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Head pointing in German interactions: On the usage profile of a practically embedded gesture

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English abstract
Although it is widely assumed that speakers point with their head when their hands are manually restricted and therefore unavailable, there is only little research on practically embedded pointing gestures. This study provides a first systematic account of how participants use head pointing in everyday practical contexts. It draws on video data from naturally occurring interactions in German coming from the corpus FOLK. Based on a collection of 57 cases, it becomes clear that head pointing predominantly occurs in a specific interactional environment: The pointing participant is involved in a manual task and uses the head gesture to simultaneously advance a practical action. Detailed case analyses reveal that the usage profile of head pointing is closely fitted to its praxeological context. Because the practical activity provides for a shared referential background, participants can use their head to manage manual tasks with great precision using only minimal means. The study contributes to a better understanding of phenomena at the intersection of communicative gesture and manual actions.

Keywords: non-manual pointing gestures – head gestures – practical activities – affordances.

German abstract
Obwohl die Annahme weit verbreitet ist, dass Sprecher:innen vor allem dann mit dem Kopf zeigen, wenn ihre Hände praktisch eingebunden und daher nicht verfügbar sind, gibt es bislang kaum Forschung zu praktisch eingebetteten Zeigegesten. Diese Studie liefert eine erste systematische Untersuchung davon, wie Teilnehmer:innen Kopf-Zeigegesten in alltäglichen praktischen Kontexten nutzen. Sie basiert auf Videodaten natürlicher Interaktionen im Deutschen aus dem Korpus FOLK. Auf Basis einer Kollektion von 57 Fällen wird deutlich, dass das Zeigen mit dem Kopf vorwiegend in einer bestimmten interaktionalen Umgebung auftritt: Die zeigende Person ist in eine manuelle Tätigkeit eingebunden und nutzt die Kopfgeste, um simultan eine praktische Handlung voranzutreiben. Detaillierte Fallanalysen zeigen auf, dass das Nutzungsprofil von Kopf-Zeigegesten eng auf ihren praxeologischen Kontext abgestimmt ist. Da die praktische Aktivität einen gemeinsamen referenziellen Hintergrund bietet, können Teilnehmende mit ihrem Kopf manuelle Aufgaben mit hoher Präzision und zugleich minimalem Aufwand steuern. Die Studie trägt zu einem besseren Verständnis von Phänomenen an der Schnittstelle zwischen kommunikativer Gestik und manuellen Tätigkeiten bei.

Keywords: Nicht-manuelle Zeigegesten – Kopfgesten – Praktische Aktivitäten – Affordanzen.

1. Introduction

> It is well known that speakers use their heads to point when their hands and arms are full. We have all casually observed people jutting out their chins, tilting their heads or turning them to indicate specific directions (McClave et al. 2007:367).

Although claimed to be an everyday sight, moments in which speakers point with their head have rarely been described on empirical grounds. This is surprising, given that research on pointing gestures has been carried out for a long time and continues to provide valuable and detailed insights into the functionality of this deictic gesture. McClave et al. (2007), among others (Cooperrider et al. 2018; Li/Cao 2019), claim, but never convincingly show, that speakers use head pointing primarily to compensate for the restriction of their hands. This study aims to shed more empirical light on this phenomenon and provides a first systematic account on head pointing as it is used in practical contexts.

Formal variation in pointing has been attributed to a number of linguistic, pragmatic and socio-cultural factors (Calbris 1990; Cooperrider 2015; Haviland 2000; Jarmołowicz-Nowikow 2014; Kendon 2004; Kendon/Versante 2003; Kita/Essegbey 2001; Wilkins 2003). The hand formation of a pointing gesture, for example, can be influenced by certain properties of the pointing's target (Fricke 2007; Haviland 2003; Jarmołowicz-Nowikow 2014; Kendon 2004; Kendon/Versante 2003; Le Guen 2011; Stukenbrock 2015), its status within discourse (Bavelas et al. 2011; Enfield et al. 2007; McNeill et al. 1993) and its function for the task at hand (De Stefani/Deppermann 2021; Goodwin 2003a, 2007; Kendon/Versante 2003; Mondada 2012, 2014a, 2014b; Streeck 2009). Another contextual factor that has been rarely studied is the (un)availability of the gesturing body itself: When the hands are preoccupied, speakers require other ways to implement 'pointing' for their current communicative needs. But how is this is done with respect to what they and others are currently *doing*?

Gestures are produced embedded in what interlocutors are currently doing, which includes numerous practical tasks that arise in their everyday and professional life (Goodwin 2003a; Heath/Luff 1992; Streeck 2009, 2017). Accordingly, from an ethnomethodological perspective (Garfinkel 1967), analysts should pay attention to the practical engagement of interlocutors when studying gesture as a means of communication. Only by recognizing the praxeological context in which

participants act is it possible to identify what is truly relevant to them and their local, interactional goals. From this viewpoint, head pointing provides an ideal example for studying practically embedded gestures and their role in social interaction.

Practical activities such as cooking, renovation work or medical care constrain the use of the acting body for communicative means. At the same time, those activities provide a shared contextual background for the participants involved against which gestural behavior can be interpreted. Both aspects shape the usage profile of head pointing, as the following analysis will demonstrate. Data from German interactions during practical activities show that speakers primarily point with their head to progress local, manual activities under specific praxeological and interactional conditions. Head pointing is specialized for ecologies in which (a) the practical activity provides for a high degree of joint pre-orientation between Self and Other and (b) the affordances of the gesturer's practical task promote the use of the head over other articulators. The gesture is thus reflexively shaped by its practical context: It incorporates a double-orientation towards both the local engagement of the gesturer and that of their addressee. Accordingly, speakers orient themselves less to the progression of talk and more to the course of the unfolding practical action when they point with their head. In some cases, the usage profile of practically embedded head pointing also applies to cases in which the hands are unoccupied.

2. Theoretical background

2.1. Head pointing and related phenomena

How a pointing gesture is realized in detail depends on a number of contextual factors. As a prototypical deictic device, the main purpose of pointing is to direct the attention of others towards a target (e.g. an object, a direction, a location) by projecting a vector into the surrounding space (Kita 2003:1). Speakers can point not only with their hands, but also with other body parts such as the eyes, head, elbow or foot (Fricke 2007; Kendon 2004; Kendon/Versante 2003; Kita 2003; McNeill 1992; among others). However, most research on formal variation in pointing has focused on differences in the hand formation of manual pointing gestures, while non-manual pointing with other articulators has received far less attention.

Because of its indexical nature, the implementation of a pointing gesture is always dependent on its local context to some extent: The direction of the pointing depends on the position of the target in relation to the pointer and its communicative success relies on its visibility for the addressee and their responsive behavior. This recipient sensitivity is especially visible in cases in which the articulation of the pointing is extended through a hold, either because the addressee has not yet shifted their gaze towards the target (Stukenbrock 2015, 2020) or their response is deemed insufficient for other reasons (Schubert 2024). Properties of the target referent (e.g. their proximity and relation to other referents in the area of scrutiny) and the communicative situation (e.g. visibility restrictions or the spatial configuration between speaker and addressee) additionally influence the shape of pointing and add to the complexity of its morphology in its concrete context of use (Enfield et al. 2007; Fricke 2007, 2014; Hassemer/McCleary 2018; Haviland 2000; Kendon

2004; Kendon/Versante 2003; McNeill 1992; Ozyurek 2000, 2002). Deictic head gestures are found widespread across languages and cultures, but they are often described as part of more complex configurations in which several deictic markers are involved. Outside of these compositional gestures, there is little known about the function and usage profile of head pointing *proper*.

First of all, a main characteristic of head pointing is its particular morphology: The directive movement of the head generates a rather broad deictic vector in comparison to e.g. an index finger. Although this might suggest that head pointing is less effective as a deictic device, experimental research has not found a clear advantage of manual pointing gestures over pointing with the eyes or the head when testing the responsiveness of addressees (Butterworth/Itakura 2000). Stukenbrock, who studies various pointing formats used in German interactions, describes head pointing to be a more vague deictic gesture as well, while ascribing gaze pointing a much more precise deictic vector that enables a highly accurate indication of the target (2015:195).[1] Issues of referential preciseness have been discussed intensively in research on manual pointing gestures. A main distinction that might also be relevant for head pointing is that between pointings that indicate new vs. known referents. Thumb pointing, for example, is used when "it is not important to establish the precise location or identity of what is pointed at" (Kendon/Versante 2003:14) because either the referent has been previously established or it is already known to the addressee, so that identification is no longer an issue. Alongside Stukenbrock (2015:171-173), Galhano-Rodrigues (2012) finds a similarity between thumb pointing and head pointing in this regard: She observes for one speaker of Portuguese, that the head and shoulders are only used for pointing when the referent is already salient. Because head pointing requires less communicative effort, its use could reflect the minimized or downgraded status of the respective target (Galhano-Rodrigues 2012:154). Similarly, Calbris argues that head pointing is a more economical substitute for pointing with the hand and could therefore be perceived as impolite (1990:128). In manual gestures, minimized and reduced versions of pointing have been described as well (e.g. so-called *S-points* in Laos, Enfield et al. 2007). In contrast to pointings that are done in a clear and extended way (*B-points*), these smaller and more subtle gestures occur when the pointing adopts a background status because of referential insecurity (Enfield et al. 2007:1723-1724). Social reasons for using a subtle way of pointing have also been reported in an experimental study eliciting pointing gestures at other, co-present participants (Jarmołowicz-Nowikow 2014). Here, speakers of Polish presumably orient to the social taboo of pointing at people by producing more deictic gestures with the gaze and head rather than with their hands. Pointing with the head also proves useful when addressing a collective group of people, when a more precise deictic vector that selects a single person could be socially problematic (Stukenbrock 2015:175-176). Head pointing is also used in narrative contexts: According to semi-experimental studies on dyadic conversations, speakers can use the head to point out abstract referents in space (McClave 2000; McClave et al. 2007).

Head pointing is often described as a part of more complex configurations of

[1] However, she notes that a clear-cut distinction between head and gaze pointing is not always possible (Stukenbrock 2015:192-194). For a more detailed commentary on this distinction, see section 3 "Data and methods" (note 6).

manual and non-manual pointing. Haviland (2000) shows that speakers of Zinacantec Tzotzil sometimes employ manual pointing gestures that are preceded by a corresponding head pointing when they locate non-present referents such as distant locations. Deictic head movements are also a component of lip-pointing and nose-pointing: Those complex non-manual gestures are used primarily in South-American, African and Asian-Pacific communities (Cooperrider et al. 2018; Cooperrider/Núñez 2012; Enfield 2001; Li/Cao 2019; Sherzer 1973; Wilkins 2003). Lip-pointing is done by turning and raising the head in the direction of the target while opening the mouth and protruding one or both lips, occasionally with raised eyebrows, before the head is moved back into its original position (Enfield 2001: 186-187; Sherzer 1983:169; Wilkins 2003:187). Enfield (2001:191-194) reports that lip-pointing is only used when the addressee is already looking at the speaker and that the gesture is regularly met with a gaze shift towards the target. This suggests that non-manual pointing requires a high degree of pre-orientation from the recipient in order to be noticed. Similarly, Stukenbrock finds that almost all of her cases of gaze pointing come from video data of a cooking show (2015:177), in which pointer and addressee usually stand closely together in a *side-by-side* arrangement. Based on his observations, Enfield argues that lip-pointing might be used when the target referent is presumed to be shared knowledge (2001:198). In his data, the gesture indicates referents in the physical surroundings that are explicitly verbalized[2] and focused in co-occurring speech (Enfield 2001:195-196). In Arrernte (a central Australian language) and Ewe (a Ghanaian language), lip-pointing is also used to point in a secretive fashion or when the hands cannot be used for social or practical reasons (Wilkins 2003:176). Nose-pointing is another complex pointing gesture that incorporates the head as a deictic device. It is used by speakers of Yupno (Papua New Guinea) and composed of an effortful scrunching of the face while the head is turned to a location. Cooperrider/Nunez (2012) claim that the deictic head movement functions independently and is imposed on the so-called s-action, which conveys a separate, diminutive meaning.

To summarize, prior research on head pointing and related phenomena suggests three characteristics:

1. Association with *backgrounded communication*: Due to their reduced morphology, head pointing could be used for communicatively backgrounded acts.
2. Association with *shared knowledge* and a *shared pre-orientation*: Several studies suggest that non-manual pointing gestures are used when the target referent is in some way known to the addressee and/or the addressee is pre-oriented to the pointing speaker.
3. Association with *concrete rather than abstract deixis*: With few exceptions (McClave 2000; McClave et al. 2007), non-manual pointing gestures indicate concrete targets in the physical space rather than targets that represent abstract concepts (for *abstract* and *concrete deixis* see: McNeill 1992; McNeill et al. 1993).

[2] This means that the verbalized *lexical affiliate* (Schegloff 1984) does not stand as a proxy for the intended referent, but is identical to it (for possible relationships between a pointing's target and referent, see also: Fricke 2007; Stukenbrock 2015).

One objective of the current study is to investigate whether these characteristics can be found in head pointing *proper* in data of naturally occurring German interactions. A second interest lies in the relation between head pointing and the practical context in which the gesture emerges, which will be elaborated in the following.

2.2. Pointing during practical activities

As mentioned, it is a widespread claim that head pointing is a compensatory solution to the problem that the primary articulators, the hands, are preoccupied (Cooperrider et al. 2018:10; Li/Cao 2019:7; McClave et al. 2007:352, 367). Already Calbris (1990:128) notes that head pointing could be considered less rude if it is motivated by a restriction of the speaker's hands. Cooperrider et al. (2018) suggest that whether speakers regularly work with their hands could be relevant to their pointing repertoire in general: After testing for preferences between head pointing, nose-pointing and manual pointing gestures, they found that speakers of Yupno use non-manual pointing gestures much more frequently than speakers of American English. This preference has been attributed to cultural reasons: Non-manual pointing could be more prominent in communities where the hands are commonly engaged in practical activities (Cooperrider et al. 2018:1384). A similar claim is made in a study comparing pointing gestures of Chinese farmers and herders, whose everyday work requires differing amounts of manual labor (Li/Cao 2019). In a study conducted by Stukenbrock (2015), several cases in which the host of a cooking show coordinates non-manual pointing gestures with a practical cooking task are discussed. In these situations, she points with her gaze without checking the response of the addressee (which is usually done with a monitoring phase), so that her attention is only briefly averted from the actions of her hands (2015:189). This provides first empirical evidence of speakers pointing with a non-manual articulator while performing practical actions. However, the cases presented come from a very limited set of settings and speakers[3] and the practical engagement of the gesturer is noted, but not analysed further.[4]

To summarize, despite the prominence of the idea that head pointing compensates for the restriction of the hands, studies on non-manual pointing are most often based on conversational data that primarily promote verbal interaction rather than practical activities (but see Stukenbrock 2015). The embeddedness of head pointing in the context of practical activities is therefore an interesting, but largely unexplored phenomenon that lends itself to a more comprehensive and systematic empirical investigation. To this end, the current study deliberately uses data from interactions in which practical activities provide the main framework for social interaction. This enables analysts to observe if and how the speaker's engagement in a practical task influences the use of head pointing. By looking at the praxeological context in which participants interact, this study explores how head pointing is organized in respect to what Self and Others are currently *doing*.

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[3] The cases of non-manual pointing gestures coordinated with practical actions predominantly occur in cooking tv show data (Stukenbrock 2015:177) and the gestures presented are almost exclusively produced by a single speaker, the host of the show.

[4] Instead, the analysis of Stukenbrock (2015) concentrates on the exact execution of the pointing gesture (including preparatory and subsequent monitoring phases) and on its deictic function in connection with co-occurring talk.

Pointing provides a valuable communicative tool for progressing verbal as well as embodied interaction. In the context of practical activities, pointing gestures are regularly used to direct and manage the actions of others: As part of recruitments, pointing mobilizes the help of others in order to progress practical actions (Floyd et al. 2020). According to Rossi, pointing gestures are also produced without speech to request the transfer of an object or the execution of a task at a specific location (2014:309). During driving lessons, they help to instruct the driver by indicating locations and specifying directions in the physical environment (Deppermann 2018; De Stefani 2018; De Stefani/Deppermann 2021). Pointings can also implement responding actions that, for example, indicate the location of a requested object (Clark 2012:92). Goodwin (2003a), looking at manual pointing as a communicative device used in and for naturally occurring interaction, has emphasized the context-sensitivity of the gesture and its embeddedness within the local ecology of participant's actions. He demonstrates how participants use pointing as part of their sense-making strategy at an archeological site. The gesture helps communicate their way of professional seeing within the site's physical environment to others. As such, it can adopt features of the environment and integrate iconic and spatial-deictic meaning at the same time, leading to a layering of referential information in one and the same gesture (see also Fricke 2014; Hassemer/McCleary 2018; Heath 1992). The shape of a pointing hand can also provide information about how the target *features* for the current task at hand (Streeck 2009), e.g., whether it is to be understood as an object to be manipulated or as a tool for a manual task.

3. Data and methods

The data basis for this study consists of video-recordings of naturally occurring interactions in German coming from the corpus FOLK[5] (version 2.22; Schmidt 2014). In order to examine praxeological constraints of head pointing, 19 recordings of interactions centered around practical activities (emergency training, room renovation, cooking dinner, medical pedicure) were selected from the corpus. This amounts to 9 hours and 32 minutes of video data coming from dyadic, triadic and multi-party conversations. All data were examined for instances of head-pointing and coded in ELAN (version 6.3; Wittenburg et al. 2006) according to the following inclusion criteria: The participant changes the position of their head with a clear, directional movement and with a higher velocity than before. Also, if the change in position is only minimal, but is accompanied by a prominent change of gaze orientation in the same direction, this was regarded a case of head pointing as well.[6]

[5] The corpus FOLK is accessible via the Database of Spoken German (DGD) http://dgd.ids-mannheim.de

[6] For the purposes of this study, a distinct movement of the head was seen as primary indicator for head pointing, because eye gaze movements were not always discernable in the video data. However, there is an ongoing discussion about the relationship between head and gaze orientation in the context of pointing: Stukenbrock demonstrates that a clear-cut distinction between gaze pointing and head pointing can be difficult (2015:192-194), which is why more often, authors do not categorize their data along these lines (e.g. Cooperrider/Núñez 2012; Haviland 2000, 2003; Jarmołowicz-Nowikow 2014; Li/Cao 2019; McClave 2000; McClave et al. 2007; among others). There is also disagreement regarding the deictic quality of both resources: Enfield (2001)

Cases in which head pointing was temporally coordinated with other, manual pointing gestures were excluded. As a result, the collection encompasses both pointings that lead to a change in face orientation (turning the head to the side or, e.g. with a body torque, behind) as well as cases with stable face orientation (forward-movements with the neck, upwards movements with the chin, horizontal shifts). Movements that bring the head back to its starting position were observed quite frequently, but were not deemed obligatory. In sum, 57 cases of head pointing were found.

Qualitative analyses focused on the contextual configurations of head pointing, in particular the participation framework and the practical activities the participants are engaged in. The main dimension of interest was the role of the gesture for the actions of Self (the gesturer) and Others (the addressee(s)). Sequential analyses were conducted to identify recurring action environments. The verbal and embodied conduct of interlocutors before and after the gesture occurs was coded in ELAN. Gesture phases (preparation, stroke and retraction) were coded according to the frame-by-frame method proposed by Seyfeddinipur (2006). Also, all co-occurring speech was segmented into TCUs and transcribed according to GAT2 (basic transcription level, see Selting et al. 2009) and the conventions for multimodal transcription (Mondada 2018, 2022) (see Appendix II). This allowed a fine-grained analysis of the temporal coordination of the gesture with co-occurring speech and other embodied behaviors. The cases presented in the following analysis demonstrate the main findings and represent the composition of the collection as a whole.

4. Analysis: The usage profile of head pointing

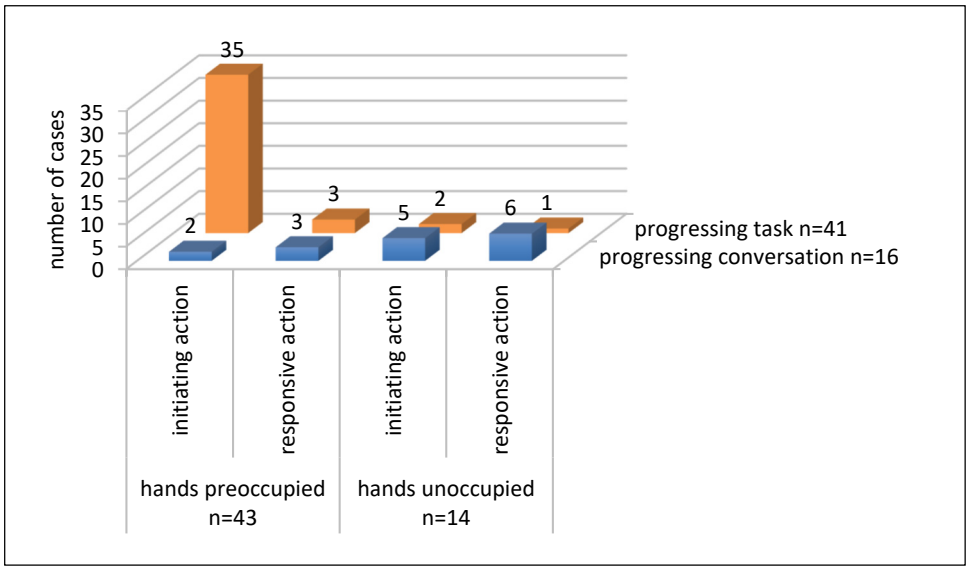
Graph 1 provides an overview of the interactional environment in which head pointing occurs in the data. In most cases (n=43, 75.4%), both of the gesturer's hands are preoccupied with a manual activity,[7] whereas in only 14 cases (24.6%), head pointing is produced while at least one hand is unoccupied. This speaks for a strong association of the gesture with moments in which speakers are engaged in practical activities requiring the mobilization of their body. And it confirms the widespread claim that head pointing is most often used when the hands are preoccupied. Regarding the social actions that are carried out through co-occurring speech, it becomes clear that speakers mainly use the gesture in coordination with first, initiating actions that call for a response: Participants point with their head while they direct and delegate others, suggest a specific way of doing something, ask questions and announce their upcoming actions (n=44, 77.2%). Responsive actions, such as answers to prior questions, are found less frequently (n=13, 22.8%).

With head pointing, speakers primarily progress the practical activity in which they and others are currently engaged in (n=41, 71.9%) rather than contribute to the on-going conversation without any relation to practical matters (n=16, 28.0%). So, the primordial site of head pointing are moments in which a speaker is currently

argues that head movements primarily serve to signal the communicative relevance of the direction of gaze, while other empirical findings (e.g. Cooperrider/Núñez 2012:124) speak against the idea that gaze alone has a deictic function.

[7] This manual activity usually consists in the manipulation of objects, but occasionally participants also hold other people's bodies (especially in the emergency training setting). In two cases, participants cannot use their hands because they are supporting their own body posture.

engaged in a manual task that requires the use of both hands and in which they implement an initiating action that progresses a practical activity. The following analysis will focus on this primary environment of head pointing.



Graph 1: Frequency of head pointing across different contextual features. [8]

While one could argue now that the frequent use of the gesture in this environment is only a matter of availability of bodily resources, the following case analyses will show that there is more to the functionality of head pointing. After all, there is still a significant number of cases (n=14) in which speakers could use manual pointing gestures instead. I argue that in these moments of articulatory freedom, head pointing still carries features that are characteristic to the practically embedded use of the gesture. First, I will present the specific ways in which head pointing is used by participants to assign, launch and adapt practical tasks of others and how the gesture's morphology is tightly fitted to the requirements of these communicative functions. Then, I will shortly discuss two cases in which there are no manual restrictions on the speaker's hands.

4.1. Head pointing while the hands are preoccupied

Across the collection, head pointing occurs in moments with recurring contextual configurations that are rooted in the praxeological engagement and shared orientation of the participants:

[8] The collection comprises a variety of interactional contexts, with practical and/or conversational activities being at the foreground of the interaction when the head pointing occurs. The local action priority is often changed dynamically and in some cases, participants are also involved in multiple activities at once (Haddington et al. 2014). In the graph, "progressing task" refers to cases in which the co-occurring social action of the pointing speaker is produced to progress a practical activity, irrespective of whether it was on-going before or not. By contrast, "progressing conversation" refers to cases in which the co-occurring action progresses a verbal interaction that does not relate to a practical activity in any way.

1. Self is involved in a manual task. While the head pointing is produced, this manual task *continues simultaneously*.
2. Self and Other are *in close proximity to each other*. Even when Other is a short distance away, Self is in their visual field.
3. The pointing's target is *an object or a location within the immediate vicinity of the interaction,* so that it can be reached directly or with a short movement. In three cases, the target is not directly perceivable, but instead located in another room next door or at a more distant target location.

With their accompanying verbal turn, speakers implement different social actions that all aim at managing the execution of a practical task that is relevant in the here-and-now. I found no instances in which distant compliance (Stevanovic 2015) is expected or given. The practical task is to be carried out by the addressee alone or by both Self and Other in a cooperative fashion. In some cases, speakers announce their own next action or step in an action and thereby provide a slot for interventions from others. A main advantage of head pointing over manual pointing is the fact that it allows to continue with whatever the hands are currently doing. In almost none of the cases analyzed did pointing with the head lead to an interruption of the 'other', manual engagement. Only few exceptions occur, for example, when the pointing involves a wide rotation of the upper body (*body torque*, see Schegloff 1998). But usually, speakers manage to distribute their embodied resources so that they can attend to multiple tasks at the same time (Haddington et al. 2014; Deppermann 2014).

4.1.1. Managing others in time-sensitive situations

This simultaneous mode of multi-activity is possible because those separate tasks have different affordances (Gibson 1977; Hutchby 2001), such as in Extract 1[9]. During a training session for emergency responders, a team of three (NH1, NH4, NH11) simulate the treatment of a patient (NH7) who has been involved in a car accident. Because they suspect an injury of the spine, NH1 keeps the head of the patient stable with his hands while his colleagues prepare to stabilize the neck with a stifneck.[10]

Ex. 1 "now you can unpack oxygen masks"
[FOLK_E_00138_SE_01_T_01 / c414-c422 / (00:04:59 – 00:05:07)][11]

```
01          (0.2)
     nh11   >>holds stifneck->
02   NH1    [jetzt den STIFne]ck dran?
             now attach the stifneck
03   NH4    [s:o;            ]
             PTCL
```

[9] The data that support the findings of this study are openly available in the Database for Spoken German (after registration at https://dgd.ids-mannheim.de/dgd/pragdb.dgd_extern.registration). For all cases discussed here in detail, direct links to the transcripts and video clips are provided. The full collection list can also be accessed (see Appendix I).

[10] In the following, all movements are described from the perspective of the participant.

[11] https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00138_SE_01_T_01_DF_01&cID=c418&wID=&textSize=600&contextSize=6&startTime=301.456

```
04          (0.3)$(0.2)
      nh4         $grabs stifneck from NH11->
05    NH7   ((moans))
06            %$#(0.3)              *(0.1)
      nh11  ->%lets go and retracts hand to body--------------->
      nh4   -->$holds stifneck over neck, adjusts size-------->
      nh1   >>head oriented to center*turns head to the right->
      Fig.      #1.1
```

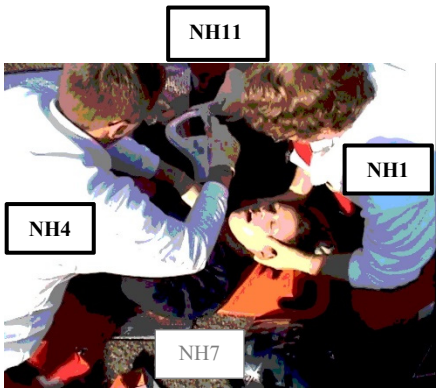
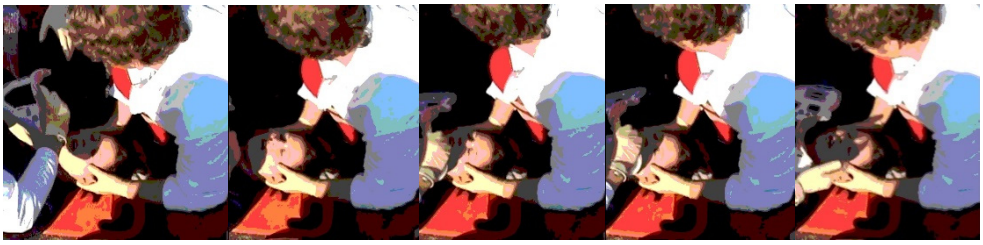


Figure 1.1: Transfer of stifneck from NH4 to NH11 while NH1 holds patient's head.

```
07    NH1   #so jetz #ka*nnst du mal #*SAUer*st#offmas#*%ken auspacken- %
            PTCL now you can unpack oxygen masks
      nh1   ---------->*nods downward*hold-*turns back*
      Fig.  #1.2    #1.3          #1.4     #1.5   #1.6
      nh11  ------------------------------------------>%turns foot left%
```



Sequence of Fig. 1.2, 1.3 (head turn), 1.4 (downward nod), and 1.5, 1.6 (head turn back to center).

```
08          %(0.3)#(0.8)      %(1.3)       %
      nh11  %moves arm forward%opens zipper%
      Fig.        #1.7
09          (1.2)
```

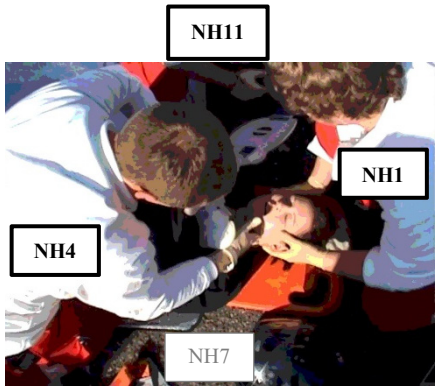


Figure 1.7: NH11 moves right arm forward in response.

After NH1's instruction (l. 02), NH4 takes over the stifneck from NH11, who has been holding it nearby and ready for transfer. As soon as NH11 releases the object, NH1 turns his head towards the area where he sits (turn to the right, Fig. 1.2-1.3) and produces a downwards head nod (Fig. 1.4) while saying "now you can unpack oxygen masks" (l. 07). The declarative turn design with the modal verb *können* is a recurrent format for instructions in German (Deppermann 2018; Gubina 2022).[12] NH11 reacts quickly: He changes the position of his foot so that his body orients to the target area (end of l. 07, Fig. 1.7) and then opens the zipper (hearable, l. 08) of the bag in which oxygen masks are kept. The recognizability of the instruction is secured early through the production of the temporal adverb "now" (which marks the immediate relevancy of compliance) and the modal verb ("you can") in coordination with a head pointing to a target in the control area of NH11. In addition, earlier, when NH11 went to get the stifneck, NH1 asked him to bring along the oxygen masks as well.[13] So NH11 has already taken up responsibility for the 'oxygen task', which further raises his awareness for the equipment next to him. NH11 initiates his response early (Deppermann/Schmidt 2021), which gives also evidence of his preparedness. The moment in which NH1 instructs NH11 is also fitted to his spatial and temporal availability, so that his disengagement from the object transfer is immediately followed by a next task to be carried out.

The head pointing allows for an efficient use of time in a complex, collaborative environment in which the execution of individual actions must be closely coordinated. The prior practical engagements of both NH1 and NH11 are relevant for the execution and recognizability of the head pointing as a short, directive signal. NH1's primary duty is to secure the stability of the patient's head in order to prevent further damage – a task of high priority, as the patient's well-being is the main focus of their joint activity. He needs to attend to this as long as it is necessary, and this generates a time span in which he manages the actions of others with non-manual resources while still continuing with his primary engagement. In this case, moving the head allows for a minimal, quick signal towards medical equipment in the immediate surroundings of NH11. This is interpreted quickly because the group has a shared understanding of which tasks and which task-related tools typically become relevant when treating a patient. Also, due to NH11's prior engagement with the oxygen equipment, it is already salient to him at the time of the instruction. Therefore, the context of their practical activity provides for a rich referential basis on which the participants can draw when implementing and responding to head pointing.

4.1.2. Launching a prepared next action

As Ex. 1 has shown, head pointing is often used to assign next tasks that recipients can anticipate because of their activity-related knowledge, previous engagements and local, spatial configuration. In other cases, this pre-orientation gets established

[12] In this case, the word order (verb-subject-object), combined with the temporal adverb *jetzt*, indicates that it functions as an instruction rather than an action proposal which would allow for more freedom on the side of the recipient (Gubina 2022:290).

[13] This happened at (00:04:14): https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00138_SE_01_T_01_DF_01&cID=c352&wID=&textSize=200&contextSize=4&startTime=254.66

through interactional work directly before the head pointing. In Example 2, a mother (PC) and her daughter (DP) are cooking a meal together. While PC is standing at the stove and is stirring a béchamel sauce, her daughter stands next to her. Currently, they discuss that the mother's shopping bag with all her groceries was stolen.

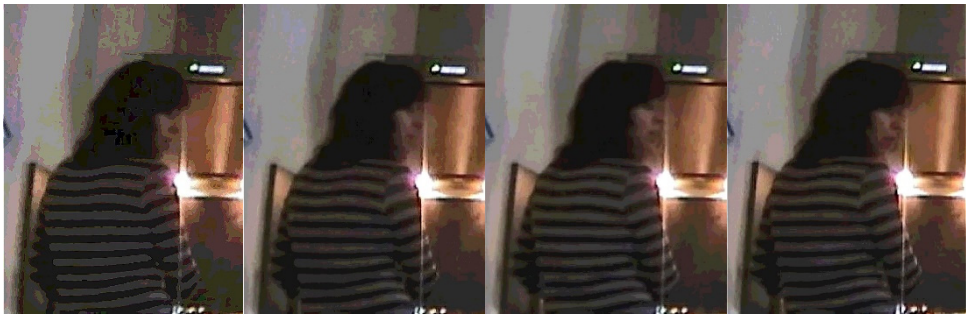
Ex. 2 "you can write down"
[FOLK_E_00327_SE_01_T_02 / c970 - c987 / (00:52:48 - 00:53:12)][14]

```
01          (0.6)
02    PC    war schon ÄRgerlich-
            was rather annoying
03          (1.7)
04    PC    °h (.) meine KLOsteine sind auch in der tüte gewesen-
            my toilet stones were in the bag too
05          mir fällt nach und nach ein was so alles geFEHLT hat;
            little by little I remember all that was missing
06    DP    (.) °h soll ich dis NICH mal aufschreiben;
            shouldn´t I write that down
07          (1.2)
08    PC    ja okay haNUta hatt *ich jetz einfach so %mitgenommen,
            yes alright I just took hanuta with me just like that
      pc                        *looks up to DP on her right---------->
      dp                                          %leans on counter->
09          (1.5)
      dp    ->crosses arms, turns to PC->
10    PC    abe:%r-
            but
      dp    --->%looks at PC->
```

Figure 2.1: PC stirs and looks at DP while DP leans on the kitchen counter.

```
11    PC    #*(0.2)#(0.2)#              *(0.2) du ka#*nnst AUFschreiben
                                                 you can write down
      pc     *raises chin over shoulder*lowers chin-*
      Fig.  #2.1   #2.2  #2.3                      #2.4
            wenn du $magst;
            if you want
      dp            $looks to corner of the room, walks over->(until l.16)
```

[14] https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00327_SE_01_T_02_DF_01&cID=c979&wID=&textSize=300&contextSize=10&startTime=3183.894



Sequence of Fig. 2.1, 2.2, 2.3 (chin raise over right shoulder) and 2.4 (chin lowered again).

```
12   PC    äh#:m *(.) ↑SÜSSstoffta*ble#tten:,
           uh sweetener tablets
     pc          *turns head back to stove*
     Fig.    #2.5                    #2.6
13         (1.0)
14   PC    oLI[venöl-]
           olive oil
15   DP       [nee ST]Evia;
              no stevia
16   PC    ja,%
           yes
     cp    -->%walks back to PC-->>
           (0.9)
17   PC    ich NEHM %dann schon des %richtige mit-
           I'll be sure to take the right one
     dp              %clicks with pen%
```

Figure 2.5: DP orients to the target area.

Figure 2.6: DP walks to the other side of the room.

DP offers to write down the groceries that are now missing (l. 06, "shouldn´t I write that down") using the German format *soll ich*, which indicates an offer to assist with a problem of the addressee (Gubina 2022:111-119). Although these problems are often of a practical nature, here, PC's trouble is a cognitive one: She is trying to remember her grocery list so that the missing items can be replaced eventually. DP's offer makes relevant an acceptance or rejection by PC, who has now raised her gaze to look at DP while continuing to stir the sauce. Instead of responding in a type-fitted way, she describes her thinking for buying a specific item in detail (l. 08). This could be interpreted as a first item of a list that her daughter is expected to note down, but if so, this is not transparent to DP, because she is now leaning at the kitchen counter with crossed arms (Fig. 2.1). At this moment, PC raises her chin across her right shoulder (Fig. 2.1-2.3) in order to point to the opposite side of the room. She lowers her chin again (Fig. 2.4) and then says "you can write down if you want" (l. 11), which both retrospectively accepts DP's offer and also launches

her embodied compliance: DP reorients to the area indexed by PC (the so-called *Suchraum* or "search area"; Stukenbrock 2015:272) (Fig. 2.5) and walks over (Fig. 2.6) to get something to write. The head pointing serves as a quick 'go signal' that mobilizes the addressee to carry out a jointly prepared and, thus, highly expectable practical task. PC continues with her grocery list (l. 12-14) and DP displays through her responses to individual items (l. 15 "no stevia") and by clicking with her pen (l. 17) that she now fully attends to this. The temporary misalignment between DP and PC is therefore resolved.

Similar to Ex. 1, the pointing speaker is engaged in a practical task that requires her continuous engagement, similar to other cases of gaze pointing in which the gesturer holds an object over a long stretch of time (Stukenbrock 2015:183-186). Before Ex. 2, DP actually asks her mother whether she needs to stir the sauce continuously, and she explains that this is necessary to prevent burning.[15] Both participants are therefore aware of the bodily restrictions imposed on PC, which might support a successful implementation of pointing with the head.

The preparatory work that builds up a shared understanding of what might come next can also be accomplished through embodied conduct alone. In Ex. 3, LH is washing up and, in parallel, engaged in conversation with her friend SP, while her partner RP is drying off cutlery. At some point, RP inspects a spoon more closely, which leads to a short interaction between him and LH that involves head pointing.

Ex. 3 "toss it in again"
[FOLK_E_00372_SE_01_T_01 / c1058-c1071 / (00:21:32 - 00:21:46)][16]

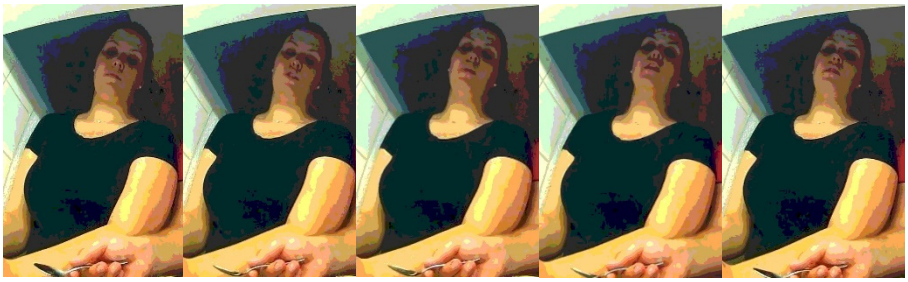
```
01          (0.6)
02    LH    kann i n_stück g ESse?
            can I eat a slice
03          (0.4)
04    LH    kriescht au a stück von MEIner;
            you also get a slice of mine
05          (0.4)
06    SP    %isch würd sage wir bestellen uns einfach DREI, %
            I'd say we'll just order three
      rp    %moves spoon under kitchen light and inspects it%
07          %(1.0)                                  %
      rp    %moves spoon forward above the sink%
08    SP    un:          #*(.) dann-
            and                then
      rp    %holds spoon in position---------->
      lh-hd >>looks at SP*looks down to spoon->
      Fig                #3.1
09          (0.4)
10    SP    &esst jeder wie er WILL?
            everyone eats whatever they like
      lh-bd &stops wiping bowl, lets water drip in sink-->
11          %(0.3)
      rp    ->%turns spoon back and forth->
```

[15] This happened at (00:51:33): https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00327_SE_01_T_02_DF_01&cID=c912&wID=&textSize=200&contextSize=3&startTime=3093.95

[16] https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00372_SE_01_T_01_DF_01&cID=c1065&wID=&textSize=400&contextSize=8&startTime=1298.304

Figure 3.1: RP holds the spoon closely above the sink
while LH cleans a bowl and looks at SP.

```
12   LH     #SCH#*MEISS #n noch          #*mal rin-#*
            toss it in again
     lh-hd       *stretches chin forward*back down*
     Fig.   #3.2#3.3    #3.4            #3.5      #3.6
13          %*&(0.4)#(0.2)%(1.3)                 %
     rp     %drops spoon--%holds towel on chest%
     lh-hd   *shifts head slightly, looks into sink->
     lh-bd    &wipes bowl in sink------------------->
     Fig.           #3.7
14   LH     mja, (.) was mit phillip ISST der irgendwas davon,
            yeah     what about phillip will he eat any of that
```



Sequence of Fig. 3.2 (look down at spoon), 3.3, 3.4 and 3.5 (chin forward), 3.6 (lowered).

Figure 3.7: RP lets the spoon fall into the sink and LH continues to clean the bowl.

While LH and SP discuss their pizza order, RP stops rubbing the spoon with his towel and holds it under the kitchen light to inspect it more closely. Then (l. 07), he moves the spoon close above the sink which is filled with dishwater. LH is wiping a bowl with a wet dishcloth and shifts her gaze from SP down to the spoon that has

been shifted directly into her task area (l. 08). RP's actions serve both as an embodied summons for the attention of LH and as a call to decide how to continue: Based on their division of labor for the joint project 'washing up' (she is cleaning kitchen utensils in the sink, he rubs them dry and sorts them), bringing the spoon back into the area of the sink is readable as a proposal for re-doing it, presumably, because there are still stains of dirt visible. However, RP respects LH's authority over the 'cleaning task' and does not interfere with her control area directly: He hovers and turns the spoon back and forth in her visual field, which allows her to evaluate its condition for herself. Because this orients to the permissibility of any further actions, RP's embodied conduct can be seen as an embodied request for permission. LH visibly stretches her chin forward (Fig. 3.3-3.5) and directs him to "toss it in again" (l. 12), with a short and concise imperative turn design: The spoon is referred to pronominally and the action "toss" is specified with the verb extension *rein* ("in"), a preposition that implicates the sink as the target location for the movement. As soon as the head pointing is completed, RP lets go of the spoon so that it falls into the sink (l. 13, Fig. 3.7) and LH resumes the topic of food (l. 14).

LH is involved in a conversational and a practical activity at the same time, a clear example of multi-activity (Haddington et al. 2014). With the head pointing and co-occurring speech, she temporarily suspends talking with SP in favor of recalibrating the joint project of 'washing up'. Within this practical project, we even see a short suspension of her concrete cleaning task: She stops wiping the bowl (l. 10) to fully attend to RP's issue instead, and continues once this issue is resolved (l. 13). This shows that different from the practical tasks before (Ex. 1 and Ex. 2), the process of cleaning utensils is much more flexible in regard to its temporality: There is no external time limit or continuous need for action, so that pausing the task doesn´t have any consequence for its success. Still, the dripping water (hearable from l. 10 onwards) poses a material constraint on using her hands as gestural articulators: Pointing with them runs the risk of spraying dishwater around and accidentally wetting other things or persons.

Regarding the participant's pre-orientation, the imperative format linguistically marks that the addressee is already oriented to the action to-be-carried-out and in a position to comply with it immediately (Bolden 2017; Vine 2009; Zinken/Deppermann 2017). On the embodied level, RP has gone through multiple preparatory steps in order to build a shared orientation to what might come next. Thus, he is maximally prepared and only requires a final 'go signal' to finally carry out the core action that he has made expectable through his embodied conduct. This signal is composed of a verbal turn that indicates, through its minimal design, shared Common Ground (Clark 1996) and a head pointing that serves as a quick, deictic marker within a jointly focused area of action.

4.1.3. Realigning individual action steps during collaborative tasks

In the examples shown so far, pointing is used in moments in which gesturer and addressee carry out separate tasks that, with the exception of Ex. 2, contribute individually to the overarching joint practical activity. The manual task that gets managed through head pointing can also be a collaborative action for which responsibility is shared among gesturer and addressee. Because these joint collaborative tasks require a close coordination of the trajectories of both participants, moments

in which those trajectories misalign can generate problems for joint progression. In these environments, head pointing offers a flexible resource that can be embedded within the on-going progression of a shared task - at particular moments in time - to realign individual action steps.

In Extract 4, the sisters PZ and TZ work together to paint a room. PZ is standing on a ladder to paint next to a window and TZ assists her by holding a tray with paint high up so that her sister can use it when needed. In parallel, PZ holds a window strap to keep it away from the wet paint. After expressing dissatisfaction with her progress (l. 01-03), she selects a new area to work on instead. Their following change of position leads to complications that get resolved with the help of head pointing.

Ex. 4 "set the thing on the window sill"
[FOLK_E_00217_SE_01_T_02 / c654 - c663 / (00:19:54 – 00:20:13)][17]

```
01   PZ     Egal;
            doesn´t matter
02   PZ     also des DECKT hier auf jeden fall nich gut;
            so this definitely doesn´t cover well here
03          <<p> des müss_ma nachher noch mal MAchen,>
            we will have to do that again later
04          (0.2)
05   PZ     °hh äh (.) +jetz komm ich runter      +un mach des HIER?
                uh       now I´ll come down and do this here
     pz-bd             +points to bottom of window+steps down ladder->
06          (.) un du %hebsch weiter FESCHT-
                and you keep on holding
     tz               %lowers tray to chest height->
07          (0.7)%(1.0)+(1.2)                                    +
     tz     ---->%
     pz-bd ---------->+steps in front of tray and grabs roller+
08          (0.8)+(0.8)
     pz-bd      +lifts handle to high angle-->
09   PZ     nimm ma nimm mal den #+pinsel %in die HAND,
            pick up PTCL- pick up PTCL the brush
     pz-bd ---------------------->+
     tz                                  %takes brush out of tray->
     Fig.                        #4.1
```

Figure 4.1: PZ lifts the roller handle (left hand) and asks TZ to remove the brush. In parallel, PZ holds the window strap (right hand).

[17] https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00217_SE_01_T_02_DF_01&cID=c658&wID=&textSize=200&contextSize=6&startTime=1206.098

```
10    PZ     wenn_s GEHT,
             if you can/possible
11    PZ     dann +kann ich nämlich%(0.2)+(0.1)*(0.1)
             then I can-
      tz     ---------------------->%
      pz-bd       +repositions roller----+
      pz-hd                                  *slight turn to window->
12    PZ     äh STELL#*mal_#s teil           #*$auf die  #*fensterbank.#
             uh set PTCL the thing             on the windowsill
      pz-hd -------->*stretches head to window*lowers head*
      tz-gz                                   $looks to window--------->>
      Fig.          #4.2  #4.3               #4.4        #4.5          #4.6
13           %(0.9)#(1.3)
      tz     %slowly places tray on windowsill------------------>
      pz      +follows tray with her roller and steps to window->
      Fig.         #4.7
```

Sequence of Fig. 4.2, 4.3 and 4.4 (stretches head forward to window) and 4.5 (head lowered again and TZ turns to window).

Figure 4.6: TZ has shifted her gaze to the lower window.

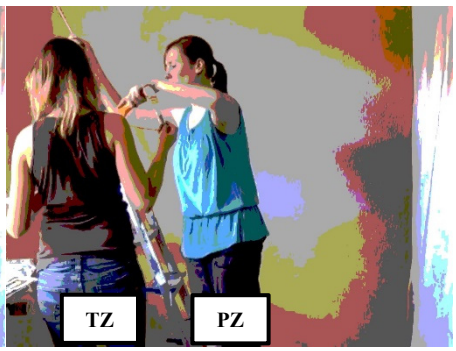


Figure 4.7: TZ moves tray to window sill and PZ follows with her paint roller.

```
14    PZ     <<creaky,p> so (.) dann kann ich %+jetz nämlich WEItermachen,>
                           PTK    because then I can continue now
      tz     ------------------------------->%lets go and steps back----->
      pz                                       +rolls in tray------------>>
15           (1.0)%
      tz     ---->%
```

While PZ steps down the ladder, TZ lowers the paint container, with a brush and paint roller in it, to the height of her chest (l. 06-07). After PZ has stepped in front of the tray and grabbed the roller in it (l. 07), this new spatial configuration proves to be impractical for several reasons: First, there is still a brush in the container which complicates its usage. So PZ asks TZ to remove it (l. 09) while lifting the roller's handle far up in order to make room for it (l. 08-09, Fig. 4.1). Then, she orients to another problem with the tray, its high up position: The way TZ holds it

only allows her to apply paint to the roller by holding her arm in an uncomfortable angle. Also, it is held in-between PZ and the wall which hinders her to reach the paint area (Fig. 4.1). To bring about a change of this position, she says "set the thing on the windowsill" (l. 12) and points to the window by stretching her head forwards (Fig. 4.2-4.5). Through its imperative design, the turn again starts with the verb that indicates the action to-be-done ("STELL"). The stroke of the pointing is coordinated with the object to be moved, "the thing"[18]. TZ responds immediately by shifting her gaze to the window (end of l. 12, Fig. 4.6) and complies by moving the paint tray slowly on the window sill to her left. PZ cautiously follows this movement with her paint roller inside the tray (l. 13-14, Fig. 4.7). When the tray is finally put down, PZ announces that she can continue now and starts rolling to apply paint again (l. 14-15).

The way TZ performs her part of the task creates problems for PZ, so that she uses an instruction in combination with a head point to prompt a reorganization of their physical-spatial configuration. Due to her current involvement in two manual tasks at once – holding the window strap with her right hand and applying paint to the roller with her left hand – the head is best suited to perform the job of pointing. Although the roller could technically also be used to point (on *object points* see Mondada 2014b: 142; Stukenbrock 2015:196) – and PZ does this in other moments of the interaction – the amount of paint on it might prevent her from doing so. Different from situations in which she uses painting tools as pointers, her sister is very close by now, which makes it especially important to avoid spilling paint. Also, because the tray and PZ's use of the roller is the focal area of their collaboration, TZ is oriented to it already and therefore can easily perceive and interpret the pointing gesture.

In the next extract, the misalignment during an on-going collaborative action gets resolved through head pointing alone and without any mobilization of speech. While the pasta is cooking on the stove, PC places a baking dish on the counter and pushes a plate with cheese to the side to make place in between.[19] At the start of the transcript, she recruits DP, who has mainly been involved in conversation, for the next cooking step by handing her over a bowl ("please hold", l. 01). DP raises the topic of her balcony again (l. 03) and their subsequent verbal interaction follows on from this. However, in parallel, they silently engage in a second, distinct interaction that focuses on the progression of their cooking task and involves a head pointing by PC.

---

[18] Here, using the pejorative term "the thing" to refer to the paint tray additionally renders it as a nuisance that needs to be taken care of. Interestingly, Stukenbrock (2015:178-180) discusses a case in which the target object of a gaze point, a cooking utensil, is referred to as "dieses Gerät" ("this device/gadget"), which conveys a connotative meaning (e.g. that it is a technically sophisticated tool) in a similar way. Although this was not observed in any more cases of the collection, a possible connection between head gestures and a stance display towards objects could be an interesting phenomenon to follow up on in future research.

[19] This happens at (00:37:00): https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00327_SE_01_T_02_DF_01&cID=c366&wID=&textSize=200&contextSize=4&startTime=2220.278

Ex. 5 "you have done it once again"
[FOLK_E_00327_SE_01_T_02 / c0380-c0393 / (00:37:30 - 00:37:50)][20]

```
01   PC    BITTe hal%tn?
           please hold
     dp-bd          %takes bowl from PC->
02         (0.8)
03   DP    °h aber mein balkon is %eigentlich ECHT %↑schön;
           but my balcony is actually really nice
     dp-bd ---------------------->%steps back------%rests bowl on hip->
04   PC    ja VIEL zu schön; h°
           yes far too nice
05         (1.2)
06   PC    schade dass du
           too bad you
07         (1.4)
08   PC    nicht viel von deinen %+BLUmen hast wenn du jetz nach
           don´t have much of your flowers now that you´re
     pc-bd                        +takes pot from stove-------->
     dp-bd ---------------------->%
     PC    lon%don ziehs[t-]+
           moving to London
09   DP                 [ d]+ie sind EH #%schon tot;#%
                          they are already dead anyway
     pc-bd ---------------->+turns around with pot-------->
     dp-bd    %two steps to counter------%turns to PC%
     Fig.                                #5.1        #5.2
```

Figure 5.1: DP orients to counter with bowl in hand.

Figure 5.2: PC turns around with pot in hands, DP is facing her.

```
10   PC    (.) *((sighs)) (.)              *
     pc-hd     *raises head and rolls eyes*
11   PC    *hast es #*WIEder   #*[mal geschafft;]#
            you have done it once again
12   DP                          [ich hab       ]#*mich SO         #*
                                  I have made such an
     pc-hd *to DP----*chin flick*turn to counter--*stretches forward*
     Fig.          #5.3       #5.4              #5.5              #5.6
     DP    *§bem#*ü%:ht;           #*
             effort
     pc-hd *retract*turns head to DP*+
     pc-bd ------------------------->+
     dp-gz  §looks to kitchen counter--------->>
     dp-bd         %places bowl on counter top->
     Fig.      #5.7               #5.8
```

[20] https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00327_SE_01_T_02_DF_01&cID=c387&wID=&textSize=200&contextSize=8&startTime=2259.456

```
13          (0.7)%*(1.0)
      dp    ---->%
      pc          *holds pot over bowl, pours noodles in->
14    PC    (mh;)
15          (0.7)
16    DP    ich WEISS nicht was ich falsch mach;
            I don´t know what I am doing wrong
17    DP    vielleicht SPÜRN die *schon dass [ich]
            maybe they feel already that I
18    PC                                     [((laughs, 0.4s))
      pc    ------------------->*
19    DP    (.) zu viele pflanzen getötet hab.
                have killed too many plants
```

Sequence of Fig. 5.3 and 5.4 (chin flick towards DP).

Sequence of Fig. 5.5 (head turn to counter), 5.6 (stretch forward) and 5.7 (neutral again).

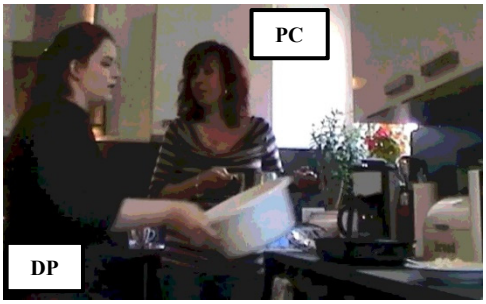


Figure 5.8: DP places bowl on counter top.

After DP has taken over the bowl, PC turns to the stove to take the pot (l. 08-09). DP first steps into the direction of the kitchen counter that has been prepared by her mother (Fig. 5.1), but then stops and turns back again to look at PC. At this point, PC has turned around again and stands facing her and with the pot of pasta in her hands (Fig. 5.2). DP says that her balcony plants have died off (l. 09). In what follows, PC attends to both their verbal interaction about the plants and to a practical problem: DP stands passively in the middle of the kitchen with the bowl in her hand while PC is already in the process of moving the pasta from one location to the next. On the verbal side, PC sighs and mocks her daughter's apparent lack of gardening

skills (rolling eyes and "you have done it once again", l. 10-11). On the embodied side, she first flicks her chin in the direction of her daughter's face (Fig. 5.3-5.4) and then turns (Fig. 5.5) and visibly stretches her head forward towards the kitchen counter (Fig. 5.6-5.7). DP's response runs on both levels of interaction as well: She continues to talk about gardening ("I have made such an effort", l. 12) and, at the same time, follows the head point with her gaze (end of l. 12, Fig. 5.7) and finally places the bowl in its designated position on the counter (Fig. 5.8). Now that this precondition for PC's trajectory has been fulfilled, she continues to move to the counter, holds the pot over the bowl and pours the pasta in (l. 13-18).

Again we see how the head pointing is used to realign the mismatched trajectories of two participants while they are involved in a collaborative, practical task. PC is in the middle of a manual action that does not allow for long delays, as the full pot is heavy and needs to be put down again soon. At the same time, DP, who has been recruited for assistance, meets all the requirements to carry out the next step: She has the object ready in her hand and can move freely towards the counter space. Their mutual orientation also enables PC to attend to subtle movements of her mother's face and head. Accordingly, she quickly recognizes her head movement as an embodied directive related to their current cooking activity. Despite the lack of verbal resources, this sequence of gestural instruction and embodied compliance is accomplished without any real disturbance. This could indicate strong and substantial interaction routines that mother and daughter can draw on to communicate with each other through minimal means.

To summarize, the usage profile of head pointing is closely linked to the practical engagement of Self and Others. On one hand, the use of the head as pointing articulator is a product of the temporal and material affordances (Gibson 1977; Hutchby 2001) of the speaker's current task. At the same time, the pointing gesture fulfills communicative needs that arise specifically because of this practical context: If one's own action takes a long period of time or otherwise restricts the use of the hands, participants still use what is available to them to advance the group's project(s). In parallel, they can assign next tasks (Ex. 1) or launch an expectable next action or action step (Ex. 2 and 3). Moreover, complex collaborative tasks may require an on-line management of the unfolding action trajectories. Ex. 4 and 5 show how speakers manage the prerequisites for their own progression with head pointing while they are still working on another action step. All this builds on constant monitoring of what needs to be done in the not-so-distant future and of who can take care of it. Head pointing provides for a communicative device that can be used effectively under these circumstances: With its particular morphology, it constitutes a quick, deictic and directive signal that can be picked up by others in close proximity and without disrupting whatever the gesturer's hands are currently doing. Ultimately, this enables speaker to make efficient use of time and resources of both Self and Others.

4.2. Head pointing while the hands are unoccupied

The following two examples give evidence that the usage profile of head pointing described so far is not exclusively bound to a practical restriction of the hands. Particular features of the gesture and its context of use can be found in moments of free articulation as well: Gesturer and addressee have a shared understanding of

relevant next action steps and the gesture is preferred for indicating referents that are easily recognizable to recipients.

First, Ex. 6 shows the use of head pointing in an environment comparable to the primary, practically embedded context presented above. Similarly, the head gesture is used to manage an upcoming practical task of the addressee and builds on a shared understanding of what might become relevant as a next action. During another emergency training, NH5 and NH6 take care of a patient (NH3) who has trouble breathing. NH6 has been in charge of a medical monitor on a table to report on vital signs of the patient before (heart rate, oxygen saturation).[21] Just before the excerpt, NH5 instructs her to call and check for the emergency doctor again. After this call has ended (XM simulates to receive and answer the call, l. 02-09, and NH6 closes it with "great", l. 11), NH6 walks back from one corner of the room towards the table where NH5 and the patient stand. As NH6 approaches the monitor again, NH5 uses head pointing and suggests a next task (l. 14).

Ex. 6 "let us do pressure"
[FOLK_E_00137_SE_01_T_01 / c0317-c0336 / (00:04:24 – 00:04:41)][22]

```
01   NH3    ((breathes heavily in parallel, until l. 22))
02   XM     ha: DES dauert noch;
            ah that will take a while
03   XM     der is unterWEGS-
            he is on his way
04          (0.9)
05          ((background laughter 6.9s. until l. 14))
06          (0.3)
07   NH5    wie LANGe,
            how long
08          (1.6)
09   XM     (ja weil) s weil (.) der ((unintelligible)) (.) (NH14)
            kommt aus ((Town B))
            (yes because it-) because ((unintelligible)) (NH14) comes
            from ((Town B))
10          (0.5)
11   NH6    SEHR schön;
            great
12          &(0.2)          &(0.3)  &+(0.3)
     nh5-gz &looks at monitor&at NH6&at monitor---------------------->
     nh5-bd                          +opens mouth, leans to monitor--->
13   NH6    %so da#nn +[(muss)       ]
            PTCL then (must)
14   NH5             +[machen   #+ma] nomal_n      #+§DRUCK-       #%§+
                      let us do pressure once more
     nh6-bd %walks two steps back to table -------------------------%
     nh6-gz                                          §looks up to NH5§
     nh5-bd  -------->+lowers head+moves chin forward+lowers head again+
     Fig.         #6.1          #6.2              #6.3            #6.4
```

[21] This happened at (00:02:18): https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00137_SE_01_T_01_DF_01&cID=c194&wID=&textSize=400&contextSize=9&startTime=149.266

[22] https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00137_SE_01_T_01_DF_01&cID=c327&wID=&textSize=400&contextSize=11&startTime=269.793

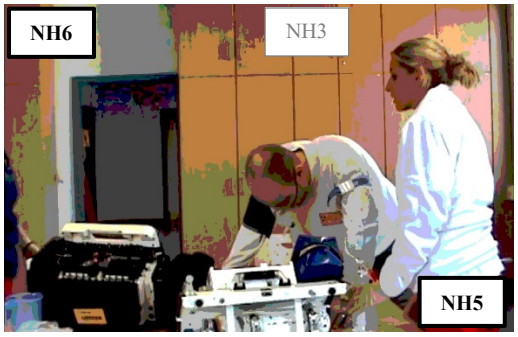


Figure 6.1: NH5 looks at monitor, leans forward and opens her mouth.
NH6 (left corner) walks back towards the table.

```
15   NH6     %§(0.3) HAB #scho§n;  %
                     (I) did already
     nh6-bd %turns to face monitor%
     nh6-gz  §looks at screen§across table to colleagues->>
     Fig.                 #6.5
16           (0.5)
17   NH6     DRUCK &(0.2) bei,
             pressure     at
     nh5-gz ----->&looks to colleagues->>
18   XM      HUNnert (.) zehn zu neun,
             one-hundred-and-ten to nine
```

Sequence of Fig. 6.2 (lowered head), 6.3 (chin moved forward) and 6.4 (lowered again).

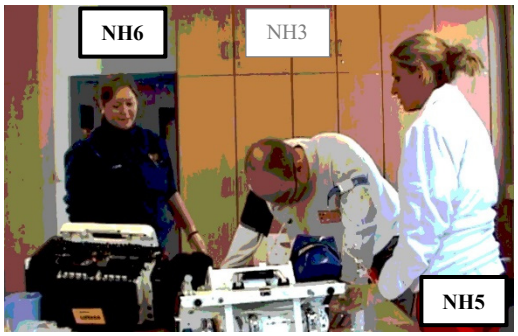


Figure 6.5: NH6 looks at the screen of the monitor in front of her.

When NH6 walks back, both the monitor sitting on the table as well as NH5 and the patient are in her view (Fig. 6.1). NH5 gazes and leans her upper body forward in the direction of the monitor, opens her mouth and then interrupts NH6 (l. 13) to propose they "do pressure once more" (l. 14). In parallel, she lowers her head and moves her chin forward (Fig. 6.2-6.4) while her hands rest on the table. This leads NH6 to look up at NH5 and, after the lexical affiliate "DRUCK" ("pressure") has

been produced as well, to shift her attention to the screen on top of the monitor (Fig. 6.5). She claims to have done so already (l. 15), (this refers to an earlier moment when she set the device to display blood pressure[23]) and follows up on this task by requesting the pressure value from her colleagues (l. 17-18).

In many regards, NH5's use of head pointing corresponds to that of the previous examples: It 1) refers to a concrete object in the immediate surroundings that 2) plays a relevant role for a practical task. This task is 3) to some degree expectable based on the pre-context and 4) feasible for the recipient due to their current spatial and praxeological situation. Thus, the functionality of head pointing that has been observed in its primary context of use also applies in this moment of articulatory freedom. This speaks for the idea that head pointing is not simply a compensatory solution to articulatory restrictions, but a gesture that fulfills a specific communicative function in practical contexts: It implements 'pointing' as a call for an immediate, practical action in proximity to the recipient.

The last example emphasizes the connection between head pointing and referents that are known to the recipients. The transcript comes from a Tupperware party, where the guests are mostly chatting at the table. AF and LE have been telling about situations in which they had difficulties finding their way around certain places while driving. CS begins to talk about her own experience when she drove to Action, a local store (l. 02-04). First, CS indicates the location of this store with a head pointing, but then she and PH resort to other pointing gestures (all cases of *Deixis am Phantasma*; see Stukenbrock 2014, 2015) to make the reference clear to her main addressee LE.[24]

Ex. 7 "action"
[FOLK_E_00329_SE_01_T_05 / c297-c322/ (01:32:14 - 00:32:36)][25]

```
01   AF    hm da[s GEHT inzwischen;]
           uhm that is alright now
02   CS         [meine is (da)   ge]fahren da;
                mine (there) drove there-
03   DA    [ich weiß nicht wie_s ]da b[ei EUCH aussieht;]
04   CS    [wir wollten          ]    [hier zu #*AC     ]t#*ion.
           we wanted to go             to Action here
     cs-hd                                      *left tilt *chin raise>
     Fig.                                     #7.1       #7.2
05   CS    (.) da #*[Oben;   ]       [*%bei ]*
               up there               next to
06   DA             [weil die]nstags [is ja]TURnen
     cs-hd -------->*hold-------------*slightly down*
     le                               %raises eyebrows-->
     Fig.         #7.3
```

[23] This happened at (00:03:12): https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00137_SE_01_T_01_DF_01&cID=c243&wID=&textSize=200&contextSize=4&startTime=192.198

[24] At the same time, a side conversation between DA and VP is taking place. Because it does not relate to the topic of "orientation while driving" in any way, it will not be discussed further here.

[25] https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displayTranscriptVideo&id=FOLK_E_00329_SE_01_T_05_DF_01&cID=c310&wID=&textSize=500&contextSize=14&startTime=5547.467

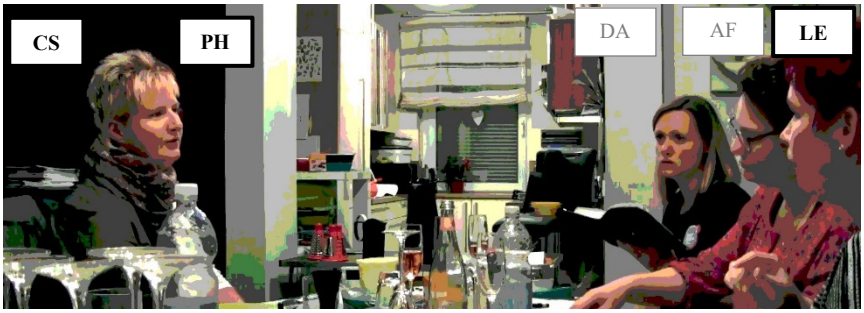


Fig. 7.1: CS looks at her primary addressee, LE.

Sequence of Fig. 7.1, 7.2 (head tilt to left) and 7.3 (chin raise up).

```
07   DA    don+[nerstags hat der max]+        [TURnen?    ]
08   CS       +[wie %heißt_n das was]+NEben ac[tion; oder,]
               what is the name of the one next to Action or
     cs-bd    +turns to PH-----------+
     le    -------->%
     ((omission of 3 lines))
12   LE    %#(0.4)%#AC[↑tion; ]                      %
13   CS              [(warst)] (du da letztens net)%
                     (haven´t you been there lately)
     le    %......%frowns eyebrows-----------------%
     Fig.   #7.4   #7.5
```

Sequence of Fig. 7.4, 7.5 (LE frowns eyebrows while starting to say "action").

```
     ((omission of 2 lines))
16   CS    ach rewe +boss       +(0.4)
           oh Rewe boss
     cs-bd          +turns to LE+index finger point up and left->
17   VP    °h
```

```
18   PH    och #+&sach [doch GLEICH+ hier] o#+&ben in Zwer der +&
           come on/oh just say it already up here in Zwer the
19   VP                  [ähm+:            ]
     cs-bd ---->+retraction--------+         +looks up and left+
     ph          &points up and left----------&retraction-------&
     Fig.      #7.6                          #7.7
           +mö&belladen;          #+
           furniture store
     cs-bd +index point up and left+
     Fig.                        #7.8
```

Figure 7.6: CS points with her index finger up and left and looks at LE.

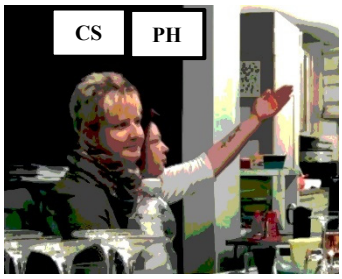


Figure 7.7: PH looks and points with her palm in the same direction.

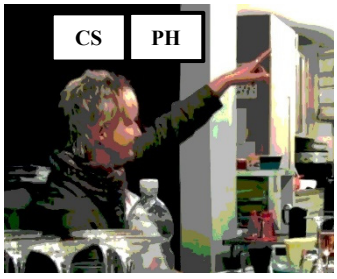


Figure 7.8: CS looks and points, now with her arm extended, in the same direction.

```
20   CS    +[DA oben ]                  +[is der;  ]
            it is up there
21   LE    +[das is]                    +[das AC   ][tion;]
            that is (the) action
22   VP                                   [muss grad][über ]LEgen;
     cs-bd +retracts point, turns to LE+
23   CS    (.) das is wie
               that is like
24   CS    (0.2) ja h° (0.2) wie phil[ips;     ]
                 yeah          like Phillips
25   DA                                [ich hätte] den
           [sechs][undZWANzigs          ]ten [noch frei;]
26   CS    [so   ]                           [SOwas-   ]
            like                             something like that
27   LE          [%ACH so; (.) %oKAY,%]
                  I see        okay
     le           %wide nod----%nod--%
```

CS starts her telling with the locational reference "we wanted to go to Action here" (l. 04), whereby "Action" is a recognitional referent (Sacks/Schegloff 1979), and extends her turn with further details ("up there (.) next to", l. 05) which are coordinated with a head pointing: Without averting her gaze from her recipient, she tilts her head to the left and then raises her chin upwards (Fig. 7.1-7.3). In response, LE

visibly raises her eyebrows (end of l. 05). Since this questioning facial expression indicates a referential problem (Ekman 1979:186) and initiates repair (Stolle/ Pfeiffer 2023), CS turns to PH and requests more information about the area (l. 08-16). While CS recruits her friend's help, LE mobilizes further facial and verbal resources to request referential assistance: She repeats "AC↑tion;" with frowned eyebrows (l. 12, Fig. 7.4-7.5), which displays epistemic difficulty (Kaukomaa et al. 2014:142) and makes clear that the store's name is unfamiliar to her. When CS recalls the name of another store nearby ("oh Rewe boss", l. 16) she points again, this time, with her right index finger, up on her left side (Fig. 7.6). PH follows suit shortly after: She points with her palm up in the same direction (Fig. 7.7), criticizes CS's imprecision and gives further referential information (l. 18). Then, CS points a third time and now maximally mobilizes her embodied deictic resources (arm fully extended, gaze aligned with the gesture, Fig. 7.8). But only after she has drawn a comparison ("like Phillips" l. 24), LE finally displays her understanding with the change-of-state token "ACH so;" ("oh I see", l. 27; Golato/Betz 2008).

Here, head pointing proves insufficient to help the addressee identify a target referent. Also, Ex. 7 is the only instance found in the data where head pointing indicates a distant location outside the local vicinity where the interaction takes place. Similar to cases reported by Haviland (2000), CS first attempts to establish shared reference with a head pointing, but then mobilizes other referential resources like manual pointing gestures. This is probably because the recipient is mistakenly presumed to know more about the area, which is evident by the initial use of a recognitional reference term. Only after the lack of recognitional displays does it become apparent that the name "Action" is, in fact, unfamiliar.[26] Most importantly, once the newness of the referent is clear, neither CS nor PH attempt to solve the problem by pointing with their heads, but instead engage in an expanded verbal repair sequence and use their hands to point.[27] So, participants seem to prefer other means over head pointing when it comes to establishing a shared referential basis based on little or no prior knowledge.

5. Discussion

Because embodied conduct and the material environment are in constant interaction with each other (Goodwin 2000, 2003a, 2003b, 2007; Mondada 2014c; Streeck 2017), gestures need to be studied as a resource that is embedded in both physical

[26] It is worth mentioning that in the case collection, Ex. 7 is one of three cases in which the target referent is located outside of the local vicinity of the interaction (the referents indicated in the other two cases are located in another room next door). These cases of *Deixis am Phantasma* (Stukenbrock 2014, 2015) have in common that the pointing speaker initially uses recognitional terms to refer to the pointing's target. This indicates that for not perceivable, absent target referents, head pointing only qualifies as a suitable deictic resource if the gesturer has sufficient reason to believe that the addressee is already familiar with it (due to a shared interactional history).

[27] Presumably, though, the information given by verbal means provide LE with more support in solving her referential problem than the spatial information given by the subsequent pointing gestures, as their orientation does not really change. Nevertheless, the mobilization of all kinds of resources demonstrates the determination of CS and PH to resolve the situation by any communicative means necessary. Their behavior shows an orientation to using minimal formats when a high Common Ground can be presumed, and to using more elaborated formats when this Common Ground is apparently lacking.

realms. Deliberately studying head pointing in practical contexts, as done here, is a step towards recognizing this contextual embeddedness. This approach has revealed that the functionality of head pointing is closely fitted to the practical engagements of Self and Others. When participants are engaged in a manual task that constraints the use of their hands, they can utilize other means of communication to manage practical actions in simultaneity. Head pointing plays an important part in this because it can be produced independently from manual articulators: It enables the intrapersonal coordination of continuing whatever the hands are doing while progressing other lines of action at the same time (Deppermann 2014). The gesture constitutes a quick, directive signal whose recognizability is ensured because of a shared pre-orientation towards what might come next. While previous research has associated the gesture with imprecision and a backgrounded status (Calbris 1990; Enfield et al. 2007; Galhano-Rodrigues 2012; Haviland 2000; Jarmołowicz-Nowikow 2014; Wilkins 2003), the data examined here draw a different picture. Although the gesture only provides an approximate indication of the target (or target area), this rough directive device is sufficient for the speaker's local communicative needs: They are able to accurately draw the attention of others to specific, concrete objects and locations in their proximal, physical surroundings. Head pointing can also manage and adjust the currently unfolding lines of action of others with great precision (Ex. 4 and 5). This is possible because both gesturer and addressee can draw on their overall practical activity as a background context against which gestural behavior can be interpreted. In the words of Hanks, their indexical ground is highly "symmetric" (1992:69), which enables them to establish very specific references through minimal means:

> […] the more information participants already share in the indexical origo, the more precisely they can individuate referents. When they are face to face, engaged mutually oriented, and share detailed background knowledge of referents, they can mobilize potentially any shifter in the language (Hanks 1992:69).

Head pointing can be seen as a material, embodied version of this minimal "shifter" within a shared referential framework. The reduced gestural format underlines the relevance of the common ground already shared between interlocutors.[28] As Stukenbrock argues (2015:195), this brings the gesture's function close to that of thumb pointing, which indicates a "knowledge symmetry between speaker and addressee [*own translation*]" (2015:134) as well. A striking difference can be found, though, when it comes to the area of common ground that gets evoked by each pointing variant. In the data shown by Stukenbrock (2015:123-133), thumb pointing is most often incorporated in sequences focused on conversation as such without any relation to practical matters. For example, the gesture is often used when refer-

[28] It needs to be noted, however, that in my data, this shared pre-orientation and high degree Common Ground (Clark 1996) is not necessarily apparent in co-occurring speech as well. Instead of using a high amount of pro-forms or a reduced argument structure which would indicate that parts of the message are presumed shared knowledge, speakers also deliver full referential forms and full argument realization, as can be seen in Ex. 4 ("set the thing on the windowsill"). This imbalance between referential resources mobilized in gesture and speech was observed in a couple of cases, but because the analytical focus lied elsewhere (i.e., on the practical embeddedness of head pointing), a more detailed investigation of this would have gone beyond the scope of this paper.

ring to a person while recalling a past event. The quantitative evidence of the present study (see section 4.1) suggests that in comparison to this, head pointing inhabits a very different interactional ecology: Pointing with the head usually indicates concrete, directly perceivable referents that serve an immediate practical purpose. Accordingly, these two gestures seem to exploit different contextual backgrounds, with thumb pointing relying more on the shared 'abstract knowledge' about non-present entities and people and head pointing relying more on participant's 'task-oriented knowledge' about their material environment and how it features in relation to the (foreseeable) course of practical actions.

So, head pointing has a double-sided relationship to the practical context in which it emerges: On one side, the manual task imposes physical restrictions on the acting body and thus directly influences the gesture's form. But at the same time, the mere presence of the gesture itself indexes the praxeological configuration of Self and Other(s) and builds on it to fulfill important communicative functions. Similar to how the material surroundings both constrain actions and provide resources for them (Mondada 2014c:250), the practical engagement of participants both restricts and supports the use of head pointing.

In general, the finding that head pointing is closely intertwined with the participants' involvement in practical activities is in line with the widespread notion that the gesture is commonly found when the hands are preoccupied. But taking a closer look at cases with articulatory freedom has shown that features from this primary, practically embedded context of use can also be seen in other environments. Based on these observations, I argue that the gesture itself has its origin in contexts of practical actions and has developed, to some degree, a stable communicative function: Self mobilizes Other(s) to start a manual action in the here-and-now that is immediately recognizable and more accessible to them. In rare occasions (such as Ex. 6), this package of gestural form and communicative function gets transferred to moments of articulatory freedom as well. Then, head pointing is used not only as a formal variant of pointing, but also a functional one: It is an efficient resource to communicate information about the speaker and the recipient that is especially relevant for managing practical actions. As Streeck (2009) has claimed, many conversational gestures might have their origin in manual actions of the hands. While Streeck had in mind hand gestures whose movement profile resembles that of instrumental actions like touching, grasping or holding objects, the fundamental link between head pointing and simultaneous practical actions suggests another line of thinking: The usability of the head when the hands are busy may have facilitated its solidification as a pointing variant that is closely tailored to the needs of participants that engage in practical activities. However, even a large data basis like FOLK does not allow (yet) to track such processes of gestural conventionalization over time. Because of such data limitations, empirical research into the development of gestures is still a largely unexplored area. Future research on phenomena that lie at the intersection of manual, practical action and gestural communication could provide interesting insights in this regard.

Viewed from a distance, head pointing can be seen as occupying an end position in a spectrum of diverse relations between gestural communication and manual action: One that allows for the simultaneous progression of both. Pointing could also be done by using a tool currently relevant for a manual action as pointer, leading to a blending of object manipulation and gesture (Mondada 2014; Nevile et al. 2014;

Stukenbrock 2015) and a temporary disruption of the task's progress. In other situations, it might be more practical to suspend a manual action altogether and release a hand from what it is doing in order to point freely. While exploring the data for this study, I observed these and other formats of pointing during practical actions many times. Investigating such phenomena more closely could challenge presumptions about the functional separation between gesture and manual action.

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7. Appendix I: Supplementary data

The full case collection for this study can be accessed by registered users of the DGD via the following link:

https://dgd.ids-mannheim.de/DGD2Web/ExternalAccessServlet?command=displaySharedObject&shareID=LDXWTu&objectType=coll_1

In order to access the video data, follow these steps:

1. Open the weblink and login to your DGD-account.
2. Click on the "movie reel" icon on the left side of a transcript to open the corresponding video in a new tab.
3. Double-Click on a transcript line in order to play the video.

8. Appendix II: Transcription Conventions

Conventions for Multimodal Transcription (Mondada 2018, 2022, modified)

* *	Descriptions of embodied actions are delimited between two identical symbols (one symbol per participant and per type of action) that are synchronized with corresponding stretches of talk or time indications.
*–>	The action described continues across subsequent lines . . .
–>*	…until the same symbol is reached.
–≫	The action described continues after the excerpt's end.
…	Action's preparation.
---	Action's apex is reached and maintained.
,,,	Action's retraction.
,,,>	The action's retraction continues across subsequent lines.
Fig. #	The exact moment at which a screenshot has been taken is indicated with a sign (#) showing its position within the turn/a time measure.
id	the participant (e.g. ID) doing the embodied action is identified in small caps (here: id), sometimes the bodily resource is specified further:
	id-hd actions of the head
	id-bd actions with the hands and/or whole body
	id-gz gaze behavior.

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