THESIS

A PROPOSAL FOR A WRITTEN SYSTEM OF AMERICAN SIGN LANGUAGE

Submitted by

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Chapter One

1.1 Introduction

This proposal answers the often overlooked need for a written system for American Sign Language (ASL), and how that need leads to the creation of a new ASL writing industry. The proposal also justifies the claim for such a need by showing how, historically, writing systems have come to build cities and societies, roads and opportunities, literature and the entertainment industry. Above all, this proposal demonstrates how all written forms have become wholly phonetic-based systems representing phonetic language, thus leaving sign language, which is visually based, without a written form. This begs the question: in a world where there are over 3,000 languages, with a third having a written version ("Writing Systems of the World," 2003.), where is the written system for a language of visual modality? This lack of a written system for ASL is a calling to establish one. Furthermore, this proposal examines past and current attempts at establishing a written system for sign language, in addition to elements of writing, and explores why this new system is ideal compared to past attempts.

Bear in mind that the proposed system is the first breakaway from the phonetic system the world has come to know. Additionally, the linguistic terminology developed over the years on phonetic properties must allow for new terminology relevant to visual modality languages. Old habits and old thinking do not perish easily. It is necessary to allow room to explore this proposal and ideas behind it, with a discussion of the possibilities and plans for implementing this groundbreaking ASL written system.

Many have argued that with ASL, video takes place of paper and pencil where sign language writing is concerned. While this may be true, it poses one problem: it still is not writing; rather, it is a recorded form. Recorded forms involve different dynamics and processes from written forms. Writing is a personal discourse allowing for interpersonal discussion and language build-up, which allows for quick editing with simply an eraser or even cut-and-paste on the computer. Recording is public discourse where one cannot have interpersonal discussion (unless it is a personal video diary) and editing on the spot makes for an impossible process. The narrator requires clarity, the use of proper clothing under proper lighting and equipment, and requires the use of electricity. Paper and pencil technology can be done anywhere at any time without electricity – and is inexpensive. Writing continues to be the dominant force of information trade in this day of video and film; books continue to be best sellers, Post-It Notes continue to sell. Why has the general public not run for the video camera to create a novel? A movie is like a novel, one would argue, and yet the movie requires a script, a written then printed medium.

Identity in writing: who am I?

The need for an ASL written system crossed my mind when I was writing a novel one morning. I paused, as I often did, to search for a word to better fit the message I had in mind. The message was an image, an idea, a thought, yet it was without language. There were two languages I knew: ASL and English. ASL was my main language; therefore, the thought was picked up by ASL. Since ASL has no formalized written system, English took the reins and became the vehicle of passage from thought to written word. As old practice went, I searched for an English word to best fit the idea so eloquently expressed in ASL. More often than not I had to rethink the idea as I stripped it

of its ASL version, manipulating it under the influence of English, before I could put the thought on paper. I was continuously doing translation work, careful to not compromise the message.

This developed an acquiescent purpose of ASL, which allowed a dangerous precedence to emerge: linguistic colonialism. Therefore, with that troubling effort to write, at best, the translation of my very thoughts in ASL, and without a written ASL system, I asked myself not once but often in that chair, "If I cannot write in my own language, then who am I?"

1.2 Recipe for linguistic colonialism

To possess none a written form of one's native language is a perfect recipe for linguistic colonialism. Linguistic colonialism is the result of several forces, most notably the education policy as written in English, therefore becoming a language policy as well. This policy dictates a curriculum where English is the language of education, reading, writing, and so on, which creates a dilemma for ASL users. Until Stokoe published his findings that ASL was indeed a language, ASL was not placed in the curriculum as a study or as the language of the classroom, a practice that continues even to this day. Only upon the discretion of each school – often within deaf teachers' classrooms – has ASL been the language of instruction.

It is important to note regarding the lack of the written system for ASL is concerned: For those who cannot read and write (English, for example) a book or any other written document this becomes a clear indicator of "their own ignorance and powerlessness; of which fact the educated few can and, of course, do take advantage."

One of the most important consequences of writing is that it is "a powerful instrument of social control (Coulmas, 2003)."

Remarkably, I wasn't alone in this struggle in my writing. In 1962, an author in South Africa echoed this sentiment. In his essay, *The Language of African Literature,* Ngugi Wa Thiong'O wrote that he was invited to a historic meeting of African writers at Makerere University College in Kampala, Uganda. To his dismay, the conference – 'A Conference of African Writers of English Expression' – excluded Africans who wrote only in African languages—Swahili, Zulu, Yoruba, Arabic, Amharic and others. With the "exclusion of writers and literature in African languages (Ashcroft, Griffiths, & Tiffins, 2006)," the writers of English expression conferees sat down to begin discussing the opening item on the agenda: "What is African Literature?"

Thiong'O discussed the outrageousness of the conference and the African writers who dropped their mother tongue for the English language in order to write and communicate. He quoted Chinua Achebe: "Is it right that a man should abandon his mother tongue for someone else's? It looks like a dreadful betrayal and produces a guilty feeling. But for me there is no other choice. I have been given the language and I intend to use it (Ashcroft, Griffiths, & Tiffins, 2006)." He wrote that he saw a paradox where this sort of confession was common among African writers with adopting into the English tongue.

While African writers live in a society where they can, easily or not, pick up the Arabic or Greek script and fit them to their speeches, ASL users have no history of any written form based on the visual phonetics of sign language. They are a step deeper into the problem in having no choice of leaning upon any written form of visual

communication. This adds further necessity for the establishment of a visual form of a written system for communication.

1.3 Establish a written form for ASL

Language is a rule-governed communication system that shows the ability of humans to communicate. All life forms have a certain rule-governed system. In writing, there are rules to abide by in order to write. In this proposal, rules are considered on how to write in ASL. It *is* indeed possible to write in ASL, despite opposing views, being that ASL is a language, as any rule-governed communication is concerned.

Florian Coulmas, a linguistics and Japanese studies professor at Gerhard Mercator University in Duisburg, Germany, put it well when he said we of the literate society find it difficult to imagine a world without any form of writing. To think of our society without books, car repair manuals, newspaper, not even a lecture note, dictionaries and so on; to have none of those things surely we would also have no linguistic studies. How unthinkable it could be.

What is even more unthinkable is that ASL and every other sign language system in the world today have no written form. The lack of a written system for any sign language around the world since the advent of recorded history seriously begs for one. Of the four types of written languages currently used world-wide—ideographic, logographic, syllabic and alphabet – the four are of a sound (phonetic) modality. Where does ASL fit in these classifications? There is a need to introduce a new term for a language of a different modality – the *visual modality*, as opposed to the traditional phonetic modality. Visual modality languages around the world are rich with grammar, syntax and structure used in spatial properties with the human body. Like any language of

a society, the vocabulary, grammar and usage incorporate cultural, historical and regional signatures of the people. There is an entire world of unexplored territories in linguistic and cultural studies of sign languages. It would be foolhardy not to have written systems representing such kind of languages.

1.4 Why the need for the written form?

The academics and the general population have long overlooked the fact that some languages gradually die off and people switch to a more popular or dominant language. However, all of the dead and new languages were spoken, and typically the language that takes hold has a written system in place and a higher chance of remaining the dominant language because of its written discourse appearing in law books, in education and just about in every tenet of society. The biological designs of the visual language, without the need to hear sound, developed the manual form that is uniquely human.

Deaf people can, if they choose to, switch to another national sign language. However, if one sign language has a written system in place, the likelihood is that it will not be disregarded as easily as a language without the written system. There needs to be a written form for sign language for a much larger reason than appears on the surface. There is more to information such as cultural and word usage incorporated in the written language than just conveying thoughts.

1.5 Power of writing

The written medium is a massage for the mind, as Marshall McLuhan titled his book, *The Medium Is the Massage*, and explains: "Until writing was invented, man lived in acoustic space: boundless, directionless, horizonless, in the dark of the mind, in the world of emotion, by primordial intuition, by terror. Speech is a social chart of this bog.

The goose quill put an end to talk. It abolished mystery; it gave architecture and towns; it brought roads and armies, bureaucracy. It was the basic metaphor with which the cycle of civilization began the step from the dark into the light of the mind. The hand that filled the parchment page built a city (McLuhan & Fiore, 1967)."

Some of the possible benefits of a written system for ASL is to consider a plethora of deaf and sign language literature and videos, and the need for a strong, unified communal sense toward one's own visual language structure and system. By that, writing restructures consciousness, as discussed Walter J. Ong's book, *Orality and Literacy*. Ong offers one of several arguments on the new world of autonomous discourse, stating that writing provides some vatic quality as found in oral cultures, and it shows the society's consciousness in the past and in the present. The writing industry transforms human consciousness. Likewise, the written form of ASL can transform deaf members and the deaf community's consciousness in the face of everything pertaining to it. The vatic qualities of video logs (vlogs) and Veditz's oft-used quote about sign language, for example, can be transcribed into written ASL and be mass produced and posted on classroom walls. As the power of the written form can attest, the written form of sign language can guard against the constant threat of its demise – a threat stemming from a lack of education, the academic studies of ASL, and *linguicism* by the educational and language policies of non-signing governing bodies.

Then if sign language is what was once called arbitrary—assumed to be arbitrary and too abstract than phonetic language (Armstrong, 2002), it is all wrong and if it is too pictorial, then it is all the better because sign language, ASL, and all national languages have the communicative possibilities to convey concrete, iconic and arbitrary

thoughts. It is as all- encompassing as a language should be. Therefore, being a pictorial language makes ASL the most accurate possible in terms of being the signifier language for the signified.

"Language is inextricably associated with 'culture', it is writing that is linked with 'civilization'," Goody wrote. If ASL is related to Deaf culture, then ASL writing can be linked to ASL civilization. Since the mind seeks ways to produce a language, then there lays a written form to exactly reflect sign language, not by way of the popular culture of minds that relies on the language of the ear. Wherefore, the written system must be language specific; the language is sign language, thus the written system is sign-specific.

1.6 ASL literature

Writing wasn't invented out of the need for literary purposes. It was an invention that made literature possible (Coulmas, 2003). In this regard, the same can be said for the need of the written form of ASL.

Recalling Coulmas' quote earlier, "the educated few can and, of course, do take advantage [of the powerlessness and ignorance of those having the inability to read and write]," deaf education and its current curriculum at Gallaudet University admit those who can read and write English, ranging from those who excel at the language to those who can pass muster. Yet there is not one admission requirement for those who can sign ASL fluently. Once Gallaudet University and all other universities with ASL programs and studies adopt the written system of ASL and use it as a standard bearer for admission, for tests, and other academic rigors, then the people of the eye and of tactile being can write in a language of their own.

1.7 Transport thought over time

Writing incorporates cultural messages and the products of the environment playing a large part of culture, governance, and society at large. When the Greek alphabet was introduced between 1100 and 800 B.C., writing advanced into such flexibility to include thoughts, feelings, and ideas of anyone about anything. In all, writing not only became a written set of symbols conveying information; it also represented speech in visible form.

To have non-phonetic writing that represents ASL—a visible language in visible form–is the ability to convey thoughts, feelings, and ideas, and above all, preserve them for all time. Examples are minutes of a meeting, a shopping or to-do list, or a quick note on a Post-It to a colleague. Now that phones are equipped with video cameras, one could argue that shopping lists can now be signed. The use of the phone can be problematic in that one has to have a phone or a handheld recording device and replay it back and forth to ensure comprehensiveness. This is a scrolling process. How would one post a message to a colleague? Leave the recording device? It is inexpensive and a lot easier to write and glance at the list, jot down thoughts and use the written form. In the past, writing on scrolls took forever, especially when trying to find certain passages. When the printing press came about, scrolling became history. Quicker referencing followed and books came about. Presently, scrolling is what the deaf community does in ASL, on video. With DVDs, one has to go by chapters and then scroll ahead or backwards to find a certain passage. To preserve this passage, one then records that and then what? More often than not, one types the passage in English. Scrolling has been part of the ASL literary life onscreen. Writing in ASL would eliminate this lengthy reading process, and furthermore,

passages and quotes could be mass-produced in minutes and placed on classroom walls and bulletin boards.

1.8 What type of writing best fits ASL?

In the next chapter, four basic types of writing will be discussed, with a look at the various writing systems from past to present. What style fits under which system? Would it be best to have onomatopoeic expressions, or pictographs? Questions such as these will be explored.

Chapter Two

A *writing system* is a pairing of a *script* and a *language* (Malamud, 2004).

There is no pure phonography: writing is not transcription; writing no more "paints speech" than it "paints thought" - Coulmas

This chapter briefly highlights the history of writing and how writing has come to become a powerful architect in building civilization and thought. In a sense, the effect of writing on thought is not unlike the effect of a snowball rolling down the hill gathering more snow with the pull of gravity. The need to write compels writers to record thought, and by reading thought, the reader builds upon by rewriting or adding to the written thought new ideas and plans.

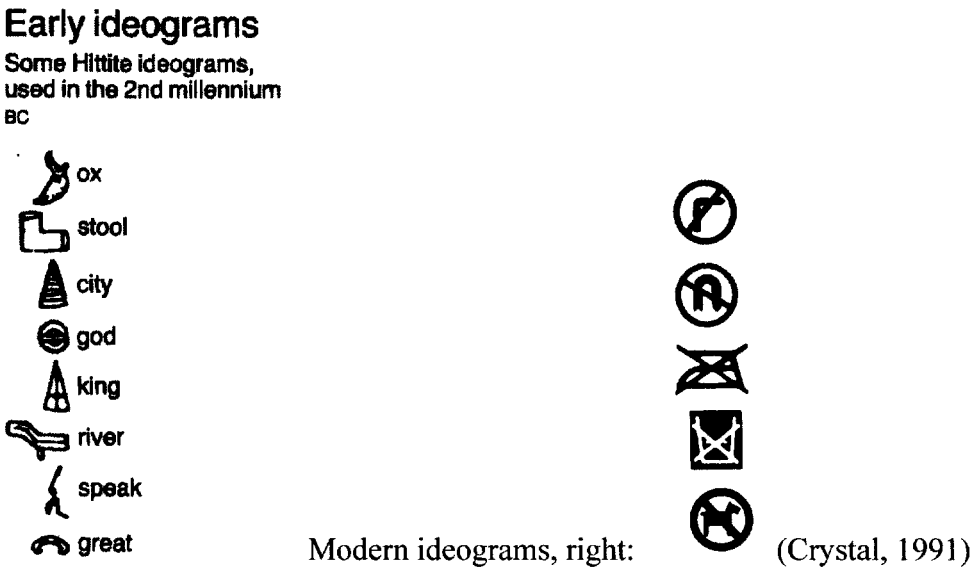
2.1 For the record

In the 10,000 to 12,000 years of human history, writing has come to be the "recent" invention, as of in about 3500 B.C. The written system, a technology "which has shaped and powered the intellectual activity of modern man, was a very late development in human history" of some 50,000 years (Ong, 1993).

The four types of writing that have come to mature over the years and provide several functions in modern society are: ideographic, logographic, syllabic and alphabetic systems. It is important to understand these four types of writing, and how they are relevant to the introduction of a written system for ASL. Phonetic-based writing has evolved from simple picture writing to writing complex thoughts. The same is possible for an ASL written system in that the written system is not a primitive form of writing pictures, even though people often say sign language is a "picture" language. On the contrary – written symbols for ASL can convey complex thoughts.

2.2 The ideographic writing system

Ideographic writing is believed to evolve from pictograph writing. Ideograms have an abstract or conventional meaning and no longer display a clear pictorial link with external reality like pictographs do. Rather, ideograms contain linguistic elements. As an example, a symbol of a foot may represent 'walk', 'stand', and other notions (Crystal, 1991). Examples of ideographic symbols are shown in the following:

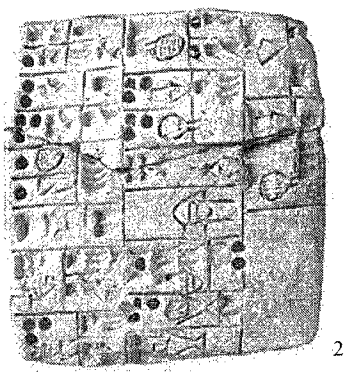


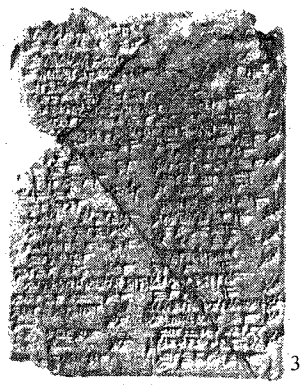
(Crystal, 1991)

Cuneiform

The earliest evidence of the writing system began with Sumerians pressing statistics, accounting and trade figures onto clay tablets, using cuneiform script, around 3000 B.C. in the ancient Near East. More than 75 percent of the 150,000 cuneiform inscriptions excavated in Mesopotamia were "administrative and economic documents including legal documents, deeds of sale and purchase, contracts concerning loans, adoption, marriage, wills, ledgers and memoranda of merchants, as well as census and tax returns; inventories of objects and persons, stock, itemizations of goods for trade, payments to officials, food rations for slaves and work requirements, cook books, and

much more,"[1] including rudimentary forms of dictionaries—where word lists were ordered as word signs for a) pronunciation, b) sign form, and c) meaning.


2


3

SUMERIA, 3,200 B.C. This Mesopotamian culture is generally thought to be the first culture to produce written texts. In the example above the Sumerians used a stylus and wet clay to record the ingredients for beer.[4]

Hieroglyphs

The Egyptian hieroglyphs were writings that defined Egyptian culture, and reflected culture and governance. The hieroglyphs were arranged in the order of lexical lists for objects depicted: gods, plants, animals, parts of the human body and tools. Most scholars regard the Egyptian, or hieroglyphic, alphabet, as the writing system that came to the threshold of alphabetic representation of the language (Coulmas, 2004).

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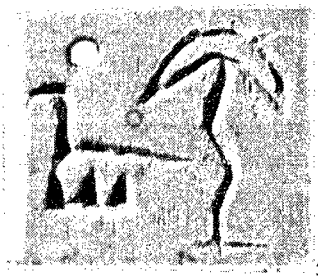
[1] Coulmas, p. 73

[2] http://www.virtual-egypt.com/newhtml/articles/Who%20Began%20Writing%20Many%20Theories,%20Few%20Answers.htm

[3] *The Electronic Text Corpus of Sumerian Literature* (1999, March 8). Retrieved April 19, 2007, from http://images.google.com/imgres?imgurl=http://www.csad.ox.ac.uk/CSAD/Newsletters/Newsletter7/VAT278.jpg

[4] Robinson, *The Story of Writing,* p. 66

 [5]

EGYPT, 3,200 - 3,000 B.C. Early Egyptians used a system of pictorial hieroglyphics as a written language. The earliest examples (above) were phonetically arranged symbols on small clay tablets used to indicate payments for commodities. It reads "Mountain of Light."[4]

2.3 The logographic writing system

Chinese characters

Writing that has continued to exist from the earliest recorded society is the Chinese language, which began as a photo-writing system consisting of characters that have evolved to fit phonetic purposes. Coulmas (2003) writes, "Chinese writing is not purely logographic [but better described as a morphosyllabic system]. There is a large phonographic component." The Chinese angular writing stemmed from writing on bones and turtle shells and when brush writing was introduced, they kept that angular style of writing. Coulmas continues, "Pictures of concrete objects stood at the beginning of Chinese writing." The characters evolved over time but not by much.

[5]http://www.virtual-egypt.com/newhtml/articles/Who%20Began%20Writing%20Many%20Theories,%20Few%20Answers.htm

6

Modern logogram

Some examples of modern logographic symbols are below. Note that a few of them will be used in one of the sign writing notational systems to be discussed in chapter four.

\+ — = ± ≠ ÷ × ≤ ≥ < > % ° ☺ ♀ ♂ √ ∞ ≈ → ↕ ↑ }

2.4 Syllabic writing system

Malamud (2004) writes that many syllabaries have been created from ancient (much of Sumerian was a syllabary) to modern writing (such as the Sequoiah's Cherokee system). The example of phonographic writing is the rebus principle, where humans began to put voice into writing and writing becomes representative of voice.

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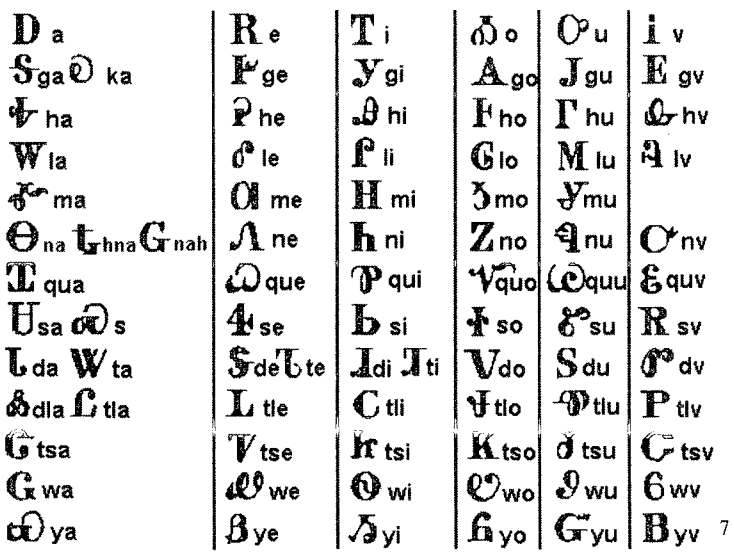
[6] Ling408 Lecture 2 Notes, *What writing represents; Crude Taxonomies; Formal Models of Writing system*, Slide 4, http://catarina.ai.uiuc.edu/L408/lecture2.html

Cherokee writing

The Cherokee writing system was invented by Sequoyah (1770-1843), a monolingual Cherokee speaker. Note that Sequoyah was monolingual and not multilingual. Yet, he saw the need for a written system for his own language. Historical accounts evidenced that the Native Americans used sign language, although whether their 'sign language' was a language or simply gestures, is debatable. Sequoyah, in his initial development of the Cherokee Alphabet, created characters for each word leading up to several thousand characters. He did not possess keen ears. With the help of his wife and children, they captured all sounds of the language.

Given the sheer amount of characters, Sequoyah reconstructed the alphabet based on syllables. The number of the characters went from several thousands to 85. The Cherokee writing system resembled modern writing in its phonetic nature, but was largely syllabic writing. Sequoyah knew no English and he was determined to "emulate the achievement of their (English settlers in America) achievement of their writing system. It caught on when the Cherokees learned them first in North Carolina (place of origin) and the newspapers and official documents of the Cherokee nation were published in Sequoyah's script, using the type font designed in Boston in 1827. Eventually 90 percent of the natives were literate in Sequoyah's script. It is not known why his system fell into disuse. There have been recent attempts to revive it (Robinson, 1995)."

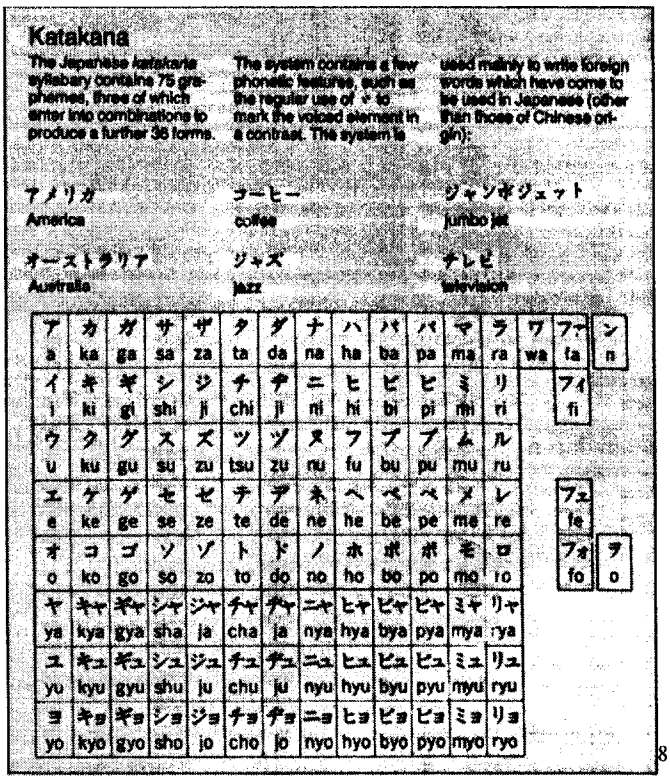


[7]

[7] Coulmas, *The Writing Systems of the World*, p. 73

Japanese system – Katakana

Contrary to popular assumption by Westerners, the modern Japanese script, as with the Chinese, is not exclusively pictorial. The two script systems have phonographic symbols:



Katakana

The Japanese *katakana* syllabary contains 75 graphemes, three of which enter into combinations to produce a further 36 forms.

The system contains a few phonetic features, such as the regular use of ゛ to mark the voiced element in a contrast. The system is used mainly to write foreign words which have come to be used in Japanese (other than those of Chinese origin):

アメリカ — America
コーヒー — coffee
ジャンボジェット — jumbo jet
オーストラリア — Australia
ジャズ — jazz
テレビ — television

ア	カ	ガ	サ	ザ	タ	ダ	ナ	ハ	バ	パ	マ	ラ	ワ	ファ	ン
a	ka	ga	sa	za	ta	da	na	ha	ba	pa	ma	ra	wa	fa	n
イ	キ	ギ	シ	ジ	チ	ヂ	ニ	ヒ	ビ	ピ	ミ	リ		フィ	
i	ki	gi	shi	ji	chi	ji	ni	hi	bi	pi	mi	ri		fi	
ウ	ク	グ	ス	ズ	ツ	ヅ	ヌ	フ	ブ	プ	ム	ル			
u	ku	gu	su	zu	tsu	zu	nu	fu	bu	pu	mu	ru			
エ	ケ	ゲ	セ	ゼ	テ	デ	ネ	ヘ	ベ	ペ	メ	レ		フェ	
e	ke	ge	se	ze	te	de	ne	he	be	pe	me	re		fe	
オ	コ	ゴ	ソ	ゾ	ト	ド	ノ	ホ	ボ	ポ	モ	ロ		フォ	ヲ
o	ko	go	so	zo	to	do	no	ho	bo	po	mo	ro		fo	o
ヤ	キャ	ギャ	シャ	ジャ	チャ	ヂャ	ニャ	ヒャ	ビャ	ピャ	ミャ	リャ			
ya	kya	gya	sha	ja	cha	ja	nya	hya	bya	pya	mya	rya			
ユ	キュ	ギュ	シュ	ジュ	チュ	ヂュ	ニュ	ヒュ	ビュ	ピュ	ミュ	リュ			
yu	kyu	gyu	shu	ju	chu	ju	nyu	hyu	byu	pyu	myu	ryu			
ヨ	キョ	ギョ	ショ	ジョ	チョ	ヂョ	ニョ	ヒョ	ビョ	ピョ	ミョ	リョ			
yo	kyo	gyo	sho	jo	cho	jo	nyo	hyo	byo	pyo	myo	ryo			

[8]

Japanese writing absorbed characteristics of Chinese writing (*kanji*) and added phonetic values (*kana*) that produced two syllabaries called *hiragana*, easy kana, and *katakana*, side kana. The reason for the two syllabaries system was that hiragana was informal writing and katakana was for formal documents. In all, the Japanese script is the most complex writing system in the world. Even the English alphabet has come to be incorporated in certain writings such as a breakfast cereal box. However, pronunciations differ. For example, the letter 'L' is not in the Japanese syllabary. The Japanese script is essentially known as a writing system of three writing systems. How is it possible all three could, if it has without trouble, co-exist? Even as complex their scripts are, both Chinese and the Japanese societies flourish as industrial nations. It is to say that the

[8] Crystal, *The Cambridge Encyclopedia of Language*, p. 201

degree of the script's complexity would not affect the progress of civilization but rather influences it and embodies its own society's characteristics.

The written form of ASL will not have multiple syllabary, have only about 100 characters—all of this can embody and structures the ideals of the deaf community and individuals.

2.5 The alphabetic writing system

The alphabetic script has come to become an entirely phonetic-based script that has removed any form of visual representation of any entity. With sound, the alphabetic script becomes the most flexible, complex, and sophisticated, form of writing system to the present day. However, this type of writing is now wholly phonetic-based and cannot be useful for a language system of a different modality, such as the sign language system. There is a need to come up with a counterpart of the alphabetic system, discussed later in this thesis.

The alphabetic chart

A mnemonic technique to represent sound in alphabet form enabled writers to record beyond bookkeeping numbers.

Α α	Β β	Γ γ	Δ δ	Ε ε	Ζ ζ	Η η	Θ θ	Ι ι	Κ κ	Λ λ	Μ
άλφα	βητα	γαμμα	δελτα	έψιλον	ζητα	ήτα	θητα	ίωτα	καππα	λαμδα	μ
alpha	beta	gamma	delta	epsilon	zeta	eta	theta	iota	kappa	lambda	m
a	b	g	d	e	z	ē	th	i	k	l	m
[a, a:]	[b]	[g]	[ð]	[e]	[zd/z]	[ɛ:]	[tʰ]	[i, i:]	[k]	[l]	[m

Ν ν	Ξ ξ	Ο ο	Π π	Ρ ϱ	Σ σ ς	Τ τ	Υ υ	Φ φ	Χ χ	Ψ ψ	Ω
νυ	ξι	όμικρον	πι	ρώ	σιγμα	ταυ	ύψιλον	φι	χι	ψι	ώμ
nu	xi	omikron	pi	rho	sigma	tau	upsilon	phi	chi	psi	om
n	ks, x	o	p	r, rh	s	t	u, y	ph	kh, ch	ps	
[n]	[ks]	[o]	[p]	[r]	[s, z]	[t]	[y, y:]	[pʰ]	[kʰ]	[ps]	[:

The alphabet changed, or rather, advanced, writing by internalizing thought and sound. The alphabet also allowed for the interchangeability of letters to produce different

words and sound production and representation. Ultimately, the alphabet departed from picture-language function to that of sound function exclusively, a practice that continues to this day. With sound being recorded and reproduced easily, everything written has come to be sound-based. In approximately 2500 B.C., [9] picture writing, or iconicity, became of little use with the introduction of the phonetic based symbols, and was viewed as a primitive form of writing because it could not express thought or voice. Consequently, the alphabet has become the pinnacle of writing.

As it was, alphabetic writing encouraged the continuance of scribal culture. The writing technology was written about, studied, and improved upon by generations of writers. Eventually the written device became mightier than any sword or weaponry of a king's army. That alone has influenced politics and society for thousand of years and will not cease for thousands of years to come.

William Massey perhaps states the importance of writing to humanity best in his poem.

> "When did the wond'rous mystic art arise,
> Of painting SPEECH, and speaking to the eyes?
> That we by tracing magic lines are taught,
> How to embody, and to colour THOUGHT?" (McLuhan and Fiore, 1967.)

[9] Coulmas, The Writing Systems of the World, p. 33

Chapter Three

3.1 The writing system for ASL

This chapter lays out the mechanics of the writing system, and illustrates each component and how the components fit together to make a word, a sentence, and how ASL's grammatical functions play a role in the construction of the written system. ASL taxonomies are also exemplified: five symbols classified to represent each parameter, the specialized (default) symbols, diacritics, how to write a sign, a sentence, and contextual writing and interpretation.

3.2 Chereme

The term, *chereme* is used in place of *phoneme* to indicate a non-phonetic (sound) manual unit. Dr. William Stokoe, a scholar at Gallaudet University, first coined this term, which derived from *cherology* (*cheros* is Greek for 'hand'). Since ASL writing is not of sound modality, but rather visual modality, it is appropriate to use *chereme*.

3.3 Introducing the Digibet

The alphabet brought writing to new heights in that the alphabet could convey complex ideas and thoughts given how letters were interchangeable in representing various sound inflections. The equivalent in writing ASL is the *digibet*. Like the alphabet, the digibet can be interchangeable to represent various linguistic functions.

The handshape is a fundamental element of sign language. The handshape serves several linguistic functions, such as classifiers, to represent the alphabet and to communicate vocabulary. Therefore, handshapes need to be represented in written form using digibet. The digibet is a symbol of a handshape, and it is somewhat a counterpart to the aural language 'alphabet.' In ASL, there are 67 digibet to English's 26 letters. The digibet conveys the handshape's three linguistic functions – classifiers, alphabet, vocabulary – on paper.

The digibet consists of a thumb, forefinger, index finger and an additional line to represent the last three fingers (see section 3.6). Each digibet also contains five or less strokes to represent a handshape. The digibet has been largely developed individually after many trials, with an emphasis on containing five or fewer strokes to ensure the ease of writing and relativity. Each digibet has gone through extensive examination during the initial development stages by focus groups and three children.

One then can see the appropriateness of introducing the digibet system as a counterpart to the alphabet, where the components are interchangeable and complex thoughts can be written. An ideographic symbol and logographic symbol that serve singular functions are not viable for ASL, a complex language involving countless embedded information. A writing system to do ASL justice requires interchangeable symbols, as seen with the alphabet, and simplicity in drawing the symbols.

3.4 Writing in the dominant hand

The knowledge of the author's dominant hand is established early in the first sentence. Although this helps the author write with ease in his/her own dominant handshape, it does not necessarily reflect the author's real-world dominant hand. This style of choosing the dominant hand and the supporting hand retains and reflects the dynamics of ASL. This can also be a lesson to be learned for new signers of ASL and becomes a useful tool in linguistic studies. 'South paws' are no longer belittled; instead, they are welcomed in equal terms.

Once the dominant digibet is established, the writing is then possible with the help of digits, locatives, movement and non-manual signals (NMS). The rest leaves for contextual interpretation and deduction of the readers.

3.5 Writing which way?

During the early development stage, a question was raised about whether to write from left to right, as currently in the United States, or from right to left as seen in Hebrew and Arabic. The option of allowing both ways was debated, depending on one's dominant hand preferences. Although possible, would this make for a confusing written system? The decision was to use the most common approach, from left to right.

3.6 The economy of writing

How much writing does it take to write? How many strokes should a writer create on paper to make a character of a word that does not make for an effort but for expression? The answer: as little as possible with the best clarity possible. Having to create too many strokes in writing would seriously compromise the quality and speed of writing. If every variety of sign was included, it would be difficult to maintain the taxonomic consistency of the patterned symbols. Patterns are mnemonic devices essential for learning, reading and recollecting symbols. Writing ASL is not to instruct how to sign a word but to convey the semantics. If one wishes to learn how to produce (pronounce) signs for the same semantics, it is possible to write them other than for the pattern.

Furthermore, writing symbols should not be as complicated as logographic or iconographic writing entails. To put this into perspective: writing the Greek alphabet script in print form takes one to five strokes each, while Chinese script goes to about seven or eight per symbol. With these criteria in mind, each digibet has no more than five strokes.

3.7 The Digibet

The written form of ASL contains 67 digibet that are not difficult to memorize since the digibet are relative in shape and classification. However, with time and further study, this may

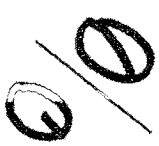
change with more digibet developed. The digibet are categorized into three basic taxonomies: closed, closed/open, and open.

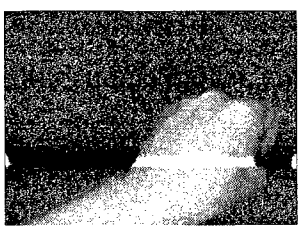
3.7 **Left and right hand digibet**

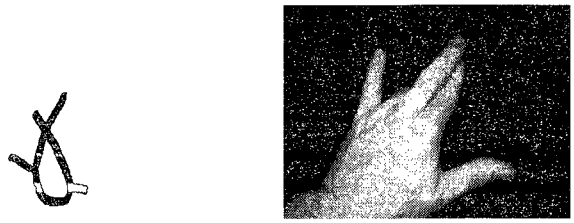
This system offers a chart showing left digibet and right digibet to help the left-handed signer connect to the left digibet and the right-handed signer to the right digibet. For reasons yet to be explored, a left-handed signer proffered to have an affinity to writing with left-hand symbols during the trial to develop the digibet representing the handshape 'o'. ASL students noted similar sentiments when reading the digibet written on the board. Some appeared to be left-handed and some right-handed. Those points became the foundation for developing left-hand and right-hand digibet charts.

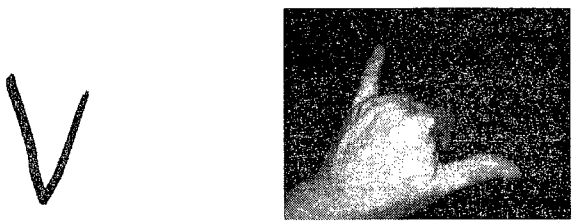
The process of reading signs from the signer's point of view remains true to the sense that the readers of sign language swivels the directional movement and sense into the reader's mind and produce the same signing motion. This applies to reading the writer's narratives. If the author's dominant hand in ASL is the right hand, the digibet symbols represent the right hand. The readers then know the author is a right-handed signer, or vice versa for left-handed signers. In fact, a right-handed signer can quote a left-handed signer and convey this to the reader with precision. Given the history of writing, this is a remarkable new dimension of writing onto paper.

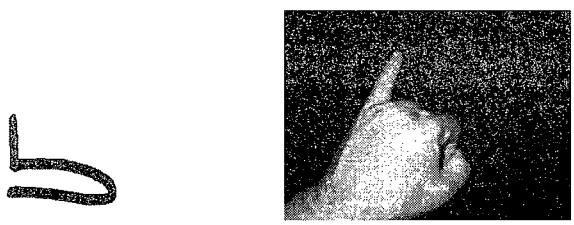
Left digibet



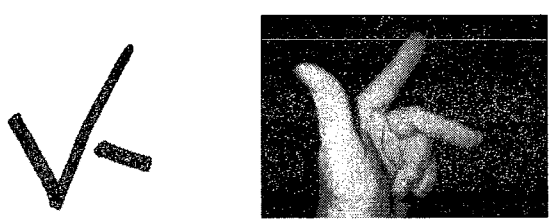




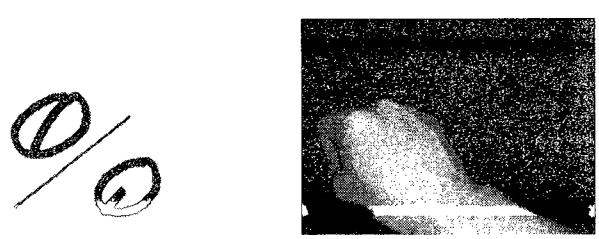




Three dimension (French sign); 3-D space, deaf space, visu-centric



Right digibet ----------



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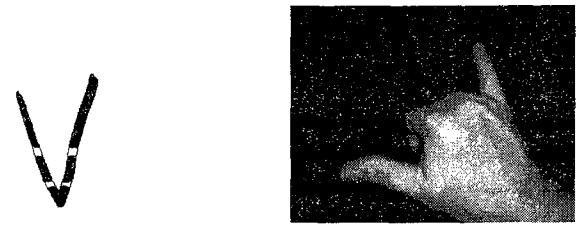
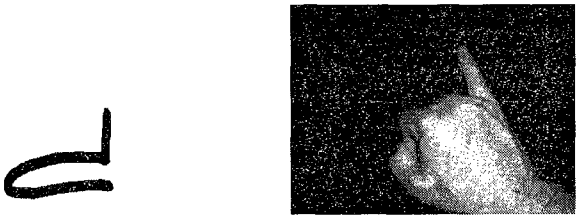
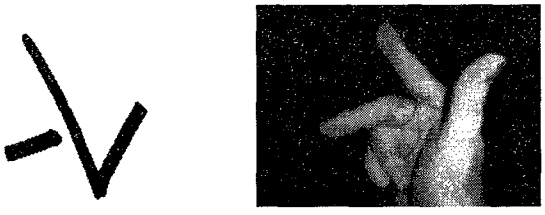


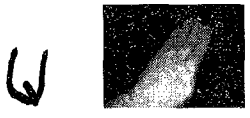


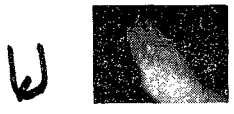
Three dimension (French sign); 3-D space, deaf space, visu-centric



3.8 The chereme

The finger and thumb chereme helps orient the reader to which hand the digibet represents. The thumb chereme plays a crucial role in establishing the actual representation of the hand's position from the signer's point of view. The digibet fits the actual physical presence of the hand position. In addition, what makes the thumb chereme particularly of interest in writing is that it is a useful mnemonic device to refer to the left or right hand. An upward slant toward the left indicates the left hand, and an upward slant to the right indicates the right hand.

Left hand 

Right hand: 

What is more interesting is that a right handshape, see figure 1, with the thumb slanting up to the right, remains to the right when placed sideways, see figure 2. Other examples are the forefinger, a classifier for 'person,' see figure 3, upright and then sideways, figure 4 and even upside down, figure 5; figure 6 as 'two,' figure 7 for 'fork' or 'meaning,' and figure 8 for 'stand,'.

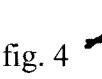
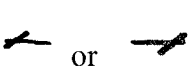
Fig. 1  fig. 2  fig. 3  fig. 4  or  fig. 5  fig. 6 

fig.7  fig. 8  .

An important note about the fist handshape where the thumb chereme is concerned: the symbol,  , represents an upright fist. The sideways fist uses the same symbol, which presents an orientation problem. A solution is to make a mark, almost like the English alphabet letter Q, to indicate a sideways right-handed fist,  where the thumb chereme is in the upper right position as it would look from the signer's point of view. It is therefore possible to allow for this symbol  as the upright fist. The upside down, right-handed fist is turned 180 degrees toward the signer appear as this,  . This looks like a sideways left-handed fist, and it can be the left hand if it is written along with left hand symbols. Otherwise, the reader will know it is an upside down right hand fist, using right-handed symbols, facing toward the signer.

The two handshape side by side show a two-handed sign indicating the left side as the left hand and right side as the right hand, with the fist symbol like this:  This would indicate hoofs, for example.

The second finger chereme is a short line to indicate an extra finger, or all the rest of the fingers, to show depth.  The thumb is a small end line. This classifier handshape indicates a

tubular or cylindrical property. A handshape  without the extra finger chereme shows only the forefinger and thumb, indicating a thin round object such as a lens or the moon. Another example of hand shape without and with the extra finger chereme are  for 'G' and  for 'H';  as the dominant handshape to sign 'write' and  to represent 'O'; and the standard 'P,'  , and the Virginia and Minnesota 'P,'  .

3.9 Movement

Movement characterizes ASL, so the movement symbol characterizes the digibet. This consists of a patterned or free form expression.

3.10 Line, End Point, Body Contact Point

A movement line is the last unit following the digibet. It is made up of a line and between one to three dots or more, called the end point. The movement aims toward the dot.

A digibet that can go either way is written: 

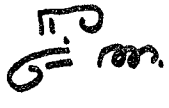
Number of end points

One end point is one movement, two end points are two movements, and so on. The indication of the number of dots is useful because one end point usually represents a verb, two a noun, and three a repetitive action. Additionally,, the number of end points helps with reading. When a reader sees a digibet accompanied by a line and end point, the reader anticipates a verb or noun.

Verb:

Noun:

Action, repetitive:

Sit:  Chair:  Sitting for a long while:  Note that this spiral movement uses one end point to mean the same thing as three end points.

Fly-to:  Airplane:  Flying for a long while: 

A wild flight: 

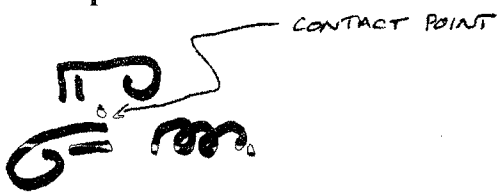
A jerky flight, turbulence: 

An air show flight: 

Another form of end point is a small bar | that represents an intense or fast movement. A frightful person riding toward a cliff signing 'stop' three times: 

Zorro slicing the sword quickly:  .

Body contact point



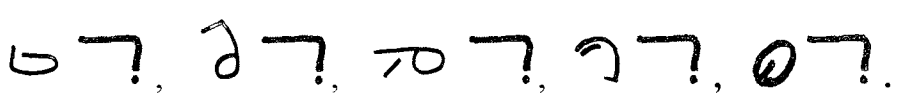
The contact point indicated shows the upper right handshape in contact with the lower left handshape. The spiral movement line directs the movement of both handshapes. The double contact point is useful for name signs using the locative symbols, for example.

3.11 Pattern

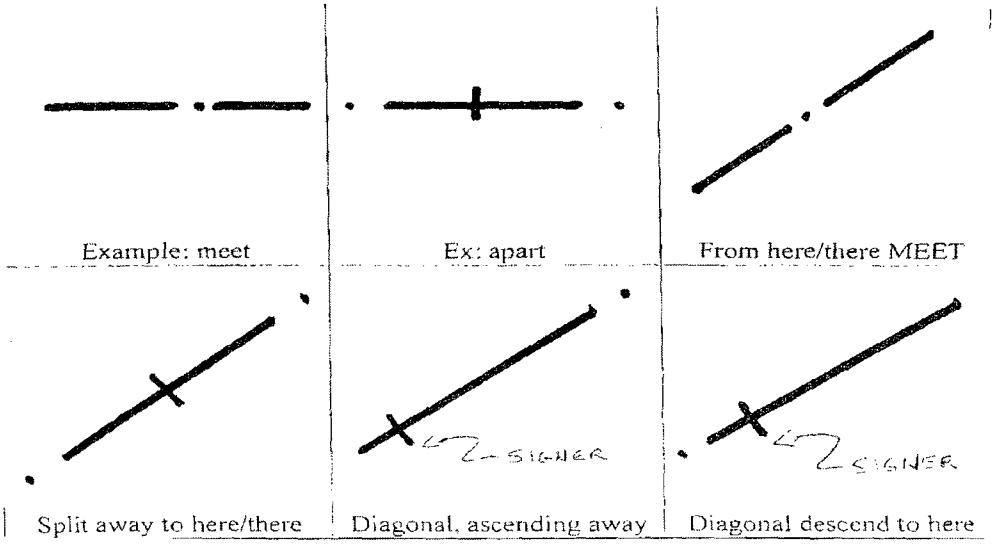
ASL has signing patterns that are easy to record and movements classified into two basic groups: patterned and random.

3.11.1 Patterned

ASL has a series of common patterns, such as signing patterns to refer to cities such as Austin, Texas, Philadelphia, Chicago, or Staunton. All use this movement pattern:  . The use of handshape followed by the region movement line identifies a place. The following are written signs for Austin, Texas, Philadelphia, Chicago and Staunton, VA, respectively:

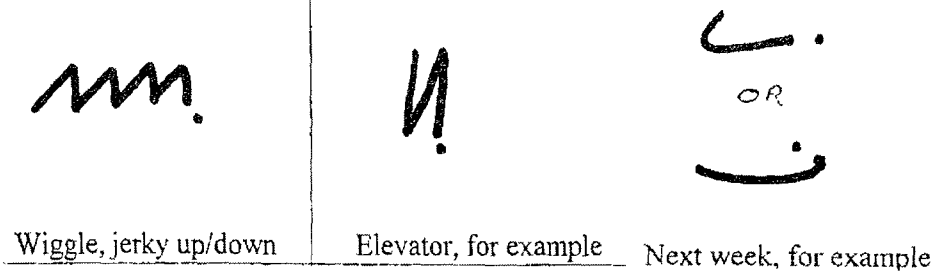


Other patterns include the sweeping motion across the signer, the three-way outward or inward motion, the jerky type, the soft bounce, the spiral, the double tapping for name signs and so on.



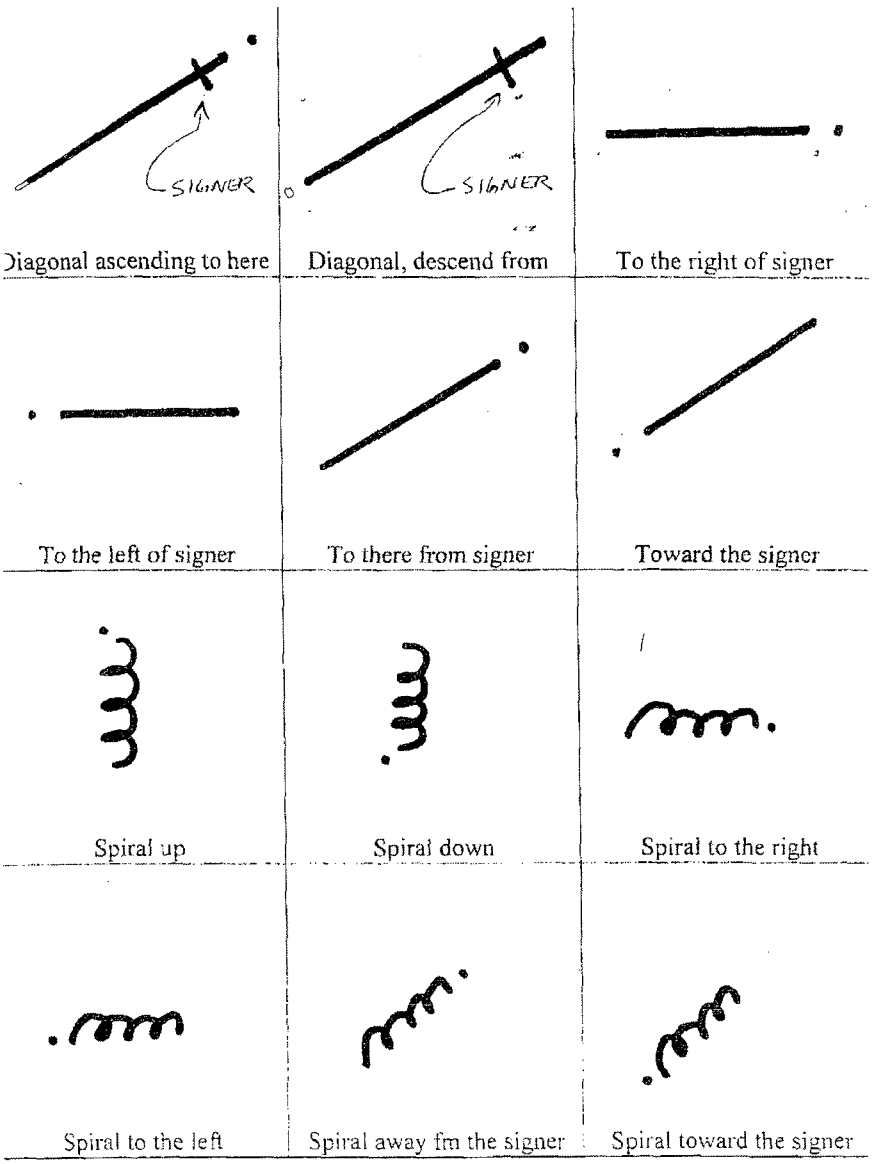
Example: meet | Ex: apart | From here/there MEET

Split away to here/there | Diagonal, ascending away | Diagonal descend to here



Wiggle, jerky up/down | Elevator, for example | Next week, for example

Going places, for example | Circle, start/end here | Circle, start/end there

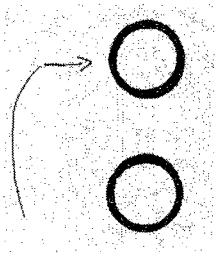


3.11.2 Random

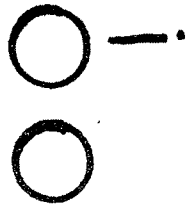
The random movement line is free form and can be set any way the writer wishes, as long as the line and diacritics are in agreement with specific spatial references. Returning to the example of an airplane, an example of free form movement:

3.12 Dominant Hand - Right

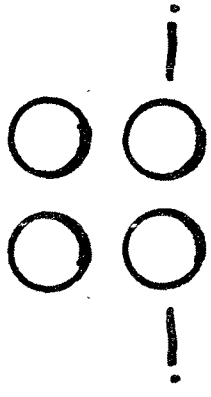
Everything is central to the signer. The placement of the digibet is always presented from the signer's point of view. The dominant digibet is above the stationary digibet or at the right. For the left digibet as the dominant hand, this is above the stationary right digibet or at the left side. The following are based on the right-handed signer.



Dominant hand



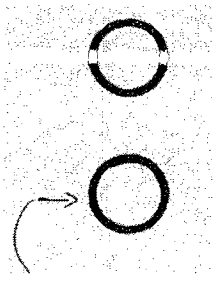
Dominant hand moves to the right



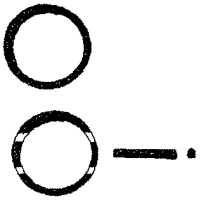
Dominant hand moves forward. Example: 'have to go,' 'run through'.

Dominant hand moves toward signer.

3.13 Base Hand

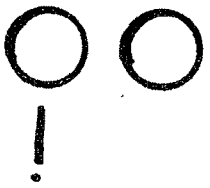


Base hand



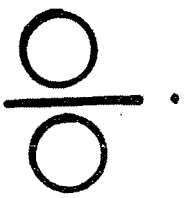
Base hand moves to the right

Base hand moves forward.



Base hand moves toward signer.

3.14 Simultaneous digibet movement

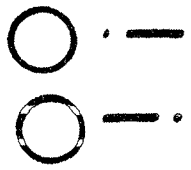


Both hands move together to the right

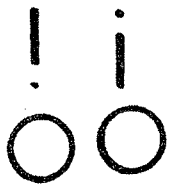
Both hands move toward signer. Example: 'want'.

Both hands move forward. Example: 'give'

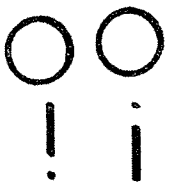
3.15 Opposite



Both hands move opposite each another

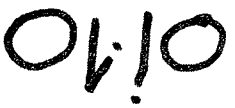


Both hands move in opposite directions. Example: 'switch,' 'passing one another'

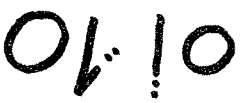


Vertical motion when movement line is below the digibet.

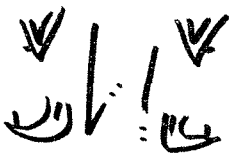
3.16 Alternative



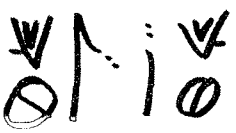
Alternative signing, once



Alternative signing, twice. Example: 'maybe,' 'weight'



'Pulling apples from a tree'



'Juggling'

3.17 Morphing of digibet

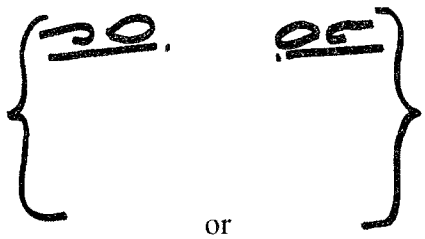
Two or more handshapes underlined with a movement line with one or more end points indicate a morphing of handshapes. Examples include *and*, *Gallaudet*, *Clerc*, and *ask*.

 Digibet morphs to the right. *Unless indicated otherwise with the End Point on the left side.

 or  Example: **'and'**

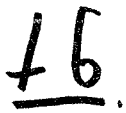
-  Examples: **'project light,' 'send'**

Gallaudet


or

Note that the profile facing left is preferable for ease of writing and that even though the handshapes are right-handed, the name sign is on the left side. The profile facing right has the left handshape but is signed on the right side, which makes for a bit of awkward writing. However, it is to the writer's preference to write either way.

Ask



3.18 Diacritics

Diacritics perform important function in the written system of the world's languages. An example of a diacritic above the 'e' for the French word is René; the German umlaut—a double dot above the vowels, or the tilde above the 'n' in Spanish. For ASL diacritics, where necessary, are used with digibet and movement symbols as illustrated below.

3.18.1 Spatial Referencing

The three lines below are accompanied by a diacritic placed before the lines. The first line has no diacritic since the default motion is horizontal from left to right.

Sideways, horizontal motion such as a car swerving on a road:

Vertical motion, hilly road or whale fins propelling along under water:

A bowling ball rolling sideways in the gutter:

A movement on a large tubular surface or dome:

3.18.2 First Person (Signer) POV – Horizontal Spatial Referencing

An interesting tidbit about spatial referencing is how a clock is used by the military and pilots. By reference to a small hand of a clock on the wall, the military and pilots use this spatial referencing of the clock to indicate the position of an object, provided that the default/automatic straight ahead view is 'noon' or 'twelve o'clock.' This type of spatial referencing is useful in ASL writing.

Outward from signer (like arrows on highway signs, not skyward). This idea applies to pronoun symbols for 'you.' – similar to the military's use of the twelve o'clock position.

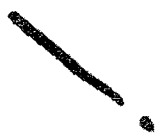
Incoming toward the signer, similar to pronoun symbol for 'me.' – is the 'six o'clock' position.

To the left of the signer, nine o'clock.

To the right of the signer, three o'clock.

From the signer toward 'ten o'clock.'

From the signer toward 'two o'clock.'



From the left side toward the signer, or from 'ten o'clock.'

From the right side, or from 'two o'clock.'

To pass out something to three people in front of you, for example.

The three of you being informed by a source, for example.

3.18.3 Vertical Spatial Referencing

A diacritic in the shape of a dash line is applied at the base of the movement line to indicate a vertical direction.

Up

Down

Upward right from the signer

Upward left from the signer

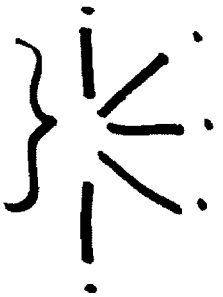
Downward right from the signer

Downward left from the signer

3.18.4 Third Person POV - Vertical Spatial Referencing

To indicate downward and straight ahead is to add a chest or face locative symbol. This is a third person reference allowing for more uses of spatial referents.

Face/profile locative symbol



Forehead locative symbol

3.18.5 Diacritics for digibet

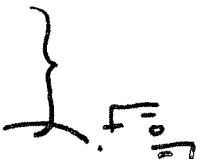
3.18.5.1 Revolving digibet

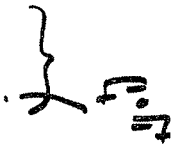
'mingle,' 'social-many people'.

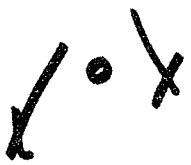
'socialize'.

'year'.

'years and years' (three dots indicates three times or more)

 **'wrap,' 'progress'.**  **'passing down,' 'generation'.**

 **'ancestry,' 'going back in time'.**

 **And of course, 'sign'.**

3.18.5.2 Sideways swivel at wrist

This handshape diacritic represents the wrist playing a part in the hand's motion. This diacritic, ∩ , indicates a sideways or to-fro motion movement marker such as this  for 'movie' and 'where' with the forefinger (aside from the default symbol for 'where').

3.18.5.3 To-fro swivel at wrist

The up-down movement marker coupled with this diacritic indicates the palm  , getting someone's attention or 'afternoon'; or the spiky hair at the moment of sheer fright,  .

3.18.5.4 Rolling at wrist

This diacritic ⊘ indicates a rolling of the palm with the forefinger such as the spinning of a ceiling fan  or the wheel coming loose off a car.  A half turn roll, for 'next' using the 'L' sideways, is determined by the movement line:  . To signify 'next, next,

next, next' in half-turn rolls to indicate persons in a line having their turn after one another:

3.18.5.5 Wiggling of digibet

The swiveling of the palm and the arm, like the sign for 'tree,' has a double curve diacritic placed at the finger area of the handshape atop the arm locative symbol,  .

 Wiggling of fingers for the '5' handshape.

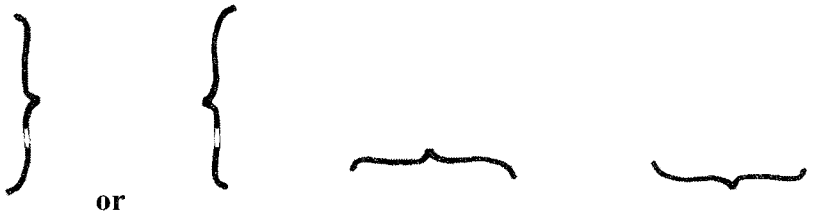
3.19 Locatives – Third person POV

There are thirteen body locations where the digibet can make actual or proximate contact.

3.19.1 The profile – side view

The facial profile is most essential for ease of writing and for depth. The sideways view of the face adds a polysemic value not only in directional, left/right-handed signing (by using either side of the face) but gender, also. The profile can be tilted to demonstrate looking up or looking down, face up or face down.

The palm orientation of the handshape can be marked by the relation to the side or front view of the locative.



or

3.19.2 Side view

The upper section of the profile

The lower section of the profile

The back of the head (rarely used)

The nose

The chest

The arm

The arm symbol offers four referents: upper arm, elbow, lower arm, and wrist. Handshapes can be placed with a dot next to one of the four referents; examples include a *medical shot* at the upper arm, *temptation* at the elbow, *long time* along the arm, and *time* at the wrist.

The waist

The knee

3.19.3 Front view

Forehead

The chin

The neck

Shoulders

3.20 Non-Manual Signals

In actual signing, NMS, including facial expressions and body shifting, are located above and behind the hands. This can also apply to writing; placement of NMS symbols are to be written along the upper region of the sentence, such as the face being above the hands; it is placed before the digibet, in between the digibet in a sentence and at the end of the sentence—inasmuch as how facial expressions changes during a discourse. This approach retains the true sense of the signer's narrative sensory as he/she writes onto paper.

For the reader, the process of reading signs from the signer's point of view remains true to the sense of 'being in the signer's shoes' when involving direction and learning signing

movements. The reader can then produce the same signing motion in person and is truly engulfed in the writer's point of view when reading.

3.20.1 WH– questions

This is a basic symbol to represent a 'frown' for WH- questions:

3.20.2 Yes/No questions

NMS for yes/no questions is a simple three-stroke written symbol that is placed in the upper region of a sentence at intervals, which is useful for topical purpose and identifying certain signs. More is discussed in 3.1.2.4.

3.20.3 Nose

The nose symbol with the locative classification has a diacritic to suggest a scrunch of the nose. To demonstrate a doubtful expression or to double scrunch is to give a subtle 'yes' or 'affirmative' semantic.

Diacritic: double lines across the top part of the nose

3.20.4 Mouth

The mouth symbol sits just before the locative symbol of the lower profile (face) or at the bottom of the profile symbol.


open, awe


puffed cheek


"small"


"pensive"


pursed lips


dislike


"near," "recent"

3.20.5 Eyes

Eye-related NMS serve as spatial referents, and are shown from the signer's point of view.


Looking to the right

Looking to the left

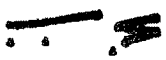
Rolling eyes once

Rolling eyes twice

Glance up and down

Glance down and up

Double take right



Double take left

Looking around

Searching

3.20.6 Combination of nose and mouth

The nose and mouth NMS symbols are drawn together to create a contraction for simplicity, with the nose naturally above the mouth. Below are two examples of facial expressions without the forefinger handshape.

"Really?" (with surprise)

"Really?" (with doubt)

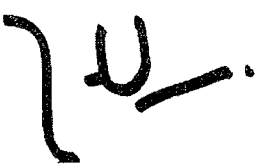
3.21 Palm Orientation

A body locative helps determines palm orientation. Contextual interpretation and knowing ASL play the final role in determining palm orientation. By having too many diacritics and symbols to show the proper palm orientation alone makes for difficult writing and reading. Instead, this approach allows for language flexibility and vocabulary expansion.

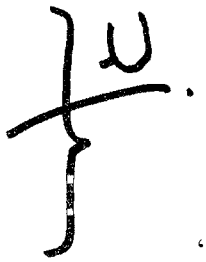
3.21.1 Side view (Third person POV) – digibet relative to the locative symbol

Digibet

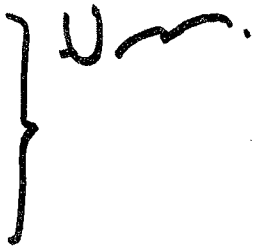
Face profile and open 'B'. With movement symbols:



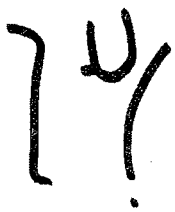
'Hello'. Note the upper half of the profile. This is one example of using whole or partial profiles.



'Will,' 'later on,' 'to-be'



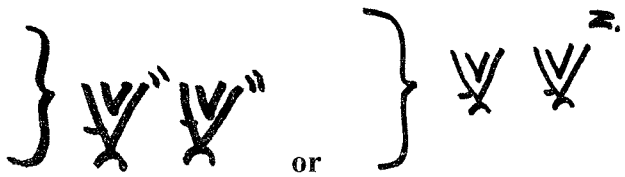
'Future,' 'a long while later'



'God'

'Think,' 'thought,' etc. Note an end point at the temple/forehead, representing a verb.

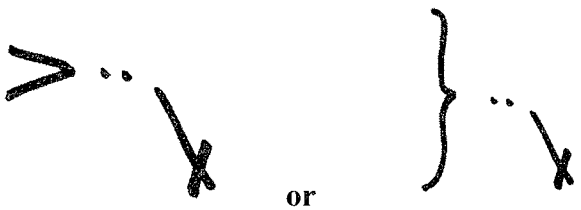
'Thinking'



or

'Movie'

Nose



or

'Nosey,' 'nose'

With the use of the chest locative symbol:

'That's fine,' 'ok with me'

'Oh great!,' 'oh fine!'

'Fancy,' 'luxury'

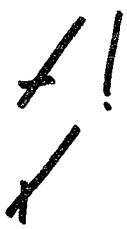
'Resent,' 'not fine'. Note rolling diacritic at base to indicate turn of handshape and line with single dot end point.

3.21.2 First person POV – usually neutral space

Vertical

'Right, right,' 'regular,' etc.

or



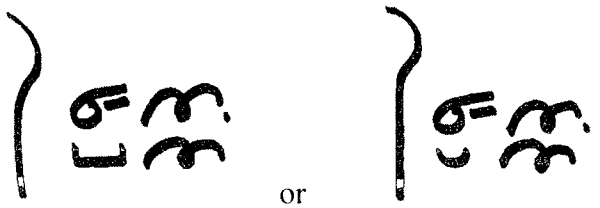
'Right,' 'correct,' etc.

3.21.3 Third person POV – use of locatives

Digibet side by side: note two kinds of diacritics at the base to indicate mirror image. Yet to be determined which of the two diacritic to keep, round or square.

or

'Nervous'



Steam locomotive wheels turning side by side: Note one movement line has an end point and the other does not have it. This means alternate movement of opposite digibet. Also note the two types of diacritic to indicate mirror image of handshapes. Those diacritics are yet to be chosen as the one to represent mirror image.

It is sensible to use a square for mirror images and a round diacritic for two handshapes of different shapes. Both handshapes appear one above the other, keeping in mind the diacritic indicates horizontal and not vertical positions.

3.21.4 Front view locative symbols

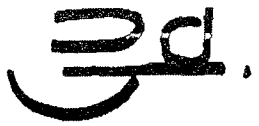
Forehead

'Forget'

'Summer,' 'wipe forehead'

'ugly'. Note that the handshape is not touching the forehead but is in approximate region below, meaning nose—and not the chin.

Chin

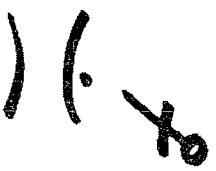


'better'

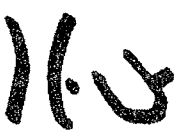
'dry'

Neck

'broke'

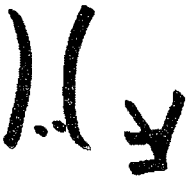


'Pain in the neck'. Note no indication of turns means one turn.

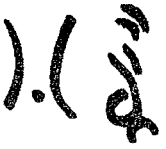


'Convince someone'

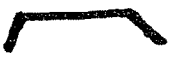
'Am being convinced'. Note right handshape flipped over toward signer.



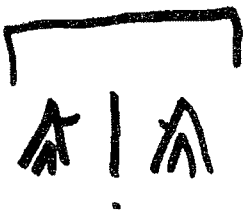
'Caught red-handed,' 'feeling discomfort,' New York sign.



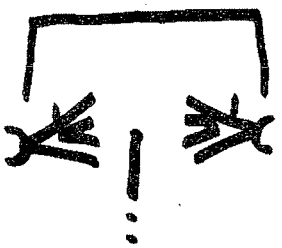
'Curious'



Shoulders



'Down,' 'depress,' 'let down,' 'liquid spill on'.



'Dress,' 'clothes'. Note that to use one end point creates a verb; thus, 'to dress,' 'dress up'.

'Inspiring,' 'inspire,' 'warmed up'.

'Enjoy,' 'pleasure'.

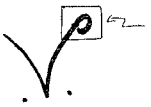
3.22 Default symbols

This is the basic symbol, as mentioned earlier, to represent a 'frown' for WH- question expressions:

Therefore, in this taxonomy, each WH– question sign applies to the following symbols, with the basic symbol coupled with diacritics:

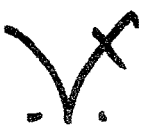
3.22.1 WH- question NMS examples

Who



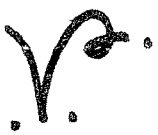
Diacritic: the loop refers to the circular motion of the forefinger by the mouth. There are several signs for 'who.'

What



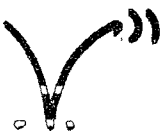
Diacritic: a slash line across the right 'brow' indicates a sign of a forefinger slashing across the open palm. There are several signs for 'what.'

When



Diacritic: spiral motion toward a dot reflects the dominant hand forefinger movement toward the stationary finger. *Note: a regional sign for 'when' is similar to 'happen'.

Where

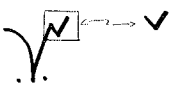


Diacritic: double curve lines indicate side ways motion of a finger, handshape, locative.

Why

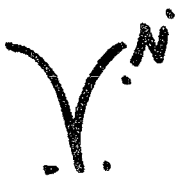
Diacritic: the middle finger bending out of line of the rest of the fingers

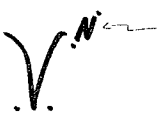
How



Handshape for 'Y'. One of three signs for 'how': a wiggle of 'Y' against another 'Y'.

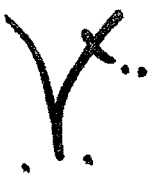
Which

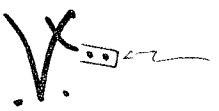




Diacritic: up and down movement line.

"For for", what for?





Diacritic: a line with double end dots infers twice movement of the forefinger, keeping with the original 'what' symbol.

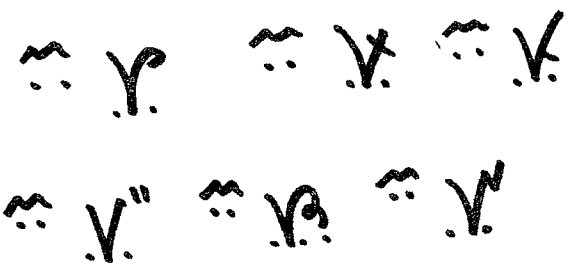
3.22.2 Yes/No question NMS examples

The yes/no NMS, once again, is a simple three-stroke written symbol. The symbol is to be placed in the upper region of the sentence at intervals, useful for topical purpose and identifying certain signs.

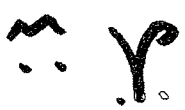
3.22.3 Rhetorical question NMS examples

The rhetorical question consist of the WH– and yes/no NMS, being that the yes/no NMS is placed before the WH–. This high–brow expression is dominant in the question and the WH–NMS offers the semantic characterization.

The following are six rhetorical symbols (although there may be more than six):



Rhetorical question for 'who'



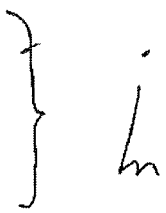
The above are exclusive symbols. There are several ways to sign the questions listed above. Diacritics indicate the movement or handshape to maintain the consistency of the WH–question symbols within four strokes.

3.22.4 Pronouns

'You'

'Me'

'it,' 'IX'. The dot indicates other than 'you,' to identify an object.



'Male,' 'him,' 'he'. Note the gender diacritic mark at the upper part of the profile locative symbol. This locative plus pronoun symbol combined makes for a compound vocabulary Below is a similar process.

'Female,' 'her,' 'she'

'They,' 'those things'

'Two of you,' 'both of you, thing'. Note the flipped-over right handshape where the thumb chereme is slanted to the left.

'Three of you'. Note the flipped-over right handshape where the thumb chereme is pointed to the right.

'Person'

'two person'

'three person or people'.

Contextual reading will determine whether the digibet means three people or people in general.

'Animal,' 'four-legged creature'

3.22.5 Time

Time

Long

Morning

Noon

Night

All day

All night

All day and night, two days

Yesterday

Tomorrow

Two days later

Two days ago

3.22.6 Verb (Motion - to go, to come, etc)

'Go-to 

'Come-to' 

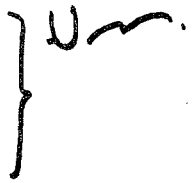
3.23 To write a sign

3.23.1 To write in three parts

A written sign is made up of two or three symbols in the following order:

Locative - digibet - movement.

An example of the three-symbol set-up to make a word:



Future, ahead of present

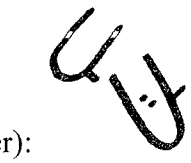
Note the locative (face profile) symbol, the digibet symbol and then the movement symbol.

Tree

The base of 'tree' is the locative symbol (arm and elbow), the digibet atop and then the movement (shaking) symbol top-right of the digibet.

Right-handed double tapping at temple/forehead for name starts with 'E'.

For 'school' (right-handed signer): 

For 'school' (left-handed signer): 

3.23.2 Two parts

If a sign is produced in neutral space, then only the two symbols are necessary, the digibet and movement symbols.

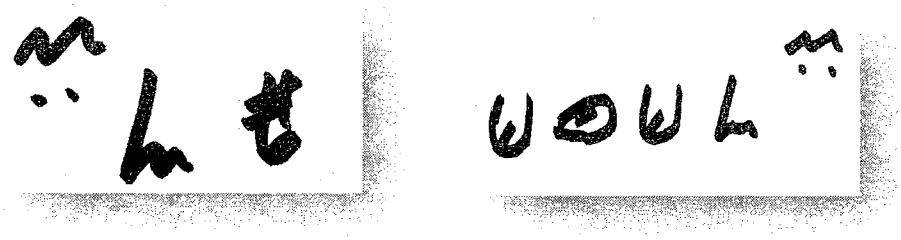
 Chicago

This is a neutral space sign with the digibet and movement symbols.

3.24 To write a sentence

3.24.1 NMS placement – beginning, middle, end

The tonality of the grammar is established by the NMS symbol preceding the sign and after the sign.



Gloss: YES/NO NMS – YOU – NAME – B O B – YOU – Y/N

English: Is your name Bob?

The NMS symbols can also be placed at certain places in the sentence to indicate a change in expressive tonality, rhetorical or topical NMS.

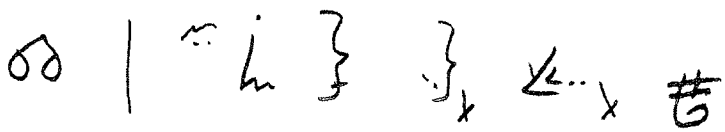
(Topical NMS – IX – man – wh NMS – name)

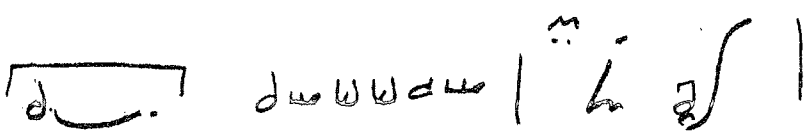
English: That man over there (or this man there), what is his name?

Gloss: WH NMS – YOU – GO-TO – WHERE Q

English: Where are you going?

3.25 Writing signs in a sentence

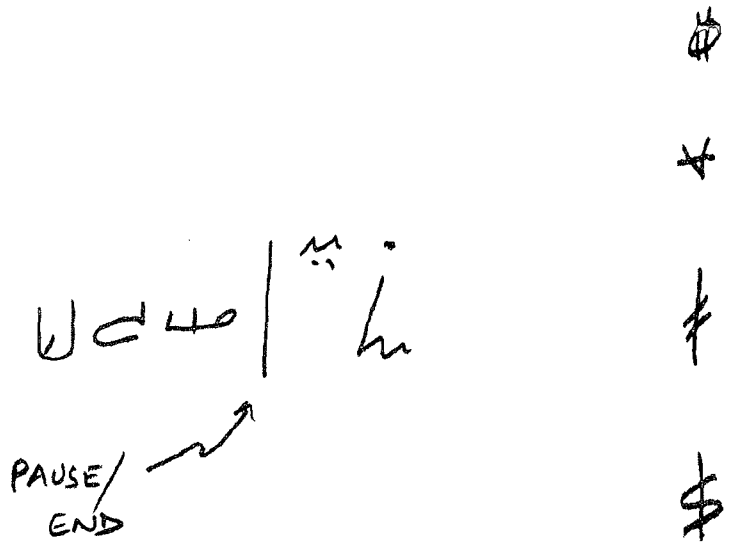




3.25.1 Suggested end of sentence, pause symbol

The simple vertical line may split the sentence to indicate a pause or end of the sentence. However, this is nearly identical to locative symbols. It may work. Other ways being entertained for indicating a pause or end of sentence are shown below. The writing process is evolutionary,

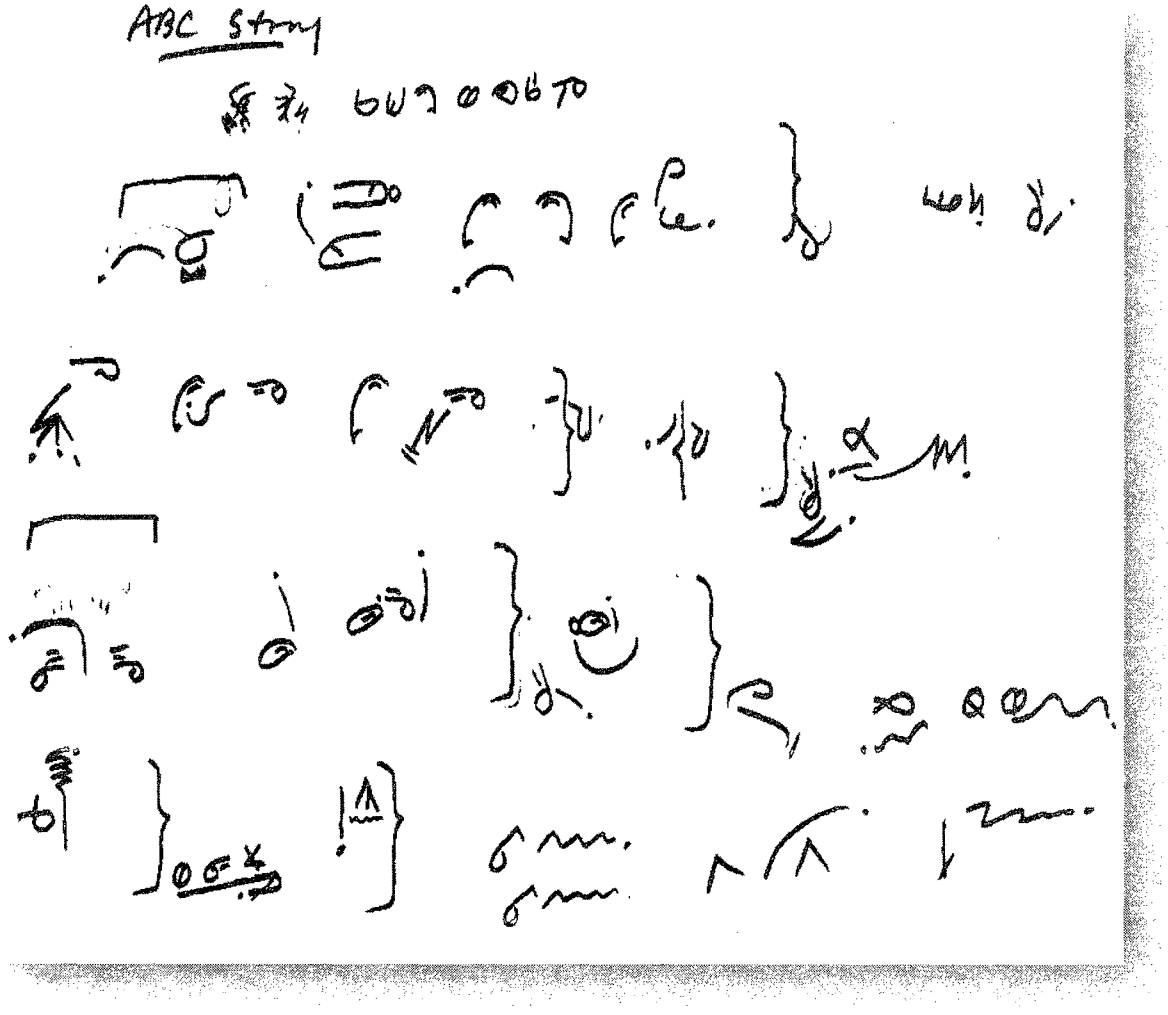
like all written systems, and the community will eventually agree on the symbol. The following are suggested symbols.



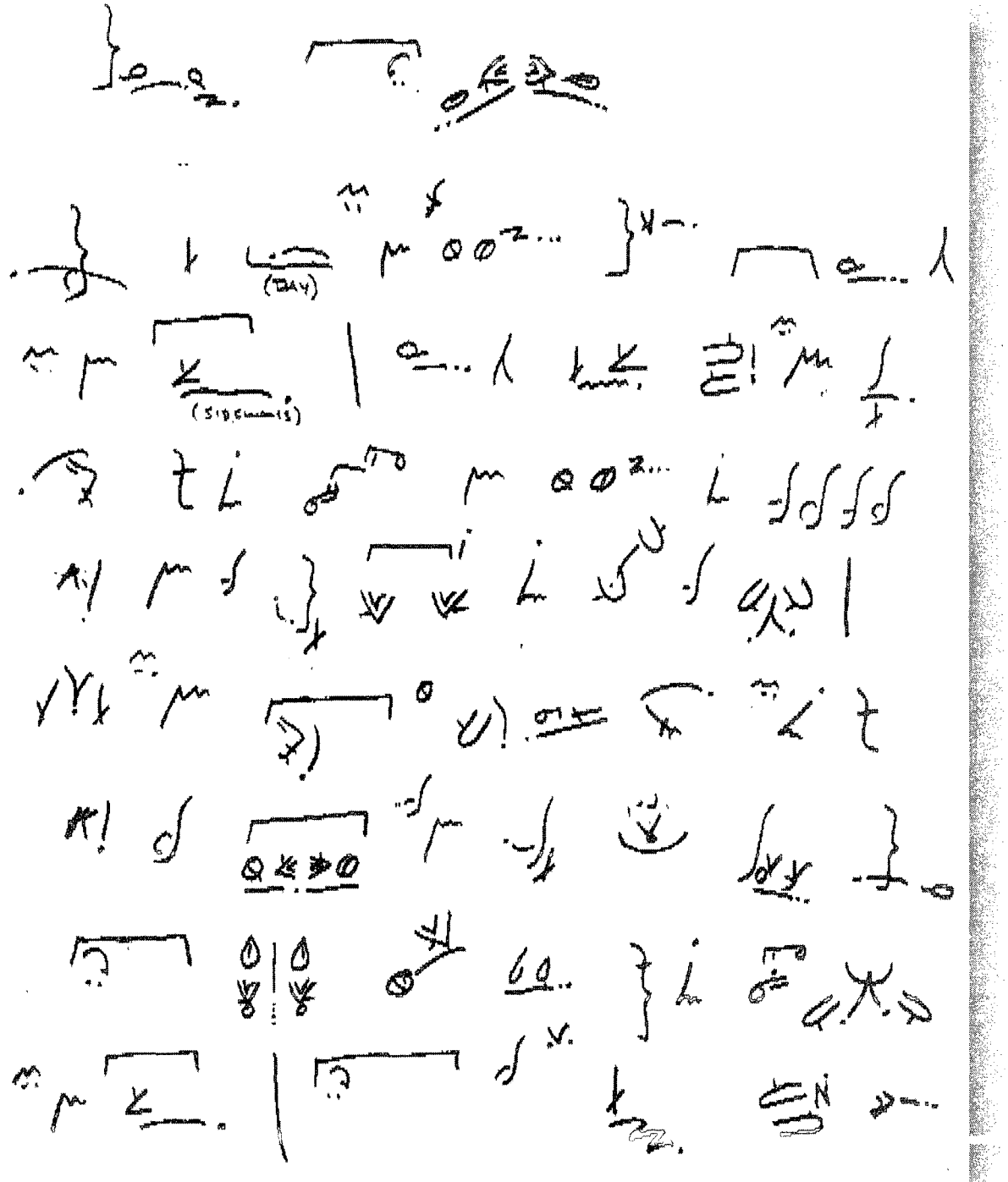
3.25.2 Samples of writing classics

Below are two stories. The first is a classic ABC story. The second is a classic humorous story known to generations of ASL users, about the deaf driver, the hitchhiker and the police officer.

3.25.2.1 ABC story



3.25.2.2 Hitchhiker and police story



Chapter Four

*"Reading is the craft of deduction and translation (*Manguel, 1997)."

This chapter provides a comparative analysis of past and current attempts in establishing a written form for sign language and symbols representing each of the sign language parameters. Included in the latter part of this chapter is the proposed written form for ASL to compare with other systems.

The major consideration of the analysis here is whether the symbol is economic (five strokes or less) and is easy to write. Another consideration is whether the symbol was created with the alphabet in mind.

Additionally, the chapter discusses the Bebian Mimeograph model, Stokoe Notational System, Sign Font and Sutton's SignWriting.

4.1 The Bebian Mimeograph Model

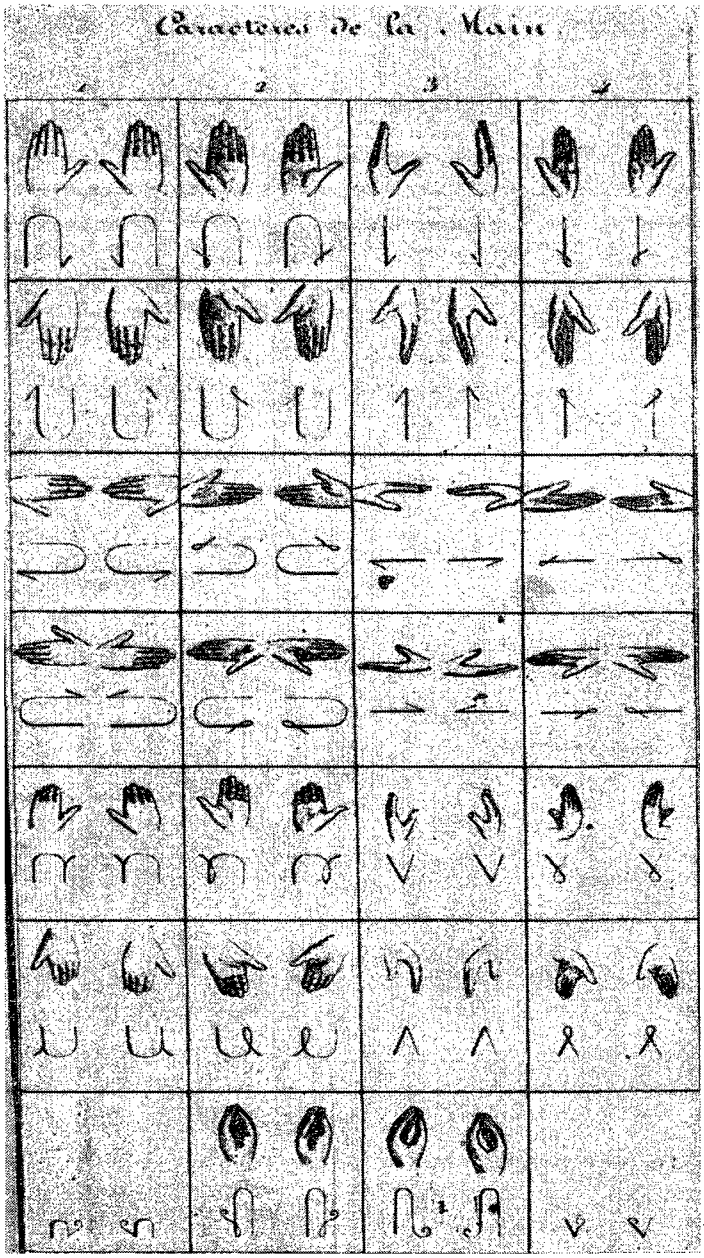
The earliest known recorded attempt in introducing a writing system for French Sign Language, or LSF, was by Roch-Ambroise Bebian. He was born in the Caribbean colony of Guadeloupe in 1789, at the dawn of the French Revolution. Bebian's parents used to live in Paris and were friends with the Abeé Sicard, who was director of the National Institute of the Deaf in Paris. Eventually the parents wanted Bebian to be schooled under Sicard's care; Sicard had been appointed as Bebian's godfather. Bebian lived at the institute while attending a prestigious school, Lycée Charlemagne. Yet he took the opportunity to attend classes at the Institute and made friends with the deaf students. In turn, Bebian became passionate about the school's curriculum, French Sign Language, and even became fluent in the language. That made him a viable member of the deaf community, one who understood the dynamics of sign language and spoken language. He realized the importance of written languages and entertained the notion of a written sign language.

In 1825, Bebian published an essay in *Mimeographe*, "On the Deaf and Natural Language, or Introduction To A Natural Classification of Ideas With Their Proper Signs." In one section, he highlighted several areas, or parameters, of French people's sign language. Interestingly, long before Stokoe's research arrived, Bebian covered the areas we now know as parameters. His major concern, as it is for anyone considering the development of a written sign language system, was how to accurately transcribe the gestures on paper. He noted that signing mimicked life far more than spoken language could, and he bore painful knowledge of the fact that once such a written sign language system became commonplace, the mimicry of thoughts on paper would bring about a revolution of consciousness in print form.

There is not enough data to analyze Bebian's work. Only the tables of his symbols written in French on microfilm at Gallaudet University archives and an essay on his proposal were available; however, an analysis can be offered on this scarce information. His text translated in English offered partial insights into his arguments and the symbols. The following analysis is based on Bebian's tables in French, and on the English version of his essay.

Handshape symbols (HS):

Below is the illustration of Bebian writing symbols indicating the handshape in regard to palm orientation, *Caractères de la Main*:



It is clear that to have multiple handshape symbols for one handshape according to palm orientation makes for too many variables to recall.

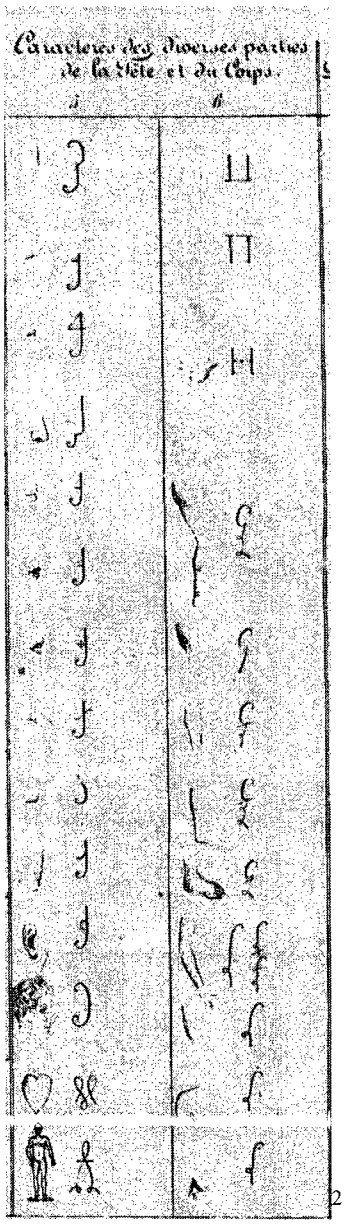
Bebian made a chart of one handshape to represent the 'B,' letter, open and closed (thumb folded out and in, respectively), using only one stroke. However, with a diacritic to indicate palm orientation (the position of the palm according to the signer's point of view or the viewer's), the

[1] Roch-Ambroise Bebian, *Mimeographie*, microfilm, Gallaudet University archives

stroke increased to two or three. Bebian realized the difficulty of indicating motion and space in writing, as well as NMS, or physiognomies.

Locative symbols (LOC):

Below is the illustration of body parts, *Caractères des dionées parties de la Gète et du Corps:*

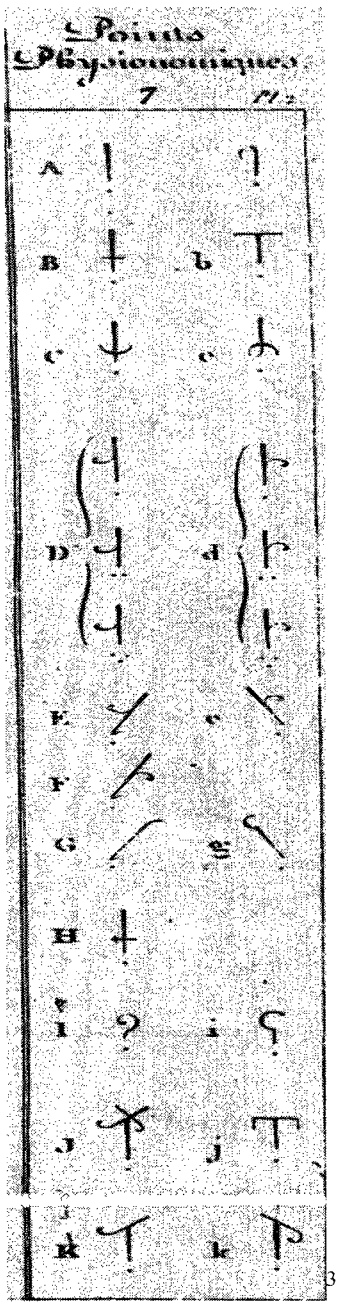


[2]

[2] Roch-Ambroise Bebian, *Mimeographie*, microfilm, Gallaudet University archives

Non-manual symbols (NMS):

The NMS symbols are presented in Bebian's *Points Physionomies* below. He felt that the "greatest hurdle is the representation of facial expression," which played a major role in sign language and that it "require[d] special care;" to write them required clarity and precision.

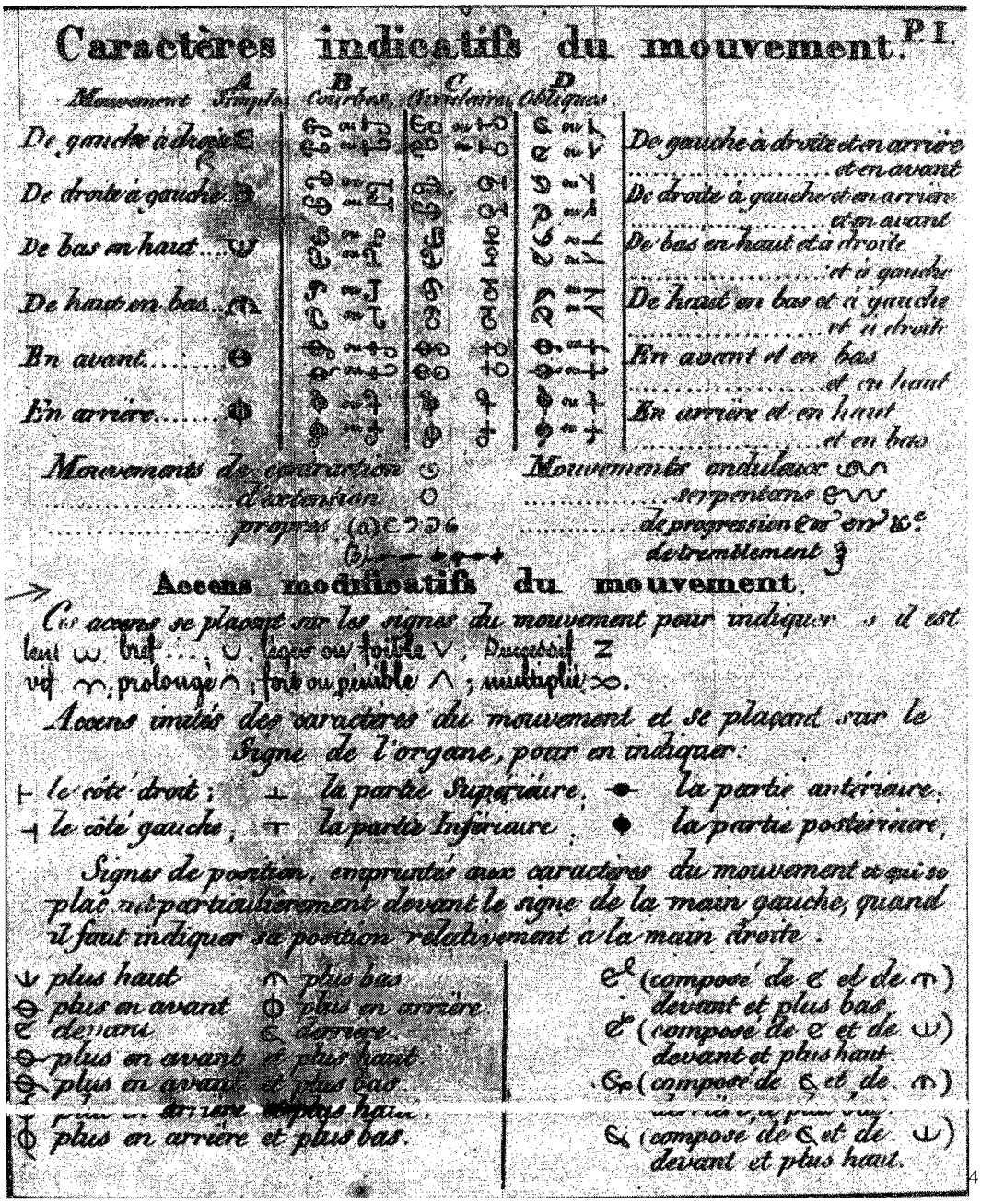


[3]

[3] Roch-Ambroise Bebian, *Mimeographie*, microfilm, Gallaudet University archives

Palm orientation (PO) and movement (MOV):

Below is the illustration of the characters indicating movements including palm orientation in conjunction with movement, *Caractères indicatifs du movement and accens modificatifs du mouvement:*



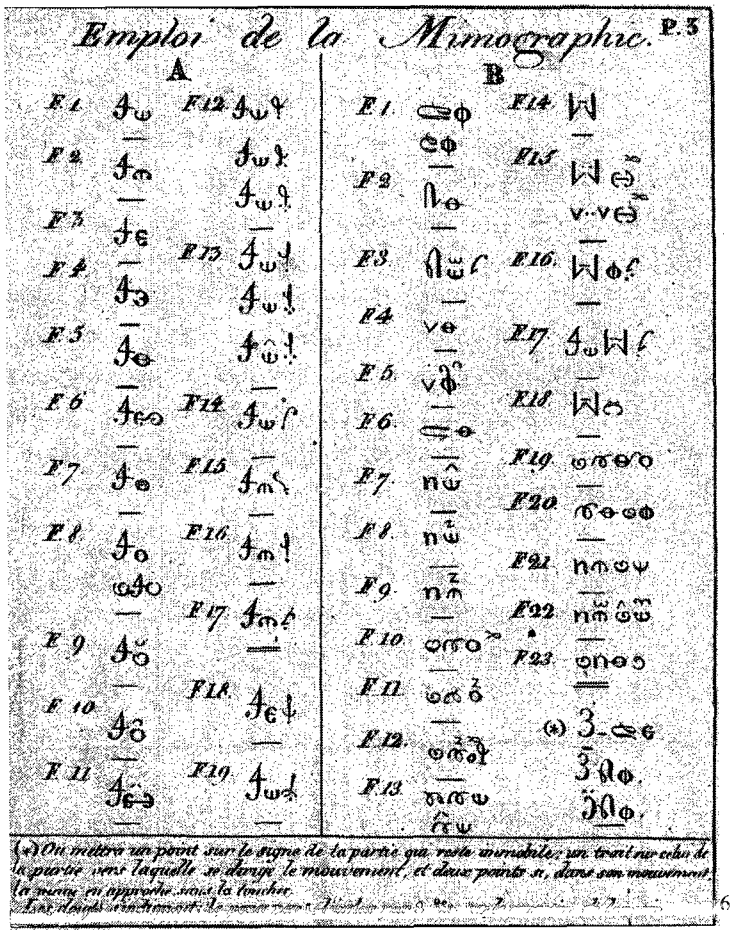
[4]

[4] Roch-Ambroise Bebian, *Mimeographie*, microfilm, Gallaudet University archives

Bebian discussed in his essay that "movements we can make are infinitely varied in direction, irregularity, speed, extent, and so on." He went on to suggest a universal character for movement, "whether a portion of a wheel or the arc of a circle described by the swinging pendulum."[5] He went on to point out the possibilities that the movement characters could be modified by 'six accents' indicating slow, quick, brief, prolonged and other movements.

Writing with NMS, PO and MOV symbols:

The illustration below is a combination of NMS, palm orientation and movement, *Emploi de la Mimographic:*



[6]

[5] Roch-Ambroise Bebian, *On The Deaf and Natural Language, or Introduction To A Natural Classification of Ideas With Their Proper Signs*, 142

[6] Bebian, *Mimeographie*, microfilm, Gallaudet University archives

He made these recorded proposals—to whom is unknown,–covering the five parameters. Bebian echoed the dubious veracity in developing a written system: "Considering the variety and extent of mimic language, one would think any attempt to put it on paper would meet with resistance, for such a great number of signs might seem to require an infinite number of characters."[7] He acknowledged further that the "infinite" number of characters was "less intimidating" when compared with all of the vocabularies world wide, that the few alphabetic characters would "suffice" for writing down all the words of all these languages.

It is not necessary to come up with a thousand symbols, or even a hundred, but less than a hundred total symbols covering all the five parameters of ASL to enable a written system. More importantly, the symbols are not a logogram, ideogram or an alphabet, but rather a digibet—to serve as a function within the syntax of ASL. Bebian pointed out: "Might not signs also contain elements to which we would assign particular characters?"[8] He considered a combination that could yield all kinds of signs, similar to how the 26 letters of the English alphabet, for example, could yield all kinds of words.

4.2 Stokoe Notational System

Dr. William Stokoe researched ASL extensively. He developed a written notation for sign language, called the Stokoe notation, as ASL had no written form at the time. His system drew heavily from the Latin alphabet. He did not try to invent a written system for ASL; rather, he came up with a notational tool to analyze ASL. Since then, various models of notational writing have been developed beyond Dr. Stokoe's system.

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[7] Roch-Ambroise Bebian, *On The Deaf and Natural Language, or Introduction To A Natural Classification of Ideas With Their Proper Signs*, 142

[8] Roch-Ambroise Bebian, *On The Deaf and Natural Language, or Introduction To A Natural Classification of Ideas With Their Proper Signs*, 142

Handshape symbols:

Stokoe offered 16 symbols with a few handshape variants attached to some of the main symbols, which were connected to the English alphabet. A fist handshape was referred to with the letter 'A,' a common handshape for 'A.' The fist, representing anything as well as the letter 'S,' had a thumb closed and across the fingers. One could not see the fist in 'A'. The thumb placed alongside the fist was more 'A' than the fist would be. The problem with this system is the root of handshape formation based on the English alphabet. Where can one draw upon a symbol based on the handshape itself and not a phonetic language component? It is understandable however because, at the time, ASL had just become recognized as a language of its own.

1.2 Table of Symbols Used for Writing the Signs of the American Sign Language

Tab symbols

1. Ø zero, the neutral place where the hands move, in contrast with all places below
2. ⌂ face or whole head
3. ⌒ forehead or brow, upper face
4. △ mid-face, the eye and nose region
5. ∪ chin, lower face
6. ʒ cheek, temple, ear, side-face
7. Π neck
8. [] trunk, body from shoulders to hips
9. ↖ upper arm
10. ∠ elbow, forearm
11. ɑ wrist, arm in supinated position (on its back)
12. ɒ wrist, arm in pronated position (face down)

Dez symbols, some also used as tab

13. A compact hand, fist; may be like 'a', 's', or 't' of manual alphabet
14. B flat hand
15. 5 spread hand; fingers and thumb spread like '5' of manual numeration
16. C curved hand; may be like 'c' or more open
17. E contracted hand; like 'e' or more claw-like
18. F "three-ring" hand; from spread hand, thumb and index finger touch or cross
19. G index hand; like 'g' or sometimes like 'd'; index finger points from fist
20. H index and second finger, side by side, extended
21. I "pinkie" hand; little finger extended from compact hand
22. K like G except that thumb touches middle phalanx of second finger; like 'k' and 'p' of manual alphabet
23. L angle hand; thumb, index finger in right angle, other fingers usually bent into palm
24. 3 "cock" hand; thumb and first two fingers spread, like '3' of manual numeration
25. O tapered hand; fingers curved and squeezed together over thumb; may be like 'o' of manual alphabet
26. R "warding off" hand; second finger crossed over index finger, like 'r' of manual alphabet
27. V "victory" hand; index and second fingers extended and spread apart
28. W three-finger hand; thumb and little finger touch, others extended spread
29. X hook hand; index finger bent in hook from fist, thumb tip may touch fingertip
30. Y "horns" hand; thumb and little finger spread out extended from fist; or index finger and little finger extended, parallel
31. 8 (allocheric variant of Y); second finger bent in from spread hand, thumb may touch fingertip

Sig symbols

32. ^ upward movement
33. v downward movement
34. ^v up-and-down movement

(32–34: vertical action)

35. > rightward movement
36. < leftward movement
37. >< side to side movement

(35–37: sideways action)

38. ⊤ movement toward signer
39. ⊥ movement away from signer
40. ⊤⊥ to-and-fro movement

(38–40: horizontal action)

41. ɑ supinating rotation (palm up)
42. ɒ pronating rotation (palm down)
43. ω twisting movement

(41–43: rotary action)

44. ∩ nodding or bending action
45. □ opening action (final dez configuration shown in brackets)
46. # closing action (final dez configuration shown in brackets)
47. ≋ wiggling action of fingers
48. ⊚ circular action
49.)(convergent action, approach
50. × contactual action, touch
51. ⋕ linking action, grasp
52. † crossing action
53. ⊙ entering action
54. * divergent action, separate
55. " interchanging action

(49–55: interaction)

9

[9] Clayton Valli & Ceil Lucas, *Linguistics of American Sign language*, (Washington, DC, 1998), 228

Locative:

The tab symbols are the 12 locative symbols to represent various body parts, something that Dr. Stokoe recognized as crucial. In the system proposed in this paper, there are 13. Bebian had 27 symbols. The last two symbols of Stokoe's system are alphabetic in nature.

Palm Orientation and movement:

Like Bebian, Stokoe combined the palm orientation and movement, totaling 23 symbols. It was a bit too complicated, as Bebian stated, because movement "invariably varied in direction, irregularity, speed, extent, and so on."

Non-manual signals:

Stokoe's system did not offer NMS symbols. However, Stokoe notational writing continued to expand with further studies in ASL. "A few additional symbols and some conventions of using the symbols to write signs have been adopted to make the notation more explicit."[10]

4.3 Sign Font Model

Sign Font was developed by the Salk Institute for Biological Studies in San Diego and published by Emerson & Stern Associates, Inc., in October 1987. According to the handbook developed, "SignFont is an attempt to create a written form of Sign Language that is easy to learn, easy to read and easy to write by hand or by computer. Other people have tried to do this before, and we are building on their experience."[11] The handbook also stated that over the two years of development the San Diego deaf community, including "40 deaf and hearing researchers, linguists, artists, educators, and writers around the country (Salk, Emerson & Stern, 1987)," gave their time to SignFont.

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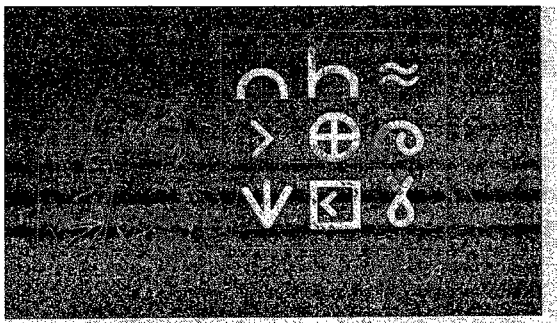
[10] Clayton Valli & Ceil Lucas, *Linguistics of American Sign language*, (Washington, DC, 1998), 229

[11] Salk, Emerson & Stern, *Architect: Final Version, Sign Font Handbook* (Dawn Sign Press, 1987), 3



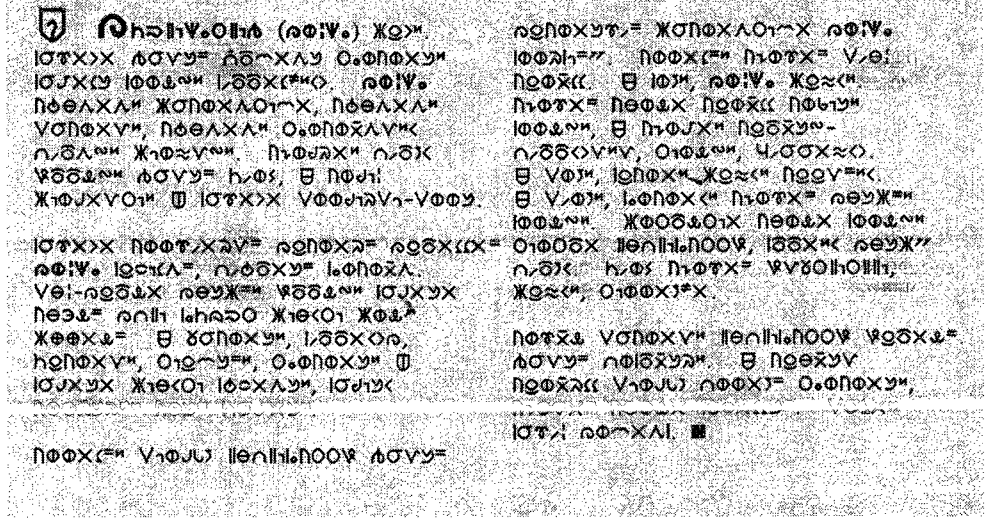
SIGNFONT HANDBOOK
OCTOBER 1987

SIGNFONT is an attempt to create a written form of Sign Language that is easy to learn, easy to read, and easy to write by hand or by computer. Other people have tried to do this before, and we are building on their experience.

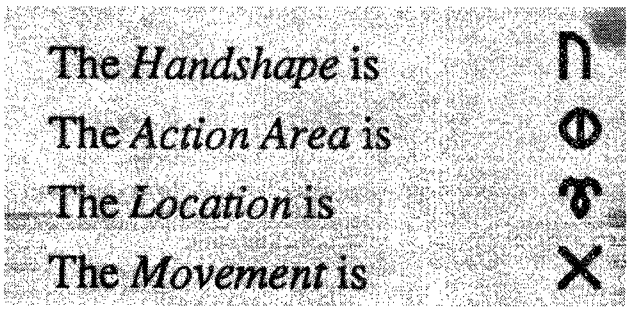
We ask you to join us as a **SignFont Architect** to make this writing system work and continue to grow. During the past two years many people in the Deaf community in San Diego, and 40 Deaf and hearing researchers, linguists, artists, educators, and writers around the country have contributed their ideas and energy to **SignFont**.

This handbook is designed to help you learn **SignFont** in the shortest time possible. There are three main sections in the Handbook. The first is a description of the **SignFont** alphabet. This is a listing of the parts of every sign that are written — Handshapes, Movements, and so on. The second section is a more detailed discussion of how to put the **SignFont** characters together to spell signs. Last, there is a Dictionary of several hundred signs. It includes all the signs used in this Handbook plus many other useful signs. In this section there are also helpful tables of useful pronouns, fingerspelling conventions, and numbers.

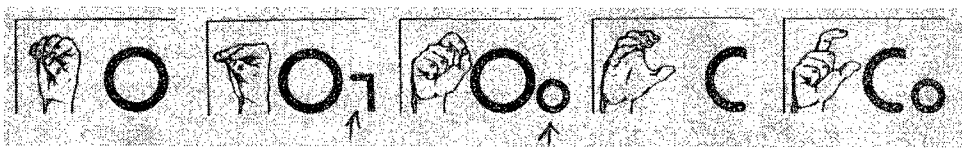
Please read through the handbook carefully and try the exercises. The answers to the exercises are printed at the end of the "How to Write" section, so you can check immediately to see if you understand the system. ■



[12] Salk, Emerson & Stern, 3

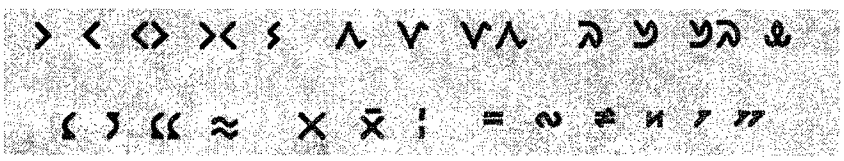


The word structure is similar to the order as in the proposed ASL writing system.

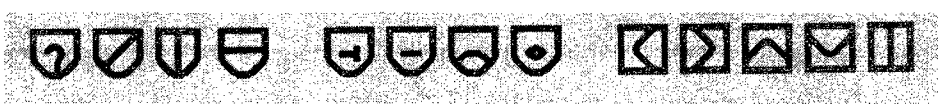


Handshape symbols.

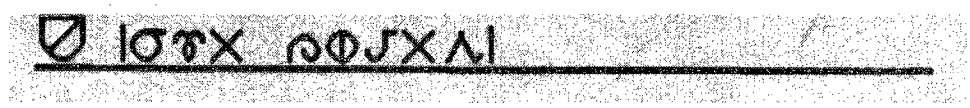
Note the alphabetic 'O' and suffixes (arrows). SignFont's O is quite similar to the English alphabet counterpart, giving a surreal sense of a perfect circle not found on any human hand. A young deaf boy once said, when he and his friends were asked to come up with a written form for 'O,' that the written representation of 'O' like that of the English could not be used in ASL writing because "my thumb and fingers are not fused together (Montan, 2004)."



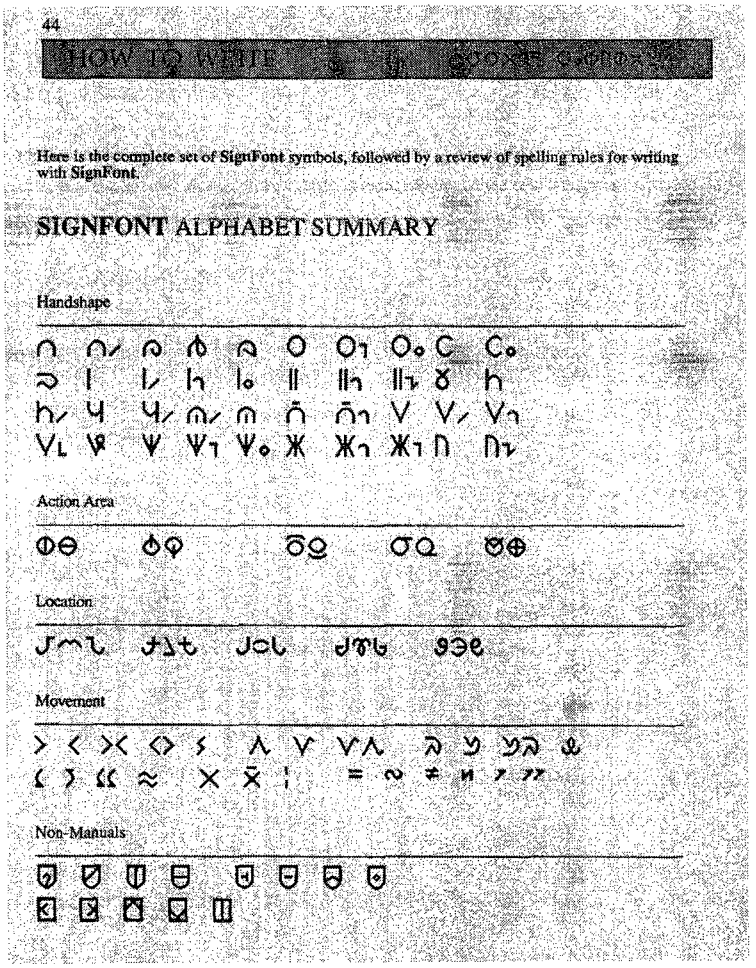
Movement symbols above.



Non-manual signals, above.



"I understand," it says.



44

HOW TO WRITE

Here is the complete set of SignFont symbols, followed by a review of spelling rules for writing with SignFont.

SIGNFONT ALPHABET SUMMARY

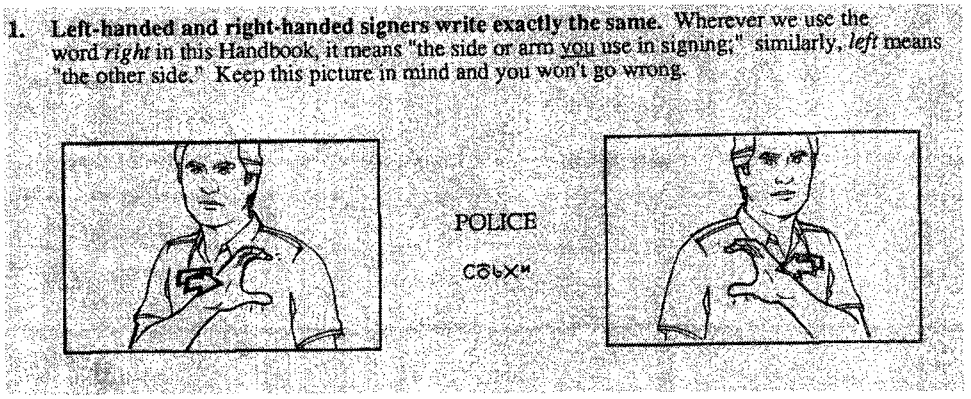
Handshape

Action Area

Location

Movement

Non-Manuals



1. Left-handed and right-handed signers write exactly the same. Wherever we use the word *right* in this Handbook, it means "the side or arm you use in signing;" similarly, *left* means "the other side." Keep this picture in mind and you won't go wrong.

POLICE

Sign Font is a writing system consisting of few strokes in writing handshape symbols. One drawback is that it does not consider right or left handshapes as having value in writing, where one can use the two distinctive handshapes to establish spatial referencing, dominant and stationary hand placement, and so on.

4.4 Sutton SignWriting

Sutton SignWriting is the name is attached to this notational writing system in the fashion that Samuel Morse's name is attached to Morse Code. Valerie Sutton's sign writing system is modeled after Labanotation, or dance writing. "Written notation systems have been developed to record human movements. Two of these, Labanotation and Benesh (Hutchinson 1954, Benesh and Benesh 1956), are exceedingly accurate for purposes of notating, comparing and storing human movement patterns. However, they do not reveal the cultural values...nor the corporeality of bodies; they record disembodied movements (Kealiinohomoku, 1989)." This type of writing is an absolute kind of writing system that records movement, as music sheet is absolute. Sutton SignWriting is merely a notational record of the movement applicable to any sign language around the world. The following is an excerpt from the SignWriting Web site:

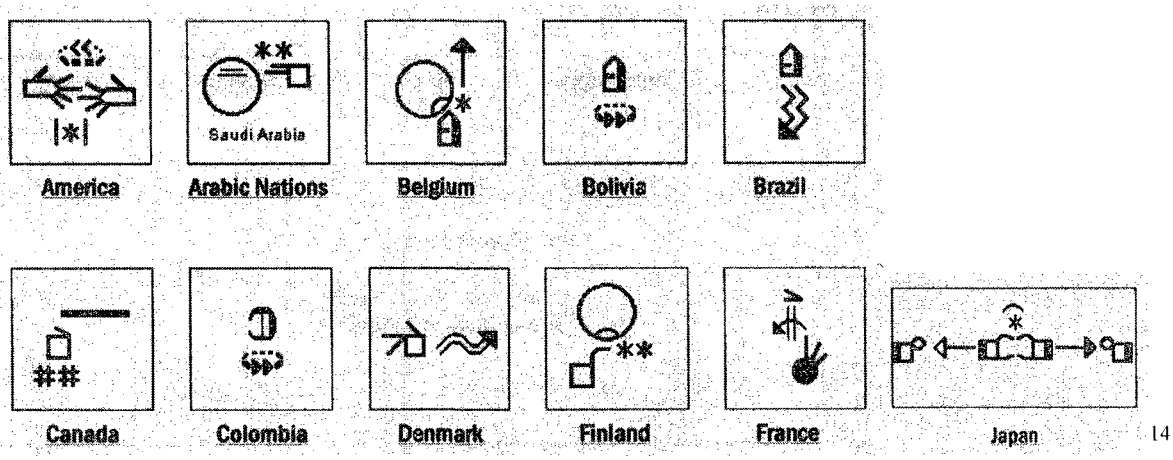
"SignWriting has no connection with any other writing system, nor is it in any way stemming from a linguistic base. Sutton does not know the languages she writes, because the movement is written down in a generic form, not based on a prior knowledge of the languages being written, but instead based on how the body looks as it moves. This means that SignWriting can write any signed language in the world, including detailed facial expressions and mime (2007)."

Since the Web site clearly states that Sutton's writing system records how "the body looks as it moves," and given that it incorporates a great number of ideographic symbols as well as iconic symbols, such as a smiley face, this appears to be logographic writing.

The following justifies the notational argument: "It is ONE movement-writing system for writing all dance, all mime and gestures that have no meaning, all sports, body language, animal movements, machine movements, the movement of the wind, PLUS the same writing system, called SignWriting in Deaf communities, is becoming the daily writing system for real languages

such as American Sign Language, German Sign Language, or Brazilian Sign Language. But whether it be SignWriting or DanceWriting, all movements are written with the SAME symbols. Sutton Movement Writing is a global writing system (Sutton, 2000)."[13]

4.4.1 The construction of SignWriting



[14]

SignWriting consists of ideographic-based symbols for world-wide interpretation, having converted such symbols to fit its purpose, and making the symbols logographic.

Ideographic Logographic for SignWriting



and


Ideographic Logographic for SignWriting

In the written system, the ideographic and SignWriting's logographic symbols carry similar meanings. This makes SignWriting an ideographic-based logographic and notational writing system. An arrow is an arrow giving directions as to where to go.

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[13] http://www.valeriesutton.org/#anchor475998

[14] http://www.signwriting.org/about/who/index.html, July 20, 2005

With ASL writing, the profile is similar to the ideographic symbol, the parenthesis bracket; however, the ideographic symbol's purpose is to bracket a sentence. In ASL, this similar parenthesis is transformed into something else: a facial profile that can convey several language codes. An example, as discussed in Chapter Three, is that it serves as a locative referent, has gender references, the profile facing right is the right side, the left—left side, and so on.

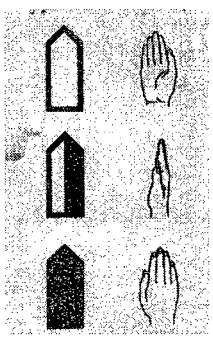
Ideographic	ASL Syllabic
} Right curly bracket	} Locative symbol, face

In ASL, the 'arrow' would be a line and the end point(s).

Ideographic	ASL Syllabic
→	——— •

4.4.2 The handshape and palm orientation in SignWriting:

SignWriting combines the handshape with palm orientation.



This geometric shape representing the palm and the shades (orientation) is computer-based writing.

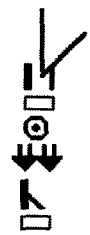
4.4.3 Locatives

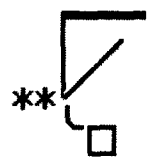
SignWriting's only locative symbols are the handshape, shoulder and face symbols. For the

forehead and temple, side and front, the diacritics are marked on the smiley face. The shoulder symbol is viewed at the front, like the face. The signs for *polite* does not have the chest area locative symbol.

Polite 

Examples of elbow signs:

Poor 

Temptation 

Country (3 examples): 

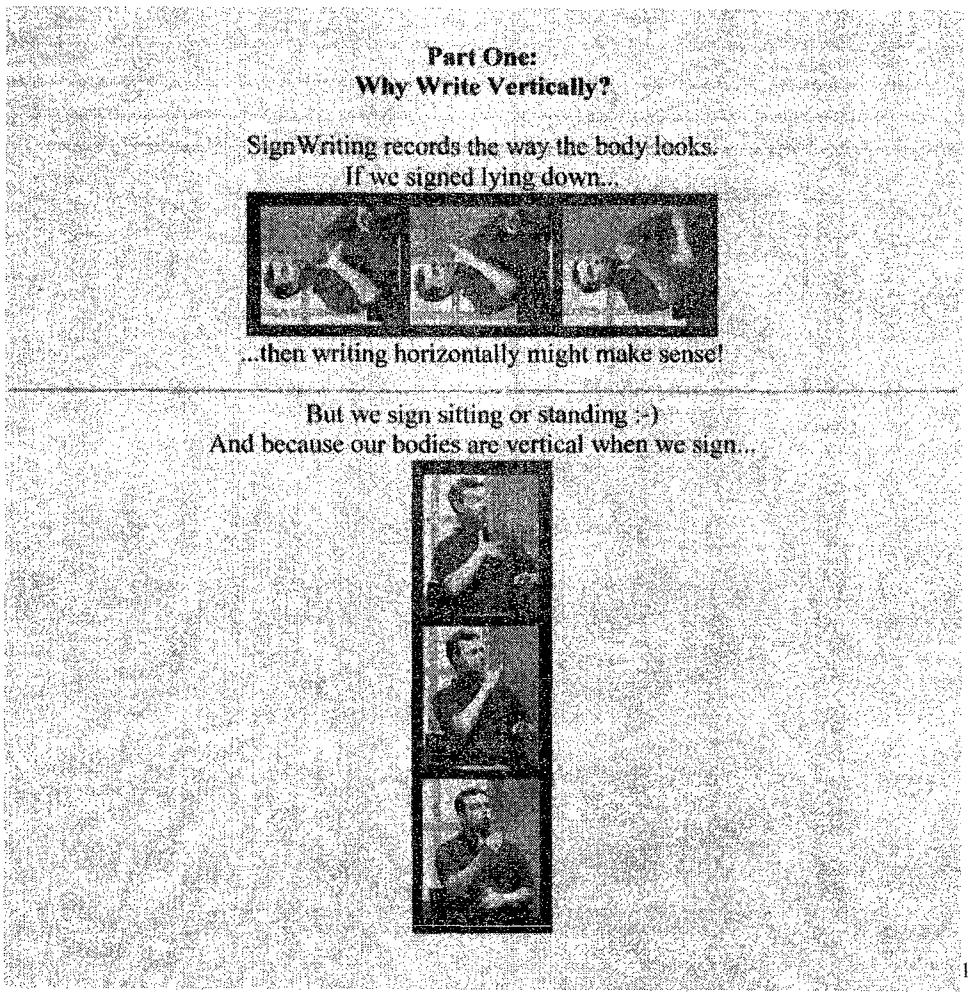
Fall (seasonal) = none.

False 

Nosey = "no results found!" according to its website.

4.4.4 Non Manual Signals

4.5 Direction of SignWriting in writing



[15]

Sign language is generally perceived by the community of users as flowing from a person on a horizontal plane. This is a matter of cultural habit as to how to read and write. It is possible Chinese deaf people, when they develop a written system for their sign language, will write vertically. Their written system will probably be distinctly Chinese, given that writing reflects culture and writing style.

[15] http://www.signwriting.org/about/who/index.html, July 20, 2005

4.6 Fairy tale example of sentences in SignWriting

[16]

The logographic smiley face in this Cinderella story takes away the reader's preference to supplant the mood based on the subtleties of writing.

4.7 Computer based writing

For most users who are just interested in writing SignWriting documents, the information about the symbol ID numbers and the symbol categorization is not that important. The average SignWriting user has only to learn what kind of symbols are available on the computer based symbolset, and where to find them on the national keyboard of the SignWriter program. Using SignWriter DOS 4.4, with some practice, the desired handshape symbol can be found easily, including the required palm facings, flops and rotations, plus other details.

This then points out, that there is specialized software for typing SignWriting documents, that works efficiently and easily. This computer program, SignWriter DOS 4.4, is available free for download on the web (www signwriting.org). Instruction documents give an introduction to learning how to use the SignWriter program, which will help you get started. (I know what I am talking about!) I offer workshops for the adult education classes in Osnabrück, Germany, on a regular basis. Participants attend two 24-hour courses which include basic information on learning to read SignWriting, and they also learn how to type with the SignWriter DOS 4.4 computer.

[17]

What does the SignWriting keyboard look like? It appears that for the United States the

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[16] http://www.signwriting.org/about/who/index.html, July 20, 2005

[17] http://www.signwriting.org/about/who/index.html, July 20, 2005

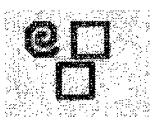
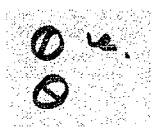
keyboard layout is U.S. English. Is the German sign writing in a German keyboard layout? If so, that may be problematic. One has to know the spoken national language in order to write sign language on the computer.

It is therefore necessary to come up with a sign language parameter-based keyboard.

4.8 Comparative analysis of the three systems' symbol strokes

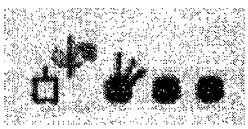
In this section, an analysis of the number of strokes per symbol is provided, to highlight the effectiveness and ease of writing them. As clearly described earlier, SignWriting is an exclusively computer-based writing system. Below, the SignWriting, Stokoe, English and ASL writing stroke numbers are compared.

 [18]

SignWriting	Stokoe	English	ASL
		COFFEE	
3 strokes, two perfect squares.	8 strokes, use of alphabet.	10 strokes, CAPS in print.	4 strokes, thumb indicates RH dominant digibet.

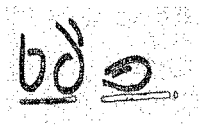
[18] www.coffeevending.com.au/CoffeeLogo.JPG

1900 (year)



1F  > OO

1900

1900 or 

16 strokes: Time spent to color in dark areas, uses logographic symbol: arrow symbols.

7 strokes: Index finger data not provided but '1' may be used as index finger, uses alphabet, arrow bracket, and 'w' for wrist motion.

4 strokes: after 'the year' to indicate number classification.

4 strokes: Uses regular number after 'year' in ASL.

8 strokes: digibet orientation and movement indicates year.

Without Stokoe's system, only three writing systems are compared:

English

SignWriting

ASL

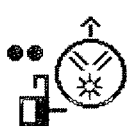
WHO

19 geometric strokes: time spent to perfect the circle and fill the arrow.

3 strokes: **main symbol** indicative of WH question

Variations of WHO for specific purposes

5 strokes: CAPS print. 3 strokes for lowercase print.



23 strokes: time spent to darken areas.

8 strokes

The question is not *how* to sign the word, but to convey the semantic for 'who' in spite of its variety of ways to sign 'who.' If it is necessary to know 'dialects' and 'accents' of regional signs then the symbols to the left are examples.

One stroke: cursive.

23 strokes: in the same manner above for **rhetorical** question.

8 strokes

13 strokes: Old south, Midwest sign-still in use. Similar to 'wet'.

23 strokes: **rhetorical** question

English

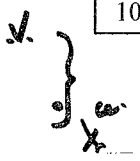
SignWriting

ASL

19 geometric strokes: time spent to perfect the circle and fill the arrow.

3 strokes: **main symbol** indicative of WH question

14 strokes: fill in arrow head.



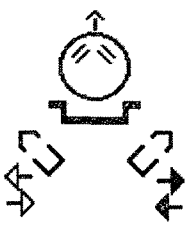
10 strokes

For rhetorical question use the y/n NMS symbol instead.

Too many variations of a word are indicative of notational writing. Which is the main symbol?

WHAT

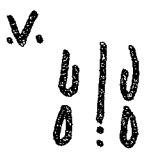
8 strokes in CAPS print; 4 strokes in lower case



4 strokes: default symbol for WHAT

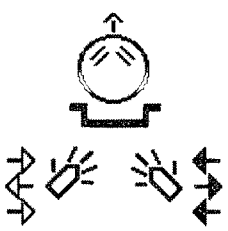
Variety of WHAT for specific *signiation*:

39 strokes: time spent for fillers.

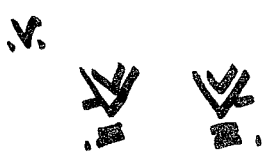


10 strokes: sign is similar to 'do-do'.

2 strokes in cursive. Extra stroke to cross the T.



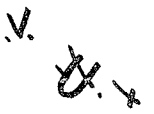
35 strokes: time spent for fillers.



13 strokes

English | SignWriting | ASL

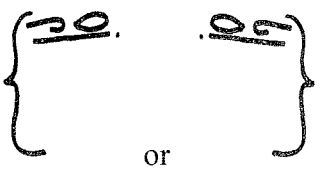
11 strokes: time spent for fillers.



9 strokes

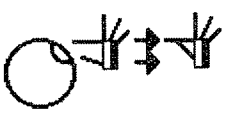
6 strokes: abbrev. finger spelling, note sideways palm inward, right digibet.

GALLAUDET



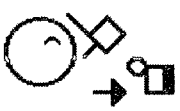
or

15 strokes in CAPS print, 12 strokes in lowercase print.



24 strokes: time spent on fillers.

5 strokes: note either way, for left and right handed signers.



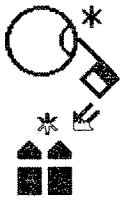
11 strokes: time spent on fillers.

11 strokes: finger spelling GALLAUDET.

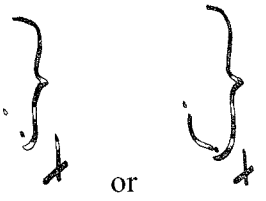
2 strokes in cursive.

English | SignWriting | ASL

DEAF



23 strokes: time spent on fillers.



or

8 strokes: CAPS print; 6 strokes in lowercase print.

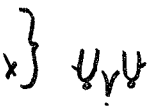
11 strokes: blocky hand, time spent on filler.

5 strokes

5 strokes: with movement line.

1 stroke: cursive.

14 strokes: blocky hand, time spent on filler.

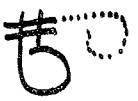


'EAR CLOSE' = 11 strokes.

NAME

16 strokes: time spent on fillers.

4 strokes: Default symbol.



Invisible digibet: etymology of default symbol. Still 4 strokes if written in full.

7 strokes: CAPS print; 4 strokes, lowercase print.

Robert

14 strokes: much time spent filling and maneuvering around gaps of 'B' and 'E'.

9 strokes. Note right handed digibet.

9 strokes. Left handed digibet.

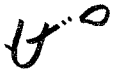
Writing as neat as possible. Can easily adapt to computer software eventually.

11 strokes: CAPS print; 8 strokes lower case print.

2 strokes: cursive.

Writing

13 strokes: blocky, time spent on fillers.



6 strokes: noun, note double end points.

To write any way one wishes to write is to simply manipulate the movement line and end points.

11 strokes: CAPS print, 10 strokes lowercase print.

9 strokes: blocky, time spent on fillers.

5 strokes: verb, wavy movement line.

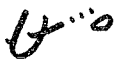
5 strokes: cursive—dot the I and cross the T.

9 strokes: time spent on fillers.

5 strokes: straight down movement line.

7 strokes: similar to above, repetitive, lots of writing.

7 strokes: writing with intensity, pressured for time. Note line end points = firm motion.



Writer:

8 strokes.

The economy of SignWriting requires greater effort to write a sign, three to five times more strokes, compared to the proposed ASL written system. It is not feasible to have a writing system created by the computer prior to creation by handwriting. Handwriting produced the printing press, after all.

The number two pencil costs about 15 cents and a sheet of paper costs less than a cent. A computer costs about 6,000 times more. The pencil and paper is accessible to everyone, and is everywhere, and at the spur of the moment, usable anywhere at any time, with or without electricity.

4.9 Writing: an author and reader meeting halfway

An author codes his writing by choosing a word expecting the reader to recognize the semantic and context of the word, internalizes it and knows how to pronounce it. The author does not write in the phonetic values telling the reader how to pronounce the word. The author engages the reader to deduct the author's word. This makes for an active participation of the reader in reading the text. If the author puts in the phonetic values (except for poetic purposes and instructing how to pronounce foreign words) then the reader does not participate but is instructed, leaving the reader in a passive state of reading.

This type of passive reading is the result of notational writing such as SignWriting discussed above. To write in the "phonetic" values—palm orientation and exact numbers of fingers, for example, leaves the reader without a chance for contextual deduction. Notational writing is useful as an instructional and analysis tool, such as Stokoe, where linguists and those not knowing ASL can study the language's parameters.

This is what makes writing powerful and explains why books are better than movies. Vlogs and video, like movies, narratives are a modern force of writing that differ from writing that it serves in conveying information. A novel in vlog form would not be as engaging as the written form engages the author and reader in deductive reading.

4.10 The possibilities of ASL in written form from preschool to college, and beyond

The proposed ASL written system is offered toward the ASL community in North America. The signing deaf community worldwide can lift some ideas and create their own written

systems that reflect their writing styles, cultural writing processes and contextual identities. This leads toward language borrowing within the same modality.

The contextual identity in the digibet reveals the writer's psychology (handwriting analysis), for example. The choice of using the left or right digibet is contextual identity in writing. This reveals the writer's style and use of syllables to refer to context of the composition. As discussed earlier, Chinese writing is vertical, Arabic and Hebrew go from right to left, and in the U.S., English goes from left to right. This is contextual identity.

L1 Reading and writing

Having a written system will enhance the reading and writing education for deaf pupils from preschool to college. Where the first language acquisition (L1 for native language development) is concerned, the aural language has both the vocal and written forms easily acquired. It is, however, problematic for deaf children. If they do acquire sign language immediately after birth, there is a lack of first language process for reading and writing. Instead, in place is the second language, L2, the English language. To achieve L2 successfully, it is first necessary to achieve L1. Furthermore, the proposed written system can fulfill this need to naturally acquire ASL without the presence of an ASL user in the classroom at all times. That deaf pupil can continue language acquisition by reading and writing beyond the classroom, alone or with peers via e-mail, letters, and so on.

How to begin writing ASL

To implement the ASL written system into the community, it is necessary to train people in how to teach the written system. Materials to use as teaching tools and lesson plans can be placed at preschool level for native ASL users. For ASL classes, the written system can supplement the sign language textbooks. Children's books can have simple digibets in large print rather than the alphabet text, for single language learning and reading. Naturally, a translated version could be

published in English and any other languages for the benefit of deaf children and native ASL users.

Who will use ASL writing?

To consider the small percentage of ASL users in this English-dominant country, many have come to question the usefulness of ASL writing. It admittedly would only be good for a few people – at first. Like all written languages at the beginning, as history has witnessed, once the written system is set in place, the potential will expand. Second, to see the language of a different modality—the visual modality, in print—would encourage greater linguistic studies. There is no proof that ASL writing will expand to make a difference in deaf society, but there is equally no proof that to *not* have a written form for ASL is just as good. What is there to lose in this endeavor of establishing a written system?

The impact of ASL writing

The written system for ASL can create a writing industry. Deaf native ASL users majoring in English can set up shop and become editors in translation and transliteration publications from ASL to English and English to ASL. This would create for more self-sustaining businesses within the ASL/deaf community engaged in commerce with education and entertainment in all levels of its society and societies worldwide.

The arts and entertainment

An ASL written system could also infuse its influence in the arts and entertainment world, such as playwriting—Shakespeare in ASL by deaf playwrights to spare the actors and directors the translation process, literature translated from any language into ASL, deaf authors writing in the original state without translation, and so on. The possibilities are endless.

ASL classes

ASL writing will be extremely useful in ASL courses because then glossing would be replaced (if not already). Grammar can be studied and written by ASL students. In this regard, like

any foreign language course, the writing supplants the spoken/signed language. Exercises can be done through writing outside of class. ASL students often draw handshapes to remind themselves the sign for a certain semantic. The digibet can easily fulfill that need. The system also helps parents of deaf children learn ASL at home, and encourages parent/child reading and writing time.

Long overdue

All in all, there is an obvious need for a written system for American Sign Language. Ever since Bebian saw such a need for the national sign language in 1825, it has been long overdue.

But who shall be the master? The writer or the reader?

- Denis Diderot, *Jaques le Fataliste et son maitre*, 1796

Writing, as Coulmas said, is the act of painting thought. To consider writing in ASL is to consider a non-traditional and innovative, new way to write thought originated and conveyed in three-dimensional form. This kind of writing offers broad strokes of the author's mind, ideas and culture. To consider how ASL, as a new language, can perform on the world stage of languages, a written form is necessary to make its place permanent.

Furthermore, the written system is a celebratory testimony of what and who of the author and his/her culture—that it is the first hand testimony not via sign language interpreters or by the written language of sound but by one's *own* handwriting.

Stokoe believed that "sign language followed by writing is the oldest and most urbane form of communication (2002)." ASL deserves to be written into the pages of history, where it will remain the oldest and most urbane form of communication.

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