DOWNLOAD PDF A PROSODIC MODEL OF SIGN LANGUAGE PHONOLOGY

Chapter 1 : CiteSeerX â€” Citation Query A prosodic model of sign language phonology

This book is a major contribution to our knowledge of sign language phonology both in its comprehensiveness and its complexity. The prosodic model offered here distinguishes between features necessary for describing movement (prosodic features) and all others (inherent features).

The transition from fingerspelling to English print: Haptonstall-nykaza, Brenda Schick , " Even though fingerspelling is based on English orthography, the development of finger-spelling does not parallel the development of reading in hearing children. Research reveals that deaf children may initially Research reveals that deaf children may initially treat fingerspelled words as lexical items rather than a series of letters that represent English orthography and only later begin to learn to link handshapes to English gra-phemes. The purpose of this study is to determine whether a training method that uses fingerspelling and phonological patterns that resemble those found in lexicalized finger-spelling to teach deaf students unknown English vocabulary would increase their ability to learn the fingerspelled and orthographic version of a word. There were 21 deaf students aged 4â€”14 years who participated. Results show that stu-dents were better able to recognize and write the printed English word as well as fingerspell the word, when training incorporated fingerspelling that is more lexicalized. The dis-cussion focuses on the degree to which fingerspelling can serve as a visual phonological bridge as an aid to decode English print. One significant challenge for deaf children learning to read is their reduced access to the phonological system of spoken languages, which impacts their ability to develop the connections between phonology and the orthography available in most written systems. There are linguistic rules that govern such phonological restructuring Battison, , and it is entirely appropriate to think of lexicalized fingerspelling as having its own subset of phonologic However, Supalla , argued that classifier verbs were composed of discrete morphemes that express obj However, whether all meaningful components within a classifier construction are discrete morphemes has recently come into question e. In the series of experiments reported here, we investigated whether aspects of classifier constructions are treated as discrete categorical morphemes or as gradient, analogue representations. Hockett proposed that human language exhibits a key set of properties that distinguish it from the communication systems of other species. Two of these design features concern us Show Context Citation Context First, they can be specified phonologically within any model of sign phonology that has been proposed e. For example, within most models, the F classifier handshape would be represented within a feature hierarchy inswhich the selected fingers are specified as th Modelling and recognition of the linguistic components in american sign language by Liya Ding, Aleix M. Martinez - Image and Vision Computing Journal " The manual signs in sign languages are generated and interpreted using three basic building blocks: When combined, these three components together with palm orientation uniquely determine the meaning of the manual sign. This means that the use of patte This means that the use of pattern recognition techniques that only employ a subset of these components is inappropriate for interpreting the sign or to build automatic recognizers of the language. In this paper, we define an algorithm to model these three basic components form a single video sequence of two-dimensional pictures of a sign. Recognition of these three components are then combined to determine the class of the signs in the videos. The results demonstrate that, using semi-automatic detection, all three components can be reliably recovered from two-dimensional video sequences, allowing for an accurate representation and recognition of the signs. A cross-linguistic study of signs and classifier constructions by Petra Eccarius, Diane Brentari - Lingua , " Our analysis is two-foldâ€”first we examine the restrictions these forms place on handshape choice, and th Our analysis is two-foldâ€”first we examine the restrictions these forms place on handshape choice, and then we look at their prosodic and morpho-syntactic structures by examining the interaction between the temporal relations of the two hands and other prosodic cues, such as eye blinks. From the point of view of well-formedness at the word level, our work shows that: With regard to larger prosodic units, we have found evidence of the prosodicâ€”syntactic interface at work in classifier constructions in a

number of systematic ways involving intonational phrases. Two-handed classifiers can be divided into four major groups with regard to their prosodic structure, one of which was found only in Hong Kong Sign Language, while the other three exhibit a general pattern that Show Context Citation Context Handshape, Movement, Location or Pla Children are just lingual: Lingua , " This paper explores three universal tendencies in spoken language acquisition: Child signs were recorded from naturalistic deaf pa Child signs were recorded from naturalistic deaf parent-deaf child interaction between the ages of months. Child errors were analysed by handshape, movement and location segments, as well as the accurate production of prosodic features, using an autosegmental phonology approach. Analysis of the results concludes that early child signing broadly follows proposed universal tendencies in language acquisition. Show Context Citation Context The role of features in phonological inventories by G. Clements - In E. Phonological inventories are structured in terms of distinctive features, rather than finer-grained phonetic categories. Five general principles are discussed and exemplified with respect to data drawn from the expanded UPSID database containing phoneme inventories. By Feature Bounding, features place an upper bound on the number of potentially contrastive categories in a language. By Feature Economy, features tend to be combined maximally. By Marked Feature Avoidance, certain feature values tend to be avoided. By Robustness, highly-valued feature contrasts tend to be employed before less highly-valued contrasts. By Phonological Enhancement, marked features are often introduced to reinforce weak perceptual contrasts. These principles interact to defined broad properties of sound systems, such as symmetry and the tendency of sounds to be dispersed in auditory space. Further phonetically-based principles fine-tune the realization of phonological categories at the phonetic level. It is suggested that these general properties of sound systems may have their explanation in the nature of early language acquisition. Paper presented at the Symposium on Phonological Theory: Representations and Architecture Powered by:

Chapter 2 : Diane Brentari | Department of Linguistics

A second claim is that movements operate as the most basic prosodic units of the language. The author is concerned to show both the similarities and differences between signed and spoken languages, and to indicate some directions for future work in cognitive science that can be derived from her phonological model.

 Although the notion of phonology is traditionally based on sound systems, phonology also includes the equivalent component of the grammar in sign languages, because it is tied to the grammatical organization, and not to particular content. This definition of phonology helps us see that the term covers all phenomena organized by constituents such as the syllable, the phonological word, and the higher-level prosodic units, as well as the structural primitives such as features, timing units, and autosegmental tiers, and it does not matter if the content is vocal or manual. Therefore, the units of sign language phonology and their phonotactics provide opportunities to observe the interaction between phonology and other components of the grammar in a different communication channel, or modality. This comparison allows us to better understand how the modality of a language influences its phonological system. Communication Modality Sign language phonology broadens the range of structures under consideration for phonological theory, getting us ever closer to understanding phonology in its most complete range of cases. As phonology is the level of the language that directly interfaces with the articulators, anatomical differences in turn have the potential to influence the phonological structure of languages across modalities. It is apparent with respect to production because the articulators involved in speaking and signing are different; the articulators in speech are the lips, teeth, tongue, throat, and larynx, and the articulators in signing are the hands, arms, head, body, and face. Besides this obvious difference, there are fundamental differences between these sets of articulators. Bellugi and Fischer found that the rate of speaking measured as words per second was twice as high as the rate of signing measured as signs per second, and they attributed this result to the size of the articulators, as the arms and hands are much larger and therefore require more effort to move than those involved in speaking. Despite the slower rate of signing compared to speech, however, Bellugi and Fischer found that the proposition rate was similar across signed and spoken languages. They attributed this result to the use of simultaneous organization in sign languages, concluding that both modalities are equally efficient at conveying information, but do so in different ways: Second, under typical signing conditions, the source articulators are entirely visible, while in speech the acoustic signal is an indirect cue to the underlying articulation. In the source-filter model Fant, , the vocal apparatus generates the sound source , which is then modified by the shape of the vocal tract filter ; this model has been effective for explaining how listeners encode and decode speech. The signal in sign language may have less of a role in phonological explanation than it does in speech, because the source articulators are visible; in other words, the spoken language is more prone to reanalysis due to acoustics to production decoding. Third, sign language can transmit multiple visual events simultaneously, and there are two hands and arms involved in articulation; in contrast, speech is transmitted through the single stream of an acoustic signal Meier, , With regard to perception, the difference between central and peripheral vision is important for feature distribution e. In sign languages, the addressee must look at the person signing to them, and signers focus their gaze on the face, neck, and upper torso, and it is in these areas that visual acuity is greatest Siple, In addition, when comparing the frequency of one- vs. Indeed, in BSL, The increased frequency of two-handed forms in areas overlapping with the peripheral vision may be explained with reference to sign recognition; there is more information available to the addressee to identify the sign in peripheral areas when it is two-handed and contains identical information than when it is one-handed. This observation, together with the distribution of marked and unmarked handshapes with respect to location, suggests that constraints on the distribution of features may have their origins in perception, as suggested by Siple and Battison In addition, it has been noted in Brentari that humans can temporally resolve auditory stimuli when they are separated by an

interval of only two milliseconds Green, ; Kohlrausch et al. The advantage of temporal processing therefore goes to audition. In contrast, simultaneous processing benefits vision over audition. The effect of speed-of-light transmission on the perception of objects is that vision can take advantage of light waves reflected from the target object together with secondary reflection from other objects in the environment onto the target object i. The combination of the two, perceived simultaneously, enhances the three-dimensional quality of the target object Bregman, and allows a three-dimensional image to be perceived quickly due to properties of the signal the same echo phenomenon in audition is much slower. Given these differences in production and perception across modalities, one might expect words in signed and spoken languages to exploit the advantages available to their respective systems. Phonological Units in the Core Lexicon Because of the modality differences between signed and spoken languages, we might expect to see differences between the two types of languages in the organization of phonological units. In this section, the distribution of features across the lexicon, in syllables, and in words is described. Because phonological distributions in both spoken and sign languages change based on the origins and morphological structure of words, it is useful to view the lexicon as multi-componential. Specifically, the sign language lexicon is divided into the following components: Much of the work on phonological theory concerning sign languages has been based on the core lexicon, where the sublexical elements are considered to be phonologicalâ€”i. Signs from the non-core lexicon, sometimes called the spatial lexicon, are made up of elements that can be both morphological and phonologicalâ€”i. The non-native lexicon includes signs borrowed from other sign languages and signs that use letters of the manual alphabet, known as fingerspelling. Importantly, in some cases signs from the non-core and the non-native lexicon show weaker adherence to the phonological constraints than the signs in the core lexicon Aronoff et al. These components can also have different handshape inventories. We refer to signs from other components of the lexicon in Section 3 when we consider the relationship between signs from the non-core lexicon and gesture, a prominent and current area of inquiry, and Section 4 , which is about fingerspelling. Non-manual behaviors of the face and body are also part of the phonology see e. In the BSL sign DANGER, the parameters specified are the hand for handshape, the ipsilateral side of the forehead for place of articulation, and a short repeated movement contacting the forehead for movement. The Orientation, which is interpreted here as the relationship between the active hand and the place of articulation, is the radial side of the hand i. Justification for the feature units within each parameter stems from their ability to show contrasts. In Figure 2 , pairs of contrasts along each parameter in BSL are provided. Click to view larger Figure 2. Sign pairs with handshape, location movement and orientation contrasts in BSL. Within the core lexicon, the parameters of handshape, location, movement, and orientation typically have no iconic motivation for the handshape in the signs PAPER or DANGER; these are arbitrary sub-lexical elements that are contrastive in BSL, and are important because they create minimal pairs and are implicated in phonological rules. To better illustrate the hierarchical structure of these features, an overview of the general organization of the sign according to the Prosodic Model is provided see Figure 3. Click to view larger Figure 3. Overview of the Prosodic Model. A description will be provided of how the parameters of handshape, POA, movement, and orientation are grouped into the Inherent and Prosodic branches of structure within the Prosodic Model. These features all combine to form a lexeme at the root node, in contrast to spoken languages, where they would combine to form a segmental unitâ€”a consonant or vowel. The Inherent Features structure branches into the parameters of handshape and place of articulation location or POA ; each will be discussed in turn. These features are typically specified only once per lexeme, not once per segment or once per syllable as in spoken language. This is a fact that isâ€”if not explicitly statedâ€”implied in many models of sign language phonology. Parallels can be drawn with tone in tonal languages and features that harmonize across a lexeme e. Importantly, all sign languages that have been subject to serious inquiry have been noted to operate in this way; the extent to which tone and vowel harmony are attested cross-linguistically in spoken languages does not approach a similar scale by comparison. Beginning at the topmost node, the handshape parameter is located within the Articulator branch of structure Brentari, ; van der Hulst, , which is first specified for

whether the sign is produced by the arms and hands or by the body or face. The manual node then branches into the dominant H1 and non-dominant H2 hands. If the sign is two-handed, it will have both H1 and H2 features. If it is one-handed, it will only have H1 features. These features include which fingers are active selected , how many are selected quantity , and whether they are straight, bent, flat, or curved joints. It is at the level of specific terminal features that the minimal units of contrast can be identified. GAY is specified only for the thumb i. Beginning at the top, the POA branch is divided into three-dimensional planes: Signs occurring along the vertical plane may also be specified for one of the major locations on the body: Within each of the eight major locations, eight further POA values are specified. The POA in signed and spoken languages is the passive articulator van der Hulst, Its organization reflects the generalization that there are four major body regions the body, the head, the torso, and the arm and that each region has eight place distinctions. The model describes eight distinctions in each of the major locations, but the values may well be language-specific, differing from sign language to sign language. Orientation is traditionally regarded as a minor parameter, since there are fewer minimal pairs based on orientation alone Brentari, Earlier descriptions of orientation e. Brentari and Crasborn and Van der Kooij treat orientation as a relationship between an active handpart and the POA. Figure 5 provides a detailed representation of the organization of the Prosodic Features tree, which includes the features of movement. Movements are, by their very nature, the dynamic elements of signs, and thus their values change throughout the signâ€”e. These dynamic elements contrast with the features of Handshape and POA within the Inherent Features branch; according to the phonotactics of ASL and BSL, the fingers and POA do not change within a monomorphemic sign, while the aperture and setting features are allowed to change Mandel, ; Sandler, ; Brentari, Click to view larger Figure 5. Prosodic Features representation within the Prosodic Model cf. The dominance of the class nodes in the PF branch of the feature tree is based on their degree of visual saliency sonority. Movements are dynamic acts with a trajectory, a beginning, and an end; their phonological representation will vary depending on the body part used to articulate the movement see Figure 6 for examples from ASL. The hierarchy of movement class nodes starts at the top with the more proximal joints e. In Brentari , it was argued that the larger the movement, the higher the sonority see Section 2. In some signs, it is also possible to have two simultaneous types of movements articulated together. Click to view larger Figure 6. Reprinted with permission by Mouton de Gruyter, from Brentari, , figure 3. While much has been made of the simultaneous nature of sign languages, it is uncontroversial that signs are comprised of sequential elements. This sequentiality is represented through timing slots projected within the prosodic structure shown as X-slots in Figure 5. Inherent Features do not generate timing slots at all; only movement features do this within the Prosodic Model. Timing slots typically do not create minimal pairs i. The movement features already described play an important role in the sign language syllable, with movement being described as analogous to vowels. Parallels between the two can be seen when one considers that vowels and movements are perceptually the most salient feature within a word or a sign and that movement is what makes signs visible, just as vowels make words audible. In fact, researchers have proposed that larger, more visually salient movements are more sonorous than smaller, less visually salient movements. The criteria for counting syllables in sign languages are outlined in Figure 7. Click to view larger Figure 7. Syllable Counting Criteria Brentari, Several arguments can be made to demonstrate that movement plays a central organizing role at the phonological level, forming a unit similar to the syllable nucleus in spoken languages. First, single fingerspelled letters located in the non-native lexicon in Figure 1 and number signs produced in isolation have been observed to add an epenthetic movement in some sign languages when used as an independent word Brentari, ; Jantunen, ; Geraci, Brentari suggests that, as in spoken languages, where an operation of vowel epenthesis ensures syllable well-formedness, movement is inserted where necessary to ensure that the signed output is a well-formed syllable. Third, morphological modifications to signs are often permitted on the basis of their movement properties, phenomena that are associated with sonority and syllable weight. In spoken and signed languages, there is a positive correlation of energy output with sonority and syllable weight Gordon, , Gordon et al.

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Chapter 3 : LINGUIST List Phonology of Sign Language

A Prosodic Model of Sign Language Phonology has 2 ratings and 0 reviews. Brentari has written a lucid, engaging, and expert account of the phonological.

Sign Language Phonology After one of the Bampton lectures at Columbia in , a young member of the audience approached him Zellig Harris and asked what he would take up if he had another lifetime before him. He mentioned poetry, especially the longer works of the 19th century poets like Browning. And he mentioned sign language. It is important to consider what the state of our knowledge about American Sign Language ASL is, since signed languages also offer unique opportunities for testing ideas about the nature of language itself, ideas generally formulated exclusively from observations about spoken language. Our task as ASL phonologists is to ascertain which are the minimal units of the system, which aspects of this signal are contrastive, and how these units are constrained by the sensory systems that produce and perceive them. Of all the items of the list of differences and similarities between signed and spoken languages the areas that present the most striking divergences occur in morphophonemics and phonology. Diane Brentari Definition of Sign Language A system of human communication whose character is like that of a spoken language, except that it is through gestures instead of sounds. To be distinguished, as productive systems with their own rules and structures, from gestural transcriptions of spoken language, e. The articulatory means of sign languages are the hands and arms, the body, the head, and the muscles of the face, in particular the muscles around the eyes, the brows and the mouth, and eye movements. The hands produce the lexemes, often jointly with the mouth. Before Stokoe , signs had been regarded as unanalyzable, unitary gestures, and therefore as containing no level analogous to the phonological. More recent research has sought to apply approaches to phonological theory in spoken languages, such as autosegmental phonology, to sign structure. Signs with shared sublexical features e. Iconicity It is perhaps not surprising that visual languages exhibit more iconicity than auditory languages â€” objects in the external world tend to have more visual than auditory associations. It is important to emphasize that while sign languages may not show an arbitrary link between symbol and referent or form and meaning, this link is as conventionalized as in spoken languages. There remains a great deal of research to be done on the role and status of iconicity in sign language. Constraints on Sign Form Constraints on sign forms arise from two sources: Battison proposes two constraints on sign form in ASL which also appear to hold for other sign languages. It is of interest to note that while it is common to see two hands with different handshapes, in different locations, and with different movements, such structures always reflect some syntactic, rather than lexical form. Phonological processes operate on the citation forms of signs; amongst those studied are change of location and deletion of hand. Signs tend to move towards the center of signing space and for contact with a location to be lost. It is also common for one hand to be deleted in two-handed signs. Liddell and Johnson discuss at length a whole series of phonological processes in ASL, including movement epentheses, metathesis, gemination, perseveration, and anticipation. Borrowing from Spoken Languages All signers live among hearing populations using spoken languages, and have some degree of access to the language of the hearing population. This contact is manifested in a number of areas, e. Simultaneous Units The first attempt by Stokoe and Stokoe, Casterling, and Croneberg to analyze lexical items into phonemes rejected the assumption imported from spoken-language phonology that sequential organization must be the most important way that signs are constructed. Stokoe proposed that we should look instead at the principal components of signs as they present lexical contrast, and he concluded that these units were simultaneously, rather than sequentially, organized. Sequential Units The notion of simultaneous organization of underlying structure in ASL was argued against, and indeed displaced, during the s. Newkirk , Liddell , Liddell and Johnson , and Johnson and Liddell presented arguments for sequential underlying structure in ASL. Stokoe and colleagues have identified 19 different values of hand configuration, or handshapes. There include an open palm, a closed fist, and a partially closed fist with the index finger pointing. Place of articulation, which has 12 values, deals with

whether the sign is made at the upper brow, the cheek, the upper arm, and so on. Movement refers to whether the hands are moving upward, downward, sideways, toward or away from the signer, in rotary fashion, and so on, and includes 24 values. Although there values are meaningless in themselves, they are combined in various ways to form ASL signs. Thus, ASL has duality of patterning. Figure shows a series of minimal contrasts involving these three parameters. The top row shows three signs that differ only in hand configuration that is, the signs are identical in place of articulation and movement. The second and third rows show minimal contrasts for place and movement, respectively. Notice how a change in a single parameter value can change the entire meaning of a sign. It is also possible to analyze parameter values into distinctive features. Two such features for handshapes are index, which refers to whether the index finger is extended, and compact, which refers to whether the hand is closed into a fist. The participants sere asked to recognize the signs of the monitor. The researchers found that the large majority of recognition errors involved pairs of signs that differed in only one feature. That is, signs with similar patterns of distinctive features were psychologically similar to one another. Slips of the Hand Errors occur in signing are strongly resemble those found with speech. Newkirk, Klima, Pedersen, and Bellugi have found some fascinating evidence that slips of the hand similar to slips of the tongue take place with deaf signers. They used a corpus of errors, 77of which came from videotaped signings and 54 of which were reported observations from informants or researchers. Newkirk and colleagues analyzed the errors in terms of the parameters of American Sigh Language-hand configuration, place of articulation, and movement-to assess whether sign parameters also appear to be independent units of production. This intended production can be described in the following way: The other two parameters were not influenced. In addition, 9 of 24 errors related to place and movement parameters were single-parameter errors. These cases provide evidence that ASL signs are not holistic gestures without internal structure; rather, they are subdivided into parameters that are somewhat independent of each other during sign language production. In general, slips of the hand strongly suggest that similar principles of organization underlie signed and spoken language, pointing to the possibility that both types of language take the form that they do because of basic cognitive limits on how or how much linguistic information may be structured or used. In contrast, some recent studies of the rate at which signs and speech are produced point to some equally interesting discrepancies between the two modes. Important People and Readings 1. Foreign Vocabulary in Sign Languages: Semiotics and Human Sign Languages. Walter de Gruyter, Inc. Phonological Representation of the Sign: Linearity and Nonlinearity in American Sign Language.

Chapter 4 : Prosody (linguistics) - Wikipedia

A Prosodic Model of Sign Language Phonology by Dr. Diane Brentari starting at $ A Prosodic Model of Sign Language Phonology has 1 available editions to buy at Alibris.

These are often subdivided into parameters: These may include movement of the eyebrows, the cheeks, the nose, the head, the torso, and the eyes. Parameter values are often equalled to spoken language phonemes, although sign language phonemes allow more simultaneity in their realization than phonemes in spoken languages. Phonemes in signed languages, as in oral languages, consist of features. Most phonological research focuses on the handshape. Also, allophones are sometimes considered separate phonemes. The first inventory of ASL handshapes contained 19 phonemes or cheremes , Stokoe, Other models consider movement as redundant, as it is predictable from the locations, hand orientations and handshape features at the start and end of a sign Hulst, , Van der Kooij, Models in which movement is a prime usually distinguish path movement i. Allophony and assimilation[edit] Each phoneme may have multiple allophones , i. Allophony may be free, but is also often conditioned by the context of the phoneme. Assimilation of sign phonemes to signs in the context is a common process in ASL. For example, the point of contact for signs like THINK, normally at the forehead, may be articulated at a lower location if the location in the following sign is below the cheek. Other assimilation processes concern the number of selected fingers in a sign, that may adapt to that of the previous or following sign. Also, has been observed that one-handed signs are articulated with two hands when followed by a two-handed signs. Phonotactics[edit] As yet, little is known about ASL phonotactic constraints or those in other signed languages. The Symmetry and Dominance Conditions Battison are sometimes assumed to be phonotactic constraints. The Symmetry Condition requires both hands in a symmetric two-handed sign to have the same or a mirrored configuration, orientation, and movement. The Dominance Condition requires that only one hand in a twohanded sign moves if the hands do not have the same handshape specifications, and that the non-dominant hand has an unmarked handshape. However, since these conditions seem to apply in more and more signed languages as cross-linguistic research increases, it is doubtful whether these should be considered as specific to ASL phonotactics. Suprasegmentals[edit] Like most signed languages, ASL has an analogue to speaking loudly and whispering in oral language. In order to vary the "volume", the signer increases or reduces their signing. In fast signing, in particular in context, sign movements are smaller and there may be less repetition. Signs occurring at the end of a phrase may show repetition or may be held "phrase-final lengthening". Hulst, Harry van der. Units in the analysis of signs. Sign Language Studies Sonority and syllable structure in American Sign Language. Linguistic Inquiry 23, An outline of the visual communication systems of the American Deaf. Van der Kooij, E. Phonological Categories in Sign Language of the Netherlands. The Role of Phonetic Implementation and Iconicity.

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There may not be two distinct regions of the body or two distinct movements in a two-handed sign from Battison There are seven handshapes altogether Battison All signs with two different handshapes are type 3 signs. There are eight discrete places of articulation where H2 contact can be made in type 3 signs. H2 has two distinct roles in phonological structure: How these two roles should be represented, and other types of restrictions on two-handed signs, are the subject of chapter 7. The restrictions outlined above are for monomorphemic, core, two-handed signs and do not cover all uses of H2. A signer need not use the same hand as H1 in all linguistic contexts, but can systematically shift between hands under certain conditions, such as in narrative storytelling, in poetry, or for particular lexical emphasis there is wide idiolectal variation on this last point. Also, H2 can perseverate while H l continues to articulate an utterance 2. The restrictions on H2 in two-handed signs will be taken up at length in chapter 7. Fingerspelling and Lexicalized Fingerspelled Borrowings Fingerspelling, which is the representation of the letters of an alphabetic writing system via signs, is one way for sign languages to borrow words from spoken languages. The ASL manual alphabet is the set of names for the English orthographic letters. Just as spoken languages have words for letters e. In some sign languages, this is the limited role that fingerspelled letters play, used as infrequently as speakers spell out words in English. Thus, in many sign languages e. In fact, ASL signers are thought to overuse fingerspelling by some members of such Deaf communities. Fingerspelling serves many other purposes in ASL, however, more than spelling does in spoken languages; I will describe four of these. For example, there is a sign for the town name Stockton, California, but only local area residents would recognize it; when the town is mentioned by or to a nonresident, its name is fingerspelled. Second, fingerspelled forms may be used to emphasize a word for which an ASL lexical item does exist. These forms obey all constraints placed on words in the core lexicon. Finally, in specific academic disciplines, fingerspelled forms are sometimes preferred over coined signs in order to highlight a technical versus nontechnical semantic distinction between uses of the same term Padden ; or they may refer to domains of knowledge where consensus on the use of a specific sign has not been achieved. Fingerspelled forms of this type undergo a rapid lexicalization process, local lexicalization, whereby in a single discourse the fingerspelled form comes to represent, not each of the letters of the borrowed word, but the concept that word has in the source language. Local lexicalization of fingerspelled forms will be used as evidence in chapters 5 and 6. The ASL fingerspelling alphabet is given in figure 1. Nominals In this book I will discuss two kinds of nominalizations. Both are formed from verb stems: In chapter 5 I will argue that in addition to semantic requirements, the phonological shape of the stem of both types of nominals determines whether nominalization can occur. For each reduplicated noun there is a corresponding verb. The movement of the stem is repeated, and both movements are produced in a "restrained" manner e. These forms have been given a segmental analysis, but in chapters 5 and 6 I will propose an analysis that includes both syntagmatic and paradigmatic components. They might be seen as a type of gerund, since they function in this way. The derived form contains a trilled movement TM. In the verb READ left , there is a single path movement. Semantically, the verb stems that undergo this operation denote atelic activities Vendler The forms in 4a may undergo this operation, and those in 4b may not; figure 1. Agreement One morphologically complex group of signs that has been studied at length using both internal and external linguistic evidence is the so-called agreement forms. Liddell argues against calling spatial reference "agreement" because of the apparently infinite allomorphy of these forms. Engberg-Pederson argues that these references to objects in the signing space ought to be called "agreement," because loci cannot be established randomly in the signing space. Instead, she argues p. Engberg-Pederson argues for a category of subsystems that share overlapping properties but cannot be treated completely alike, rather than the binary

split of spatial versus grammatical. Comparison of figure 1. Sentences exemplifying these types of verbs are given in 5 - 7. A case where the spatial and person systems of reference are mixed is shown in 8 ; here, the locus at the end of GO-TO is the same as the locus at the end of HELP, even though in the first case it expresses spatial agreement, and in the second case it expresses person agreement. Compounds Compounds in ASL are limited to two stems. There are monosyllabic forms and disyllabic compounds, using the syllable-counting criteria listed in 1.

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Chapter 6 : American Sign Language phonology - Wikipedia

A prosodic model of sign language phonology. [Diane Brentari] -- "This book is intended in part to provide linguists and cognitive scientists who do not know sign language with a point of entry into the study of sign language phonology.

A Cambridge Language Survey. Foreign Vocabulary in Sign Languages: A Cross-linguistic Investigation of Word Formation. Morphology and its Relation to Syntax and Phonology. Selected Articles and Book Chapters Links to the. From iconic handshapes to grammatical contrasts: Longitudinal evidence from a child homesigner. Phonological reduplication in sign language: The interaction of pitch accent and gesture production in Italian and English. Studi e Saggi Linguistici, 51 1 , A modal aspects of linguistic design: Evidence from sign language. Acquiring word class distinctions in American Sign Language: Language Learning and Development, 9 2 , Cognitive Science, 4, â€" Can experience with gesture influence the prosody of a Sign Language?: ASL prosodic cues in bimodal bilinguals. Language and Cognition,15 2 , When does a system become phonological? Handshape production in gesturers, signers, and homesigners. Natural Language and Linguistic Theory, 30 1 , Sensitivity to visual prosodic cues in signers and nonsigners. Language and Speech, 54 1 , The lab is designed to analyze linguistic data from sign languages and gestures pertinent to her ongoing research projects, which include two NSF-funded projects and a third award by the Neubauer Collegium for Culture and Society. These projects concern the linguistic structure of sign languages and their expression in conversation, narrative and performance, as well as the gestures of hearing people and homesign systems. Motion capture, as well as a variety of tools for video analysis and transcription, are employed in this work. For more information about the projects, people and resulting publications, please direct your attention to:

Chapter 7 : Brentari, Diane [WorldCat Identities]

Sandler, Wendy. b. A sonority cycle in American Sign Language. Phonology Sandler, Wendy. The medium and the message: Prosodic interpretation of linguistic content in Israeli Sign Language. Sign Language Linguistics Sandler, Wendy & Lillo-Martin, Diane. In preparation. Sign language and linguistic universals.

Auditory and acoustic measures of prosody do not correspond in a linear way. There is no agreed number of prosodic variables. In auditory terms, the major variables are the pitch of the voice varying between low and high length of sounds varying between short and long loudness , or prominence varying between soft and loud timbre quality of sound in acoustic terms, these correspond reasonably closely to fundamental frequency measured in hertz, or cycles per second duration measured in time units such as milliseconds or seconds intensity, or sound pressure level measured in decibels spectral characteristics distribution of energy at different parts of the audible frequency range Different combinations of these variables are exploited in the linguistic functions of intonation and stress, as well as other prosodic features such as rhythm, tempo and loudness. Phonology[edit] Prosodic features are said to be suprasegmental , since they are properties of units of speech larger than the individual segment though exceptionally it may happen that a single segment may constitute a syllable , and thus even a whole utterance, e. It is not possible to say with any accuracy which aspects of prosody are found in all languages and which are specific to a particular language or dialect. Intonation[edit] Some writers have described intonation entirely in terms of pitch, while others propose that what we call intonation is in fact an amalgam of several prosodic variables. The form of English intonation is often said to be based on three aspects: The division of speech into units The highlighting of particular words and syllables The choice of pitch movement e. English has been said to make use of changes in key: Stress[edit] From the perceptual point of view, stress functions as the means of making a syllable prominent; stress may be studied in relation to individual words named "word stress" or lexical stress or in relation to larger units of speech traditionally referred to as "sentence stress" but more appropriately named " prosodic stress". Stressed syllables are made prominent by several variables, by themselves or in combination. Stress is typically associated with the following: Unstressed vowels tend to be centralized relative to stressed vowels, which are normally more peripheral in quality [5] These cues to stress are not equally powerful. Cruttenden, for example, writes "Perceptual experiments have clearly shown that, in English at any rate, the three features pitch, length and loudness form a scale of importance in bringing syllables into prominence, pitch being the most efficacious, and loudness the least so". It has often been asserted that languages exhibit regularity in the timing of successive units of speech, a regularity referred to as isochrony , and that every language may be assigned one of three rhythmical types: As explained in the isochrony article, this claim has not been supported by scientific evidence. Cadence may be subjectively experienced by the listener an auditory , not acoustic measurement by speech that shifts back-and-forth between word chunks , and words perceived as isolated or not chunked, e. Conversation analysis commonly notes pause length. Distinguishing auditory hesitation from silent pauses is one challenge. Contrasting junctures within and without word chunks can aid in identifying pauses. There are a variety of "filled" pause types. Formulaic language pause fillers include "Like", "Er" and "Uhm", and paralinguistic expressive respiratory pauses include the sigh and gasp. Although related to breathing, pauses may contain contrastive linguistic content, as in the periods between individual words in English advertising voice-over copy sometimes placed to denote high information content, e. Examples include the phrase , phraseme , constituent or interjection. Chunks commonly highlight lexical items or fixed expression idioms. Chunking prosody [9] is present on any complete utterance and may correspond to a syntactic category , but not necessarily. The well-known English chunk "Know what I mean? Cognitive aspects[edit] Intonation is said to have a number of perceptually significant functions in English and other languages, contributing to the recognition and comprehension of speech. In this way potential ambiguities may be resolved. But when the sentence is read aloud, prosodic cues like pauses dividing the sentence into chunks

and changes in intonation will reduce or remove the ambiguity. This result has been found in studies performed in both English and Bulgarian. A well-known example is the ambiguous sentence "I never said she stole my money", where there are seven meaning changes depending on which of the seven words is vocally highlighted. David Brazil and his associates studied how intonation can indicate whether information is new or already established; whether a speaker is dominant or not in a conversation; and when a speaker is inviting the listener to make a contribution to the conversation. Emotional prosody Prosody is also important in signalling emotions and attitudes. When this is involuntary as when the voice is affected by anxiety or fear , the prosodic information is not linguistically significant. However, when the speaker varies her speech intentionally, for example to indicate sarcasm, this usually involves the use of prosodic features. The most useful prosodic feature in detecting sarcasm is a reduction in the mean fundamental frequency relative to other speech for humor, neutrality, or sincerity. While prosodic cues are important in indicating sarcasm, context clues and shared knowledge are also important. This sort of expression stems not from linguistic or semantic effects, and can thus be isolated from traditional[clarification needed] linguistic content. These emotional[clarification needed] have been determined to be ubiquitous across cultures, as they are utilized and understood across cultures. Various emotions, and their general experimental identification rates, are as follows: High rate of accurate identification Fear and happiness: Medium rate of accurate identification Disgust: Poor rate of accurate identification The prosody of an utterance is used by listeners to guide decisions about the emotional affect of the situation. Whether a person decodes the prosody as positive, negative, or neutral plays a role in the way a person decodes a facial expression accompanying an utterance. As the facial expression becomes closer to neutral, the prosodic interpretation influences the interpretation of the facial expression. A study by Marc D. Pell revealed that ms of prosodic information is necessary for listeners to be able to identify the affective tone of the utterance. At lengths below this, there was not enough information for listeners to process the emotional context of the utterance. Adults, especially caregivers, speaking to young children tend to imitate childlike speech by using higher and more variable pitch, as well as an exaggerated stress. These prosodic characteristics are thought to assist children in acquiring phonemes, segmenting words, and recognizing phrasal boundaries. And though there is no evidence to indicate that infant-directed speech is necessary for language acquisition, these specific prosodic features have been observed in many different languages. Aprosody is often accompanied by the inability to properly utilize variations in speech, particularly with deficits in ability to accurately modulate pitch, loudness, intonation, and rhythm of word formation. The right Brodmann area 22 aids in the interpretation of prosody, and damage causes sensory aprosodia, with the patient unable to comprehend changes in voice and body language.

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We build word models for American Sign Language (ASL) that transfer between different signers and different aspects. This is advantageous because one could use large amounts of labelled avatar data in combination with a smaller amount of labelled human data to spot a large number of words in human data.

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