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Roland Pfau

http://www.uva.nl/profiel/p/f/r.pfau/r.pfau.html?1549626317047

Roland Pfau is an associate professor in sign language linguistics at the Department of General Linguistics at the University of Amsterdam. His research is devoted to aspects of sign language morphophonology (e.g. pluralization), morphosyntax (e.g. agreement, classifiers, and reciprocals), syntax (e.g. relative clauses, questions, and negation), and grammaticalization - much of this in collaboration with Markus Steinbach from the University of Göttingen. Much of this work focuses on German Sign Language, but he is also interested in taking a typological and cross-linguistic perspective on these issues and enjoys collaborating with colleagues who work on other sign languages (e.g. Sign Language of the Netherlands, Catalan Sign Language, Indian Sign Language).

Headshakes: from Gesture to Grammar

Headshakes commonly accompany both spoken and signed utterances, not only to express negation, but also to signal intensification or uncertainty. In this talk, I argue that headshakes, as used in many sign languages, are no longer gestural elements but rather grammaticalized gestures. Evidence for this claim comes from the observation that the use of headshake across sign languages is subject to language-specific constraints – which is unexpected if the headshake was a mere gesture. If headshakes indeed function as grammatical markers, then their use and distribution should be accounted for within formal models of grammar. I will sketch efforts of accounting for the behavior of headshake using Generative Grammar mechanisms, and I will also offer some speculations on the grammaticalization of negation applying a well-known scenario suggested for spoken languages, i.e. Jespersen's Cycle.

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Katharina Rohlfing
Paderborn

Katharina J. Rohlfing received her Master's in Linguistics, Philosophy, and Media Studies from Paderborn University, Germany, in 1997. As a member of the Graduate Program Task-Oriented Communication, she received her PhD in Linguistics from Bielefeld University in 2002. In 2006, with her interdisciplinary project on the Symbiosis of Language and Action, she became a Dilthey Fellow (Volkswagen Foundation) and Head of the Emergentist Semantics Group at Bielefeld University's CITEC. Currently, she is professor of psycholinguistics at Paderborn University. Her work is on early semantics with a strong interdisciplinary interest in multimodality and language acquisition.

Learning language from the use of gestures

The last years of extensive research on the multimodality of communication have yielded quite a lot of studies on how gestures support learning. My presentation will focus on learning language and will address the question of how, from early on, children can communicate via gestures and how gestures being a part of a learning situation can enhance memories about the learning content. In the first part, I will present a differentiation between gestural forms. Subsequently, a key feature of gestures, namely the coordination across modalities and with the dialog partner will be addressed. In the third part, the role of gestures as a precursor to language skills will be set out, and I will point to the benefits of gestures for learning different language skills in younger and older children. Finally, I will conclude with explanations for why gestures help learning.

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Katherine Rowley

Katherine Rowley is a post-doctoral Research Fellow at University College London and City, University of London. In her PhD research she explored visual word recognition and reading processes in deaf and hearing adults using eye-tracking technology. In particular, she looked at the interplay between orthographic, semantic and phonological information in deaf readers whose primary language was British Sign Language (BSL). Her further research interests include sign language acquisition, language, literacy and cognitive development in deaf children.

Visual Word Recognition in Deaf Readers: the interplay between orthographic, semantic and phonological information

BSL

For hearing readers, good visual word recognition skills are crucial for successful literacy attainment and poor readers are likely to have poor word recognition skills. Poor literacy is prevalent in the deaf population, yet little is known about word recognition processes in this population. This study investigated the interplay between orthographic, semantic and phonological information during word recognition and reading in deaf and hearing readers. The deaf group consisted of native or near native signers whose preferred language was British Sign Language (BSL) and they were compared to a group of hearing, native English speakers, whilst carefully controlling for reading level. The results show that both groups processed orthographic and semantic information in similar ways, however there were differences in how the two groups of readers processed phonological information.

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Anton Stepikhov

Anton Stepikhov, PhD (кандидат наук, доцент) is an associate professor of The Russian Language Department at St. Petersburg State University and a senior research fellow at The Research Institute for Applied Russian Studies, Herzen State Pedagogical University.
His research focuses on the interaction between syntax and prosody of spontaneous speech as well as on the role of individuality in speech perception. Particular interest is devoted to factors that determine ambiguous sentence boundary detection in unscripted speech. To these ends he uses a multidisciplinary approach which involves linguistics, psychology and cognitive science. His recent project "Sentence Boundary Detection in Russian Spontaneous Speech: An Experimental Study" (2015-2017) was supported by the Russian Foundation for Basic Research. In 2016 he was a research fellow at Leibniz Centre for General Linguistics (Leibniz-Zentrum Allgemeine Sprachwissenschaft – ZAS) as a grant-holder from DAAD and St. Petersburg University. Since 2015 he has been the member of the programme committee of the International Philological Conference held by St. Petersburg University. He was an invited lecturer at Groningen University (The Netherlands), Tartu University (Estonia), Donetsk National University (Ukraine) and Humboldt University of Berlin (Germany).

The effect of individual psychological profile on syntactic segmentation of spontaneous speech

Sentence boundary detection in spontaneous speech is one of the greater challenges faced by natural language processing. Human-based segmentation of speech is usually considered the most accurate way to arrive at the segmentation supporting oral discourse structure. Expert manual annotation of spontaneous speech is performed through speech transcripts in which spoken language is represented in written form. Yet numerous studies have shown that, even for expert annotators, sentence boundary placement is typically ambiguous. This ambiguity manifests itself, first, in boundary placement in different positions in the text and, second, in the different number of boundaries; i.e. in varying average sentence lengths. The reasons for such ambiguity have rarely been extensively explored. While the first type of variability may be at least partially explained by the fact that annotators identifying sentence boundaries in transcripts use segmentation strategies common for reading a conventional written text rather than speech, the second type may rather have a non-linguistic basis.

This presentation reports the results of psycholinguistic experiments aimed at revealing a possible relationship between syntactic segmentation of spontaneous speech (German and Russian) and the annotator's individual psychological profile (personality traits, working memory capacity, lateral asymmetry).

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Wendy Sandler

Wendy Sandler is Professor of Linguistics at the University of Haifa and Founding Director of the Sign Language Research Lab there. She has developed models of sign language phonology and prosody that exploit general linguistic principles to reveal both the similarities and the differences in natural languages in two modalities. More recently, her work has turned to the emergence of new sign languages and ways in which the body is recruited to manifest increasingly complex linguistic form within a community of signers. Wendy Sandler is currently conducting a multi-disciplinary research project, The Grammar of the Body, supported by the European Research Council.

The composition of a theatrical sign language

In sign languages, visible actions of bodily components often correspond directly to linguistic functions. This property allows us empirically to trace the course of language emergence in new sign languages, through bodily actions. Here I take the Grammar of the Body approach one step further, into the realm of sign language theatre. I show how deaf actors weave components from sign language, gesture, and mime, into complex compositional arrays that push the bounds of human expression in the service of art.

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Asli Özyürek

Asli Özyürek is professor at the Radboud University Nijmegen and the Director of the Multimodal Language and Cognition lab. Her research in general investigates the relations between cognition (action, space), language, communication and development. More specifically, she focuses on two domains of human communicative behavior in which body and language are closely related, that is, gestures that speakers use along with speech and sign languages. Asli Özyürek is currently conducting a research project „Giving cognition a hand: Linking spatial cognition to linguistic expression in native and late learners of sign language and bimodal bilinguals“ supported by the NWO-VICI Grant.

Using and Processing Language in Multimodal Context

Use of language in face-to- face context is multimodal. It involves use and coordination of many visible articulators of the head , face, hands and the body with speech both in production and comprehension of language. However we still understand little about how and to what extent language users integrate communicatively relevant signals from different modalities in producing and comprehending language.

In this talk I will specifically focus on integration of hand gestures that convey semantically relevant information as in so-called iconic or pointing gestures referring to abstract entities in space. For production I will show that speakers use information conveyed in their gestures, not in universally similar ways but integrated with the language-specific ways information is packaged at the levels of semantics, syntax and discourse. To do so I will present data from speakers of typologically different languages as well as bilinguals (e.g., Dutch/Turkish heritage speakers). In follow up studies I will also show that the way speakers use not only language specific speech but also gestures modulate the way they allocate their attention to event components during message preparation. These findings show that gestures are produced having access to the language production system rather than independently i.e., generated from action schemas and/or imagery alone. Similarly for comprehension I will provide experimental evidence showing that listeners integrate semantic information they see in the gesture with speech and to varying in degrees in clear and adverse listening situations (i.e., in noise or by L2 listeners) .

These findings call for unified production and comprehension models of language where multiple modalities are integrated and at the same time provide evidence for multi-modal usage-based accounts of language. I will end up discussing implications of these findings for (bilingual) education and language/speech therapies.

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Deanna Gagne

Deanna Gagne is an Assistant Professor in the Department of Linguistics at Gallaudet University. She received her PhD from the University of Connecticut in Developmental Psychology with certificates in the Neurobiology of Language and the Cognitive Sciences. Her research interests include the ways in which language emerges and evolves within individuals and communities and the relationship between language and cognition. One particular area of interest is in the way that Codas (hearing children born to deaf signing parents) acquire and produce their signed and spoken languages as a unique form of bilingual, multimodal communication.

Multimodality in hearing native signers

Hearing children born to signing deaf parents, also known as bimodal bilinguals, present language researchers with a unique population of bilinguals who are natively exposed to linguistic structures from two different modalities. As a unique population of bilinguals, their language use can provide insight into the linguistic constraints imposed by each language (for example, in the Language Synthesis Model (Lillo-Martin, 2019). The inherent multimodal nature of bimodal bilingual language use offers researchers opportunities to observe how some structures sourced in one modality might "slip through" to the other simply because no constraint exists in the other modality. Data will be presented from native signing hearing individuals born into an emerging sign language context with discussion of the ways that their languages interface.

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Emmanuel Dupraz

Emmanuel Dupraz is a professor of Classics at the Université libre de Bruxelles (ULB, Belgium) in 2013. He defended his Habilitation à diriger des recherches at the Ecole Pratique des Hautes Etudes (Paris, France) in 2010 and his doctoral thesis at the Université Paris-IV (France) in 2003. His research deals with the inscriptions and languages of Gaul and Italy. He has been working both in a linguistic (syntax, semantics) and in a sociolinguistic (uses of writing, pragmatics of inscriptions) perspective.

Written formulae, spoken formulae, acted formulae: on the interaction between writing and speaking in ancient ritual and juridical operations

This talk is devoted to the interaction of written and spoken messages in a particular subset of communication situations, mainly in the ancient Roman culture (with some examples taken from other ancient civilizations of the western part of the Mediterranean basin). These situations correspond to official utterances in ritual or juridical contexts.

In such situations, the speaker utters a message which has irrevocable and definitive value. It is supposed that the hearer cannot accept eventual corrections or modifications. If the hearer is a god, the ritual value of the utterance makes the possibility of a mistake highly dangerous for the speaker and eventually for the whole community. If the hearer is a human being, (s)he cannot be trusted to interpret the utterance according to the intentions of the speaker, who may therefore, in the case of a mistake or ambiguity, find himself or herself engaged in a situation (s)he did not want to be in. These circumstances have important effects on the oral message itself, which must be devised carefully to avoid any uncertainty. That is why the messages uttered in ritual or juridical operations often consist of fixed formulae. Such utterances are typically accompanied by precise gestures and actions which underline the utterance at the moment when the latter takes place and becomes irrevocable.

A solution to these pragmatic problems may be, as soon as writing is diffused in the society in question, to use the various possibilities of this new technology. Writing may help to establish fixed, normative versions of the messages which may have to be uttered, thus reducing the risk of misformulated utterances. In this respect, writing is but a further way of fixing as unambiguous and definite a message as possible. However, the act of writing itself, in such cases, often leads to the utterance of new oral formulae, accompanied by new gestures.

Furthermore, writing may be regarded as an action in itself: it may acquire a ritual or juridical value, independently of the content of the message, for instance in so-called magic texts. Writing becomes in this case a ritual or juridical tool comparable to any other material tool.

Finally, writing has a pragmatic advantage of its own: it is a way of addressing a hearer (in this case a reader) in as remote a future as the material support of the text can reach, thus establishing new communication situations which can be used either in ritual or in juridical contexts.

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The interplay of written and sign language. The first corpus-based analysis of fingerspelling and its functions in Russian Sign Language (RSL).

Anastasia Bauer & Roman Poryadin

Universität zu Köln

This study presents our preliminary work on fingerspelling in RSL corpus. Fingerspelling is a linguistic feature of sign languages in which letters from spoken language alphabets are represented by conventionalized handshapes (Sandler & Lillo-Martin 2006). Russian signers use a one-handed variety of fingerspelling in which 32 hand arrangements correspond to the 32 letters of the Russian Cyrillic alphabet. Unlike native sign language vocabulary or syntax, fingerspelling undeniably is the result of cross-modal contact (Quinto-Pozos 2007; Zajceva 2000).

Filling lexical gaps has been long considered the central function of fingerspelling. On further investigation, it has been shown that fingerspelling has other functions, such as emphasis or disambiguation, since signers often fingerspell words, when there is a well-attested lexical sign to select from (Padden & Le Master 1985, Montemurro & Brentari 2018).

We investigate whether the Russian manual alphabet is employed in the same way and for the same purposes by the RSL signers. Our study aims at providing the first detailed corpus-based description of this phenomenon drawing from an existing RSL corpus. We analyze all instances of fingerspelling in the on-line corpus of RSL (Burkova 2012-2015). The corpus currently includes over 180 texts filmed from 59 RSL signers – men and women aged from 18 to 63 years, with varying degrees of deafness. The corpus reflects the true everyday language use of different groups of RSL signers in a variety of situations.

Our study demonstrates interesting results. Among a variety of usual fingerspelling forms, such as 'loan signs' as RSL #HOW, in which fingerspelled handshapes are left out and additional movement is added, we find the use of fingerspelling to mark mophosyntactic features of Russian such as gender or case.

References Burkova, S. 2012-2015. *Russian sign language: general information. Russian Sign Language Corpus*. Novosibirsk, http://rsl.nstu.ru/site/signlang | Montemurro, K. & D. Brentari. 2018. Emphatic fingerspelling as code-mixing in American Sign Language. *Proc Ling Soc Amer* 3, 1-13. | Padden, C., & B. LeMaster. 1985. An alphabet on hand: The acquisition of fingerspelling in deaf children. *Sign Language Studies* 47, pp. 161-172. | Quinto-Pozos, D. 2007. Outlining Considerations for the Study of Sign Language Contact. In: Quinto-Pozos, D. (Ed.), *Sign Languages in Contact*. Washington, DC: Gallaudet University Press, 1228-1246. | Sandler, W. & D. Lillo-Martin. 2006. *Sign language and linguistic universals*. Cambridge u.a: Cambridge Univ. Press. | Zajceva, G. 2000. *Žestovaja reč. Daktilologija*. Vlados: Moscow.

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Influence of Written Syllable Shape on Oral Reading? Evidence from an Eye Tracking Experiment

Anna Blöcher, Prof. Dr. Frank Domahs & Prof. Dr. Ulrike Domahs

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Several theories assume that during reading, words are parsed into syllables on the basis of grapheme-phoneme correspondences. Accordingly, graphemic syllables are conceived as derivations of their phonological counterparts. An alternative account suggests that written syllables are basically constrained by graphemic visual properties like the length hierarchy of letters ranging from compact to long letters (Fuhrhop et al. 2011) leading to visual cues that facilitate syllabic segmentation.

In the present study, 20 participants took part in a pseudoword reading experiment, and their eye movements were registered with an EyeLink 1000 eye tracker. Two manipulations of quadrisyllabic stimuli were used: a) pseudowords in which one consonant letter in syllable boundary position (onset or coda) contrasted in length (e.g. Fenasmaro vs. Fenatmaro) and b) pseudowords contrasting in the existence of violations of the length hierarchy, such that the long coda grapheme <h> was followed by a small or long letter (e.g. Borohnsero vs. Borohlsero).

Performance on pseudo words with visually salient boundaries showed shorter reading times and shorter fixation durations than words with non-salient syllable boundaries. Moreover, pseudowords which violated the syllabic length hierarchy led to longer reading times and fixation durations compared to stimuli containing visually well-formed syllables. Overall, our results suggest that – beyond grapheme-phoneme correspondences – visual length features of letters facilitate syllabic segmentation during reading.

Reference Fuhrhop, N., Buchmann, F., & Berg, K. (2011): The length hierarchy and the graphematic syllable. Evidence from German and English. *Written Language and Literacy* 14, 275-292.

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"Assisted kinemes alphabet" (AKA) as a support of phonological development in preschool deaf children

Anne Bragard[2], Pauline Marchal[2] & Marie-Christine Biard[3]

Institut Royal pour Sourds et Aveugles (IRSA); [2]Institut de Sciences psychologiques, Université catholique de Louvain; [3]Institut Libre Marie-Haps, Bruxelles

The "Assisted kinemes alphabet" (AKA) (Wouts, 2018) is a gestural communication system helping the listener to differentiate the phonemes of spoken language. The present study aimed to see if this system could aid prereader deaf children to develop phonological skills. AKA is based on the revised motor theory of speech perception (Liberman & Mattingly, 1985). According this theory, the listeners interpret the speech input in reference to articulatory movements. AKA tries to reproduce manually the qualities that we can attribute to phonemes by using their articulatory and phonological features. For example, /t/ is represented by a quick movement of the index finger forward and up reproducing the tip of tong movement in direction of the articulation point. Twenty children (5 to 7 years old) participated to this research: 10 French speaking hearing children (HC) and 10 deaf children (DC). Several phonological tasks were selected because they are considered as necessary to establish prerequisite literacy. Each task was presented in matched conditions (with or without AKA support). Results show (1) a significant difference between groups for most tasks, DC displaying weaker performances than HC, (2) a significant effect of AKA on DC performances for all tasks (rapid automatized naming, auditory discrimination, word and pseudo word repetition, rhyme judgment, initial syllable/phoneme identification) except for a digit repetition task. While future researches need to consider larger sample, these first data are promising and recommend the use of AKA with young deaf children for helping them to develop phonological representations.

References Liberman, A. M., & Mattingly, I. G. (1985). The motor theory o f speech perception revised. *Cognition*, 21(1), 1-36. | Wouts, W. (2018). *L'Alphabet des kinèmes assistés* (AKA). Louvain-la-Neuve : Presses Universitaire de Louvain.

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Using gestures to help children with specific language impairment in word learning

Anne Bragard[1,2] & Marie-Anne Schelstraete[1]

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[2]Institut Royal pour Sourds et Aveugles (IRSA)

Specific language impairment (SLI) is generally defined as a language impairment that occurs in the absence of other developmental concerns, sensory impairments or global developmental delays. SLI children have poorer lexical acquisition and show significantly lower word learning performance in comparison to age-matched children. While some authors assume that gestures scaffold lexical development in typically and SLI children, experimental results have led to contradictory conclusion (Capone & McGregor, 2005; de Nooijer, van Gog, Paas, & Zwaan, 2014; Luke & Ritterfeld, 2014; Tellier, 2008; Van Berkel-van Hoof, Hermans, Knoors, & Verhoeven, 2016). Empirical evidence for this multimodality effect is then required.

This study aimed to investigate the role of iconic and arbitrary gestures in novel word learning in SLI children (aged 5;4 – 10;1). Ten typically developing children (TD) were compared to ten chronological-age-matched children and ten language-aged-matched children. These 30 children learned phonological labels for novel words under three conditions: with the help of iconic gestures, with arbitrary gestures and without gestures. The results indicate a scaffolding effect of both types of gesture in comparison to the control condition in this novel word learning context. These data suggest that using gestures with SLI children may support their spoken language development and specifically their word learning. Theoretical and clinical implications are discussed.

References Capone, N., & McGregor, K. (2005). The effect of semantic representation on toddlers‘ word retrieval. *Journal of Speech, Language, and Hearing Research*, 48, 1468-1480. | De Nooijer, J., Van Gog, T., Paas, F., & Zwaan, R. (2014). Words in action: using gestures to improve verb learning in primary school children. *Gesture*, 14, 46-69. | Luke, C., & Ritterfeld, U. (2014). The influence of iconic and arbitrary gestures on novel word learning in children with and without SLI. *Gesture*, 14(2), 204-225. | Tellier, M. (2008). The effect of gestures on second language memorisation by young children. *Gesture*, 8, 219-235. | Van Berkel-Van Hoof, L., Hermans, D., Knoors, H., & Verhoeven, L. (2016). Benefits of augmentative signs in word learning: evidence from children who are deaf/hard oh hearing and children with specific language impairment. *Research in developmental disabilities*, 59, 338-350.

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Purposeful and Transitional Velocity among Sign Language Users: A Motion Capture Study

Chris Brozdowski, Anjali Tewari & Irene Mittelberg

Natural Media Lab & Center for Sign Language and Gesture,
RWTH Aachen University

The fluid sign stream can be broken down into purposeful lexical productions and transitional periods, moving from sign offset positions to subsequent onset positions (Jantunen, 2013). Jantunen (2013) provides evidence that signs are produced more slowly than transitions, and suggests that slower sign production signals the communicative portion of the signing stream to the interlocutor. It remains unclear, however, whether this contrast is a feature of linguistic communication or can be found in intentional versus transitional manual productions more broadly.

Our ongoing experiment asks deaf signers and hearing nonsigners to produce a series of grooming gestures (e.g., scratch face, stretch arms, etc.) and invented signs by following along with a video of a native signer. Dominant hand movement is measured via a VICON motion capture system. Preliminary evidence with one participant in each group replicates the previous pattern: our signer showed significantly slower productions for pseudosigns (M = 5.87 mm/s) compared to transitions (M = 7.28 mm/s; $t(59) = 2.27$, $p = .027$). This pattern was also present during the signer's grooming gesture production (M = 5.89 mm/s vs. 7.55 mm/s; $t(59) = 3.55$, $p = .001$). Our nonsigner showed similar velocities for purposeful versus transitional movement for both pseudosigns (M = 11.19 mm/s vs. 11.53 mm/s) and grooming gestures (M = 3.77 mm/s vs. 3.30 mm/s). This pattern suggests that sign language experience trains movement patterns that are applied to contexts without semantic or phonological content. The work may have implications on prosody training among adult sign language learners.

Reference Jantunen, T. (2013). Signs and transitions: Do they differ phonetically and does it matter? *Sign Language Studies*, 13(2), 211-237.

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"... or this could be like the gender map and somebody is not even on it" – The conceptualization of gender through speech and gesture

Hanna Bruns

University of Bonn

Gender is assumed to be one of the most important dimensions of a person's identity (e.g. DeFrancisco and Palczewski 2014: 3-4) and understood as cultural construct (Stryker 2008: 11) which describes "self-expression, not anatomy" (Feinberg 2006: 205). While normative ideologies represent gender as binary, queer theory has been imagining gender not as a binary concept, but a continuum on which "there are degrees of gender" (DeFrancisco and Palczewski 2014: 11). Queer linguistics, then, offers a framework for uncovering dominant ideological conceptualizations of binary gender and normative heterosexuality which are reproduced through language (Jones 2019: 87).

The current study is part of a project which looks at two transgender YouTubers who do not subscribe to normative ideals of binary gender and heterosexuality (cf. Zimman 2012: 12; Jones 2019: 87). The YouTubers, who describe their own gender as non-binary / not binary, often discuss (their) gender identities. In doing so, they try to conceptualize gender in different ways: as a spectrum, as a circle, as a map, as a 3-dimensional model, or (maybe) as something which cannot be visualized. The YouTubers make active use of the possibilities for meaning making that the video format offers them: This includes the use of speech, gesture and written language, among others.

By conceptualizing gender in a very open way, leaving room for other ideas and representations, the two YouTubers are opening up a virtual space for (transgender) people who do not subscribe to the normative ideals of binary gender.

References DeFrancisco, V. P., & Palczewski, C. H. (2014). *Gender in communication: A critical introduction* (2nd edition). Los Angeles, London, New Delhi, Singapore, Washington DC: Sage Publications. | Feinberg, L. (2006). Transgender liberation: A movement whose time has come. In S. Stryker & S. Whittle (Eds.), *The transgender studies reader* (pp. 205-220). New York: Routledge. | Jones, L. (2019). Discourses of transnormativity in vloggers' identity construction. *International Journal of the Sociology of Language*, 256(2), 85-101. | Stryker, S. (2008). *Transgender History*. Berkeley, CA: Seal Press. | Zimman, L. (2012). *Voices in transition: Testosterone, transmasculinity, and the gendered voice among female-to-male transgender people*. PhD diss., University of Colorado at Boulder.

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Multimodal Communicative Acts: What Words Cannot Do without a Hand

Sandy Ciroux

Universität Konstanz

Speech Act Theory is not new and has been revised and/or applied for decades. Theories of gestures, on the other hand, are newer as they started to emerge – and since then get more and more attention – about 30 years ago. This work wishes to align to this growing interest in multimodality by proposing an experimental study of hand gestures as parts of communicative acts or, more specifically, a study of illocutionary acts produced with the help of hand gestures. As this study only proposes a pilot experiment no strict hypothesis will be made. Rather, using ELAN and the Linguistic Annotation System for Gestures (Bressem, Ladewig, and Müller 2013) for my analyses, I investigate the following two aspects. (1) I question the place of verbal and non-verbal supports in the production of illocutionary acts. (2) I investigate the contributive aspect of gestures, i.e. I pose the question whether they contribute to the illocutionary force or rather to the propositional content. Before conducting the experimental work, it is important to determine the literature on which this study is based. Therefore, in the first part of the presentation, I briefly review the literature dealing with so-called Speech Act Theory from a specific perspective. The idea is namely to review the literature on illocutionary acts in order to pinpoint how it tackles multimodality. In other words, some speech acts theorists (and other theorists of communication) are put under scrutiny in terms of what they tell us about gestures.

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Experimental studies on co-speech gestures and their (non-)at-issueness

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We present experimental evidence for Ebert & Ebert's (E&E's) (2014) analysis of gestures with and without accompanying demonstratives. E&E argue that, (1) by default, gesture meaning enters into composition as non-at-issue material (cf. Potts 2005), and that (2) demonstratives like German so 'such' function as 'dimension shifters' from *non-at-issue* to *at-issue*.

Following Potts (2005), we predict that incongruent non-at-issue material impairs matching judgments less strongly than incongruent at-issue material (cf. Syrett & Koev 2015). In two studies, participants saw a picture and a video of a person describing the picture (e.g. *In this picture, you see a wall with a (round) window*) with or without speech-accompanying gesture and judged how well the description matched the picture.

Fig. 1: MATCH

Fig. 2: MISMATCH

Exp. 1 tested E&E's claim (1) with the two factors MODE (ADJECTIVE VS. GESTURE) and MATCH (MATCH VS. MISMATCH). As for MODE, the critical property of the object in the picture (here: *roundness*) was conveyed via speech (ADJECTIVE *round*) or by way of an iconic co-speech GESTURE (*round*-GESTURE). The property agreed (MATCH, Fig. 1) or disagreed (MISMATCH, Fig. 2) with the picture. The ANOVA revealed that MODE and MATCH interacted significantly (Fig. 3) and confirmed the predicted less strong effect of incongruent non-at-issue material (GESTURE) compared to incongruent at-issue material (ADJECTIVE).

Exp. 2 tested claim (2) by adding a co-speech gesture with a concurrently uttered stressed *SO* 'such' to the MODE factor. The analysis confirmed our prediction that *so* 'such' strengthens the negative effect of the mismatching gesture (Fig. 4).

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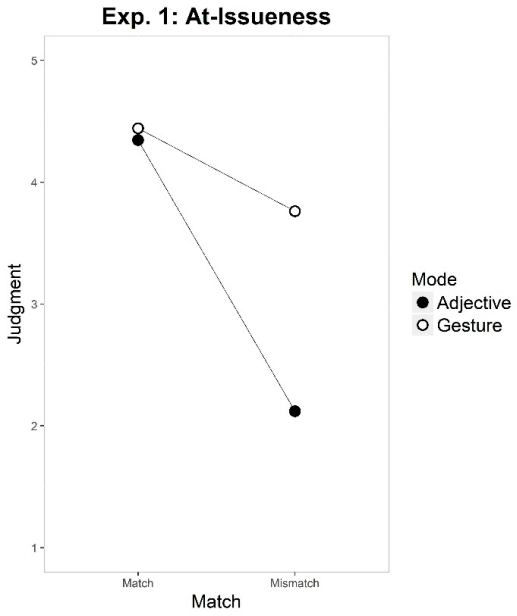

Fig. 3: Mean judgments in Exp. 1

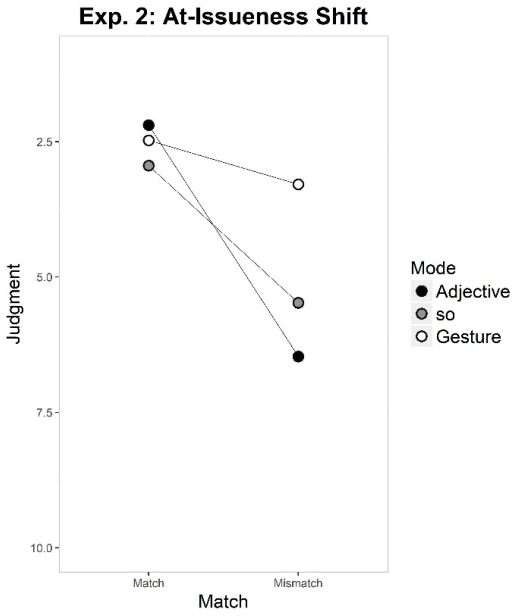

Fig. 4: Mean judgments in Exp. 2*

*) Note that different scales were used in Exp.s 1 and 2; the plotted scales correspond to each other with good judgements on top and bad judgements at the bottom.

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Language of the hands: Comparing signers and gesturers representation of lexical items

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Recent cross-linguistic research on sign languages and gestures has demonstrated several semiotic practices comparable to signs and gesture (Perniss, 2018). One of these is the existence of *patterned iconicity*, the recurrent use of an iconic strategy across concepts in a semantic category (Brentari, et al., 2015; Kimmelman, et al., 2018; Padden, et al., 2015; 2013). The present study extends this research to *Ghanaian Sign Language* and *Adamorobe Sign Language* and the gestures used in the surrounding communities and across a range of semantic categories. Signers of Ghanaian Sign Language (GSL; N=10) and Adamorobe Sign Language (AdaSL; N=10), and hearing non-signers (rural N=4, urban N=6) were asked to provide signs and gestures, respectively, for a total of 48 concepts from a range of different semantic categories (handheld tools; clothing & accessories; furniture & household items; and appliances). Responses were coded in ELAN version 5.4 (Wittenburg, et al., 2006) for type of iconic strategy.

Findings are discussed with respect to patterns of iconicity across semantic categories and similarities and differences between sign and gesture. Signers and gesturers exhibited systematic preference for iconic representation of household items, choosing an action-based sign depicting how the object is held (handling) or depicting features of the object (instrument/entity/tracing). One interesting finding is the preference for instrument strategy by rural gesturers in the Adamorobe which is comparable to AdaSL. This seems to be due to the influence from AdaSL although all the gesturers confirmed no prior knowledge of AdaSL.

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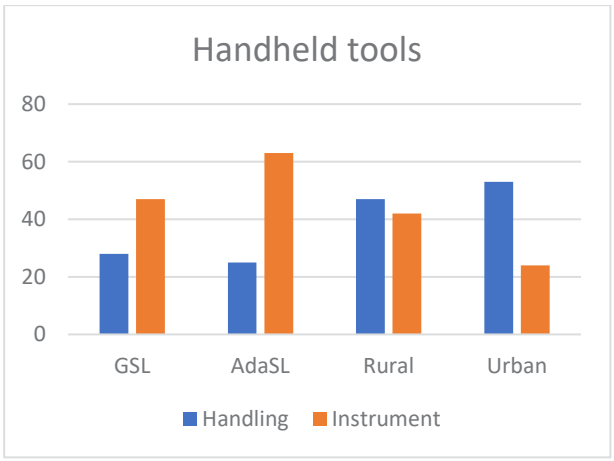

Fig. 1 Handheld tools

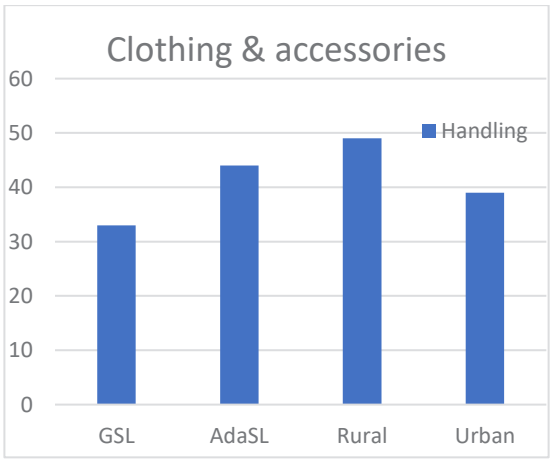

Fig. 2 Clothing & Accessories

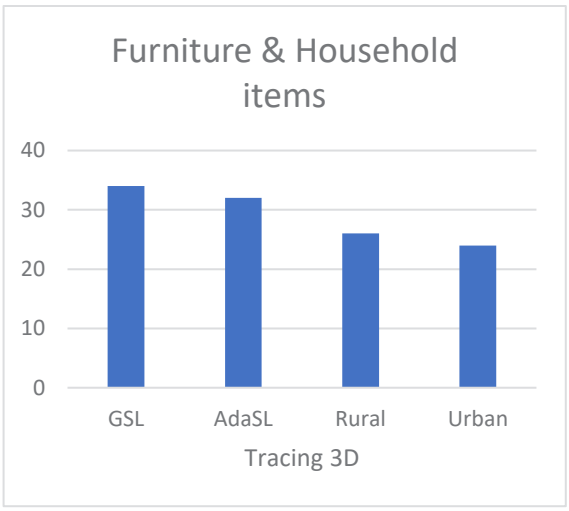

Fig. 3 Furniture & Household items

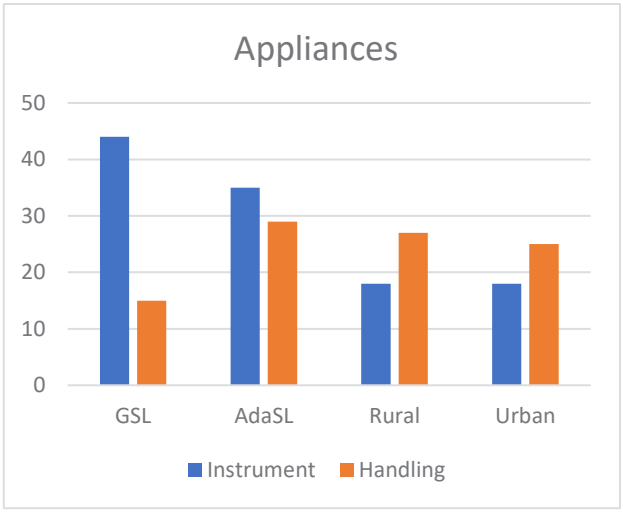

Fig. 4 Appliances

The history of the graphematic foot in the writing systems of English and German

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University of Cologne

Suprasegmental graphematics holds that there are units in alphabetical writing systems comprising more than one segment. While graphematic units such as the syllable and the word seem to be well established, the graphematic foot was only recently proposed (cf. Evertz & Primus 2013; Evertz 2017, 2018). This talk provides further insights into this unit by discussing diachronic data from English and German.

There are two phenomena that make the graphematic foot especially visible: graphematic geminates in English and German (e.g. mitten Engl. a type of glove/ Germ. 'in the middle') and the silent <e> in English. Both phenomena coded segmental information in earlier stages of the languages, i.e. spelling geminates coded phonological geminates and the end-<e> in English coded schwa. At some time, phonological geminates in both languages and the word-final schwa in English disappeared. That rendered the original functions of these spelling devices obsolete. However, instead of vanishing, graphematic geminates and the end-<e> acquired new functions connected to the graphematic foot.

Interestingly, the phonological segments, which were coded by the discussed spelling devices, developed because of suprasegmental conditions: geminates and the word-final schwa played a major role in the development of the vowel quantity systems of both languages, which is connected to syllable and foot structure (cf. Hickey 1986, Charles 1989, Minkova 1991, Maas 2006, Britton 2012, Ritt 2012).

In today's systems, the graphematic foot bidirectionally corresponds to the phonological foot and thus helps the reader to gain information about the phonological foot and syllable structure of a word, cf. Fig. 1 for a (simplified) summary.

This new diachronic approach may not only enhance our understanding of the unit graphematic foot, it may also help to understand how and why suprasegmental units developed in writing systems in the first place.

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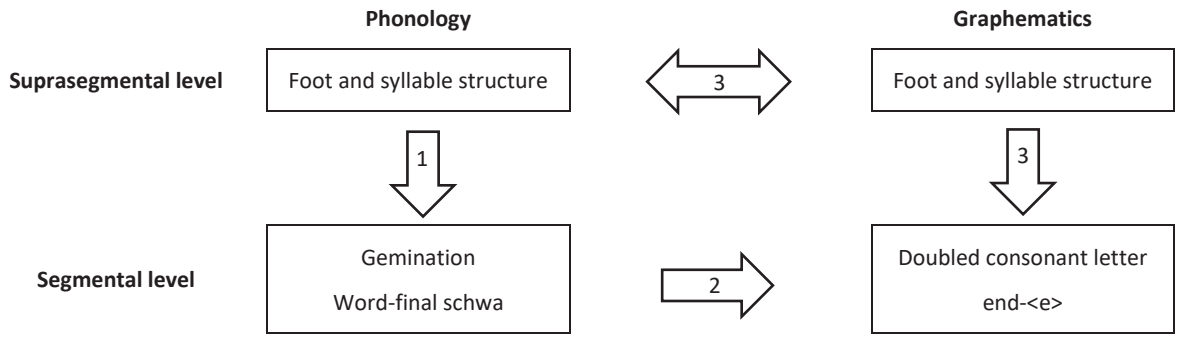

Figure 1 Relationships between suprasegmental properties in phonology and graphematics and their segmental manifestations. The numbers represent the chronological order; 3 represents today's system.

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Annotating deictics and gesticulations: A data model, a multi-level annotation scheme and software

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In our contribution we propose an annotation scheme as well as an implementation of that scheme for the analysis of deictics and accompanying gesticulations in the sense of McNeill (1992), e.g. demonstratives as illustrated in (1) (own field data, cf. below).

(1) A to B:

bo	gta	ɲi	kwnkwnäŋä	t̲äyäbi	nänä	nʌn̲am
they	this	water	alcoholic	all	drink	AUX
	[pointing at referent *x*]					

'They all drink this liquor.'

We analyze demonstratives as five-place relations holding between

1. a speaker,
2. an addressee,
3. a linguistic expression,
4. a gesture, and
5. a referent.

This type of relation cannot be annotated in a tabular annotation model like the one underlying ELAN (cf. Lausberg & Sloetjes 2009). Rather, a graph-based model is needed (cf. Zipser & Romary 2010), as there are markables that are not represented in the linear signal. We will propose an annotation schemes with (at least) the following levels:

(2) I. audio-visual signal level (AVS), with acoustic and visual sub-layers (AVS-A, AVS-V), (time-aligned, sequence of time spans),
II. referential level (REF, time-stable, set of nodes),
III. speech act participant level (SAP, time-stable, set of nodes),
IV. speech act level (SA).

The annotations will be implemented with GraphAnno (Gast et al. 2015, Druskat et al. 2016), using material gathered in fieldwork on a Papuan language, Idi (San Roque et al. 2012, Evans et al. 2018). The annotation of example (1) is shown in Figure 1.

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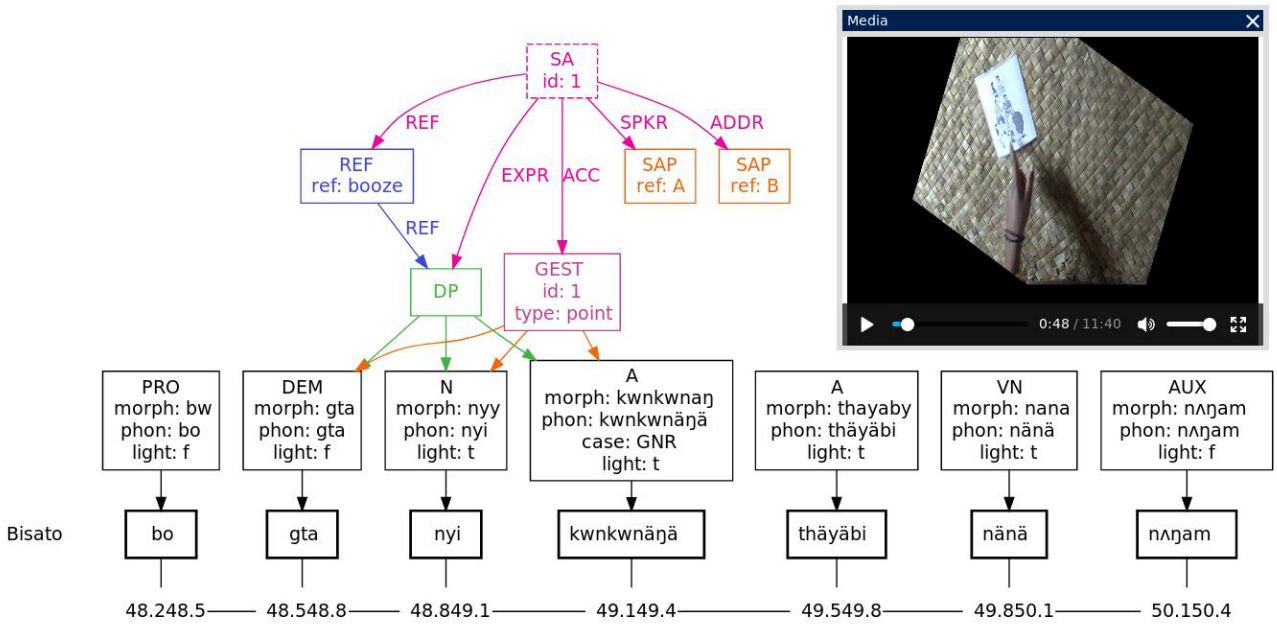

Figure 1: An example annotation, cf. (1).

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The role of body orientation during gesture-speech integration: Evidence from EEG

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Body orientation influences how hand gestures are perceived and comprehended together with auditory speech during face-to-face communication. To date, despite the emergence of literature concerning the role of body orientation on gesture-perception and gesture-speech integration [1,2], no studies have directly investigated how gestures differing in body orientation impact upon sentence comprehension. To address this research question, we carried out an EEG experiment with a two-by-two design, presenting participants (n=21) videos of frontal vs. lateral hand gestures of five-seconds (e.g., raising a hand), followed by RSVP sentences that are either congruent or incongruent with the hand gesture (e.g., 'the mountain is high/low, said John'). All participants underwent a semantic-probe task, judging whether a target word is related or unrelated to the gesture-speech event. At the behavioral level, the results did not reveal interaction of body-orientation with gesture-sentence congruency in terms of accuracy and reaction times. For the EEG results, during the perception phase of hand-gestures, while both frontal and lateral gestures showed power decrease in both the alpha (8-12Hz) and the beta (16-24Hz) bands, lateral gestures elicited reduced power decrease in the beta band when compared with frontal gestures. For sentence comprehension, at the critical word whose meaning is congruent/incongruent with the gesture, frontal gestures elicited an N400 effect for gesture-sentence incongruency [3]; however, this incongruency effect was significantly reduced for lateral gestures. The findings suggest that body orientation plays a crucial role in gesture perception, and that it influences gesture-speech semantic integration in an interactive manner.

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Can gestures facilitate the acquisition of lexical stress in a second language?

Marieke Hoetjes, Lieke van Maastricht & Ellen van Drie

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Previous studies on language development, production, and comprehension have demonstrated the close relationship between speech and co-speech gesture, but less work is available on the role of gestures in second language (L2) acquisition. Findings on gestural training in L2 prosody acquisition present contrasting results, often varying in the gesture types used in training and not allowing for a comparison of the effect of these different kinds of gestures. Hence, we investigate the potential benefit of two types of gestural training in L2 lexical stress production. Sixty-seven Dutch natives participated in a pretest-posttest experiment, in which they received training on the lexical stress rules of Spanish. Dutch speakers of Spanish often struggle with the Spanish lexical stress rules and many Dutch-Spanish cognates differ only in the position of the stressed syllable (e.g., 'pira*mi*des' and ventil*a*tor in Dutch, but p*irá*mides and ventila*dor* in Spanish). Training consisted of written instructions about the three rules for lexical stress assignment in Spanish, each rule being accompanied by one of three types of video examples: 1) a Spanish native producing the example word without gestures, 2) producing a beat gesture during the stressed syllable, or 3) producing a metaphoric gesture during the stressed syllable visualizing the increased duration of this syllable. Before and after training, participants read short Spanish sentences that contained cognates. Auditory and phonetic analyses are currently ongoing and focus on whether type of training affects correct lexical stress assignment in these cognates. Results will be ready to be presented at the LingCologne conference.

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The influence of fingerspelling on different sign languages

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University of Cologne

DGS

This study focuses on the effect of fingerspelling on sign languages. It is widely known that fingerspelling is used to add to the vocabulary of a sign language by borrowing from spoken one (Fischer, 2015). Different investigations have shown that fingerspelling has an influence on sign language causing a change of the language and producing different phenomena. These investigations have been analyzed to outline the current state of the art. Apparently there are four different main effects. First, there are sign-fingerspelled compounds, in which the second part of a word is fingerspelled, although there are signs for these words (e.g.: BLACK+M-A-I-L; Padden, 2005). Second, some frequently fingerspelled words have become actual signs, so called loan signs (Battison, 1978) that underwent phonological changes (Lucas et al., 2001). Third, initialized signs occur in some sign languages, which have been influenced by the fingerspelled word being initialized by the first letter (Ann, 2001) or rarely by the last letter (Padden, 2005). Fourth, character signs appear in some sign languages, borrowing signs from the written language by following fully or partly the linguistic constraints of the original by being iconic (Ann, 2001).

This research summarizes the effects fingerspelling had on sign languages in different parts of the world.

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Russian Sign Language size and shape specifiers and how they differ from gesture

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Signers gesture in a number of ways. Perhaps, the most complex type of gesturing in sign languages are signs which have features of both gestures and conventionalized linguistic units (Liddell, 2003). Out of these, size and shape specifiers (signs denoting size and shape of objects) received surprisingly little attention (see, however, Supalla, 1986; Ferrara, 2012; Nyst, 2016). This project aims to fill this gap by analyzing Russian Sign Language (RSL) size and shape specifiers (SASSes) in comparison with Russian co-speech iconic gestures of size and shape.

The study method entailed a series of psycholinguistic experiments in which participants performed a range of communicative games ("matching task type" scenario). Overall, 16 deaf and 14 hearing individuals participated in the experiments. The videos were coded using ELAN software allowing for annotation of general translation tiers together with a detailed phonetic transcription of target signs/gestures.

A component by component comparison of RSL SASSes and Russian co-speech gestures showed similar use of location and motion elements, but, in line with (Goldin-Meadow et al., 1996; Schembri et al., 2005), different use of handshape. Moreover, in contrast with Russian speakers, RSL signers use a range of mouth gestures with SASSes which contribute to the meaning of the sign in a non-trivial way. The talk will present examples highlighting similarities and differences between SASSes and co-speech gestures, and discuss implications for the analysis of the former.

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Multimodal responses: A typological perspective on *yes* and *no* in German Sign Language

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Response particle systems vary cross-linguistically regarding the number of particles and the discourse functions of the particles. Some languages have two particles (English *yes, no*), others have three (German *ja, nein, doch*). Traditional accounts of response systems distinguish truth-based and polarity-based systems (Pope 1976, Jones 1999). In truth-based systems, *yes*-type answers confirm the truth of the antecedent proposition (1bi, 2bii); *no*-type answers reject it (1bii, 2bi). In polarity-based systems, response particles signal the polarity of the response clause: positive (*yes*-type 1bi, 2bi) or negative (*no*-type, 1bii, 2bii). Languages may also employ both systems and use *no* to reject the truth of a proposition (1aii) or signal the negative polarity of the response (2bii). Languages with a three-particle system often have a dedicated response particle for rejecting negative propositions (scenario 2bi), although other dedicated particles exist, too (Roelofsen & Farkas 2015).

Concerning the visual-gestural modality, very little is known about the inventory of (non-)manual response particles (but see Gonzalez et al. on ASL), including their role in signaling truth vs. polarity. Sign languages are of particular interest here since they have multiple articulatory channels, which may simultaneously encode truth and polarity. The present study provides data from a production experiment with 24 native signers of DGS investigating responses to positive and negative assertions. It shows that DGS favors a truth-based over a polarity-based strategy but also exhibits modality-specific response strategies that combine truth and polarity. Additionally, DGS integrates non-manual gestural components and exhibits interesting bimodal combinations of signs and (German) mouthings.

(1) a. Anna smokes.
b. i. Yes (= She does).
ii. No (= She doesn't)

(2) a. Anna doesn't smoke.
b. i. Yes/[?]No (= She does).
ii. [??]Yes/No (= She doesn't)

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Cross-modal transfer of iconicity: Evidence from bimodal bilinguals

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In sign languages, spatial relations are often encoded iconically to the real event[a] by mapping entities and their spatial relations onto the hands and signing space (i.e., classifier constructions, CL) (Fig. 1d). Therefore, signed encodings typically contain more semantically specific information than speech. We investigated if this iconic specificity in sign might be transferred to speech in bimodal bilinguals.

We tested 20 Dutch non-signers and 20 Dutch-Sign Language of the Netherlands (NGT) bimodal bilinguals and presented them with 24 four-picture displays. Participants described one of the four pictures highlighted by an arrow to a deaf or hearing confederate who selected the correct picture. We tested non-signers in Dutch and bimodal bilinguals in Dutch and in NGT (3-5 weeks between sessions). For Dutch descriptions, we coded whether spatially specific information (i.e., object orientation) was encoded. For NGT descriptions, we coded whether object orientation was encoded through CLs and/or specific signs indicating object orientation (Fig. 1d).

Results revealed that bimodal bilinguals use more semantically specific descriptions in their speech (e.g., *"A glass with on the left side a lollipop and the lollipop is lying vertical with the sugar part pointing upwards"*) than non-signers (Fig. 2) (β=2.42, *SE*=0.40, z=6.02, p<0.001) and that this semantic specificity is predicted by the amount of bimodal bilinguals' spatial specificity in NGT (β=0.26, *SE*=0.12, t=2.14, p<0.05).

These results provide first evidence that iconicity in sign influences speech. This shows that language transfer is not a unimodal phenomenon (i.e., within one modality), but can also occur across different modalities.

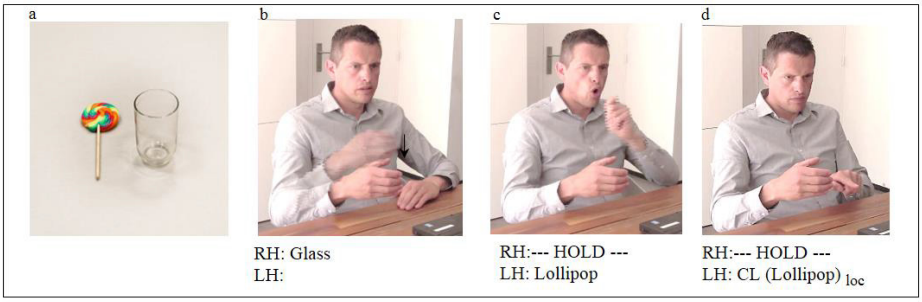

Fig 1. An example for "the lollipop is to the left of the glass" (panel a) in NGT from a bimodal bilingual by encoding the lexical signs for the objects involved (panel b and c) as well as specific spatial and orientation information (panel d)

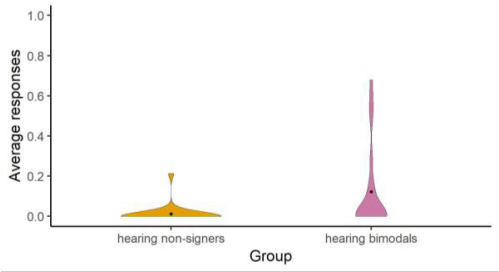

Fig 2. Amount of spatial specificity encoded in Dutch across hearing non-signers and bimodal bilinguals.

References [a)]Emmorey, K. The effects of modality on spatial language: How signers and speakers talk about space. In *Modality and Structure in Signed and Spoken Languages* (eds. Quinto-Pozos, D., Cormier, K. & Meier, R. P.) 405–421 (Cambridge University Press, 2002).

Children's viewpoint in gesture and their relation to linguistic structure

Ulrich Mertens[1], Friederike Kern[2], Stefan Kopp[3], Olga Abramov[3], Anne Nemeth[2] & Katharina J. Rohlfing[1]

[1]Paderborn University; [2]Bielefeld University; [3]CITEC, Bielefeld University

In this study 33 German preschool children at the age of 4 years participated during a retelling task. The retelling task took place in the middle of four other task children experienced during this study. Children watch the German movie "The maul and the star" at home with a caregiver one night before they visited us in our lab and retell it there to another caregiver. We examined children's viewpoint in iconic co-speech gestures and related it to children's linguistic structures (transitivity of an utterances). While in adults character viewpoint (C-VPT) gestures are related to transitive utterances, observer viewpoints (O-VPT) are related to intransitive utterances (McNeill, 1992) during a retelling task (Parrill, 2010). In contrast, children's behaviour during the communicative genres explanation and report varies regarding to the relation of linguistic structure and viewpoint in gesture (Mertens et al., 2019). However, during the retelling task children showed similar communicative behavior as adults. C-VPT's occurred more likely with transitive utterances (M= .038; SF= .011) than with intransitive utterances (M= .028; SF= .009), which effect is significant (Z= -2.224; r= .387; p= .026). and O-VPT's occurred more often with intransitive utterances (M= .045; SF= .012) than with transitive utterances (M= .038; SF= .009), with effect is also significant (Z= -2.959; r= .515; p= .003). Therefore, children are able to use viewpoints in gesture and linguistic structures as adult's, but this seem to be a context-specific and not a general phenomenon.

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Does L2 speech generate a higher gesture rate? A study of Dutch speakers of English

Varduhi Nanyan

Ghent University

The study focuses on identifying the differences in gesture rate in L1 Dutch and L2 English narratives and the effect L2 gestures might have on memory. Given that gestures facilitate the lexical retrieval process (Rauscher & Krauss, 1996) and ease the cognitive load on verbal working memory (Gillespie et al., 2014) we assume that bilinguals will use more gestures in their L2 than in L1 speech. To test this hypothesis, first, we compare the frequency of gestures used in L1 and L2 storytelling. Second, basing on Prebianca's (2014) suggestion that proficiency can mediate the lexical access in speech production, we test whether proficiency has a bearing on the frequency of gesturing in L2. To elicit gesture an experiment was designed during which the informants were asked to watch a short cartoon clip and retell it to a listener in two languages: first in L2 English, and then in L1 Dutch. We used a paired-sample t-test (between subjects) to compare the gesture rate in Dutch and English. L2 proficiency of the participants was determined through self-reported and behavioural measures. The results reveal that Dutch speakers tend to gesture more in their L2 English speech. Specifically, we find significant differences in the categories of iconic and deictic gestures. Further analysis suggests that there are no significant differences between the proficient L2 speakers and their less advanced peers in terms of the gesture rate in L2. The findings provide at least partial support for the Verbal Working Memory and the Lexical Retrieval theories.

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Quantity of co-speech gestures in children's narratives: A study of formal vs. informal language

Gökhan Özkayin

Universität Koblenz-Landau

This study explores the quantity of manual co-speech gestures in children's narratives in two different settings: (i) spontaneous speech and (ii) oral presentations in front of school classes. Formal and informal language serve different purposes. They are not only associated with particular choices of grammar and vocabulary, but also with the amount of co-occurring manual gestures, especially in children´s narratives. During this investigation, it has been observed repeatedly that the quantity of manual gestures is significantly higher in spontaneous speech than in formal oral presentations. The focus of my analysis lies on building coherent discourse by using speech and co-occurring gestures in narratives (Levy/McNeill 1993; Kita/Özyürek 2003). The coherence of narratives is examined covering two aspects: 1. The multimodal internal structure of the noun phrase (Fricke 2012). 2. The cohesive and discourse structuring potential of manual and non-manual gestures in narratives (Gullberg 2003, 2006; McNeill 2005). Concerning the first aspect, the study has shown that gestures in noun phrases with an attributive function were used less, particularly compared to adults. Whereas regarding the second aspect, it could be seen that children use non-manual gestures more often than adults to structure information through gestures.

The investigations are based on a specially created video-corpus of German-speaking children from elementary school that retell either animated short films or picture stories. The videos were collected 2018-2019 and transcribed applying the GAT-2 conventions (Selting et al. 2009).

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Event categories in the manual modality: a cross-cultural study of child homesign

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Gestures are theorized to be simulations of human actions [1]. This theory is supported by the finding that when adults gesture about tools (e.g., someone brushing their teeth), the shape of the hand often represents how someone would hold the tool [2]. In sign languages, however, handshape is grammatically constrained [2-3]. We asked whether handshape among child „homesigners" corresponds to verbal categories in spoken language, reflecting grammatical constraints. Homesigners are congenitally deaf individuals who have not been taught a sign language and therefore grow up without structured linguistic input [4].

Nine homesigners from four countries described cartoon pictures of tool events. We coded whether their signs had handling handshape (a grasping hand represents holding a knife) or instrumental handshape (a flat hand represents the shape of the knife). Second, adult speakers of English, Spanish and Mandarin described the same pictures. Verbs such as *slice* and *write* encode the presence of an instrument, but *eat* and *open* do not [5-6] (we label these strong and weak instrumental verbs, respectively). We categorized the verbs used by the adult speakers as either strong or weak and then categorized each picture as to whether all three languages used strong verbs („all strong"), all three languages used weak verbs („all weak"), or whether both strong and weak verbs were used („mix"). We found that homesigners were more likely to use instrumental handshape for „all strong" pictures (Figures 1 & 2). Event categories are shared between homesign and spoken languages, suggesting emerging semantic structure in homesign.

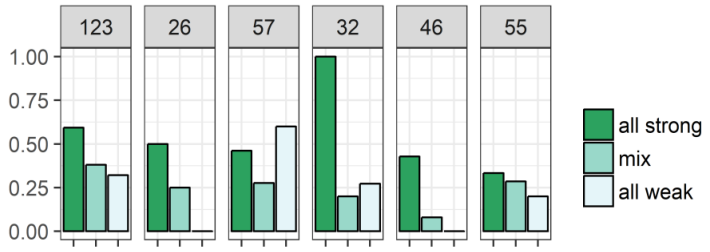

Figure 1. Guatemalan homesigners: proportion of signs with instrumental handshape, by whether the sign was describing an all strong, all weak or mix picture type. Total number of signs per child shown in the panel label.

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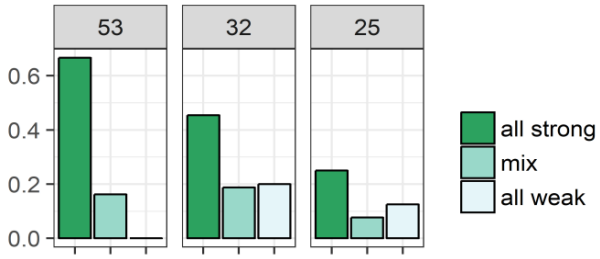

Figure 2. Nicaraguan, Taiwanese & U.S. homesigners (Panels 1, 2 & 3, respectively): proportion of signs with instrumental handshape, by whether the sign was describing an all strong, all weak or mix picture type. Total number of signs per child shown in the panel label.

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Gesturing strategies and verbal-visuospatial profiles of atypically developing children.

Ellen Rombouts[1], Bea Maes[2] & Inge Zink[1]

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[2]Special Education research group, KU Leuven

Introduction. Atypically developing children may use gestures to compensate for cognitive deficits. Children with developmental dysphasia (DD) have severe language impairment and low-average visuospatial skills. Compared to typically developing children (TD), they speak with a higher iconic gesture rate. Children with Williams syndrome (WS) also use a higher iconic gesture rate but their verbal skills are a relative strength compared to their visuospatial skills. The content of these children's gestures may differ. Therefore, we examined how their gesturing strategies are associated with their verbal-visuospatial profiles.

Methods. Twenty children with DD between 7 and 9 years, twenty TD children matched for chronological age, and 20 persons with WS aged between 8 and 19 years participate.[a] Children with DD have a therapy-resistant severe language impairment that is not caused by intellectual disabilities or neurological disorder. The children watch a 4-minute animated film and retell the story to the researcher. We administer the Wechsler Intelligence Scales for Children (Perceptual Organization factor) and CELF-4 NL (verbal skills). Children's narratives are transcribed and iconic gesturing strategies are coded (handling, enacting, object, spatial). Using partial correlations and between-group comparisons, we examine how verbal skills, visuospatial skills, and verbal-visuospatial skill discrepancy are related to the gesturing strategies of the participant groups.

Results. Compared to TD children, we expect that children with WS use more spatial gestures, which is associated with their visuospatial deficit. Children with DD expectedly use more non-spatial gestures, which is shaped by expressive language difficulties.

[a)] This is the study's target sample size. The poster presentation includes data of 20 DD children, 20 TD children, and 10 WS children.

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Discussion of a Japanese sign language database and its annotation systems with consideration for its use in various areas

Shinji Sako[1], Yuji Nagashima[2], Daisuke Hara[3], Yasuo Horiuchi[4], Keiko Watanabe[2], Ritsuko Kikusawa[5], Naoto Kato[6] & Akira Ichikawa[2]

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Sign language is a natural interactive visual language different from and independent of spoken language. Research on speech data of the Japanese language has vastly developed in the fields of engineering and linguistics. Research on sign language in the fields of engineering and linguistics, however, has lagged. One of the reasons is lack of a common database available to any researcher. This research thus plans to discuss a methodology to construct a versatile database of Japanese sign language (JSL). An aim of the research is to construct an interdisciplinary database which can be used by many researchers in the fields of engineering, cognitive science, linguistics and many others. First, we have collected JSL data appropriate for linguistic and engineering use. This task involves consideration of types of signs, types of sentences and selection of informants. Second, we have discussed the best source format, spatio-temporal resolution, format of data files, and storing method for academic fields such as linguistics and engineering. Detailed analyses of the distinctive features, phonemes or morphemes of sign language involve detailed analyses of manual signals and non-manual markers. The discussion has resulted in highly accurate motion data which will be obtained through optical motion capture. It has been also decided that video data and depth data will be recorded by three HD camcorders and a Kinect v2 sensor respectively. Until now, 1,341 signs have been recorded using these data formats. We have planned to record nearly 5,000 signs and to develop a new annotation system by 2020. This study was supported by JSPS KAKENHI grant number 17H06114.

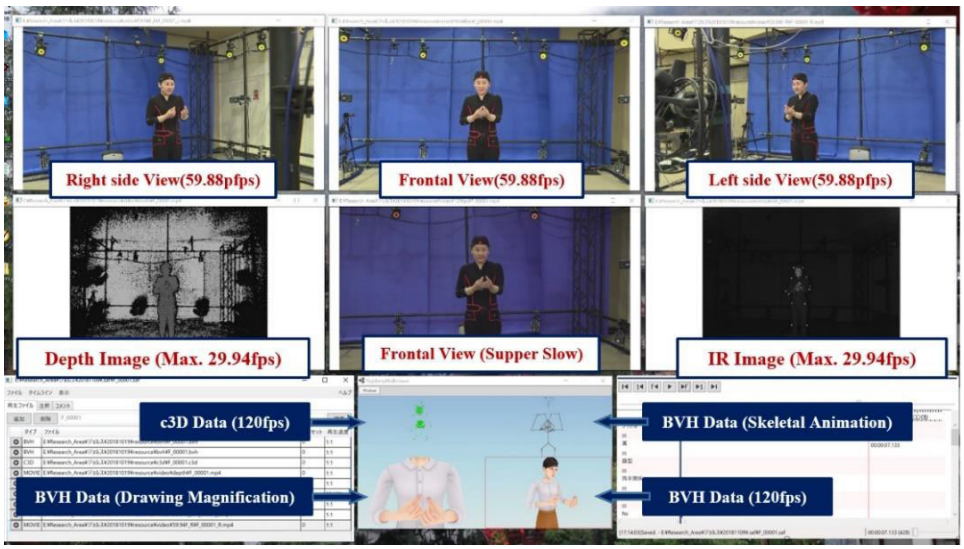

Figure 1: Examples of the viewers displaying four synchronized videos of the sign SAME

Multimodal Elements in Students' Texts – Two Case Studies

Kirsten Schindler & Matthias Knopp

University of Cologne, Faculty of Arts and Humanities, Department of German Language and Literature II

In recent years our understanding of 'text' has fundamentally changed, among other things due to new text types in digital media (e.g. Twitter, WhatsApp, Wikipedia). Categories for describing and distinguishing texts like coherence, topic, situation (Beaugrande/Dressler 1981) need an added understanding considering a more fluent concept of authorship (and reader), of text vs. other visual information (like charts, images, but also typography) and fundamentally of multimodality (Klug/Stöckl 2016).

If and how this transformation of 'text' (both the variety of texts in our modern world plus our extended understanding of text) has shaped the text production of students is one key question in writing pedagogy: Do students write differently in social media and in school texts? And is this good or bad? In our view such narrowed discussion forgets the basic difference of writing assignments and situations (Beißwenger/Knopp 2019).

In our poster we will show texts from third and fourth graders written with the computer (producing linear (case study 1) and hypertexts (case study 2)). We invented a categorical scheme that distinguishes between three phenomena of multimodality (typography, textimage- relations and hyperlinks; see also Diekmannshenke, Klemm, Stöckl 2011 and Knopp/Schindler 2019). Our analysis is both qualitative (describing individual texts more closely, e.g. the use of color in texts) and uses descriptive statistics. One result is that an analysis focusing multimodality helps to realize the quality of students' texts as a semiotic resource for young writers. Multimodality should therefore be taken into account in terms of language didactics.

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Editing processes in the transition from speech to writing: The case of Romani

Melanie Schippling

University of Cologne

The PhD project presented in this poster contributes to research on the relations of spoken and written language by focusing on Romani, a language without a long-known tradition of writing. It will be shown to what extent the predictions emerging from the literature on editing processes in the transition from speech to writing and differences on the surface structure hold for the case of Romani. The poster addresses speaker-specific differences as identity-establishing functions and the question of representation of the language itself intertwine in the complex relations of spoken and written Romani: Romani is a traditionally oral language (cf. e.g. Matras & Elšík 2006: 53) of Indo-Aryan origin spoken in areas which are characterised by a literacy-based culture. Matras and Elšík (2006: 53) point out that "there is no form of standard Romani […]. There is not even a globally accepted prestige dialect. Every form of Romani is therefore a 'dialect'."

Thus, the poster presents *work in progress* of a closer examination of patterns visible in the editing and scripting practices and speaker-specific differences in the transition from spoken to written Romani. Drawing on a method used in previous research (e.g. Maas 2010), oral language use is recorded, afterwards the speakers are asked to write down what was said. Features analysed include the choice of orthography, the ratio of intonation units in spoken and propositions in written language, syntactic variation, and how loanwords are dealt with.

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Divergent rehearsal strategies in DGS-German bilinguals vs. German monolinguals during memory span tasks

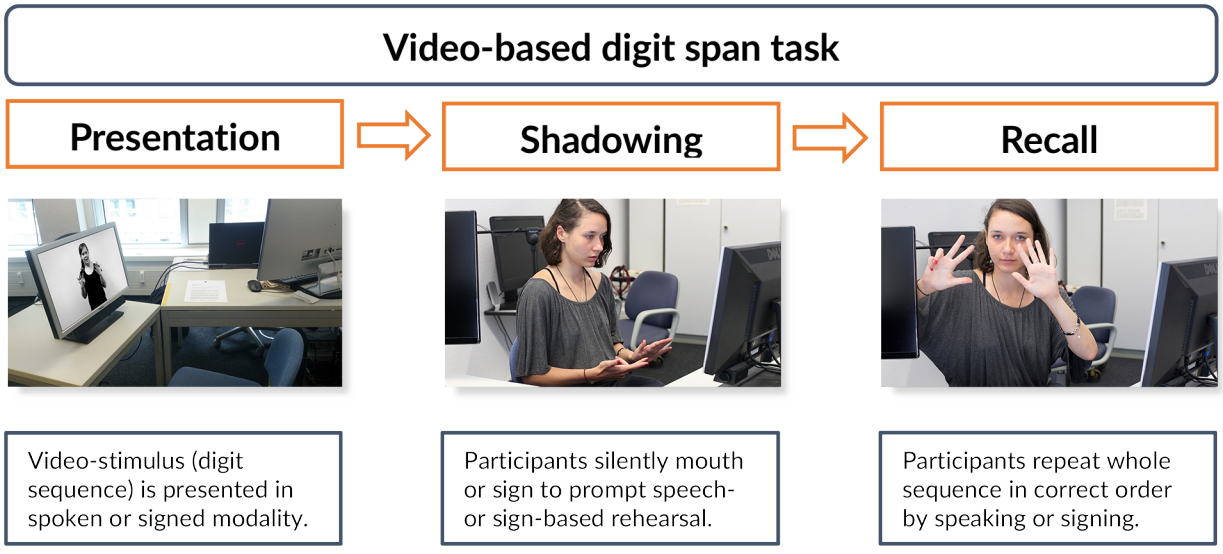
Gediminas Schüppenhauer & Katarzyna Stoltmann

Leibniz-Centre General Linguistics / Humboldt University Berlin

When remembering an ordered sequence of digits (eg. a telephone number), do you hear or see it? In our study, we investigated how many digits speakers can memorize by using either a speech- or sign-based rehearsal strategy. When processing verbal material in short-term memory, hearing speakers primarily use their vocal articulatory motor system to generate a speech-basecl code for subvocal rehearsal ("inner speaking"). Similarly, Deaf signers recruit their manual motor system to create a sign-based code ("inner signing") [1]. This difference might explain Why Deaf signers usually score lower in serial span tasks [2].

We conducted a video-based digit span task, comparing German monolinguals and CODAs (Children Of Deaf Adults) fluent in DGS and German. By manipulating modality (spoken vs. signed) during presentation, shadowing and recall, we observed that both groups performed better when using spoken shadowing [p=0.009]. While German monolinguals generally seemed to default to speech-based codes, we found a more pronounced difference for CODAs [p=0.028], indicating that they were able to alternate between speech- and sign-based coding in accordance with the respective shadowing language.

Confirming previous findings on English-ASL bilinguals [3], our results show that sign language use and its modality-specific requirements for encoding new input contribute to the serial span discrepancy between hearing speakers and Deaf signers. This does not only have implications for the interpretation of standardized test results involving serial span methodology but also for the further development of inclusive learning environments.



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Signers have better memory than speakers for object locations displayed on a lateral versus sagittal axis

Beyza Sümer[1,3], Francie Manhardt[1], Kimberley Mulder[1], Dilay Karadöller[1] & Aslı Özyürek[1,2]

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Unlike in spoken languages, the visual-spatial modality of sign languages allows for iconic expression of object locations [1], mostly through classifier constructions [2] (1a, 2a) or relational lexemes [3] (1b, 2b). The current study investigates the interaction between linguistic encoding of object locations and non-linguistic spatial representations in memory of signers compared to that of speakers.

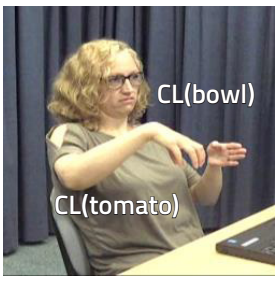
We presented deaf native signers of the Sign Language of the Netherlands (NGT) [N=18] and hearing adult speakers of Dutch [N=20] with four pictures. The target pictures show an object located with respect to a reference object on the lateral or sagittal axis (1, 2). After the linguistic description task, the participants were given a surprise recognition memory task, in which they received a subset of displays in a random order, and asked to indicate the picture that they described.

The results of glmer analysis in which items and participants were entered as random factors showed an overall effect of language modality, and axis type, interacting with language modality. Memory accuracy scores for the items located on lateral axis were higher than the ones located on the sagittal axis, and this effect was stronger for NGT signers compared to Dutch speakers (Figure 1).

We suggest that the enhanced split in the memory scores for different axis types might be related to the way the locative forms are anchored to the body coordinates of the signer, which modulates memory encodings of spatial locations differently for signers than for speakers.

(1)

(a)



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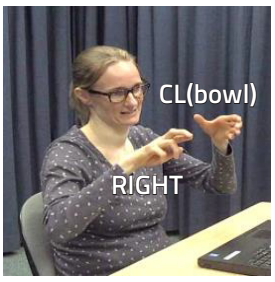

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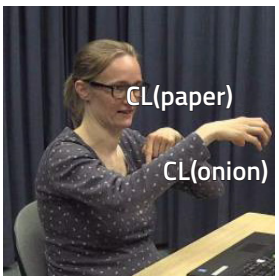

(b)

References [1] Emmorey, K. (2002). *Language, cognition, and the brain: Insights from sign language research*. Mahwah, NJ: Lawrence Erlbaum Associates. | [2] Supalla, T.R. (1982). *Structure and acquisition of verbs of motion and location in American Sign Language*. PhD Thesis, UCSD, The USA. | [3] Sümer, B. (2015). *Acquisition of spatial language by signing and speaking children: A comparison of Turkish Sign Language (TİD) and Turkish*. PhD Thesis, Radboud University Nijmegen, The Netherlands.

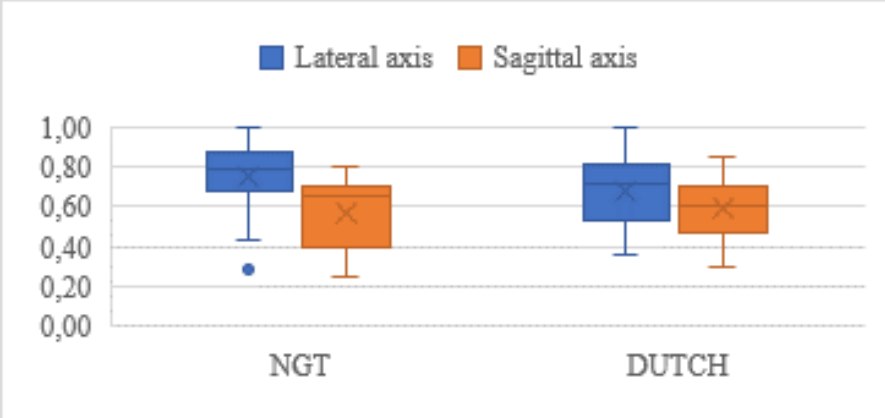

Figure 1. Mean proportions of memory accuracy scores for lateral and sagittal axis locations in NGT and Dutch.

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Do orthographic representations influence spoken language processing in the second language?

Stefanie Tuerk[1] & Ulrike Domahs[1,2]

[1]Neurolinguistics Group, Institute of German Linguistics, University of Marburg;
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A recent line of research suggests that orthographic representations are active when we process spoken language. This has convincingly been demonstrated in native speakers of languages with deep orthographies (e.g. for English: [1], [2]; for French: [3], [4]; for Portuguese: [5]), but to our knowledge studies so far have not addressed the effect of orthographic representations on spoken language processing in an L2 in the same way. We therefore replicated Perre, Midgley and Ziegler's 2009 reaction time study [2] with German L2-learners of English.

In analogy to the original study, we used an auditory priming paradigm with a lexical decision task in which participants were confronted with three kinds of primes: orthographically and phonologically related (beef – reef), phonologically related (leaf – reef) and not related to the target (sick – reef). While the phonological priming effect was highly significant for the reaction times ($p < .000$), we found no influence of orthographic similarity on either reaction times ($p = 1.00$) or accuracy ($p = .722$).

We conclude that the lack of an orthographic priming effect in German L2-learners of English is due to different strategies of processing depending on the consistency of the native writing system. In deep orthographies, the activation of an additional modality could be an advantage in spoken language processing to disambiguate homophones. In a more consistent writing system, the activation of orthographic representations might not be relevant due to the fact that the phonological information is sufficient for the mapping of a phonological form onto the corresponding entry in the mental lexicon. To test our hypothesis, we are conducting a similar experiment in German with German native speakers and English L2-learners of German.

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Multimodality of reported speech and thought in Russian

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Claims about the multimodal composition of reported speech and thought range from the recurring observation that certain framing expressions including 'new' quotatives (*be like* in English, *so* in German, etc.) tend to co-occur with changes in gaze direction, elevated pitch, or specific facial expressions, to the discussion of the 'air quotes' gesture as a multimodal quotative construction (e.g. Lampert 2013). However, quantitative analyses of the coordination of the involved modalities are scarce, and the status of the multimodal signals in reported speech remains understudied.

I conducted a narrative problem-solving task (cf. San Roque et al. 2012) in Russian to study the multimodal behaviour of speech participants. This task typically elicits references to speech and thought of the depicted characters. The most frequent strategies of framing reported speech in my data include quotative verbs, the 'new' quotative *tipa*, and demonstratives *takoj/takaja* (whose quotative usage is rarely discussed in literature). Each strategy appears to display varied multimodal behaviour.

The questions that I address in my poster include the following:

- Do different types of quotatives in Russian represent various degrees of commitment to the reported claim?
- Do they make certain kinds of 'coverbal behaviour' salient?
- Can the degree of commitment of a speaker to the reported claim be interpreted based on the multimodal complexity of a reported speech event?

Ultimately, the central question of my research is to what extent the definition of reported speech in Russian (and potentially other languages) can be extended to include the multiple modalities that are typically involved in its production.

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How the CONTAINER schema underlies gestures in multimodal descriptions of temporal concepts

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Time and space form a metaphorical symbiosis providing the basis for many conceptual metaphors. A productive example is TIME IS A CONTAINER where the embodied image schema CONTAINER serves as source domain for the ephemeral concept of time (Johnson 1987). It has particularly been found in verbal and written spatiotemporal discourse (e.g. Graf 2011; Lakoff/Johnson 2003; Pérez Hernández 2001). Gesture research has shown that certain aspects of time conceptualisation, e.g. the cognitive reality of a lateral mental timeline, become only apparent in the gestural modality (e.g. Calbris 2008; Cienki 1998; Casasanto/Jasmin 2012; Mittelberg 2018). Yet, little attention has been paid to how TIME IS A CONTAINER manifests itself in co-speech gesture and what implications can be drawn concerning the conceptualisation of time through space.

This poster presents the findings of a qualitative pilot study in which two German native speakers explained temporal concepts to non-native speakers. A frequently observed phenomenon in the participants' multimodal discourse was an arcing gesture: On both the sagittal and lateral axis, participants produced gestures reminiscent of a leaping motion, thus indirectly creating confined spaces. I propose the following tendencies in how such arcing gestures reveal features of the speakers' temporal representations drawing on the CONTAINER schema: On the lateral axis, the arcing gesture marks the boundaries of a temporal sequence, thus creating spatiotemporal CONTAINERS (Fig. 1). On the sagittal axis, an arced forward gesture indicates, in the context of verbal deictic references, the leap from the origo in the presenttime-CONTAINER into the future-CONTAINER (Fig. 2). I argue that the trajectories of the arcing gestures evoke underlying CONTAINER schemata, suggesting that time is conceptualised as a segmented continuum rather than a continued line.

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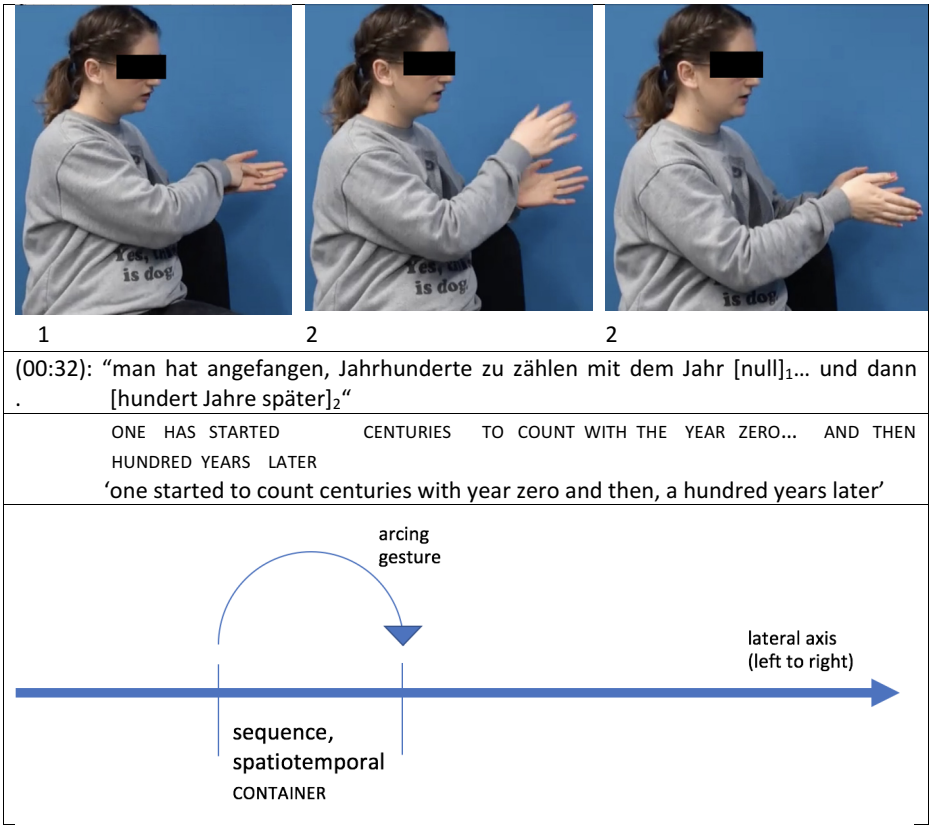

Figure 1. Arcing gesture along the lateral axis: Marking the confines of a temporal sequence

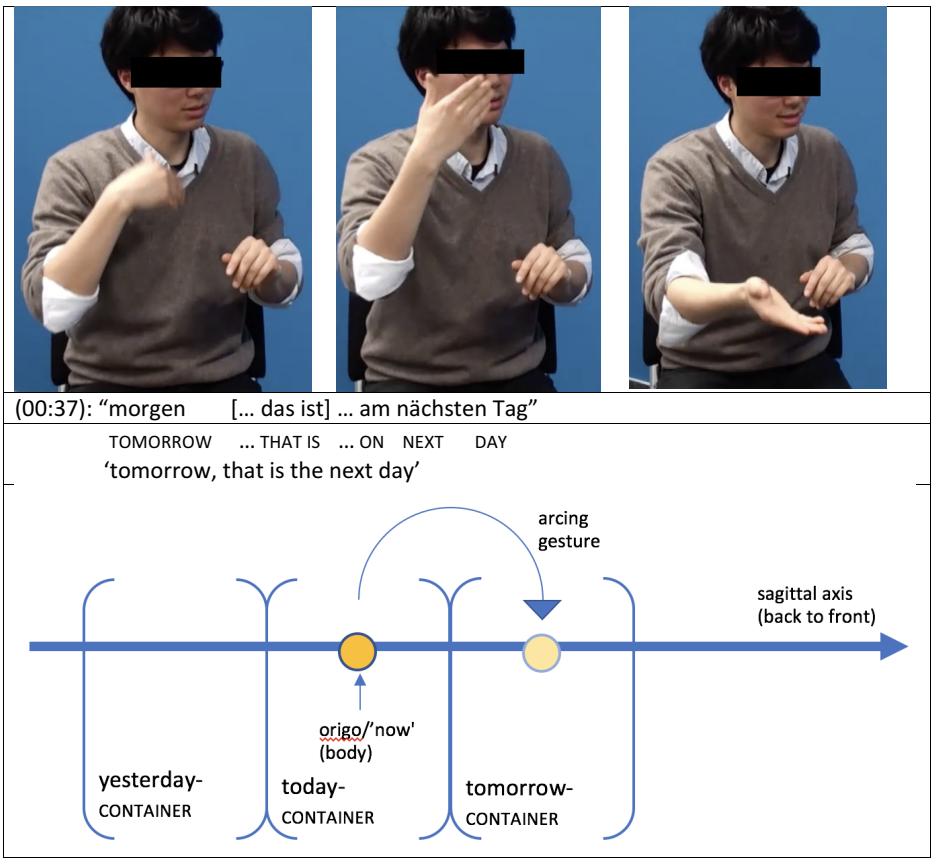

Figure 2. Arcing gesture along the sagittal axis: Overcoming of the CONTAINER-boundary

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Beat gestures and narrative development: Training children in producing rhythmic hand gestures promotes immediate gains in their discourse performances

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Recent research has shown that when preschoolers listen to a speaker who is simultaneously making rhythmic beat gestures, this favors the recall and comprehension of what they have heard (Igualada et al., 2017; Llanes-Coromina et al., 2018) and also boosts their narrative performance (Vilà-Giménez et al., 2019). However, previous studies have not tested the effect of encouraging children to produce beats while retelling narratives –as opposed to merely observing them– on their narrative performances. In this study, a total of 47 5- and 6-year-old children participated in a between-subjects brief training study with a pretest and an immediate posttest design (Figure 1). Children were exposed to a training phase with a total of six one-minute stories, presented under two experimental conditions: (1) beat nonencouraging condition, and (2) beat encouraging condition. Video recordings of the pretest and posttest narratives were then scored for narrative structure and fluency. A comparison of scores showed that children in the group that had been encouraged to use beats performed better than the group of children who were simply asked to retell the story without gesture instruction. These findings suggest that encouraging the use of beat gestures in children helps improve their subsequent narrative performance in line with the hypothesis that beats are important highlighters of structural properties of language (e.g., focus, discourse structure and rhythm) (Shattuck-Hufnagel et al., 2016). This research can have an impact on our understanding of the integration of children's gesture and narrative development, as well as practical implications for teaching methodologies.

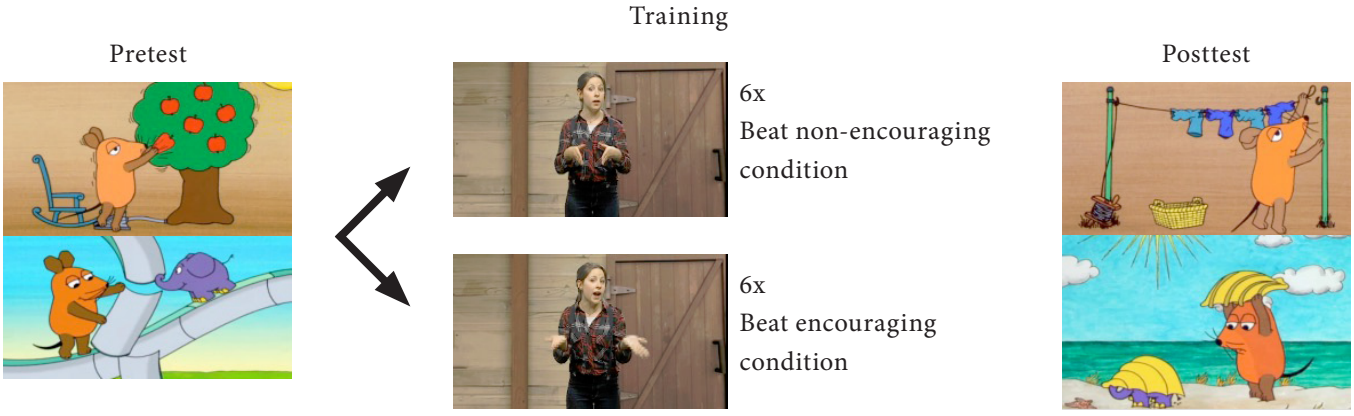

Figure 1. Experimental procedure.

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Sharing the load – the interplay of verbal and gestural negation in Savosavo

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This poster presents preliminary work on the interplay of the verbal and gestural domains to express negation in Savosavo, a Non-Austronesian language spoken by about 3.500 people on Savo Island, Solomon Islands (http://dobes.mpi.nl/projects/savosavo/).

Much of the previous research on gestures associated with negation focused on identifying the usage contexts and semantic core as well as the range of possible form variations of relevant gestures and gesture families, usually for better-studied languages such as English, French, Italian or German (e.g. Kendon 2004, Harrison 2009, Calbris 2011, Bressem and Müller 2014). Some also looked at utterances where both negation gestures and explicit verbal negation co-occur and studied their temporal alignment (Harrison 2009, 2014). But is it actually the case that verbal and gestural negation co-occur often?

Based on a corpus of about 6h of video data we studied the relation of verbal and gestural negation from two perspectives. First, we analyzed the patterns of use of one particular negation gesture, the "sweeping away" gesture, and noticed a strong tendency of this gesture not to occur with explicit verbal negation, i.e. *ghoma* 'no' or *sika* 'don't'. Instead, it is found mostly with utterances containing implicit (lexical or pragmatic) negation, i.e. with lexemes like *zui* 'end' or *tabu* 'forbidden', or utterances that only implicate or presuppose a negation. We then checked every occurrence of explicit verbal negation in our corpus to see if any kind of negation gesture is present. Our results show that only few instances of explicit verbal negation are accompanied by any gestural negation, confirming the pattern observed with the "sweeping away" gesture.

References Bressem, Jana & Cornelia Müller. 2014. The family of Away gestures: Negation, refusal, and negative assessment. In Cornelia Müller, Alan Cienki, Ellen Fricke, Silva H. Ladewig, David McNeill, Jana Bressem (Hrsgg.), *Body – Language – Communication / Körper – Sprache – Kommunikation. Vol. 1. Handbücher zur Sprach- und Kommunikationswissenschaft / Handbooks of Linguistics and Communication Science* 38, 1592-1604. Berlin, New York: Mouton de Gruyter. | Calbris, Geneviève. 2011. *Elements of Meaning in Gesture*. Amsterdam: John Benjamins Publishing Company. Harrison, Simon. 2009. *Grammar, Gesture, and Cognition: The Case of Negation in English*, Université Michel de Montaigne, Bourdeaux 3. Ph.D. | Harrison, Simon. 2014. The organisation of kinesic ensembles associated with negation. *Gesture* 14(2), 117-141. | Kendon, Adam. 2004. *Gesture: Visible Action as Utterance*. Cambridge: Cambridge University Press.

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How prosody, speech mode and speaker visibility influence lip aperture

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Trading relations, in which one cue compensates for the absence or reduced occurrence of another cue, have been widely discussed not only in perception (Parker et al. 1986) but also in terms of speech and gestures (de Ruiter et al. 2012). The present paper sets out to study the relationship between *articulatory* gestures such as lip aperture and degenerated (whispered) speech in order to examine how the absence of fundamental frequency influences lip opening.

We therefore conducted a motion capture experiment with ten native speakers of German by including the following conditions:

(i) the speech mode (normal speech vs. whispered speech where f0 is absent),
(ii) the visibility of the interlocutor (visible vs. invisible),
(iii) the pragmatic function of a message (question vs. statement).

To this end, maximal lip aperture in German vowels /a, ɛ, ɪ/ was scrutinized (see Figure 1 for the placement of markers on speaker's face, Figure 2 for the experimental setting, and Table 1 for stimulus example).

Our results reveal that the lip aperture is larger in whispered than in normal speech (Figure 3). It is also larger when speakers do not see each other (Figure 4). Finally, questions are produced with a larger lip aperture than statements (Figure 5).

Overall, the results suggest trade-off relations where both the lack of fundamental frequency and the lack of visibility are compensated by larger lip aperture.

Figure 1: Positions of facial markers

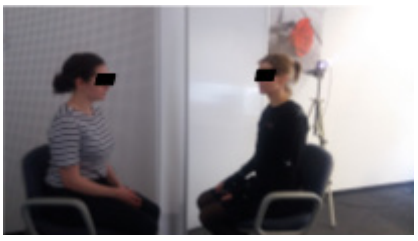

Figure 2: Experimental setting

References De Ruiter, J. P., Bangerter, A., Dings, P. 2012. The interplay between gesture and speech in the production of referring expressions: Investigating the tradeoff hypothesis. *Topics in Cognitive Science* 4(2), 232–248. | Parker, E. M., Diehl, R. L., Kluender, K. R. 1986. Trading relations in speech and nonspeech. *Perception & Psychophysics* 39, 129–142.

Question condition		**Statement condition**	
Confederate:	Er mag diese Piste. “He likes this slope.”	Confederate:	Er mag diese Piste? “He likes this slope?”
Informant:	Er mag diese Piste? “He likes this slope?”	Informant:	Er mag diese Piste. “He likes this slope.”

Table 1: Examples of stimuli (40 sentences per speaker)

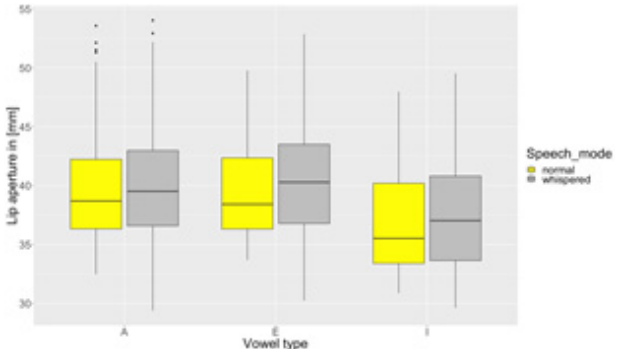

Figure 3: Lip aperture in different vowel as function of speech mode

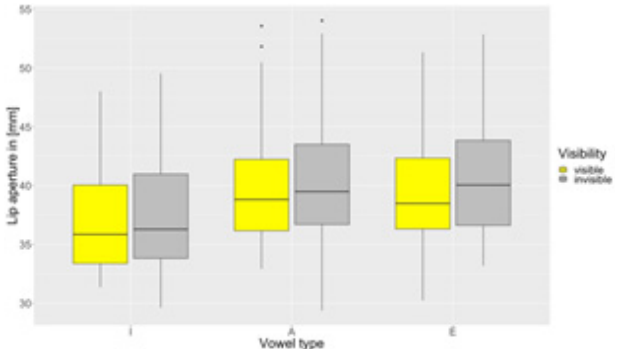

Figure 4: Lip aperture as function of visibility mode

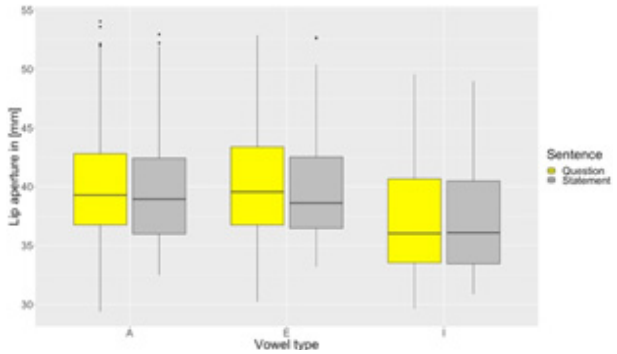

Figure 5: Lip aperture as function of sentence type