The Hunting Tongue

Part One

On a (not-so) recent Reddit thread on the /r/conlangs subreddit, user /u/Pace-Quirky floated the idea of a mixed spoken and sign language, and I chimed in with a link to Logan Kearsley's "Thoughts on Sign Language Design," in which he discusses the evolution of modern American Sign Language from Old French Sign Language.[1] This got me thinking: I've been wanting to design a sign language for a while now; similarly, I've had something of an interest in Chakobsa (the Caucasian language, not the *Dune* one); and it occurred to me a few days ago that it might be interesting to explore the evolution of sign languages and secret languages by creating one of my own. Today, we'll be creating a mixed language, both spoken and signed, that will serve as a secret language among the nobility of some far-flung region in my fantasy fiction, and hopefully we'll learn a little something along the way.

I feel I should state up front that a hybrid sign-spoken language goes against the inherent purpose of sign languages; that is, a hybrid language is biased towards those who are hearing. This put me off developing such a language for a while; I didn't want it to seem as though the signed portions of the language were decorative or fanciful as that would seem to diminish the importance of sign languages and deaf culture. However, I think such a project could yield quite

[1] When I began this essay, this thread was recent, but it is increasingly less-so as the scope of this essay grows and other tasks eat up my time.

interesting results and so I want to be explicit that this is an entirely artistic endeavor.

Hopefully this explanation satisfies you, but I would love to hear more people's opinions on this subject.

1 | THE HUNTING LANGUAGE

Chakobsa is a language made by David Peterson, Frank Herbert, and a caste of Circassian knights from the Caucasus—or something like that, if Google is to be believed. There are really two things that people refer to as Chakosa: the first, a secret language used by Circassian nobility, often referred to as "The Hunting Tongue," about which we know too little, and the second, a language from Frank Herbert's *Dune*, used by various peoples and factions in the story, recently fleshed out into a full constructed language by David Peterson for the adaptation by Dennis Villeneuve.

This first Chakobsa is referenced in a few books and a handful of accounts, but it is difficult to say anything substantial about it other than that it might be a sort of code in the vein of Pig Latin—based on Circassian—though it may alternatively have been a distinct language ambiguously related to the local Caucasian family. In any case, this Chakobsa was used by the knights and princes of Circassia as a secret language, meant to ensure important information could be kept entirely between them. We know that it existed; we know roughly where it was used and who used it; and beyond that, to my knowledge, we know almost nothing.

Dune's Chakobsa, on the other hand, was recently fleshed out into a conlang, so while there's more to say about it there isn't much worth discussing here (since our language will look considerably different). I'll direct you to a brief look at Chakobsan orthography and Peterson's streams, during which he has done some translations in the language. Much like the real-world's Chakobsa, it seems like whoever controls which details get out about Peterson's version of the language has opted for secrecy.

When it comes to the phonology of Peterson's Chakobsa, we can make a few guesses based on its orthography, though presuming that the writing system is less-than-phonetic, any guesses will be just that: guesses. The language seems to be reminiscent of modern Arabic languages, featuring three short vowels, /i u a/, and five long vowels, /i: u: e: o: a:/. There are a few diphthongs, again like Arabic, but accurate IPA notation seems to disappear when it comes to the consonants. Fishing around through his streams, we can piece together an idea of the language: it seems to feature plain, voiced, and ejective stops with a couple affricates, presumably /t͡s/ and /t͡ʃ/. There appear to be dental non-sibilant fricatives, again like (Classical) Arabic, and a uvular stop, /q/. The Semitic influences are undeniable, I think, though the writing system is much more akin to the Brahmic scripts, especially Tamil. It definitely seems neat, if the bits and pieces I've managed to find are any indication, though we should probably move on before we get too wrapped up in it. Our purpose here isn't to design a language akin to his nor even to the Caucasian languages necessarily.

We're more interested in the broad idea than in the particulars; our hunting tongue will draw on a great number of sources—the Circassian languages, of course, if only because I love the Caucasian languages a little too much, but also several other families. Any similarities with Peterson's will be entirely accidental (or, likelier, due to our drawing on similar influences). I likely won't be able to restrain myself: I'll put together a little writing system for our language; I've been itching to draw on Hebrew and Javanese, so that'll be where we find our own influences.

This essentially wraps up our brief exploration of Chakobsa and my laying out of a vague roadmap for the rest of this essay. Sadly, there isn't a whole lot to say about the real world's Chakobsa, and *Dune*'s isn't entirely pertinent to our discussion here today, so it's about time we get around to talking about sign languages.

2 | SIGN LANGUAGE CHARACTERISTICS & ORIGIN

It really is a shame more conlangers don't create sign languages, though I understand why they tend not to: most of us, I assume, use spoken languages as our primary means of communication, so it makes sense that our interest would be in that form primarily. There exist a number of purely written conlangs—that is, conlangs which lack any phonology at all, not those that simply go unspoken—and while these are neat, I've not run into too many that go the opposite direction: lacking an (in-world) writing system. To bring Peterson back again, Dothraki from *Game of Thrones* lacks a script; its speakers are nomadic

peoples who haven't developed a need for one, but I honestly can't call to mind many others (at least, among the big names) that share this (lack of a) feature.

Plenty of real world languages lack a script or don't make frequent use of one. Many of the Caucasian languages are primarily spoken, with their speakers writing in Georgian or Russian, and the same goes for some of the Chinese languages and Mandarin. We could do the same for our hunting language, but I'm also just a sucker for creating writing systems, so I don't know if I can help myself. Ah, but we're meant to be talking about sign languages.

Sign languages have existed for quite a long time, but it wasn't until the early modern period that we saw—at least, in Europe—their institutional systematization and diffusion.[2] Their evolution has been studied extensively, though their classification into nice families seems to elude academics; it isn't clear precisely where all modern sign languages evolved from, though the sign language that most my readers will be most familiar with, American sign language (ASL), ultimately comes from Old French Sign Language (OFSL). Modern French sign language (FSL) also came from OFSL, though ASL and FSL are no longer mutually intelligible. Like spoken languages, sign languages evolve and dissimilate, so there must be some discernible mechanisms driving this that we can emulate in our own conlang.

First, we should talk about the distinctive features of signs and determine which notation we might use to describe them. Then, I'd like to briefly talk about

[2] Power JM, Grimm GW, List J-M. 2020 Evolutionary dynamics in the dispersal of sign languages. *R. Soc.* open sci. 7: 191100. http://dx.doi.org/10.1098/rsos.191100

how the context in which our language will be situated might affect its development (specifically with regards to its signs).

Those without much experience with sign languages might think that the only real mechanism for conveying information is the hands, but many sign languages make use of a number of related dimensions and mechanisms that make describing signs somewhat more difficult than (broadly) describing phonemes. Consulting David Peterson's Sign Language IPA (SLIPA), we can break the various dimensions common to sign languages down into the following: the place where the sign is made (on or near the body), the movement of the hand(s), their shape, their orientation, facial expressions and gestures, and indexation (or the referencing of certain arguments by direct gesturing, pointing, etc).[3] Peterson has outlined a notation for describing these which I will likely draw on to develop our signs; I considered my two alternatives—creating my own notation or simply describing each sign in long-form—and while I will probably resort to the latter in many places, it might do well to try out SLIPA, if only to bring it marginally more into the mainstream conlang discourse.

In her 1991 article on "Urban and Rural Sign Language in India," Jill Jepson explores the differences between the sign languages employed by India's deaf urbanites and its rural deaf communities, specifically looking at the two languages' communicative efficacy. She characterizes the former—urban ISL (or UISL—as "appeal[ing] primarily to linguistic conventions shared by members of the sign community" while the latter—rural ISL (or RISL)—appeals instead to

[3] Peterson, David. "Sign Language IPA," dedalvs.com (Oct. 2021): https://dedalvs.com/slipa.html

"communal nonlinguistic knowledge of the cultural and physical environment."[4] That is to say that the context in which these languages are acquired and transmitted shapes the degree of arbitrariness and iconicity to be found in their signs—each being particularly equipped to transmit information between the members of their respective communities. Granted, this article is now around thirty years old, we can draw on it in conjunction with some more recent publications to determine how our language might look due to the context in which it is situated.

Jepson describes RISL as "a collection of related community-based or even familiosyncratic idioms used by deaf individuals and by the hearing when they interact with deaf people."[5] In essence, RISL grew out of highly localized sign languages and remains very distinct from place to place, unlike the relative universality of UISL. We would expect our constructed language, arising in pre-modern times, to reflect this highly localized nature, and it would be reasonable to assume that it would have grown out of a tight-knit community, maybe even a family. Since we lack any examples of truly half-spoken, half-signed languages in our world—only the interwoven use of distinct fully spoken and fully signed languages—we're going to have to reason about why we pick and choose particular features more on the basis of believability than reality. That is, since we can't say, "feature X makes sense because it can be found in natural language Y," we'll have to say "feature X makes sense because it has certain similarities to feature Y which is present in natural language Z." For

[4] Jepson, Jill. "Urban and Rural Sign Language in India," *Language in Society* 20, no. 1 (Mar. 1991): 38.
[5] Jepson, "Sign Language in India, 41.

example, we know that sound symbolism and its signed equivalent exist but we have (to my knowledge) no wealth of research about their interaction: do we say that our constructed language sees no interplay between the two or do we extrapolate a sort of hybrid sound-sign symbolism? Since the latter approach would seem to have more room for creativity, we're going to go with it, though it will require that we engage in a bit more reasoning and explanation for each feature we add.

You're going to run into this problem whenever you're making languages that don't quite fit the structures found in our world, but the existence of a language similar to the one we're making doesn't seem to be outside the realm of believability so we still have room to appeal to real world examples of spoken and signed languages to back up any claims we make.

To return to real world sign languages, we see a similar situation to the division between UISL and RISL in Trinidad, as Ben Braithwaite reports in his much more recent article, "Language Contact and the History of Sign Language in Trinidad and Tobago." Within, he describes two accounts of the use of local signs before the introduction of ASL to the islands; the first, a government account, states that local signs existed for "the names of foods, fruits, vegetables, and festivals which are indigenous to [the] islands" but were not extensive enough to form a unique language. On the other hand, Braithwaite states that older members of the community "insist that they already had their own language, developed in the school and passed on through successive generations."[6] This

[6] Braithwaite, Ben. "Language Contact and the History of Sign Language in Trinidad and Tobago," *Sign Language Studies* 19, no. 1 (Fall 2018): 6.

disjoint between accounts somewhat mirrors the language used in discussions of RISL and UISL, with the former often being seen as "rustic" or "primitive." We obviously know that no language is primitive—each is equipped for its purposes and can evolve to accommodate new modes, but it can tell us a bit about how we might expect our constructed language to function. We might expect our language to have developed out of a fusion—not quite a pidginization, though perhaps similar—which saw the sign language extended in its use, spreading beyond the small family or community which produced it, and eventually interweaving with the spoken language inextricably. We see the melding of sign languages in the real world: to return to the Trinidad and Tobago example, Braithwaite states that "younger signers see TTSL as a mixed language, combining indigenous forms with influence from ASL," while older signers are more likely to "consider ASL and TTSL to be completely different languages."[7] Similarly, creoles and pidgins form when spoken languages blend together.[8] If we extend this model to a spoken and signed hybrid language, we might see older speakers use two distinct languages, one spoken and one signed, with younger speakers progressively mixing the two, until later generations no longer recognize the difference between them. We would expect to see certain patterns in the resulting language akin to those found in pidgins and creoles: speakers might shift the meanings of signs to be closer in line with their associated spoken words (and vice versa) and the grammar of the spoken and signed languages would likely adjust—to some degree—to fit with the other.

[7] Braithwaite, "History of Sign Language in Trinidad and Tobago," 14.
[8] Of course, this is more complicated than a simple "blending," but this isn't an essay about creoles so we'll leave it at that.

One pitfall I want to avoid though is treating the signed portion of the language as subordinate to the spoken half; instead, I'd like to make a language where each complements the other. We might imagine a language that has three different modes: a fully spoken mode (for those who cannot see one one another), a fully signed mode (for deaf signers or those who cannot or do not want to be heard), and the mixed mode (for standard use). However, this seems to cast into doubt whether each isn't really an independent language, and we aren't setting out here to make two languages, only one.

Furthermore, we have to (again) acknowledge the fact that such a hybrid language goes against the purpose of real-world sign languages and is inherently biased to those who are not deaf. Many are familiar with sim-com, or simultaneous communication, which is the use of one sign language at the same time as one spoken language, but this is obviously not the kind of system we hope to make; however, it does (somewhat) avoid this bias towards non-deaf people (albeit often imperfectly). Sim-com is likely to be, in part, the origin of our hybrid language and so we would do well to pay attention to how people engage in it in the real world.

One idea regarding the interplay of signs and speech that I was initially a fan of is this: we would use the signed portion of a word much like how (some) Chinese characters use radicals. The opposite could also be true for other words: spoken portions could sometimes serve to distinguish between homosigns (words that are signed the same way). For example, if English were to feature this, we may say the words "bat" and "bat" while signing the words for animal and tool

respectively in order to differentiate between them. The inverse would see us use spoken components to distinguish homosigns—BEER and BROWN are near homosigns, so we'll use them; you would sign BEER while saying "drink," or something to that effect, and you would sign BROWN while saying "color." This does strike some sort of balance—neither the signed nor spoken parts of a given word would be more or less important than the other—but I do worry that sticking to this method relegates both components of the language to a single role. Instead, this will be one of many ways that the signed and spoken portions of our language intertwine. Most words will not work this way; I truly do not want to relegate either part of the language to a secondary status.

3 | SIGNED PHONOLOGY

I intend to use David Peterson's SLIPA to outline the signs in this language; I haven't actually seen anyone use it before, though perhaps this speaks more to my own ignorance than to any actual lack of examples. Back in 2017, David Peterson noted that he hadn't run into any examples of conlangers using SLIPA, though that was six years ago so there's a good chance at least someone has made use of it since.[9] In any case, as I'm not nearly as familiar with SLIPA as I am with the IPA, obviously, there's a good chance I slip up here and there. Try not to hold it against me.

In terms of our approach, the most obvious influence on the signed portion of our language is likely to be Peterson's KNSL. There aren't a whole lot of

[9] Peterson seems to do some amount of communication on Tumblr, which is where I found him talking a bit about SLIPA.

constructed sign languages out there; fewer, which make use of SLIPA. I don't intend to ~~steal~~ borrow any of KNSL's phonology (at least not directly), only to take Peterson's approach to sign-conlanging as a guide.

For the signed portion of our language, we're going to need to outline a phonology; this includes hand-shapes, placements, orientations, and movements. We might also outline certain non-manual facets of sign language phonology such as expression and body behaviors, but we'll hold off on those until we've covered the aforementioned manual features.

Because I'm an absolute zealot for diachronic conlanging, I'm going to outline the modern form of the signed phonology, followed by an explanation of the (rough) evolution leading from our homesigns to this phonology. Anyways, let's lay out the modern handshapes.

Modern Handshape Inventory							
Curled Fingers		*Extended Fingers*					
		Closed	*1 Finger*	*2 Finger*	*3 Finger*	*4 Finger*	*5 Finger*
Fully Curled	Total	A S	G I	U V	Ꞇ □ ᑌ	Ɽ	B Ƒ
	Mixed	Ŧ		L Y Ŷ	Ü Ÿ		
Half Curled	Total	E	Ġ	Û	F □		C O
	Mixed		X				Č Ǒ
Flat	Total		Ñ	N	M	Ḿ	Ш
	Mixed			Ṇ	Ɲ	□	Ẇ

I should explain what each of these means since I have altered the symbols for certain shapes from their SLIPA forms and added a couple more altogether. Starting from the top and heading right:

- “A” is the same as in the SLIPA—a fist with all fingers curled, with the thumb pressed to the side of the index finger.
- “S” is the same as in the SLIPA—a fist with all fingers curled, with the thumb folded over the front of the index, middle, and ring fingers (or just the first two).
- “G” matches the SLIPA—the index finger sticks straight up and all other fingers are curled. You’ll see, here and in others, that I’ve avoided using numbers to represent handshapes. Call me aesthetically nitpicky, but I don’t like the mixture of numbers and letters in the SLIPA.
- “I” is, again, the same as in the SLIPA—the pinky sticks straight up while all the other fingers are curled.
- “U” and “V” match the SLIPA—in both, the index and middle fingers are straight up and the other fingers are curled. In “U,” the index and middle are pressed together, but in “V” they are spread apart.
- “ꞟ” is equivalent to the SLIPA’s “3.” It resembles “V” in all ways except the thumb, which sticks out perpendicular to the index finger.
- “□” is equivalent to the SLIPA’s “6.” The pinky and thumb fold in and form a circle while the other fingers stick straight up.

- “U” is equivalent to the SLIPA’s “7.” The ring finger and thumb fold in and form a circle while the other fingers stick straight up.
- “ʯ” is equivalent to the SLIPA’s “4.” It resembles “ʅ” in all ways except that the ring finger sticks out and is spread apart with the middle, index, and thumb.
- “ʃ” is equivalent to the SLIPA’s “5.” All fingers stick out and are spread apart.
- “B” is the same as the SLIPA’s “B.” All fingers stick out but are pressed together, and the thumb is parallel (and resting against) the index finger.
- “ꟻ” is the same as in the SLIPA. All fingers are curled except the thumb which sticks straight out (forming a thumb’s up).
- “L” is the same as in the SLIPA. The thumb sticks straight out as in “ꟻ” while the index finger sticks out perpendicular to it.
- “Y” is the same as in the SLIPA. All fingers are curled except the pinky and the thumb, which stick out.
- “Ŷ” is the same as in the SLIPA. All fingers are curled except the pinky and the index finger, which stick out.
- “Ü” is the same as in the SLIPA. It is very similar to “L” except that the middle finger sticks up and is pressed to the index finger.
- “Ÿ” is the same as in the SLIPA and is almost identical to “Ŷ” except that the thumb sticks out almost perpendicular to the index finger.
- “E” is the same as in the SLIPA. The four non-thumb fingers are bent at ninety degrees at both joints so that the tip of each touches the top of the

palm. The thumb is placed such that the tip of each finger rests atop it: in other words, it is folded across the palm.

- “F” is the same as in the SLIPA. The index and thumb are curled to make a circle, the tips of each touching, while the other three fingers stick up, spread apart. This is the same as the popular “ok” gesture.
- “□” is equivalent to SLIPA’s “8.” It is the same as “F” except that instead of the index finger, the middle is the finger forming the top half of the circle with the thumb. Here, the index finger sticks straight up.
- “C” is the same as in the SLIPA. The non-thumb fingers are arched to form the top half of a circle, while the thumb forms the bottom half, though unlike in “O” these two halves don’t touch. In simpler terms, if you form a “c” with your hand, you’re likely forming “C.”
- “O” is the same as in the SLIPA. One forms a circle with one’s hand; in other words, the non-thumb fingers are curled to form an arch while the thumb is positioned inverse to them; the tip of the thumb touches the tip of the index or middle fingers or somewhere between them.
- “X” is the same as in the SLIPA. One forms “O” but sticks their index finger straight up. The thumb must then necessarily touch the tip of the middle finger, possibly in addition to the tip of the ring finger.
- “Û” is the same as the SLIPA’s “Û.” It is formed exactly the same as “V” except that the index and middle fingers are partially curled, forming an arch.

- “Č” and “Ǒ” are additions that either don’t exist in the SLIPA or which I was perhaps too much an idiot to find. They’re both equivalent to their caret-less versions except that only the index and middle fingers form the arch; the ring and pinky fingers are curled to the palm. In other words, imagine if you made an “O” with your thumb and your index and middle fingers. The other two are curled as though in a fist. This is “Ǒ,” and if you want to make it into “Č,” you just separate your thumb from your index and middle fingers.
- The rest can all be described rather easily. For “Ñ,” curl a fist and then extend your index finger up, lower it ninety degrees, and fold your thumb beneath the extended index so that the latter rests upon the former. Imagine trying to gesture to a friend that they were “this close” or “almost there”—then bring your thumb back to your middle finger and rest your index finger atop it. That’s it.

  From here, you can move your middle finger up next to the index finger to create “N,” add the ring finger to “N” to create “M,” and add your pinky to “M” to create “Ḿ.”
- “Ñ,” “N,” “M,” and “Ḿ” correspond to “Ṉ,” “Ɲ,” “□,” and “Ẅ” in that each of the latter corresponds to the each of the former with the slight difference that the thumb isn’t folded under the extended fingers but instead “pinched” to them. If “N” has the index and middle fingers extended, resting upon the top of the thumb, then “Ɲ” has the index and middle fingers extended, pinched with the thumb, forming a handshape

like the popular way of representing a bird's beak, not coincidentally like the intermediary shape of the ASL sign for DUCK.

- "Ш" is an addition which is the same as "W" except that the thumb sticks out perpendicular to the other fingers, as it would in a "thumb's up."

That about sums up the handshapes of our language, of which there are thirty-seven (if you haven't been counting). These are by far the most difficult element of the phonology to describe; our language isn't particularly great at describing particular arrangements of fingers and whatnot, but now that we've done so we should be able to breeze through hand positions and motions since they're comparatively intuitive.

Our language features twenty-seven hand positions. These fit nicely into the following chart:

Hand Placements						
Symmetry	*Head*			*Torso*		
	Top	*Mid*	*Bottom*	*Top*	*Mid*	*Bottom*
Central	h f x	r n	u l c	t k	s	b i
Mirrored	sf	ey tm	ch sc	sh	lbw	
Reversible		ear		bcp	frm wrs	plm fng

In order, the central positions (which are, as you might guess, along the central axis of the body) are: "h," the top of the forehead; "f," the middle of the forehead; "x," the spot between the eyebrows; "r," the bridge of the nose; "n," the tip of the

nose; “u,” the upper lip; “l,” the lower lip; “c,” the chin; “t,” the throat; “k,” the top of the sternum or the center of the clavicle; “s,” the bottom of the sternum; “b,” the belly button; and “i,” the spot just above the waist.

Mirrored positions are those which have two symmetrical spots on the body; for example, the palms are mirrored because (for the average person) there are two of them on either side of the body. The signer often uses the spot opposite their dominant hand, so if I were left-handed and wanted to gesture to my “sh” position, I would usually touch my right shoulder. These are as follows: “sf,” the side of the forehead; “ey,” the eyes; “tm,” the temples; “ch,” the cheeks; “sc,” the sides of the chin (or the jaw); “sh,” the shoulders; “lbw,” the elbows. These last two could conceivably fall into our next category, “reversible,” but our language treats them as nonreversible.

Reversible positions are a subset of mirrored positions that feature another dimension in addition to left and right; that extra dimension is front and back. For example, the “ear” position can specifically be left or right and front or back, where back indicates that a sign is made behind the ear. If you imagine an axis running through one’s head, going through each ear, the sign would have to be made behind that. In our language, this position freely ranges from directly behind the ear to just over the shoulder. Our last three positions are “bcp,” the biceps; “frm,” the forearms; “wrs,” the wrists; “plm,” the palms; and “fng,” the fingers.

Since SLIPA isn’t super well-known, I should explain how exactly these two elements—handshape and placement—manifest in the notation. In short, the average sign will look something like this:

ear[Ñ$^{f(in)}$]^{t}

Breaking this down, the “ear” is the place where the hand goes; in this case, obviously, the hand is next to the ear. It assumes the “Ñ” handshape, and the superscript “f(in)” means that the index finger points towards the position. The final superscript “t” tells you that the hand makes a tumbling, rolling movement. If I were to describe this, I’d say that the signer pointed at their own ear and made small circles with their hand.

If we wanted to repeat that motion, we would add a little “:||” to the end. Thus, pointing to your ear and repeating a tumbling or rolling motion would look something like this:

ear[Ñ$^{f(in)}$]^{t}:||

If you chop one hand down into the other’s palm as though cutting an onion, it might be notated with the following sign:

plm$^{t(\underline{sd})}$[B]XCX:|||

Breaking this down, the “palm” is the place; “t(<u>sd</u>)” means that the palm is touched by the back side of the active hand; the active hand assumes a “B” handshape; and “XCX” means that the active hand moves down to and up from

the point of contact with the palm. Finally, ":|||" means that the action occurs three times.

Before we close on this section, I'll add that we're going to adopt the SLIPA's essential notation for orientation and movement without any major alterations. You can find the relevant sections on Peterson's page here and here respectively.

Doubly finally, I am going to add a quick little outline for signs more for my own sake than for yours, honestly; I want something to reference when I look at signs since SLIPA's overarching sign structure can be a little unintuitive. Here we go:

$$(\text{place})^{(\text{interaction})} + [(\text{handshape})^{(\text{orientation})}] + (\text{movement})^{(\text{behavior})}$$

The (interaction) is the way in which the dominant hand interacts with the place; (orientation) is the dominant hand's orientation relative to the place or the signer; and (behavior) is the way in which the dominant hand goes about the movement described.

Signs can be contained within parentheses and added together for two-handed signs. For example, we might pat our shoulders with open palms like so:

$$((\text{sh}^{\text{t(pm)}}[\text{B}]) + (\underline{\text{sh}}^{\text{t(pm)}}[\text{B}])):||$$

The first handshape and corresponding modifiers presented is always going to be the dominant hand, while the non-dominant hand follows after the addition sign.

Now that we've outlined how all that's gonna work, we can move on to evolution of the proto-language to its modern form.

4 | CSL EVOLUTION

Having not seen many CSLs (constructed sign languages), I obviously haven't run into a wealth of information on how one might adapt the diachronic method of conlanging—to which I am an almost religious adherent—to their domain. I'm going to extrapolate based on how I understand natural sign languages have evolved, how spoken ones have, and those few resources I can find specifically on the subject. In any case, feel free to reach out if you think I've made some critical blunder: I've tried to educate myself as best one can on the subject, but I'm still only a student of linguists so my understanding may very well be incomplete.

I mentioned the wonderful Logan Kearsley's article on the subject of sign language design earlier, but I'll link it again since it is immediately prevelant. He outlines several changes that occurred between Old French Sign Language and modern ASL that bear repeating here:

1. Signs that require interaction with one's environment change to lose that requirement. That is, if a sign involves picking something like a plate up, the sign might change to simply mirror the motion of picking up a plate.

2. Non-manual components of signs are lost except for grammatical purposes.
3. Signs tend to drift towards the torso and face.
4. Signs move to avoid obscuring the face, while signs near the torso tend to centralize.
5. Two-handed signs near the face become one-handed. The opposite occurs for those near the torso.
6. Two-handed signs tend to become symmetrical: both hands do the same or similar shapes and motions.
7. Signs tend to simplify "sequential motions or points of contact."
8. Sound symbolism (gesture symbolism?) spreads to new signs.

All of these are hopefully summarized well from Logan's list.[10] We're going to follow these as the foundation for our evolution, adding on the general "simplification" of the number of legal handshapes and placements.

As an example, we might have a proto-sign for WRITE that begins life as such: the signer picks up a pencil, moves it zig-zag downwards, and scrunches their eyebrows in concentration. Following our outline, the pencil would be replaced with the somewhat similar "N" handshape—which looks kinda like one is holding a pencil—and the zig-zag motion, which we might notate as "FEBDGH," would likely get symplified down to "$\overline{FDG}$." And lastly, the

[10] Kearsley, Logan. "Thoughts on Sign Language Design," Gliese 1337 (9 September 2016). https://gliese1337.blogspot.com/2016/09/thoughts-on-sign-language-design.html

non-manual eyebrow movement would be dropped, resulting in a sign that'd look something like this:

$$[\text{N}]\overline{FDG}$$

If a proto-sign, for some reason or another, included a handshape that was like "S" except with the thumb touching the pinky and ring finger instead of the index and middle, we would expect it to shift to an "S," in the same way that indistinct phonemes can collapse into one another. I debated coming up with some notation for this as one would a spoken conlang, but we run into a question that I don't feel qualified to answer: do sign languages arise with a limited set of handshapes already present or do they begin with all possible handshapes and narrow down over time? I mean, the same idea is extended to spoken languages in certain theories of language acquisition in which children begin with the ability to perceive and articulate all distinctive features but have this whittled down over time, but in spoken conlanging, we often begin with proto-languages that already have solidified phonologies and phonotactics, something we can't really do if we want to say that this sign language came into being from homesign. To my knowledge, we don't have an underlying phonology and phonotactics to the pantomimes we use in daily life, and if homesigns arose, in part, out of these, we would expect them to reflect this lack of a phonology, at least until evolutionary processes kick in (which would be almost immediately).

All this is to say that I'm not going to stress about the proto-phonology of the sign language and instead assume that early signs saw their handshapes and placements gradually collapse into the system we outlined above.

While I'd originally intended to post this essay in whole, it is becoming a bit too long to do so; I have decided to split it into two (more likely three) parts in order to make it a little less intimidating as a whole. Since we've covered (at a surface level) the phonology of the signed portion of our language, we'll leave the discussion of the spoken half for the next part. In any case, thank you for reading. I leave soon for a trip to Switzerland and then on to graduate school at Indiana University, so the next part may take a bit of time to write; expect it in early-to-mid July.