

Report on the 2nd international workshop "Facial Gestures in Interaction" from 7th – 9th October 2021 at the University of Bayreuth)

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Introduction

Aiming to shed light on the interactive structure and function of facial gestures, Alexandra Groß and Carolin Dix of the University of Bayreuth (Germany) hosted the 2nd workshop on Facial Gestures in Interaction, 7th to 9th October 2021 as an online conference. Taking up the outcomes of the first workshop, which took place in Bayreuth in January 2020 (cf. Alt 2020), the goal was to examine the forms, effects, consequences, and relevance of different facial gestures and dynamics (such as closing the eyelids, raising both eyebrows, or pursing lips, etc.) for social interaction, its structure, and organization. The workshop addressed the desideratum of systematically approaching the human repertoire of facial gestures occurring in natural f2f interaction from a participant's perspective in order to specify their impact on the interlocutors' mutual understanding of what they are doing and how they organize the ongoing interaction.

This second workshop demonstrated the multifunctionality and global conversational significance of different facial gestures such as raising the eyebrows (Stolle/Pfeiffer, Li/Wang, Dix/Groß, Ambrazaitis/House), closing the eyelids (Shor) and opening or closing the mouth and moving the lips (Ruth-Hirrel/Wilcox, Ike/Mulder). These elements, whether as a stand-alone or performed with other verbal, vocal, and visual resources, were contextualized within diverse activities and sequential contexts, e.g. repair sequences (Stolle/Pfeiffer, Li/Wang), change-of-state moments (Dix/Groß), narratives (Shor), knowledge queries (Li/Wang), embedded in naturally occurring informal as well as institutional talk conducted in different languages: German, Hebrew, English, Swedish, and Mandarin Chinese.

With presenters from Canada, the US, Germany, Sweden, the Czech Republic, Israel, Japan, and Australia, different theoretical and methodological perspectives (cognitive linguistics, phonetics, and interaction analysis) and research strands (sign language research, CA, and interactional linguistics) were covered.

This report aims to retrace the virtual and cognitive steps taken during this workshop by summarizing the shared presentations, questions, and findings including the plenary discussions. These steps build the groundwork for future studies shedding light on the phenomena of facial gestures and hopefully many workshops to come.

Alexandra Groß (University of Bayreuth, Germany): Introduction to the topic

Starting with a short thematic introduction, Alexandra Groß outlined the state of the art regarding investigating the interactive functions of facial resources.

Formerly being almost exclusively viewed from the perspective of emotion psychology as a human way of expressing emotions (e.g. Ekman/Friesen 1969; Ekman/Oster 1979; Ekman 1979), Ekman (1979) found that around two-thirds of all facial

movements serve as what he refers to as *conversational signals*. Their impact on and within social interaction has since been investigated by researchers working in the tradition of sociology and social psychology (e.g. Brunner 1979; Kraut/Johnston 1979), communication theory (e.g. Birdwhistell 1970; Bavelas/Chovil 2018, the latter also using the term *facial gesture*) as well as quantitative approaches in linguistics and experimental phonetics (as *visual prosody*, e.g. Beskow et al. 2009; Flecha-García 2010; Ambrazaitis/House 2017). EMCA research on multimodality in interaction has increased considerably over the last decades (e.g. Mondada 2018). Besides manual gestures (e.g. Kendon 2004; Clift 2020), gaze (e.g. Rossano 2012; Auer 2021; Stukenbrock 2019) and interpersonal touch (e.g. Li 2020), the conversational use of facial gestures has been put into focus over the last few years (Peräkylä/Ruusuvuori 2006; Kaukoma 2015) while analyzing them in their local conversational contexts as part of multimodal gestalts performing conversational actions. In that respect, the pursing of one's lips has been described as part of the facial configuration called the 'thinking face' (Goodwin/Goodwin 1986; Heller 2021). Turn-opening smiles (Kaukoma/Pärekylä/Ruusuvuori 2013) as well as turn-opening frowns (Kaukoma/Pärekylä/Ruusuvuori 2014) have been found to modify upcoming sequential trajectories. Recently, the eye roll has been described as a facial practice, that comments in a negative way on a target action, but at the same time forges alliances with the addressee (Clift 2021). Further, several studies focus on the raising of both eyebrows. Besides contributing to accomplishing offerings (Kärkkäinen/Keisanen 2012), raising both eyebrows can be used as part of repair initiations (Stolle/Pfeiffer in prep., Li/Wang in prep.) and as facial displays of a changed state of mind in response to informings (Dix/Groß in prep.).

Following these lines of research, Groß raised three main questions for guiding the workshop discussions:

- Which functional levels of facial movements can be distinguished? What purpose do facial movements (in social interaction) serve?
- What theoretical, methodological, and technical tools are useful when investigating facial movements?
- How can the methodological repertoires of CA, IL, and MA contribute to the analysis of conversational functions of facial movements?

Through a short sequence analysis, Groß illustrated the range of facial movements: the brow area can be furrowed, the eyebrows can perform a multitude of up and downward motions even non-symmetrically, the eyes can vary between wide open, squinted, and, closed, the nose can be wrinkled, the cheeks can either protrude or be sucked inward, the mouth and lip area can be relaxed or strained with the lips pulled back and the corners of the mouth can range from an upward position, to neutral to downward, etc.

In addition, Groß raised the question of how to adequately classify facial resources and their movements and proposed the following terminological differentiation:

- Facial movement is a general term for facial expressions including the movement of the areas previously discussed.
- Facial expressions revolve around the psychological state of an individual and the resulting expression of emotions.

- Facial dynamics are defined as physical movements accompanying facial processes or resulting from physical processes such as pain, disgust, etc. Following Schmidt (2016) physical processes and bodily reactions like yawning, sneezing, etc. are not primarily rooted in interaction but having the potential to fulfill conversational functions and be relevant within and for interaction.
- Facial gestures (Bolinger 1946) describe the entity of motions that possess an intrinsic interactional value and are used for the realization of certain interactive actions. Following the definition for gestures in general given by Kendon (1985:215), they are "regarded by participants as directly involved in the process of deliberate utterance" in interaction. And such as manual gestures, facial gestures as well contribute to the formation of conversational actions as well as to the organization of interaction. Within this last domain, sign language research was identified as a fruitful source since e.g. so-called "mouthings" can fulfill semiotic functions here.

In order to trace the evolution of methodological approaches in the investigation of facial movements Groß illustrated different functions of smiles. Starting with emotion psychology (Ekman/Friesen 1969) the embedded indexical property of revealing underlying emotions and its social functions were highlighted. Similar studies showed its high probability of occurrence in social encounters (cf. Birdwhistell 1970; Kraut/Johnson 1979; Fridlund 1994). Conversational functions of smiles in their specific co-occurrence with speech were related to approaches of communication theory (cf. Bavelas/Chovil 2018) as well as to multimodal CA and IL (e.g. Kaukomaa/Peräkylä/Ruusuvuori 2013, 2014, 2015), the latter being the methodological approach of choice for most of the Workshop contributions.

**Laura Ruth-Hirrel (California State University, USA) and Sherman Wilcox (University of New Mexico, USA):
Facial Gestures and epistemic assessments in American English:
The case of the horseshoe mouth**

From the perspective of sign language research and cognitive linguistics, Laura Ruth-Hirrel and Sherman Wilcox presented insights into the interactive functions of the so-called *horseshoe mouth* (HSM). The HSM or mouth shrug is defined as a simultaneous downward pull of both corners of the mouth into a horseshoe-like shape and an upward protrusion specifically of the lower lip which causes an overall compression of the lips. This motion is then reversed back to a normal relaxed state.

There is a multitude of functions that can be associated with this facial gesture. Previous (crosslinguistic) research found the mouth shrug to be used as a stance marker e.g., to express uncertainty (Debras/Cienki 2012; Debras 2017), epistemic possibility (Siyavoshi 2019), or obviousness (Jehoul/Brône/Feyaerts 2017). The authors highlighted, that the HSM operates as one resource within a multimodal gestalt while contributing to the overall meaning.

This current study is taking a closer look at instances of HSM in American English talk shows, news reports, courtroom interactions, and even instances from scripted tv-shows. The authors explicitly aimed to identify further functions of the HSM while analyzing other facial (e.g. raising of both eyebrows) and non-manual

gestures (e.g. head movements) co-occurring and collaborating with the HSM in institutional settings.

Based on 77 instances, the marking of an assessment was identified as one main function of the HSM. The examples showed that an HSM combined with a head-shake is used by interlocutors to indicate a negative stance towards a proposition, even before an explicit verbal evaluation is produced. Epistemic stance management was identified as the second main function of the HSM, respectively in co-occurrence with further resources.

To conclude this presentation, additional settings and ways to reliably study the contribution made by an HSM to a set of manual and non-manual interactional resources were discussed. In retrospect to the roots of this topic, the question of how these results were to be assessed cross-linguistically and throughout different cultures was posed as a starting point for further research in this area.

Xiaoyun Wang and Xiaoting Li (University of Alberta, Kanada): Teacher's Eyebrow and Head Movements as Repair-initiation in Second-Language Classrooms

Xiaoyun Wang and Xiaoting Li presented data on Chinese as a Second Language (CSL) classrooms, investigating how teachers employ raising or furrowing eyebrow movements together with head tilt or poke to initiate repairs and how these movements contribute to the upcoming students' response as well as to the larger classroom interaction. At the beginning of their presentation, the authors gave an overview of previous research on eyebrow and head movements in the context of conversational repair (Floyd et al. 2016; McClave et al. 2007), particularly in contexts of foreign language learning and teaching (Kasper 1985).

A total of eight hours of video-recorded university-level classes between Mandarin native-speaker teachers and adult learners of Mandarin from various native language backgrounds formed the basis of the analysis. Following the guidelines of CA, IL, and MA, Wang and Li showed that the combinations of different types of eyebrow and head movements are designed to mark different types of problems that are needed to be repaired in students' responses. Therefore, the presenters identified two different types of repairs initiated by the use of eyebrow movements:

Type 1 shows the structure of an understanding problem, where the student performs differently than the teacher expects them to and the teacher's following stance and orientation towards the student's response. Examples of this type included a partial repetition of the trouble source with rising intonation, which clearly indicates that the acoustic perception was not the problem of the student's utterance. It was also paired with raised brows, the corners of the lips pulled backward and up, a head poke as well as a forward-leaning motion.

The Type 2 scenario includes production problems such as language errors on the student's side and he/she is expected to perform a repair. On a pedagogical level, this case allows room for self-reflection and self-correction through teacher guidance. Instances of this type of repair were often times performed with raised brows and a head tilt. This also proves the aspect of multifunctionality and multimodality, since this co-occurrence of an eyebrow raise and a leaning motion was spotted quite frequently. This waiting position is due to the mobilization of a response from the student in question and also a display of reaction. What is problematic about this

type is the lack of precision, as the source of trouble is not explicitly pointed out. Students can then be led to think that semantic, syntactical, or intonational aspects of their utterance are in need of repair even if they may be correct.

In conclusion, the teacher's eyebrow and head movements mark different pedagogical problems in second-language classrooms.

The discussion touched upon the issues of relating the functions of eyebrow movements identified to further conversational contexts. The general observation that moving eyebrows are used to mobilize response, to mark, and to point towards problems (among other functions) corroborates the multifunctionality of moving eyebrows on one hand and links it to newness and unexpectedness on a genuine interactional level.

**Gilbert Ambrazaitis (Linnæus University, Växjö, Sweden) / David House (KTH, Royal Institute of Technology Stockholm, Sweden):
The role of head and eyebrow movements for the production
and perception of prosodic prominence: Evidence from Swedish
news readings and spontaneous dialogue**

Coming from the field of phonetics and prosody research, Gilbert Ambrazaitis and David House held the first presentation on the second day of the Workshop. They were primarily interested in how prosodic prominence is produced and perceived by using additional visual means like facial gestures. Ambrazaitis and House first gave an overview of their previous research (Ambrazaitis/House 2017) showing that prominence marking is frequently achieved through the multimodal orchestration of intonation and visual resources such as head and eyebrow movements. They based their investigation on further studies, categorizing those movements as practices for marking important information (Swerts/Krahmer 2010) and for structuring discourse (Flecha-García 2010), the aim of the presentation was to show how acoustic and kinematic parameters relate to each other in speech production, and how this prominence is perceived.

For their data of 1000 words gathered from news readings, a double peak "big accent" in comparison to a one-peak "small accent" was found to be the most frequent form of prominence marking, closely followed by the combination of a big accent with a head beat. In third place, an eyebrow raise added to this multimodal gestalt was found. The authors highlighted that prominence is mostly performed multimodally. The role of eyebrow movements, however, has to be investigated further. The question "Is an eyebrow raise a definite marker for high-level prominence?" has to be given a differentiated consideration. Generally, it seems to be that lexical prosody in speech adds up with gesture integration in prominence production: The more multimodal resources added, the higher the amplitude of the pitch accent (Krahmer/Swerts 2007; Krivokapić et al. 2017; Parrell et al. 2014; Roustan/Dohen 2010; Rusiewicz et al. 2014). These findings also carry over to speech reception: In settings, where the recipient can see the head and eyebrow movements of the speaker, this visual perception of head beats can add to the perceived prominence.

Aiming at differentiating varying forms of prominence, Ambrazaitis and House emphasized the role of raising both eyebrows for contrasting sides as well as adding value or magnitude to single words. In this context, semantically 'loaded' words

were particularly found to be accompanied by an eyebrow raise, which the authors interpreted as disclosing a strong connection of the latter to the semantic structure which is settled beyond the function of marking prominence.

With regards to the effect of interaction type on the production of facial gestures, the authors highlighted that the percentage of eyebrow movements was found to be higher in news readings compared to spontaneous dyadic speech. On the other hand, the head movements of participants were found to be more frequent and complex during spontaneous dialogue. This shows that head movements fulfill a wide array of communicative and expressive functions other than signaling prominence, especially in day-to-day interactions.

In the course of the discussion, the notion and role of gaze were brought up, which can present the subject for further studies regarding the production and perception of prominence and head and eyebrow movements individually.

For a full analysis of multimodal phenomena, all resources, especially bodily and facial movements of the hands, the head, and the eyebrows, have to be included. Genre and setting of social interaction play an important role, too as the Workshop participants could see in this multifaceted study. It is now the goal for future research to corroborate these findings while investigating head and eyebrow movements in the context of multimodal prominence marking in mundane interaction.

**Marzena Żygis / Susanne Fuchs (Leibnitz-ZAS Berlin, Germany):
At the margins of speech: Orofacial expressions and acoustic cues
in whispering**

With a different approach towards the gathering of data – namely, lab-generated data and motion capturing technology – Marzena Żygis and Susanne Fuchs contributed to this workshop by integrating the topic of whispering. Based on the importance of visual prosody their presentation aimed at contributing to a wider view on speech comprehension.

Two hypotheses formed the starting point of this study: First, the trade-off hypothesis suggests that if speech production is hindered or impeded, other resources such as gestures are made more prominent and vice versa. Therefore, if the perceptive value of one acoustic cue is weaker, it is set off through others such as eyebrow movements and lip aperture.

The second hypothesis, the hand-in-hand hypothesis, proposes quite the opposite case: It claims that speakers use gestures in a direct proportion to their speaking habits. Rather than to compensate, more gestures are used when the acoustic cues gain on expressivity and intensity.

Based on previous research about the validity of trading relations in various contexts (cf. Kendon 1972; Perkell et al. 1993), eyebrow movements during f_0 changes (Cavé et al. 1996) and whispering (Dohen/Loevenbruck 2008, 2009; Tao/Busso 2014; Żygis/Fuchs/Stoltmann 2017), the main focus was set upon this relation between speech and gestures when speech signals degenerate.

In particular, the authors analyzed the differences in acoustic and facial cues during polar questions and statements among 17 German-speaking participants. In order to ensure comparability, the acquisition and the analysis of data were processed in laboratory conditions.

An important aspect under investigation was the impact of speaker visibility (e.g. Alibali et al. 2001; Bavelas 2008; Melinger/Kita 2007; Ruiter 2012), particularly the question: How do speech and the use of gestural cues change when the speaker is not visible to the recipient?

For a fine-grained analysis of the latter, a total of 10 markers were placed on the faces of the participants: four in the mouth and lip area, two for the eyebrows, and four stable markers on a pair of glasses for reference. The participants then had to produce a set of specifically designed and structured sentences, where the final intonation changed from a statement with a down pitch to a polar question with a final rise.

In addition, the circumstances regarding speaker visibility (speaker visible and not visible to the recipient) and intensity (normal speech vs. whispering) were changed. For all participants and all combinations, the amplitude and motion range of the markers was measured and compared to the stable markers.

As their main findings the authors stated that the raising of both eyebrows more often occurred in questions than statements, during whispering, and during speaker invisibility. A higher degree of lip opening was found for questions, whispering, and speaker invisibility. The intensity of stressed vocalization was the highest during question production, and speaker invisibility and it was lower during whispering. And lastly, sentence duration was longest during whispering and invisibility. These results, therefore, lined up with the trade-off hypothesis.

Saya Ike (Meijo University, Japan) and Jean Mulder (University of Melbourne, Australia): Smile in Interaction: (Re)conceptualizing roles

Focusing on lip movements, Saya Ike and Jean Mulder analyzed video data from dyadic interactions of native English speakers (Australian English) and non-native speakers to gain a deeper understanding of the different formal manifestations and interactive functions of smiles. In that respect, the authors aimed to answer the following empirical and methodological questions: How can the different interactional aspects of a smile be (re)conceptualized with a model of interaction? What functions/meanings can a smile fulfill in interaction? How can different forms of smiles be transcribed?

To answer these questions, Ike and Mulder propose the 'Interactional Space Model', consisting of four intertwined levels: the social meaning, the interactional meaning, the structural meaning including aspects of interaction organization, and the linguistic meaning of elements, to represent and analyze the multidimensionality of smiles.

In considering an applicable definition of smiles, it is noticeable that they are just as varied. As already mentioned, Ekman and colleagues developed a facial coding system using activated muscles and muscle groups to categorize Action Units. Thus, this approach uses physiological and emotional markers to detect and determine smiles. A further distinction can be made if the smile is not only visual but also audible, namely laughter (cf. Glenn 2003; Haakana 2010). Additionally, Peräkylä and Ruusuvuori (2012) differentiated a broad from a slight smile. Generally, any such function and definition have to align with the currently performed activity.

Based on their data analysis, Ike and Mulder differentiated four interactionally relevant types/levels of smiles in contrast to a neutral 'base position' of the lips:

- Broad smiles (mouth wide open, teeth showing, accompanied by laughter)
- Regular smiles (lips open, teeth showing)
- Slight smiles (lips together, lifting the corners of the mouth)
- Minimal smiles (lips together, upturned, horizontal to corners of the mouth)

In that respect, they discovered that smiles sometimes appear as 'base position' themselves, that is, interactants constantly showing a minimal or slight smile while listening to the co-participant. Therefore, the presenters stress that this appearance of a smile serves as an element for marking participation and displaying alignment. Furthermore, they describe longer stretches of a shared smile (frequently accompanied by laughter and mutual gaze) as rapport management practices (Spencer-Oatey 2008), establishing or enhancing rapport between the interlocutors, therefore operating on the level of social meaning.

Drawing on the data, the resource of smile is shown to operate at a range of additional levels: from having a linguistic meaning of marking humor and (positive) emotion or expressing agreement, to serving the structural meaning as an interactional resource in backchannels and turn-management, and performing interactional work such as marking stance (Brunner 1979; Kaukomaa/Peräkylä/Ruusuvuori 2013), (dis)affiliation and as a device to indicate speaker change and the wish to claim this role (Kaukomaa/Peräkylä/Ruusuvuori 2013; Schegloff 1996).

The second aim of their presentation was to discuss proper ways of transcribing different formal manifestations of smiles in interaction. In that respect, they addressed the overall challenge when it comes to transcribing visual-bodily actions, namely representing the form of the movements as well as its temporal unfolding, the duration as well as the transition between the different levels of smiles in an adequate way. Using the system by Kendon (2004), they annotated aspects like strokes, holds and recovery phases. Furthermore, Ike and Mulder mentioned the transcription of idiosyncratic ways of realizing smiles as well as adequately categorizing co-speech smiles as another challenge. Through data sequences, the presenters were able to show in a multi-level transcript not only the location, duration, and developments during the smile but also instances of shared smiles. This in turn can now be related back to the Interactional Space Model and its varying functions. It is not the case that one degree is to be linked specifically to one function, even though relations between alignment and lower-degree smiles were frequent. In the same way, affiliation and positive stance can be connected with higher degrees and rapport with shared smiles.

Finally, the presentation showed that particular levels of smile do not correspond with a particular interactive function or type of meaning. Instead, the meaning of a smile is highly context-dependent and must be analyzed within its multimodal orchestration with verbal, vocal, and other visual resources.

Nevertheless, the authors drew big lines between the formal realization of smiles and its meaning:

- Alignment appears to be associated with low-level smiles
- Affiliation and positive stance appear to be associated with higher-level smiles

- Rapport establishment and enhancement appear to be associated with shared smiles

During the discussion, further questions were posed: Can co-speech smiles reach the highest level of a broad smile? How do a broad smile and laughter work together? It became apparent, that a differentiation between humor and smiling needs to be implemented. In the presented data, a broad smile was accompanied in nearly all cases by audible laughter, yet there is no definite coincidence between these two elements. Moreover, whereas laughter is normally associated with displaying humor, a broad smile can serve different interactive, linguistic, and social functions. Further research is needed at this point to differentiate between the co-occurring elements, to detect different meanings, and find a more fine-grained categorization of smiles. For future studies, Ike and Mulder also plan on analyzing more data with different, modified settings to confirm their results so far. The Interactional Space Model is also to be applied to other facial expressions as well as cross-linguistically. Special cases such as an ironic smile or speaking with a broad smile were discussed by the participants. It was also suggested to incorporate the eyes in the differentiation process of the types of smiles following Ekman's taxonomy (1979) to better cover the whole gestalt of a smile.

Leon Shor (University of the Negev, Israel): The discursive functions of eye closure in spoken Israeli Hebrew

Leon Shor rounded off the second workshop day with the investigation of eye closure, which he operationalized as instances of closing both eyes for at least 500 ms. Shor started with an overview about previous findings on functional facets of eye closure, beginning with the physiological perspective: For reasons of eye protection, eye closure is performed when irritating stimuli are occurring, therefore operating as a physiological reflex. Closing both eyes can also be an index of fatigue or reduced alertness (Stern et al. 1984; Fridlund 1994; Schleicher et al. 2008).

Based on 90 instances of speakers' eye closures in about 8 hours of talk show interviews in Israeli Hebrew, Leon Shor pursued the questions whether, first, the interruption of mutual gaze in the form of an eye closure is to be seen as a communicative signal and, second, what specific function(s) it performs. Shor based his study on Vincze and Poggi (2011a, 2011b) who found eye closure in French political discourse to portray certainty, the unimportance of a matter (or person), and demarcation. For Russian tv-shows Grishina (2013, 2017) was able to prove an affirmative function as well as the negation of statements both with coordinating verbal and nonverbal markers.

The multimodal transcription included the location and degree of eye closure in the structural context of the utterance, cooccurring facial and bodily movements, and the prosodic design. First assumptions on the communicative function were also made.

The observations pointed towards (1) a usage for visual prosody in the form of an intensifier and (2) indicating shared knowledge and understanding. For the first case, examples showed the use of additional nonverbal resources such as head shakes and tense lips, prosodic markers like preceding pauses and pitch jumps, and verbal markers including loaded words. Secondly, verbal and nonverbal markers of

confirmation were placed together with eye closure, which in terms shares the display of mutual understanding. In both cases, the verbal and gestural context can be associated with the communicative function.

The semiotics of eye closure show a significant use in response to an out-of-the-ordinary perception of verbal information and as concentration on cognitive processes besides the aforementioned displays of fatigue, boredom, dysfunction, and a state of rest.

In conclusion, eye closure in most cases is to be classified as a multimodal complex and therefore analyzed accordingly – with respect to all resources used and not used. In this sense, further studies regarding the role of gaze direction, the degree and tension of closure, and other co-occurring facial gestures are necessary to wholly understand the notion of eye closure.

The plenary discussion also provided the question, of whether other communicative genres or different activities and settings may show differences in this behavior. It became also apparent, that the function of increased intensity needs a closer look as to the matter of what exactly (e.g. the topic, emotions, the verbal aspect) is intensified.

Alexandra Groß and Carolin Dix (University of Bayreuth, Germany): Raising eyebrows in Interaction (Data Session)

Alexandra Groß and Carolin Dix offered insights into one of the most frequent facial movements – the raising of both eyebrows (RBE) – while analyzing it in the specific conversational context of responses to (elicited) informings for performing news receipting / news marking. Before letting the remote audience take a look at selected data extracts, Groß and Dix presented an overview of previous studies.

Approaching the RBE within emotion psychology Ekman and Friesen (1969) were among the first and the most prominent who provided a detailed depiction of various eyebrow movements (symmetrical or asymmetrical movements up, down, inward raise) while highlighting their expressive character of underlying emotions (cf. Ekman 1979; Chovil 1991). Further studies related the RBE to the display of participation and reciprocity (cf. Ekman 1979; Chovil 1991), the formation of action such as greetings (Ekman 1979), requesting information (cf. Ekman 1979; Chovil 1991; Wierzbicka 2000; Granström/House 2005; Beskow et al. 2009; Crespo Sandra et al. 2013; Mohr 2014), etc., and the organization of talk and interaction (Ekman/Friesen 1969; Chovil 1991; Flecha-García 2010; Swerts/Krahmer 2010; Mohr 2014; Ambrazaitis/House 2017, Guaitella et al. 2009).

For the precise multimodal transcription, a blend of GAT2 (Selting et al. 2009) and the International SignWriting Alphabet (ISWA; cf. Sutton 2010; Parkhurst/Parkhurst 2008) was applied (Dix 2022).

Groß and Dix found different temporal-formal patterns of RBE being deployed in the context of responses to informings: The eyebrow flash (< 450 ms) as a stand-alone or with minimal verbal change of state tokens like *hm* or *ach so*. Further, they presented a piece of data in which a respondent produces a more accented and lengthened, but still continuous upward-downward movement of both eyebrows, thereby evaluating received news in a positive way within a multimodal ensemble together with the semantically loaded expression "nice" and an open smile.

Finally, the eyebrow *hold* (> 700 ms) was observed to operate as a visual marker for displaying a significant emotional change of state facing new information, mostly as displays of surprise, astonishment, or a deeper understanding of what has been said. This involves an open mouth, widened eyes, and/or verbal expressions like *what* or *wow* which are prosodically highlighted.

Based on this initial observation, the following questions were posed as a guideline for extended data sessions: What role does the raising of both eyebrows play regarding the multimodal gestalt of change-of-state moments? What sequential consequences arise from different temporal-structural patterns of RBE? During breakout sessions, all participants were able to have a closer look at two sequences with several instances of eyebrow raises.

During the final discussion, various special cases such as synchronic lengthening of vowels with the same duration as an eyebrow hold were addressed. A hypothesis for sequential consequences in terms of continuation vs closing of sequences depending on whether a hold or a flash is executed was posed. This aspect along with the consideration of other brow movements and facial gestures leaves room for future investigations.

Sarah Stolle / Martin Pfeiffer (University of Freiburg, Germany): Facial gestures as a resource for other-initiation of repair

A multimodal oriented approach is gaining importance in the analysis of repair sequences (cf. Olsher 2008; Rasmussen 2014; Mortensen 2016). So far, research on bodily visual resources in other initiation repair sequences is focused on co-occurring verbal initiations (cf. Levinson 2015; Floyd et al. 2016).

In the context of sign language research Manrique (2016), and Skedsmo (2020a, 2020b) have provided insight into the use of exclusively facial resources in other-initiated repair. Manrique introduces the notion of no movement as a distinctive marker and establishes a distinction between implicit and explicit means to initiate repair, which is also referred to in this presentation. Lastly, Oloff (2018) investigates other-initiated repair mechanisms paired with facial expressions.

This study now poses questions regarding the given interactional contexts in which solely facial other initiations of repair occur, and whether and what functional consequences arise from a facial repair initiation in opposition to a verbal one. The focus is on the facial gesture of frowning performed as a stand-alone means to initiate repair.

Roughly 10 hours of German conversation amongst multiple students are still being evaluated following a multimodal CA concept. Repair sequences with participants trying to resolve the source of trouble are first filtered out and in a second step, forms, initiators, and applied facial resources are determined.

A particularly poignant example showed the structural process of other-initiation repair mechanisms after the source of trouble – a referential problem – was uttered by the speaker. Recipient A, with whom the speaker was upholding mutual gaze performed a so-called freeze, whereby he seized any ongoing movement going so far as to stop swallowing. He then added a brow furrow. One of the other participants (recipient B) produced a *wh*-question requesting further specification in an attempt to resolve the referential problem. Meanwhile and with still upheld mutual gaze, the speaker again addresses recipient A, complying with the implicit demand

for more information. This expansion was not able to clarify the referendum for him, so he resolves to verbal means and repeats the question made by recipient B. Again, the speaker shares descriptions which finally lead to an identification of the name of the referendum which the speaker confirms.

It is important to note, that the recipient without shared eye contact could only use a verbal repair initiation in order for it to reach the speaker. The freeze, on the other hand, is a purely visual means of repair initiation which can only be performed during mutual gaze. The first realization, therefore, is, that any qualified facial expression needs to be perceived in order to function as a repair initiation, which is consistent with Floyd et al. (2016).

Visual markers of trouble can be produced almost in the same instance as the reparandum is uttered. If those facial gestures are perceived, the speaker can address and resolve the trouble source within the same turn in a self-repair without interruption. If this is not achieved, the visual other-repair initiation can easily be upgraded to a verbal one – with or without additional bodily resources.

Also, the preference for self-repair can be met by using explicit and implicit non-verbal repair initiations, as they are less face-threatening.

As for specific contexts for facial other-initiations, the data so far points towards referential problems such as the example discussed above. This is in line with examples from Levinson (2015) and can indicate a cross-linguistic common ground, which is a hypothesis to be proven in future related studies.

Conclusion and Outlook

With many insights gained, there is one which stands above all: There is still much to be explored in this field of facial gestures, and that the more comes to light on the specific structural and functional characteristics, the more questions arise.

As seen in the presentations, all contexts, settings, and genres play an important role in the formation of facial gestures.

Future studies on intercultural similarities or differences between movements of the forehead, brows, eyes, nose, cheeks, lips, and chin, especially with respect to the influence of covering parts of our faces to prevent infection may pose another opportunity. How are first and second language acquisition affected by teachers and students wearing face masks? How is the deaf community coping with a vital resource being severely restricted? What is the impact on gaze made by face-to-display interaction with mutual gaze seemingly impossible and how are eventual troubles and overlaps handled or even prevented?

Empirical findings answering these questions and many more may already be discussed at the next Workshop about Facial Gestures, either in person or virtually.

References

Alibali, Martha W. et al. (2001): Effects of Visibility between Speaker and Listener on Gesture Production: Some Gestures Are Meant to Be Seen. In: *Journal of Memory and Language* 44, 169-188.

- Alt, Franziska (2020): Report on the international workshop "Facial Gestures in Interaction" from 30 - 31 January 2020 at the University of Bayreuth. In: *Gesprächsforschung* 21, 133-141.
- Ambrazaitis, Gilbert / House, David (2017): Multimodal prominence: Exploring the pattern and usage of focal pitch accents, head beats and eyebrow beats in Swedish television. In: *Speech Communication* 95, 100-113.
- Auer, Peter (2021): Gaze selects the next speaker in answers to questions pronominally addressed to more than one co-participant. In: *Interactional Linguistics* 1/2, 154-182.
- Bavelas, Janet (2008): What's Unique About Dialogue? Hand gestures, figurative language, facial displays, and direct quotation. SIGDIAL: the 10th Annual Meeting of the Special Interest Group in Discourse and Dialogue, Queen Mary University, London, UK.
- Bavelas, Janet/Chovil, Nicole (2018): Some Pragmatic Functions of Conversational Facial Gestures. In: *Gesture* 17/1, 98-127.
- Beskow, Jonas et al. (2009): Focal Accent and facial movements in expressive speech. In: *Working Papers Lund University* 52, 9-12.
- Birdwhistell, Ray (1970): *Kinesics and Context: Essays on Body Motion Communication*. University of Pennsylvania Press.
- Bolinger, Dwight L. (1946): Thoughts on 'Yep' and 'Nope.' In: *American Speech* 21/2, 90-95.
- Brunner, Lawrence J. (1979): Smiles Can Be Back Channels. In: *Journal of Personality & Social Psychology* 37/5, 728-734.
- Cavé, Christian et al. (1996): About the relationship between eyebrow movements and F0 variations, In: *Proceedings of the ICSLP* 4, 2175-2178.
- Chovil, Nicole (1991): Discourse-Oriented Facial Displays in Conversation. In: *Research on Language and Social Interaction* 25, 163-194.
- Clift, Rebecca (2020): Stability and visibility in embodiment: The 'Palm Up' in interaction. In: *Journal of Pragmatics* 169/1, 190-205.
- Clift, Rebecca (2021): Embodiment in Dissent: The Eye Roll as an Interactional Practice. In: *Research on Language and Social Interaction* 54/3, 261-276.
- Crespo Sendra, Veronica et al. (2013): Perceiving incredulity. The role of intonation and facial gestures. In: *Journal of Pragmatics* 47, 1-13.
- Debras, Camille (2017): The shrug: forms and meanings of a compound enactment. In: *Gesture* 16/1, 1-34.
- Debras, Camille / Cienki, Alan (2012): Some Uses of Head Tilts and Shoulder Shrugs during Human Interaction, and Their Relation to Stancetaking. In: *Proceedings of the 2012 ASE / IEEE International Conference on Social Computing and 2012 ASE / IEEE International Conference on Privacy, Security, Risk and Trust*, 932-937.
- Dix, Carolin (2022): GAT2 trifft das International SignWriting Alphabet (ISWA): Ein neues System für die Transkription von Multimodalität. In: Schwarze, Cordula / Grawunder, Sven (eds.): *Transkription und Annotation gesprochener Sprache und multimodaler Interaktion. Konzepte, Probleme, Lösungen*. Tübingen: Narr, 103-131.
- Dix, Carolin / Groß, Alexandra (in prep.): Surprise about or just registering new information? Moving and holding both eyebrows as visual change-of-state markers. In: *Social Interaction. Video-Based Studies of Human Sociality*.

- Dohen, Marion / Loevenbruck, H el ene (2008/2009): Interaction of audition and vision for the perception of prosodic contrastive focus. In: *Language and Speech* 52/2-3, 177-206.
- Ekman, Paul (1979): About brows. Emotional and conversational signals. In: Cra-nach, Mario von et al. (eds.): *Human ethology. Claims and limits of a new discipline*. Cambridge (u.a.): Cambridge University Press, 169-202.
- Ekman, Paul / Friesen, Wallace V. (1969): The Repertoire of Nonverbal Behavior. Categories, Origins, Usage, and Coding. In: *Semiotica* 1/1, 49-98.
- Ekman, Paul / Oster, Harriet (1979): Facial expressions of emotion. In: *Annual Review of Psychology* 30, 527-554.
- Flecha-Garc a, Maria (2010): Eyebrow raises in dialogue and their relation to dis-course structure, utterance function and pitch accents in English. In: *Speech Communication* 52, 542-554.
- Floyd, Simeon et al. (2016): Timing of Visual Bodily Behavior in Repair Se-quences: Evidence from Three Languages. In: *Discourse Processes* 53, 175-204.
- Fridlund, Alan J. (1994): *Human facial expressions: an evolutionary view*. San Di-ego, CA: Academic.
- Glenn, Phillip (2003): *Laughter in Interaction*. Cambridge: Cambridge UP.
- Goodwin, Marjorie Harness/Goodwin, Charles (1986): Gesture and coparticipation in the activity of searching for a word. In: *Semiotica* 62/1-2, 51-75.
- Granstr om, Bj orn / David House (2005): Audiovisual representation of prosody in expressive speech communication. In: *Speech Communication* 46, 473-484.
- Grishina, Elena (2013): Eye behavior in Russian spoken interaction and its correla-tion with affirmation and negation. In: Thielemann Nadine/Kosta, Peter (eds.): *Approaches to Slavic Interaction*, Amsterdam: John Benjamins Publishing Com-pany, 63-83.
- Grishina, Elena (2017): Russian gestures from a linguistic perspective: A collection of corpus studies. [russkaya zhestikulyatsiya s lingvisticheskoi tochki zreniya (korpussye isseledovaniya)]. Moscow: Languages of Slavic Culture.
- Gua tella, Isabelle et al. (2009): Are eyebrow movements linked to voice variations and turn-taking? An experimental investigation. In: *Language and Speech* 52-3, 207-222.
- Haakana, Markku O. (2010): Laughter and smiling: Notes on co-occurrences. In: *Journal of Pragmatics* 42, 1499-1512.
- Heller, Vivien (2021): Embodied Displays of "Doing Thinking." Epistemic and In-teractive Functions of Thinking Displays in Children's Argumentative Activities. In: *Frontiers in Psychology* 12, 636-671.
- Jehoul, Annelies/Br ne, Geert/Feyaerts, Kurt (2017): The shrug as marker of obvi-ousness: Corpus evidence from Dutch face-to-face conversations. In: *Linguistics Vanguard* 3/1, 1-9.
- K rkk inen, Elise/Tiina Keisanen (2012): Linguistic and embodied formats of mak-ing (concrete) offers. In: *Discourse Studies* 14/5, 587-611.
- Kasper, Gabriele (1985): Repair in Foreign Language Teaching. In: *Studies in Sec-ond Language Acquisition* 7, 200-215.
- Kaukomaa, Timo (2015): Facial expressions as an interactional resource in every-day face-to-face conversation. Dissertation (University of Helsinki).

- Kaukomaa, Timo / Peräkylä, Anssi / Ruusuvuori, Johanna (2013): Turn-Opening Smiles: Facial Expression Constructing Emotional Transition in Conversation. In: *Journal of Pragmatics* 55, 21-42.
- Kaukomaa, Timo / Peräkylä, Anssi / Ruusuvuori, Johanna (2014): Foreshadowing a Problem: Turn-Opening Frowns in Conversation. In: *Journal of Pragmatics* 71, 132-147.
- Kaukomaa, Timo / Peräkylä, Anssi / Ruusuvuori, Johanna (2015): How Listeners Use Facial Expression to Shift the Emotional Stance of the Speaker's Utterance. In: *Research on Language and Social Interaction* 48/3, 319-341.
- Kendon, Adam (1972): Some relationships between body motion and speech. In: Siegman, Aron W. / Pope, Benjamin (eds.): *Studies in dyadic communication*, Oxford, England: Pergamon Press, 177-210.
- Kendon, Adam (1985): Behavioral Foundations to the Process of Frame-Attunement in Face-to-Face Interaction. In: Ginsburg, Gerald P. / Brenner, Marilyn / von Cranach, Mario (eds.): *Discovery Strategies in the Psychology of Action*, London: Academic Press, 229-253.
- Kendon, Adam (2004): *Gesture. Visible Action as Utterance*. Cambridge, New York: Cambridge University Press.
- Krahmer, Emiel / Swerts Marc (2007): The effects of visual beats on prosodic prominence Acoustic analyses, auditory perception and visual perception. In: *Journal of Memory and Language* 57/3, 396-414.
- Kraut, Robert / Johnston, Robert (1979): Social and emotional messages of smiling: An ethological approach. In: *Journal of Personality and Social Psychology* 37/9, 1539-1553.
- Krivokapić, Jelena / Tiede, Mark K. / Tyrone, Martha E. (2017): A Kinematic Study of Prosodic Structure in Articulatory and Manual Gestures: Results from a Novel Method of Data Collection.
- Levinson, Stephen C. (2015): Other-initiated repair in Yéllî Dnye: Seeing eye-to-eye in the language of Rossel Island. In: *Open Linguistics* 2015/1, 386-410.
- Li, Xiaoting (2020): Interpersonal Touch in Conversational Joking. In: *Research on Language and Social Interaction* 53/3, 357-379.
- Li, Xiaoting / Wang, Xiaoyun (in prep.): Teachers eyebrow, head movements and partial repeats as other-initiations of repair in second language classrooms. In: *Social Interaction. Video-Based Studies of Human Sociality*.
- Manrique, Elizabeth (2016): Other-initiated repair in Argentine Sign Language. In: *Open Linguistics* 2, 1-34.
- McClave, Evelyn et al. (2007): Head movements in the context of speech in Arabic, Bulgarian, Korean, and African-American Vernacular English. In: *Gesture* 7/3, 343-390.
- Melinger, Alissa / Kita, Sotaro (2007): Conceptualisation load triggers gesture production. In: *Languages and Cognitive Processes* 22/4, 473-500.
- Mohr, Susanne (2014): *Mouth Actions in Sign Languages – An Empirical Study of ISL*. Boston, Berlin: deGruyter.
- Mondada, Lorenza (2018): Multiple Temporalities of Language and Body in Interaction: Challenges for Transcribing Multimodality. In: *Research on Language and Social Interaction* 51/1, 85-106.

- Mortensen, Kristian (2016): The Body as a Resource for Other-Initiation of Repair: Cupping the Hand Behind the Ear. In: *Research on Language and Social Interaction* 49/1, 34-57.
- Oloff, Florence (2018): "Sorry?!" / "Como?" / "Was?" – Open Class and Embodied Repair Initiators in International Workplace Interactions. In: *Journal of Pragmatics* 126, 29-51.
- Olsher, David (2008): Gesturally-Enhanced Repeats in the Repair Turn: Communication Strategy or Cognitive Language-Learning. In: McCafferty, Steven G. / Stam, Gale (eds.): *Gesture. Second Language Acquisition and Classroom Research*. London: Routledge, 109-130.
- Parkhurst, Stephen / Parkhurst, Dianne (2008): *A cross-linguistic guide to Sign Writing. A phonetic approach*.
- Parrell, Benjamin et al. (2014): Spatiotemporal coupling between speech and manual motor actions. In: *Journal of Phonetics* 42, 1-11.
- Peräkylä, Anssi / Ruusuvuori, Johanna (2006): Facial Expression in an Assessment. In: Knoblauch, Hubert et al. (eds.): *Video-Analysis – Methodology and Methods. Qualitative Audiovisual Data Analysis in Sociology*. Frankfurt am Main (u.a.): Peter Lang.
- Peräkylä, Anssi / Ruusuvuori, Johanna (2012): Facial Expression and Interactional Regulation of Emotion. In: Peräkylä, Anssi / Sorjonen, Marja-Leena (eds.): *Emotion in Interaction*. Oxford: Oxford University Press, 64-91.
- Perkell et al. (1993): Trading relations between tongue-body raising and lip rounding in production of the vowel / u / : A pilot "motor equivalence" study. In: *The Journal of the Acoustical Society of America* 93/5, 2948-2961.
- Rasmussen, Gitte (2014): Inclined to better understanding – The coordination of talk and 'leaning forward' in doing repair. In: *Journal of Pragmatics* 65, 30-45.
- Rossano, Federico (2012): Gaze in Conversation. In: Sidnell, Jack / Stivers, Tanya (eds.): *The handbook of conversation analysis*. Malden, MA: Wiley-Blackwell, 308-329.
- Roustan, Benjamin / Dohen, Marion (2010): Co-production of contrastive prosodic focus and manual gestures: temporal coordination and effects on the acoustic and articulatory correlates of focus. In: *Proceedings of Speech Prosody 2010*. Chicago, USA.
- de Ruiter, Jan P. et al. (2012): The Interplay Between Gesture and Speech in the Production of Referring Expressions: Investigating the Tradeoff Hypothesis. In: *Topics in Cognitive Science* 4/2, 232-248.
- Rusiewicz et al. (2014): Effects of perturbation and prosody on the coordination of speech and gesture. In: *Speech Communication* 57, 283-300.
- Schegloff, Emanuel (1996): Confirming Allusions. In: *American Journal of Sociology* 102, 161-216.
- Schleicher et al. (2008): Blinks and saccades as indicators of fatigue in sleepiness warnings: looking tired?. In: *Ergonomics* 51, 982-1010.
- Schmidt, Axel (2016): Am Rande der Praktik – Körperliche Eigendynamiken und ihre Funktionalisierung am Beispiel von Reality-TV. In: Deppermann, Arnulf / Feilke, Helmuth / Linke, Angelika (eds.): *Sprachliche und kommunikative Praktiken*, Berlin, Boston: De Gruyter, 205-228.
- Selting, Margret et al. (2009): Gesprächsanalytisches Transkriptionssystem 2 (GAT2). In: *Gesprächsforschung* 10, 353-390.

- Siyavoshi, (2019): The Expression of Modality in Iranian Sign Language (ZEI). Dissertation (Universtiy of New Mexico).
- Skedsmo, Kristian (2020a): Multiple Other-Initiations of Repair in Norwegian Sign Language. In: *Open Linguistics* 6/1, 532-566.
- Skedsmo, Kristian (2020b): Other-Initiations of Repair in Norwegian Sign Language. In: *Social Interaction. Video-Based Studies of Human Sociality* 3/2.
- Spencer-Oatey, Helen (2008): Face, (im)politeness and rapport. In: Spencer-Oatey, Helen (ed.): *Culturally Speaking. Culture, Communication and Politeness Theory*. Second Edition. London, New York: Continuum International Publishing Group, 11-47.
- Stern et al. (1984): The endogenous eyeblink. In: *Psychophysiology* 21/1, 22-33.
- Stolle, Sarah / Pfeiffer, Martin (in prep.): Stand-alone facial gestures as other-initiations of repair. In: *Social Interaction. Video-Based Studies of Human Sociality*.
- Stukenbrock, Anja (2019): Mobile dual eye-tracking in face-to-face interaction. The case of deixis and joint attention. In: Brône, Geert et al. (eds.): *Eye Tracking in Interaction. Studies on the Role of Eye Gaze in Dialogue*. Amsterdam: Benjamins, 265-301.
- Sutton, Valerie (2010): *The SignWriting Alphabet. Read and Write any Sign Language in the World*. ISWA Manual 2010. The SignWriting Press.
- Swerts, Marc / Kraemer, Emiel (2010): Visual prosody of newsreaders: Effects of information structure, emotional content and intended audience on facial expressions. In: *Journal of Phonetics* 38/2, 197-206.
- Tao, Fei / Busso, Carlos (2014): Lipreading approach for isolated digits recognition under whisper and neutral speech. In: *Proc. ISCA INTERSPEECH*, Singapore, Sep. 2014, 1154-1158.
- Vincze, Laura / Poggi Isabella (2011a): Communicative functions of eye closing behaviours. In: Esposito, Anna et al. (eds.): *Analysis of Verbal and Nonverbal Communication and Enactment. The Processing Issues*. Berlin, Heidelberg: Springer, 393-405.
- Vincze, Laura / Poggi Isabella (2011b): Close your eyes and communicate. In: Paggio Patrizia et al. (eds.): *Proceedings of the 3rd Nordic symposium on multimodal communication*. NEALT proceedings series 15, 62-71.
- Wierzbicka, Anna (2000): The Semantics of Human Facial Expressions. In: *Pragmatics & Cognition* 8/1, 147-183.
- Żygis, Marzena / Fuchs, Susanne / Stoltmann, Katarzyna (2017): Orofacial expressions in German questions and statements in voiced and whispered speech. In: *Journal of Multimodal Communication Studies* 4, 87-92.

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