J.H. Schmelen			··	∩	’	/		
	1838	Sir J. Alexander			’	’	’	’		
	1841	C.F. Wuras			··	’	’	’		

Figure 1.

(1) their independence of the breath movement;

(2) the suction or smack approach;

(3) the phenomenon of rarefaction of air; and

(4) the rarefaction seal release.

The first author to introduce an original click symbolism is Sir Thomas Herbert (1638) (see Herbert 1634) who, for any click he thought he detected, put an onomatopoeic 'ist'. Witsen (1691) uses three letters of the Latin alphabet *T*, *t'* and *k'* to denote frontal, medial and posterior clicks respectively. In a rather similar and equally inconsistent manner, Grevenbroek (1695) uses *Ch*, *kh*, *Nh* and *nh* to describe clicks he heard. Leibnitz (1717) (see Grey's Library) employs only two symbols for what he

heard, *viz. t*? and *k*?. Kolb (1719) is the first one to use diacritics ∩ and/or ~, but puts them rather randomly. Sparman's (1782) (see Grey's Library) *t'* could be a copy of Witsen's but may also be a reinvention. Le Vaillant's three symbols are original in every way; the v is newly introduced, so is the upsidedowness of the same letter, also symbol △ is an innovation. It is noteworthy that each of the Le Vaillant symbols refers to a click of specific formation, i.e., dental, alveolar (historic term: palatal) and lateral-alveolar: ʌ, △, v, respectively. 60 years later Wuras (1850) (see Wuras 1919-20) uses a 'v' symbol for the alveolar click like Tindall later on in 1857, whereas Vollmer (1854) (see Vollmer 1959) employs the 'v' for a dental click.

Thunberg (1798) (see Grey's Library) makes use of the letters 'a' for dental, 'A' for lateral alveolar; and he is the first one to create a symbol, *viz.* 'á', for the pre-palatal (historically up to our days vaguely termed: guttural, cerebral or cacuminal) click.

Barrow's (1801) (see Grey's Library) two diacritics — and ∪ which stand for dental and pre-palatal respectively are different from Kolb's diacritics. In addition to using the Sparman *t'*, Lichtenstein (1808) (see Lichtenstein 1815) numbers his symbols so that *t'1*, *t'3*, *t'2*, stand for dental, alveolar and lateral alveolar respectively. Later on Motteno (1857) (see Grey's Library) and Passarge (1907) use a similar numerals approach.

In 1824, the Kafir books (see Grey's Library) introduce the letters *c*, *x*, *q*, phonetic symbols in those days, but accepted orthography today. Burchell (1824) is the first one to introduce commata symbols in variation for clicks but unfortunately with a lack of precision. Ebner (1829) (see Grey's Library) uses one of Barrow's diacritics, —, in a vague and inconsistent manner. Schmelen (1830) (see Schmelen 1934), on the other hand, employs the same diacritic exclusively for the dental click. His Kolb-type symbol ∩ stands for the alveolar, his Burchell comma, *viz.* ', for lateral alveolar. The symbol of his invention, /, represents the pre-palatal click.

Alexander (1838), Wuras (1841) (cf. Figure 2) and Knudsen (1842-46) employ commata and/or punctuation marks to denote four different clicks. In 1850, Wuras (see Wuras 1919-20) switches to the letters *f*, *v*, *y*, *q*, for his click description, whereas in 1857-1858 he doubles up his symbolism with miniature geometric forms and an original symbol for the bilabial and labiodental clicks. Wuras, indeed, is the first author to transcribe the two labial clicks. The symbol for the labio-dental is the same as the one for the bilabial except for a 90 degree turn to the right. This is the first and, as far as I know, the only case of a 90 degree switch of a phonetic symbol, whereas the upsidedowness or 180 degree turn, introduced by Le Vaillant, later on, should become popular with certain phoneticians. Wuras is also the first one to use a mirror image for a different sound shade of the original symbol (1857-1858). Sir H. Johnston (1919) designs two pairs of mirror symbols. An incomplete but striking symbolism is the one invented by Schreuder (1850); antiquely viewed, his symbols remind one of Germanic runes, modern-electrically interpreted one gets the message of high voltage warnings.

			B	℗	D	ʌ	ʌ̱	P	R	undefined
	1842	H.C. Knudsen			.	:	.	..		
	1846	H.C. Knudsen			.	:	.	,		
	1846	J. Ayliff			c		x	q		
(G)	1848	C.F. Wuras			.	:	ɔ	c		
	1850	Wuras (Appleyard)			ſ	v	ч	q		
	1850	J.W. Appleyard			c		x	q		
	1850	H.P.S. Schreuder			ϟ		ϟ	ϟ̉		
(G)	1853	R. Lepsius			c	ɔ	x	ʏ		
(G)	1854	R. Lepsius				´		'		
	1855	R. Lepsius			(c)	(qc)	(x)	'(q)		
(G)	1854	F.H. Vollmer			\	x	ч	≁'		
	1856	Rhenish Mission				:		≁		
	1857	J.G. Wallmann				´		:		
	1857	H. Tindall			c	v	x	q		
(G)	1857	W.H.J. Bleek			c	ɔ	x	q		
(G)	1857	J.O. Rivers			ts	kt	kl	gkt		
(G)	1857	Motteno			1	4	2	3		
	1857-8	C.F. Wuras	↘	ꜩ	ⵎ (Ɫ)	ⴷ (Γ)	ⵏ (ᴗ)	⌒ (ᴗ)		
	1859	F.H. Vollmer				:		≁		
	1862	W.H.G. Bleek				:		:		
	1870	C. Callaway			c	:	x	q		
	1870	T. Hahn				:		:		
	1870	T. Hahn			Ð đ	Ǥ ǥ	Ⱡ ⱡ	ⱥ ⱥ́		
	1881	T. Hahn				:		:		
	1881	G. Bertin*	ʃ			´		:		.
	1888	I.P.A.: Table of phonetic symbols								
	1889	J.G. Kronlein				:		:		
	1891	H. Schinz		l		:		:		
	1894	G.H. Schils			δ	τ	æ	ɩ		
	1905	Ch. Sacleux	φ		δ	τ	x	ɩ		
	1905	W. Planert				::		:		
	1906	P. Passy			ʇˆ		cˆ	kˆ		
	1907	L. Schultze	:			:		:		
	1907	Anthropos-Script	d		ʃ	c	ɣ			
	1907	S. Passarge			1	2	4	3		
	1907	D. Jones	pˀʒ		ʇˀʒ		(ʇ)ʃ(c)	cˀʒ	xˀʒ	
	1909	C. Meinhof				:		:		

* Apart from the Labial Click and all original Lepsius symbols Bertin uses 3 self-invented clicks and undefined [ʃ].

Figure 2.

In 1854, Lepsius (see Lepsius 1863) Introduces a transcription which was subsequently modified by the Rhenish Mission (see personal correspondence), by Wallmann (1857) and then fixated by Bleek in 1862. To This script of vertical strokes, Vedder (1910) adds the / / / which he call a second literal click, which later on

becomes the symbol of the retroflex click (cf. Stopa 1935). To the Bleek system, Miss L.C. Lloyd (1911) (see Lloyd and Bleek 1911) adds the bilabial click, ⊙, of her invention. A labio-dental click symbol is designed in the strokes pattern, ∥, by Stopa in 1935 and another one, synthesized of the existing, viz. ⊙/, in 1939 (see Stopa 1935, 1939).

Theophilus Hahn, in his Ph. D thesis on the Nama language (1870), proposes to replace the Lepsius-Bleek symbols by those of his own creation, viz. Ð đ, Ǥ ǥ, Ⱡ ⱡ, Ⱥ ⱥ, obviously based on an idea similar to the one I had, when (in 1958) I designed my click symbolism of capital letters. Hahn's symbols, however, have poor mnemonic value and his đ, ⱡ, ⱥ, look like monetary symbols.

G.H. Schils (1894) introduces Greek letters for clicks; Sacleux (1905) and E. Nigmann (1909) make their modifications of this system. (cf Figure 2). Meinhof (1910/24) (see Meinhof 1928) introduces numerous diacritics to describe a quasi-unlimited number of click variants. Panconcelli-Calzia (1914) simplifies some of Meinhof's diacritics. Doke (1923) uses basic transcriptions in existence but adds numerous symbols of his invention.

Stopa (1935 and 1939) gives the most complete symbolism for the transcription of the entire click spectrum. This type of symbolism was justified proposed for the official spelling by D.M. Beach (1938) and Pienaar in 1938.

After having reviewed the click symbolism well beyond the year of the inauguration of the I.P.A. in 1886, the vital question is: what click symbolism does the Association offer? (Cf. Figure 2.) My tabulation of Publications and Manuscripts on Clicks shows for the year 1888: "I.P.A.: Table of Phonetic Symbols", but a complete blank where clicks are concerned. The next date in my tabulation which mentions the I.P.A. is the year 1921 (cf. Figure 3): L'Écriture Phonétique Internationale. As the Secretary of the I.P.A., Professor A.C. Gimson (see personal correspondence) told me in a letter[1] the four click symbols published in the French-language article were of Daniel Jones's invention. The other two publications of the I.P.A. which to this day in each re-print show click symbols under the heading of "Other Letters" and "Other Sounds" are The Principles of the International Phonetic Association (1949, 1970) and Le Maître Phonétique (July-Dec., 1969) respectively.

The following chart (figure 4) may clarify the incompleteness and weakness of the I.P.A. symbolism.

[1] "Paul Passy recognized the need for symbols for the various clicks in the July-August 1914 number of Le Maître Phonétique and asked for suggestions. This number, however, was the last for some years because of the war. During this interval, Professor Daniel Jones himself invented the four symbols, in consultation with Paul Passy and they were all four printed in the pamphlet L'Écriture Phonétique Internationale published in 1921. The symbols were thus introduced in a somewhat unusual way, without the explicit consent of the whole Council of the Association. They were, however, generally accepted from then on, and, as you say, were used by Professor Doke in 1923. I have consulted Professor Jones in this matter, and he accepts responsibility for their invention, during the period of the First World War".

		B	Ᵽ	D	A	A.	P	R	undefined
1910	C. Meinhof	p̂		î	t̂	l̂	ĵ		
1910	H. Vedder			/	/	// & ///	!		ǂ
1911	L.C. Lloyd	⊙		/	/	//	!		
1913	W.L. Thompson						!		
1914	G. Panconcelli-Calzia	(p̂)		î	t̂	l̂	ĵ		
1919	Sir H.H. Johnston			ʆ	ƅ	ʔ	ҁ		
1919 20	W. Bourquin	▭		⫪	⌐	⊓	∩		
	quoting: C.F. Wuras			⫫	⌐	⊔	∪		
1921	I.P.A.: "L'écriture phoné-tique internationale"			ʇ		ʖ	ʗ		χ
	unvoiced			ʇ ʇh		ʖ ʖh	ʗ ʗh		
1923	C.M. Doke voiced			⅄		ⱳ	ᶃ		
	nasal			ŋ		ⱨ	ⱦ		
1924	C. Meinhof oral	p̂		t̂	t̂	l̂	ĵ		K̂'
	nasal			n̂	n̂	n̂	n̂		
1925	C.M. Doke unvoiced			ʇ	↓	ʖ	ʗ	ψ	
	voiced			⅄	↑	ⱳ	ᶃ	ʌ	
	nasal			ŋ	℗	ⱨ	ⱦ	ⱨ	
1935	R. Stopa	◎	◎	/!	/	// & /ᵠ/	!	///	ǂ & /ᵠ/
1939	R. Stopa	⊙	⊙/	//	/	// & //	!	///	
1938	D.M. Beach proposed spelling			/ (c)	/ (z)	// (x)	! (q)		
1938	P. Pienaar proposed orthography	⊙		/	/	//	!	///	
1958	G.H. Breckwoldt unvoiced	B	Ᵽ	D	A	A.	P	R	
	voiced	B̌	Ᵽ̌	Ď	Ǎ	Ǎ.	P̌	Ř	
1971	nasal	B̃	Ᵽ̃	D̃	Ã	Ã.	P̃	R̃	

Figure 3.

1971: proposed symbols and definitions	B Bilab.	Ᵽ Labio-dental	D Dental	A Alveol.	A. Later. alveol.	P (Pre) palatal	R Retroflex	undefined
1921 "L'Écriture" Kafir symb.			ʇ c		ʖ x	ʗ q		χ
1949/70 Principles Zulu symb.			ʇ c		ʖ x	ʗ q		χ velar (sic!)
1969 "Maitre" Zulu symb.			ʇ c		ʖ x	ʗ q		

Figure 4.

For understandable reasons, I decided to use the most complete phonetic click symbolism, i.e., the Lepsius-Bleek-Lloyd one. In 1958, I realized that my students had always found this system of impersonal strokes difficult and confusing and that after all the characters were entirely out of place within the I.P.A. alphabet. I therefore resorted to Latin capital letters which the I.P.A. does not mind to incorporate in its phonetic system. Each symbol I introduced consists of the first letter of the adjective giving the physiological definition of the particular click sound.

My transcription obviously complies with items (1), (2), (3) of *The Principles of the I.P.A.*, as printed on the inside of the booklet's cover. With regard to (4): "international usage", in this case, will comprise the meaning of "the same internationally used physiological definition of each click sound". Item (5) postulates: "The new letters should be suggestive of the sounds they represent, by their resemblance to the old ones." Realizing that there is no old orthography of clicks, no symbols could be more suggestive of the sounds they represent than my proposed ones, because they are in themselves the minimal, i.e., one-letter, abbreviation of the sound defini-tion itself. For this reason, as numerous student tests have shown, my symbolism is instantly memorized and rules out confusion; seeing the symbol immediately calls
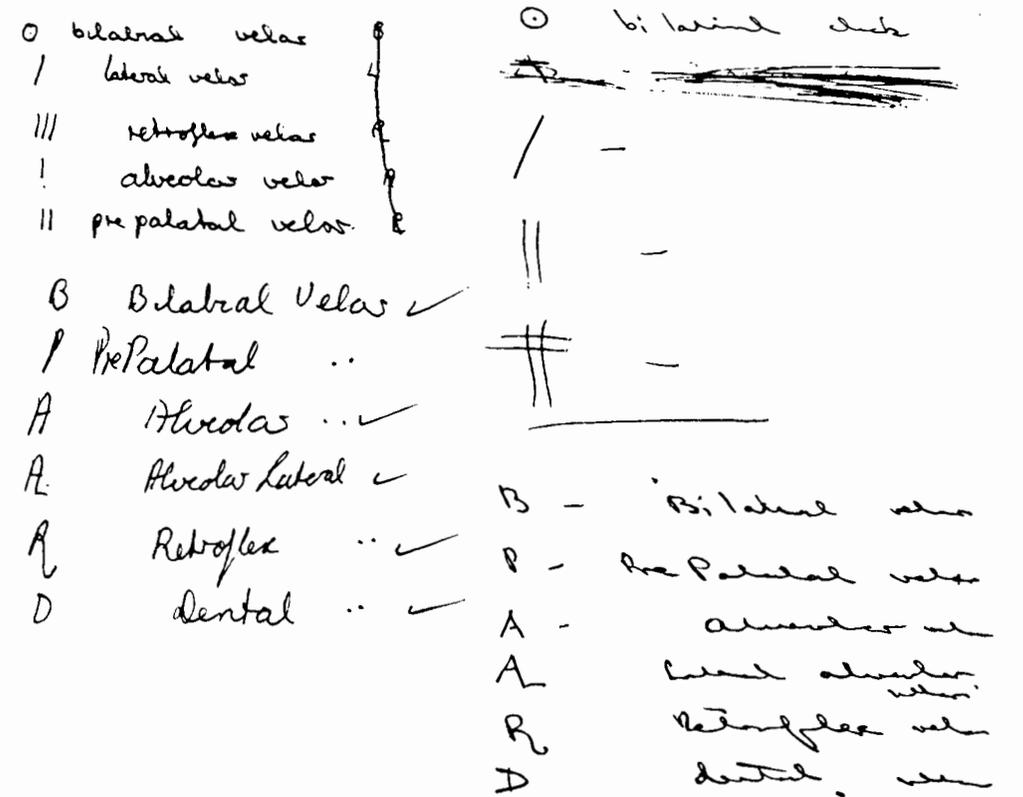

Figure 5.

Figure 6.

up the definition; being given the definition, one immediately knows the symbol (cf. Figure 5). This mnemonic power of the symbolism has proved a great asset in teaching, particularly in ear and speech training, as well as in tonulemic therapy[2] and the treatment of maxillofacial imbalance.[3]

With regard to item (6) of the *Principles*, it can be stated that the proposed click symbolism is free from diacritics (cf. Figure 6). It consists of Latin capital letters to be written in full (NOT half) size. Two of the symbols are ligatured, *viz* Ⱡ and Ⱥ, similar to the I.P.A. vowel symbols æ and œ. The Ɽ has the characteristic under-the-line hook which in itself denotes retroflexity at first sight.

Finally, I wish to appeal to this Congress to recommend to the International Phonetic Association a revision of its existing click symbolism.

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[2] The structured tonulemic approach, a foundation therapy for most cases of dysphonia and dyslalia, aims at making the patient aware of his energy household. It teaches tonus awareness, or rather tonulus awareness, by means of a strictly structured yet individualized technique. It uses the elements of movement, holding and release of holding in exercises of sighing, yawning, chewing, clicks (or smacks, tongue pops), etc. (see Breckwoldt 1965).

[3] "In addressing the problem of maxillofacial imbalance, one is impressed with the imbalance of the extrinsic tongue musculature. Principally, this problem is between the genioglossus vs. the hyglossus and involving the omohyoidus of the infrahyoid complex. This conviction has led me to employ the tongue pop as a routine to retropositioning the tongue very early in the management of maxillofacial imbalance. Essentially, in this activity I am attempting to stretch passively the fibers of the genioglossus and to work against resistance of the omohyoidus as well as the hyoglossus". (Newberry, personal communication).

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DISCUSSION

SOJIJÄRVI (Helsinki)

Do you have a special symbol for a unilateral click?

BRECKWOLDT

To have a separate symbol for a bilateral click would be a matter of using a diacritic with the symbol I showed in my tabulation which actually *is* the symbol of the

unilateral click, i.e., the one articulated on the left or right side depending on the speaker's habit and/or preference.

ULDALL (Edinburgh)

Sequences of symbols for various approaches and departures from the click position? Sá Nogueira?

BRECKWOLDT

(1) For various modifications of click sounds, the existing I.P.A. modifiers and diacritics like [h, ᵥ, ˜], etc., are used as I show on Figure 3 of my historical tabulation under 1958/71.

(2) I am glad that the name of Rodrigo de Sá Nogueira is brought up. The monograph on clicks published by Nogueira under the name of *Dos cliques em Geral* (Agencia do Ultramar, 1957) is a major opus in the field of click research. Because Nogueira gives good reasons against the use of the word 'suction' release sound, I have adopted the word 'smack' release.