

Protactile Linguistics: Discussing recent research findings.
Presented by Jelica Nuccio and John Lee Clark
Tactile and visual descriptions at the end of the transcript.

Jelica: My name is Jelica Nuccio and I am here with my dear esteemed colleague, John Lee Clark. It's wonderful to be here with you, John.

John: Jelica, it's such a pleasure to be with you today, for us to share some exciting news about Protactile with the public. The research we will be discussing has made it clear that Protactile is emerging as a language distinct from ASL. We became aware of this early on. We could feel that we were adhering to rules unlike the ones that govern ASL grammar. Finding ways to communicate every day as we did, Protactile just took off. Research, however, has been moving very slowly. But what it does reveal is exciting because it confirms our sense of what has been going on with our language all this time.

The research we are describing here today has validated our intuitions by methodically documenting the emerging structure of protactile language and showing that it is different from signed language. While exciting discoveries continue to be made at the frontiers of the Protactile movement, we must be patient with the gradual pace of research as it struggles to keep up. It is easy to wish that research would just jump ahead to where all the buzz is at the cutting edge of the language. But it's imperative to allow research to run its course as it considers the foundations—our intuitions—from which our language proceeds.

There are two authors of the study we are discussing today. The first is Dr. Terra Edwards, a professor at Saint Louis University. She is a linguistic anthropologist, which means that she is interested in how language is bound up with historical and political forces that shape its speakers' lives and their experiences of the world. That is Terra's area of expertise. The second author is Dr. Diane Brentari, a linguist at the prestigious University of Chicago. Dr. Brentari is an expert on the internal structures of language. Working together, Terra and Diane have uncovered some intriguing things about protactile language.

Jelica: John is the director of research activities for the Minnesota hub, and I am the director of research activities for the Pacific Northwest hub. I would also like to acknowledge the many members of the Minnesota and Pacific Northwest Protactile DeafBlind communities involved in this research, without whom this work would not have been possible.

The nature of Protactile is to be in connection physically, as we are. As evidenced in the research findings and linguistic analysis presented here, This positioning makes it possible to recruit the body of the person we are talking to when producing signs.

We are not facing the camera using ASL, we are facing each other, coordinating our bodies and hands reciprocally. We use each other's bodies to establish what we call "contact space". It is a space for signing in, and it goes from the shoulders all the way down to the lap. We are emphatically not making use of what we call "air space."

John: One of the most fundamental things that distinguishes Protactile from ASL is that Protactile is rooted in "contact space." ASL, on the other hand, makes use of air space, or the visual space on and around a signer's body. ASL uses air space, which to us, just feels like hands moving around in empty space. There is nothing to ground it. By contrast, everything in Protactile is anchored in contact space. Contact space consists of areas of the body that we frequently call into use to make our messages with. When I express my thoughts and feelings in contact space they can be felt through the parameters of protactile language. We feel language. This is a profound difference. Linguistic research is now uncovering the many consequences of that difference which occur especially in constructions where we explain or describe things. For example: a cup overflowing with water, or a tree being felled.

Jelica: Air space restricts communication because, without the other person's body, ASL only has the two hands of the signer to produce signs with. In ASL, statements like "How are you?", signs like "house" or references to "over there," such as "My home is over there," are all produced with just two hands. Without the body of the listener involved, those two hands are floating around in unstructured space. Two-handed constructions are no longer found in Protactile because they lack cohesion and structure for us. They are ephemeral. Their meaning cannot be grasped

because they are out there in vacuous air space. Trying to chase down ASL signs is hard work, and when we have to use ASL, communicating and learning are much harder than they should be.

John: There are many different ways to arrange and analyze the data we collected. Each type of analysis brings into relief different trends in the data. One framework we used has served sign language linguistics well and has similarly proved useful in our research. This vein of analysis was drawn from studies of signed languages from all parts of the world, including American Sign Language and breaks a lexicon down into three categories. Looking at the data through one set of categories or another, yields different patterns. The three categories are foreign, core, and spatial. All signed languages have these three components of the lexicon

We are borrowing this framework and terminology and applying it to protactile language. This is helpful for understanding how Protactile is structured. I'm going to start with how it applies to ASL. For American Sign Language, the "foreign" vocabulary includes words that derive from English, like fingerspelled words that are absorbed into ASL, such as the words "style" or "bank." Fingerspelling itself is not incorporated into the core vocabulary of ASL. The core vocabulary is made up of words you would expect to find in an ASL dictionary: house, money, store, cup, like, home, love, and so on. Signs in the spatial lexicon are those that describe events and actions such as a cup getting knocked over and spilling. While the word "cup" belongs in the core category, the rest of that construction falls into the spatial sphere. Interestingly, applying this framework to Protactile finds that the "foreign" category includes not only fingerspelling but also ASL words. ASL words are now part of Protactile's foreign vocabulary.

Some ASL words, though, can't be borrowed because they don't feel right to us. For example, the ASL words "mother" and "father" are ambiguous because you can't tell where they are produced on the face, making those two words difficult to distinguish from one another. We have a mechanism for borrowing words like that into Protactile. You touch the listener's shoulder and then specify the location, such as the chin for "mother" or the forehead for "father." But that's clunky. The more we talk in Protactile the more words get added to the core vocabulary. I am confident that in the future we will have Protactile core words for "mother" and "father" that are neat, clear, and readily understood. Meanwhile, we are stuck with these ASL words, which, along with fingerspelled English words, are part of our foreign vocabulary.

Protactile is a young language and our core vocabulary is still growing and developing. As it continues to evolve we find ourselves borrowing some ASL words, while others don't lend themselves to being borrowed. We reject some ASL words outright and come up with brand new Protactile words that capture what we mean and that make sense to us.

The spatial part of Protactile is the most robust, and the best source for our understanding of Protactile phonology. The core is still shifting and changing, expanding and contracting, so we're going to do research on the core a bit later. It's so fascinating, this whole process because we can feel the core catching up. That Protactile is a living language is very palpable.

Jelica: John, these three different types of vocabulary are so interesting! I'd like to talk more about Protactile's spatial vocabulary. To understand the spatial vocabulary of Protactile, let's use this ASL sign indicating a person walking with the index finger or "1" handshape like this. That ASL sign isn't clear to us. To simply substitute the ASL handshape with the movement of the index and middle fingers doesn't work either because it's still in air space. Since there is no good way to ground that sign in contact space, we have rejected it outright. Instead, we have the Protactile word "walk," signed like this, with the index and middle fingers walking in contact space along the leg, forearm, or chest. This sign can take place in many locations and can be modulated to describe a variety of types of movement, walking as well as running. Using this sign eliminates the need to use other signs produced in air space such as this ASL sign "run." Instead it can be simply articulated in Protactile in contact space, thereby making it possible to express the manner of movement or speed. Notice that all of the meaning is expressed through touch—ASL features that depict running, including shoulder and head movements, for example, are not part of Protactile and they can't be borrowed in. That is just one of many examples.

John: How about "run" like this, with each finger represents a pumping leg? (Laughing.) We can't borrow that one.

Jelica: (Laughing.) That sign feels so wrong! (Laughing.) You can express that same idea in Protactile, with different resources. You can feel different pressure gradations. That depth, from the skin's surface to the bone, that's all material you can work with to express ideas. There are words in there that we can discover.

John: Many would assume that the Protactile word "house" is the same as the ASL word "house" because both use the same handshape. But in ASL, the word actually refers to a specific type of house, such as a big fancy mansion. The Protactile word "house" has nothing to do with size; it is a general term for house. So I would use this sign in simple sentences like "Your house is one house up the street from mine." Now, if we wanted to convey the size of the house, we would spread the fingers and add movement and pressure, pushing down and shaking, or releasing pressure, narrowing our fingers and shrinking the area in contact space to show that the house is small. But if we don't add any of that information, the word simply refers to a house.

So here we have an example of a Protactile word that resembles a word in ASL but they mean different things. They look alike, but the resemblance is misleading.

Jelica: Take for example, the ASL signs "yes" and "no." People seem to think that signing the ASL sign "yes" with a fist on the body of the listener is how you say "yes" in Protactile.

Or the pinching of the ASL word "no" on the body, which doesn't feel clear at all. Neither ASL sign can be borrowed effectively. To feel distinct in Protactile, "yes" is conveyed by tapping, and "no" by pressing down and moving the hand back and forth. These are good examples where borrowing just isn't possible.

John: Now that we've discussed some of the ways Protactile and ASL are different, let's turn our attention to what the research on protactile language has shown. The project we are reporting on today is an analysis of the emerging phonological structure of protactile language. Through careful analysis, we are beginning to understand how this part of the language is structured and we have some findings that we are delighted to share.

John: A crucial, fundamental difference between protactile language and signed language is that the latter uses two hands while Protactile uses four hands. This is a significant difference that has many linguistic ramifications. With two hands, you are limited to air space. Four hands opens up completely different possibilities. Our research begins with this observation: ASL is a two-handed system, while Protactile makes use of four hands.

The four hands used to produce spatial PT vocabulary have specialized, linguistic functions. There are rules that govern how the four hands can interact.

The breakdown of the role of each hand in protactile language is as follows: Signer 1's dominant hand is hand One or H1, signer 2's dominant hand is H2, signer 1's non-dominant hand is H3, and signer 2's other hand is H4 (which is connected to signer 1's H1). Each of these hands is responsible for a distinct and conventionalized linguistic task.

Hand One can produce core vocabulary and it can also be used to describe things on Hand Two in more complex spatial constructions. Hand One is very mobile within contact space—it can go anywhere, from your neck and head, across your chest, down your arm—all of this space is available to the first hand. The role of each hand in spatial constructions is rule-governed. The functions of each hand are divided into units and subunits which are combined in specific ways according to specific constraints.

Hand Two is the listener's dominant hand. The most important thing that hand does is maintain co-presence and give the signer feedback that they're listening, which is called "backchanneling." This hand is how we communicate emotions and reactions. If I say something in jest, you would respond by laughing with this hand. I feel you laughing and we maintain a reciprocal link. If I were to share bad news with you, deliver a blow so to speak, I glean how you have taken it through the responses coming from your dominant hand. This feedback helps us stay connected throughout our conversation.

In visual ASL, emotions are displayed on the face and read visually by conversation partners who maintain eye contact and respond to each other in kind. This type of feedback is accomplished differently in Protactile. In Protactile one would display thoughts and emotions via touch and the listener would communicate them through their dominant hand, which is usually resting on the leg of the signer during conversation. This link provides the fabric of reciprocity, something that is supremely important in all languages. I feel your feelings and we are attuned.

Another function that the dominant hand of the listener has is producing different kinds of “objects” that can be incorporated into Protactile spatial constructions, which are co-produced by both signers. For example, Jelica, here your dominant hand is a tree. I have prompted you to present your hand to me in this particular shape denoting a tree. I can now describe a cat walking up to the tree, climbing the trunk, exploring between the branches, climbing down, and going on its way. If I were to construct that sentence in air space, the cat’s actions would not be perceptible. That is an example of how your dominant hand contributes to complex spatial constructions.

Moving on to the Hand Three—my non-dominant hand. This hand plays a critical grammatical role. In order to initiate contact between my dominant hand and your dominant hand in this type of spatial construction, I must enlist my non-dominant hand to hold your hand in place while the construction is still being built. Not holding your hand in place would constitute a violation of grammatical rules. If I explained to you that I had a headache by squeezing your fist, but I just left your fist hanging there, without holding it in place, that would be ungrammatical. Having this third hand allows me to encode all sorts of information in an efficient way. The way the hands work together like this in spatial constructions—all of that is rule-governed. I don’t just move my hand haphazardly against your hand. The way I coordinate with you to produce language is always anticipated. We know how that works beforehand, because we know Protactile grammar.

This brings us to the last hand—your non-dominant hand. That hand is always in contact with the back of my dominant hand and it is constantly receiving information. The most important thing about H4 is that it never disconnects from H1. Jelica, as you and I have taught in introductory Protactile trainings in the community, one common mistake novices make is the uncoupling of these two hands to try to add information onto that hand, instead of receiving information with it. This is a major violation of Protactile rules. Your non-dominant hand and my dominant hand are always coupled. As I explained earlier, my two hands can work in tandem to encode information on your dominant hand, or I can use my dominant hand in other regions of contact space, such the shoulders, arms and legs of the receiver. Throughout all of these possibilities, your non-dominant hand stays coupled with my dominant hand. There are no exceptions.

Additionally, we can receive sensory information not only on the palm of the hand, but on the back of the hand. For example, the back of your hand below my chin feeling my head shaking, me delivering a puff of air to the back of your hand, or the back of your hand against my forehead feeling my head shaking. We might use the area on the back of H4 to indicate laughing by placing it on the throat, or indicate someone speaking orally by placing it below the bobbing chin. Again, there are constraints on how the hands work together to produce linguistic expressions.

Jelica: Here is an example: I tap on the back of your non-dominant hand with my non-dominant hand, which tells you I want to co-create a complex sign. I make a fist with my dominant hand, which tells you to make a fist with your dominant hand. That represents a “sphere,” which you can perceive easily. Then I hold that sphere in place using my non-dominant hand, while my dominant hand adds information by touching the sphere in different ways. I can describe a beautiful tree to you like this. Part of what makes this so smooth and easy is that each articulator has its own special role. We assigned those roles intuitively as protactile language emerged. Within that system, information flows freely from your palm, up the sensitive inside of your arm, across your chest, and all the way to your other arm, where another flow of information is being received. All of it comes at you in stereo, and hits you—bam!

In sum, the roles of the four hands in Protactile have become conventionalized and are clearly established in the system. ASL has two hands, not four, and the functions of the two hands are different. This is an important difference, linguistically.

John: Yes, yes!! It’s quite thrilling to see how our intuitions are expressed, then detected, then come back to us in the form of research. While some of the patterns researchers have identified are old news for us, others we didn’t pick up

on because we didn't think about it explicitly. It's not as if we have been making conscious decisions about how our language will work. Protactile structure has emerged naturally as we communicate with one another in our everyday lives. Some things can only come under notice upon rigorous investigation, and it's exciting to learn more about what we were not thinking about but doing anyway.

The analysis also helps clarify what the grammatical rules are.

The evidence we have gathered is minute. Thousands of instances of specific phonological features. Every little movement, every little press, tap, and trace. It's all recorded and fed into software that we have. That's coding work, and its rigorous yielding exciting discoveries!

Jelica: Yes, research has shown that the hands have specialized roles within the linguistic system. For example, my dominant hand and your non-dominant stick together and cannot, under any circumstances, disconnect. Constraints and patterns on how articulators interact were uncovered through analysis but the patterns themselves are based on our intuitions as DeafBlind language-users. We know, at some deep level, which constructions are right and which are wrong, when it comes to our own language.

Research shows that: 96% of spatial vocabulary is currently produced in contact space. 62% of core vocabulary is currently produced in contact space.

John: Quantitative analyses performed as part of this research shows that 96% of spatial vocabulary in Protactile is produced in contact space, such as constructions showing a cup of water spilling, or a tree being chopped down. In ASL we have the reverse scenario. ASL vocabulary is produced almost exclusively in air space. We strictly adhere to the opposite, producing language in contact space because information is clearest to us there. We have a strong sense of what is acceptable in Protactile. Air space is unacceptable for spatial constructions.

On this matter of contact space we're draconian.

(Jelica agrees and laughs, John laughs.) It's true! We're strict! But not because we are consciously obsessing over the rules. It's because we have strong intuitions. We can't even help it. It's just a natural part of us—isn't that amazing?

Research shows how clear our intuitions are. We produce 96% of spatial constructions in contact space. The other 4% of constructions, not many at all, occur when we drop out of contact space and end up in air space. The majority of the time we are co-creating messages in contact space, but every now and again our hands float off into air space. (Jelica laughs.) Sometimes we still revert back to air space, but 96% of the time we stay in contact space. Isn't that number astonishing? ASL is the very opposite of that, and I'm delighted that research has conclusively established this fact.

Jelica: That is very cool! In constructions like these, take this example of a proprioceptive construction describing earrings in the lobe of an ear.. They are very intuitive. We don't need to use the vocabulary of ASL to clearly explain these things in Protactile. Through touch, we can capture everything precisely. This is especially true for spatial constructions.

I think this research can really clarify some things. For example, it was previously thought that by just placing one's hands onto the hands of the speaker, that ASL signs produced in air space like "house" would be sufficient to be comprehensible tactilely. And furthermore, that all of the visual meanings expressed through ASL could be grasped this way, too. We can't perceive or understand ASL, so we have to guess. Our research shows that Protactile signers are moving instead to contact space, which makes everything easy to understand.

John: Research on ASL has found that signs can be analyzed into smaller units. One of the most important of these is the "handshape." The handshape is key to distinguishing ASL words from one another. ASL speakers are sensitive to small alterations in handshape. However, in Protactile the handshape is not important. In Protactile, the way a word feels is what matters. If I tap on your leg several times, and each time I tap, I use a different handshape, you

can't tell the difference. All you feel is the tapping. They all feel the same! So it's the nature of the contact being made, and how it feels to us, not the handshape.

Jelica: Protactile has four units.

The first unit is the initiate.

There are different kinds of initiates

There are different ways to "initiate" as spatial construction. For example, I can tap on the back of your hand twice like this. Once I do that, I can ask you to produce a specific object with your dominant hand. So that tapping sign—that is one type of initiate.

The second unit, going in sequence, is the object you produce with your dominant hand after I prompt you to produce it. This whole area on your arm can be part of the proprioceptive object, or PO.

There are different kinds of POs.

There are POs within POs, so if I have this PO up here, and I touch one of these fingers, it becomes a separate PO.

There are a lot of different kinds of POs. This category is the most elaborated.

The third unit is "prompt-to-continue," or PTC.

There are different kinds of PTCs.

PTCs are produced by my non-dominant hand, which holds the PO in place. Each of these different things I'm doing with my non-dominant hand to tell you to keep the PO there is a PTC. There are also PTCs that involve pressing on a PO as a kind of anchor point, while other locations are specified in relation to the anchor on the same PO. Just like the other units, there is an inventory of PTCs.

The last of the four units is the movement-contact type, or MC. Recall that the first unit is the initiate. Here, I'm tapping on your hand to initiate, followed by a prompt to select a particular PO. The second unit is the PO, which you then produce, according to my prompt. The third unit is produced by my non-dominant hand here, Hand Three, which holds your dominant hand in place. Then I can add information of various kinds by touching the PO and moving my hand on it in these different ways. That is the "movement-contact type" (Freeze frame.)

Let's Review: PT Spatial vocabulary is composed of four types of units: initiate, proprioceptive object, prompt-to-continue, movement/contact. These units are combined in rule-governed ways.

What are the implications of these findings for DeafBlind communities?

Jelica: Let's discuss the effects and implications of this research. Linguistic research on protactile language is entering brand new territory, exploring a language that is the first of its kind, completely unprecedented in its use of contact space. When protactile language came on the scene, people had questions and some were skeptical.

Up until this time there were many proponents of "haptics," a communication tool that came out of Europe. They had books and instructional materials so Americans followed that European trend. We also tried to perceive ASL through touch. But none of that felt right to us because it was all happening in air space. It was foreign to us and our tactile experience of the world. We DeafBlind people endured this muddled, up in the air nature of visual language, which was impossible for us to really pin down, but our concerns were suppressed.

Once linguists started analyzing Protactile, everything changed. Something was going on that we could not quite articulate or name, which we felt but could not put our fingers on. It finally became apparent through this research that we were speaking a new language. Language was what made all the difference.

Yet people have dismissed the idea that language could be tactile. There is this idea that language can only be spoken or signed up in air space. They didn't think that language could be tactile. What we were doing was considered mere "communication." We had the sense that we were speaking a different kind of language, but when we claimed that, or implied it, we encountered resistance.

When I founded Tactile Communications to provide training for DeafBlind people by DeafBlind people, I tried to educate those working with DeafBlind people in the Vocational Rehabilitation system, teachers of DeafBlind children, colleges working with DeafBlind students, to no avail. Within these systems DeafBlind people were not finding a sense of agency and autonomy. Being stranded in air space meant being stranded in other ways as well within systems that espoused very negative views of DeafBlind people. Interpreters trying to communicate in air space with DeafBlind people were quitting right and left due to strain and injury from using a visual language ill equipped for tactile reception. The pool of interpreters was shrinking because they were afraid that working with DeafBlind people would cause injuries. There was an overwhelming stigma and so much negativity associated with the DeafBlind community. It was demoralizing.

Then came this research. We began by videotaping DeafBlind people communicating with one another in contact space as you and I are now, John, not conforming to the rules of visual language, but following our own internal sense of what felt clear from a tactile perspective. Once the data was collected and analyzed, we discovered that there are conventions that are shared by DeafBlind speakers---patterns that hold across the group.

It turns out that it's a great idea to have researchers outside of the circle of DeafBlind speakers observing. These researchers did not cast prescriptive judgments about correct or incorrect language, evaluate what they saw, or try to get us to communicate in a certain way. They were simply interested observers stepping back and attentively documenting what they noticed. We sought out Dr. Brentari, an expert in the relevant linguistic theory, to help us apply frameworks that would help us understand and describe the patterns we were finding in terms that linguists who study other languages would understand. Applying these frameworks helped us see that the patterns we were finding were linguistically significant.

Despite evidence early on that aspects of Protactile had diverged from ASL, many still were not convinced. There were Deaf people who believed that Protactile was essentially a set of "modifications" that allowed DeafBlind people to use ASL. As if Protactile involved minor changes in sign production, like making signs smaller and more centrally located. If you think about Protactile as a modification of ASL, you're going to miss the point. Research has confirmed that when you move a language from air space to contact space, you fundamentally alter the language.

Our intuitions have been verified by linguistic research. Our challenge now is to share these research findings with others, such as those in the Vocational Rehabilitation system, where protactile language could make a huge difference in outcomes for DeafBlind clients. For example, when it comes to Braille instruction we know that reading Braille is an important skill for DeafBlind people to have, but most of us hate learning it! There is a good reason why. Instruction via a visual language creates barriers and causes unnecessary frustration and confusion. When met with that language barrier again and again, it can make you feel like you can't think or learn—like something is wrong with you. However, when information is presented in a tactile language, we pick up Braille instruction easily. Our confidence is improved as we realize we can learn and think and be effective in the world. Over the course of the last ten years, from 2010 to 2020, we have witnessed the positive effects Protactile has had in the lives of DeafBlind people because we feel emboldened—like we can take a stand and push back against systems of oppression. We can assert our right to our own language. Without this research behind us, our claims don't carry enough weight. Armed with these findings, we can take a stand, making sure that we will not be denied access to our language any longer.

This research supports the idea that DeafBlind people have strong intuitions. If sighted people do not interfere, and instead, support our autonomy, we can create new and more effective practices.

We are the experts on how we should live and communicate.

This research unambiguously shows that protactile language has its own linguistic structure. These findings support the idea that sighted people should respect DeafBlind space. Research has shown that when sighted people enter into, and impinge on, DeafBlind space, norms and language shift away from what is optimal. The linguists don't try to change our language. They just observe and document what we do. They elicit protactile language by providing objects to DeafBlind participants to touch, feel, and then describe to a conversation partner. The language elicited is

spontaneous, there is no language instruction. What this reveals is that the patterns and conventions uncovered through linguistic analysis are unprompted, intuitively generated in the minds of DeafBlind Protactile speakers.

These findings have affected our lives because interpreters are more willing to work with DeafBlind people now than they were in the past. We are now the experts on our language and we can choose those interpreters we feel are well suited to the work, motivating interpreters to improve their protactile language skills. This fosters healthy working relationships where both interpreters and DeafBlind people join in a reciprocal collaborative effort to grow their protactile language skills together. Our research on protactile language has really been beneficial.

Implications for DeafBlind Education

John: The research findings are absolutely compelling and have so many ramifications that should ripple throughout many areas, such as Vocational Rehabilitation, as you've mentioned, and the education of DeafBlind children. But I'm deeply concerned with the fact that, of all the thousands of teachers and professionals working with DeafBlind children in our country, not one is DeafBlind. Those children, they don't have DeafBlind role models.

All of those hearing and sighted instructors operate under the assumption that they know what is best for DeafBlind children. The hearing and sighted professionals rely on the great fallacy that you can go to college, study textbooks, and follow instructional guides and become meaningful experts. Because of that fundamental error, DeafBlind children suffer tremendously in environments hostile to our natural way of learning and connecting.

So the children tend to grow up without social skills, because they've had such limited direct interactions. They're often appointed a single "intervenor" who is at their side all day, propping up a broken system—distantism. Insidiously, the system wraps each DeafBlind child in what is effectively isolation. The result is passivity and no sense of agency. This is internalized so deeply that, later in life, it is difficult to claim any autonomy. The system doesn't work.

On all achievement tests and by all measures the education of DeafBlind children is an atrocity, a travesty. Profound changes are in order.

To effect such an overhaul—yes, of the entire system—and to usher in a new era, the biggest thing is simple: DeafBlind teachers hired to teach DeafBlind children. That is the only way there will be any real change. However, every time I make this argument to a school, they defend the expertise of their hearing and sighted staff. They defend their credentials, as if that provides any assurance. But there can be no substitute for DeafBlind teachers who are natural language models.

Consider Deaf education. In the field of Deaf education, it is abundantly documented the critical role that Deaf teachers play. They possess and bring to the classroom a command of ASL that no hearing teacher can rival. Deaf people have skills that hearing people do not, cannot possess. Some hearing people may be fluent in ASL, but the way they present information is not the same as a Deaf person. Deaf teachers are a treasured resource.

Likewise, when it comes to educating hearing blind children, they, too, have hearing blind teachers. Through personal experience these blind educators intimately know what it means to navigate the world as a blind person. They bring an approach and mindset from their lived experience into the classroom and are models for blind children.

Now tell me, why don't DeafBlind children have the same access to natural models. Clearly, there is something fundamentally wrong here. This ingrained error is not going to be easy to correct.

But now we have this research. Perhaps it can help make a difference. Our findings have identified the particular ways that our intuitions work, how they are so finely tuned that we don't even need to think about them. Protactile language and its grammatical structures come naturally to us as we relate to each other. We live in contact space and are adept at communicating in and about its intricacies in a way that is unsurpassed by hearing or sighted peers. Although you and I can teach sighted hearing or Deaf people to become fluent Protactile speakers, they cannot bring what we can. They are not equipped with all that the experience of being DeafBlind affords us. They may have

learned on a cognitive level to venture into and out of protactile space and language, but they cannot internalize this at the core of their being. Our lived experience is indigenous, deeply rooted in us, and we are the only source that can fully nourish DeafBlind children.

The research details how and why our linguistic intuitions make us uniquely qualified. There's no question that to achieve any systemic change in the education of DeafBlind children hiring DeafBlind teachers is required.

In autonomous DeafBlind spaces, no accommodations are necessary

Yes, and there is one additional problem I want to discuss. There is a widespread misconception that bringing DeafBlind teachers into the classroom will be prohibitively expensive—they think that we require all of these “accommodations.” What they don't realize is that in autonomous, Protactile spaces, accommodations become completely unnecessary. We can interact with the environment directly. We don't need sighted people to describe it to us or tell us what people are saying.

It has been difficult for us to convince people of this, but we hope that showing people the results of this research will prove to them that autonomous DeafBlind spaces yield effective practices.

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For more information, please visit www.protactileresearch.org

Tactile Descriptions:

Jelica Nuccio: Her stories are smooth and come with the scent of lavender; She draws you in slowly and then grips; When she laughs on you, you can't help but laugh too. In the summer, her skin soaks up the sun and feels warm.
John Lee Clark: A full head of soft hair and world-shifting ideas; Frequent whiffs of chocolate, which he's always willing to share; A penchant for striking mock-serious poses.

Visual Descriptions:

Jelica Nuccio: White female with long curly hair pulled back in a low ponytail, wearing business attire.
John Lee Clark: White male, with short light hair, wearing business attire.

John and Jelica and seated facing one another, with their right legs touching from the knee to the hip. They use protactile language (all four hands) to communicate.