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Multimodal existential constructions in German: Manual actions of giving as experiential substrate for grammatical and gestural patterns

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Abstract: Taking an Emergent Grammar (Hopper 1998) approach to multimodal usage events in face-to-face interaction, this paper suggests that basic scenes of experience tend to motivate entrenched patterns in both language and gesture (Fillmore 1977; Goldberg 1998; Langacker 1987). Manual actions and interactions with the material and social world, such as giving or holding, have been shown to serve as substrate for prototypical ditransitive and transitive constructions in language (Goldberg 1995). It is proposed here that they may also underpin multimodal instantiations of existential construsctions in German discourse, namely, instances of the es gibt 'it gives' (there is/are) construction (Newman 1998) that co-occur with schematic gestural enactments of giving or holding something. Analyses show that gestural existential markers tend to combine referential and pragmatic functions. They exhibit a muted degree of indexicality, pointing to the existence of absent or abstract discourse contents that are central to the speaker's subjective expressivity. Furthermore, gestural existential markers show characteristics of grammaticalization processes in spoken and signed languages (Bybee 2013; Givón 1985; Haiman 1994; Hopper and Traugott 2003). A multimodal construction grammar needs to account for how linguistic constructions combine with gestural patterns into commonly used cross-modal clusters in different languages and contexts of use.

Keywords: multimodal constructions, gesture, embodiment, grammaticalization, emergent grammar

1 Introduction: Gesture and emergent grammar

The goal of this paper is to contribute some theoretical and empirical insights to the ongoing discussion on the topic of multimodal constructions. A central question regarding the challenges and merits of developing a *multimodal construction grammar* (e. g., Steen and Turner 2013; Zima 2014) seems to be whether, or under what conditions, spontaneous co-speech gestures partake in grammatical constructions or may themselves, in certain cases, be considered constructions. Advocating an embodied and multimodal understanding of language, cognition and interaction, the work presented here builds on Goldberg's (2006: 5) definition of *constructions* as "learned pairings of form with semantic or discourse functions." At the core of the present approach stands Hopper's (1998) discourse-based concept of *Emergent Grammar*:

> The notion of Emergent Grammar is meant to suggest that structure, or regularity, comes out of discourse and is shaped by discourse in an ongoing process. Grammar is, in this view, simply the name for certain categories of observed repetitions in discourse (...). Its forms are not fixed templates but emerge out of face-to-face interaction in ways that reflect the individual speakers' past experience of these forms, and their assessment of the present context, including especially their interlocutors. (Hopper 1998: 156)

Applying Hopper's understanding of grammar to gesture and multimodal discourse, my aim is to show that although spontaneous co-speech gestures tend to be less conventionalized than linguistic signs, they may exhibit characteristics comparable to those that typically emerge from gradual discourse-shaped processes of conventionalization and grammaticalization in spoken and signed languages (e. g., Bybee 2010; Hopper and Traugott 2003; Janzen and Shaffer 2002; Pfau et al. 2012; Sweetser 2009; Wilcox 2004). An increased

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degree of schematization, through routinization (Haiman 1994) and various embodied construal operations, seems to not only engender dynamic gestural patterns in the first place, but also to make these flexible regularities good candidates for participation in *multimodally instantiated constructions* (Mittelberg 2014a).

1.1 Gestures ground multimodal usage events

Co-speech gestures here are understood as discourse-integrated hand (and arm) configurations and movements, as well as head motions and whole-body enactments that have some communicative function (e. g., Kendon 2004; Müller 1998). Previous research has shown that gestures tend to be integrated, to varying degrees, with the concurrent verbal utterances on semantic, prosodic, syntactic and pragmatic levels (Fricke 2012; Kendon 2004; Müller et al. 2013, 2014). As part of usage events (Langacker 1987), one of gestures' multiple functions is to reflect or enact aspects of the experiential groundedness of human thought and language (for overviews, see Cienki 2013, 2015; Sweetser 2007). Assuming that "usage events create linguistic structure" (Bybee 2013: 68), I suggest that one aim of a multimodal construction grammar should be to derive cross-modal structures (or clusters) from comparable *multimodal usage events*, that is, from similar instances of situated, multimodal meaning-making during face-to-face interaction. Here, similarity pertains to formal and functional aspects of gestures, while allowing for context-dependent modulations (e. g., Ladewig 2014; Mittelberg 2014b).

Goldberg's (1998: 203) view on "patterns of experience in patterns of language" will serve as a guiding idea throughout this paper. In particular, the pragmatically minded nature of gestures calls for special attention to be paid to the experiential motivation and *discourse-conditioning* of grammatical constructions (Goldberg 2006). This will allow us to analyze multimodal data and reveal parallelisms in the ways in which gestural patterns are motivated by and abstracted from holistic experience. The cognitive-pragmatic approach adopted here was first put forth in work on how scenes (Fillmore 1977; Grady and Johnson 2002) feed into gestural frame evocation. First observations suggest that gestures evocating basic semantic frames (Fillmore 1982) tend to metonymically pick out elements of scenes, that is, the motivating context of frames (Mittelberg 2017; Mittelberg and Joue 2017; Mittelberg and Rekittke in press). In the following, the centrality of scenes in multimodal meaning construction will be further elaborated on, shifting the focus from semantic frames to syntactic frames. Given the limited scope of this paper, it will provide first insights into the multimodal phenomena of interest here and sketch the foundations of what can be developed into a more complete theoretical framework. More in-depth analyses of the multimodal sequences that also account for the integration of speech, gestures and eye-gaze, as well as interactive discourse patterns, cannot be included here; ensuing work will enable a more comprehensive understanding of the complex processes involved.

1.2 Target structures: German existential constructions (*es gibt* 'there is/are')

This paper focuses on syntactic frames and clausal patterns that are experientially rooted in common manual actions, namely, ditransitive argument structure constructions, in particular, prototypical instances of double object constructions (Goldberg 1995), as in (1):

(1) Mary gives Paul a book. (Sub V Obj Obj2) (ditransitive)

In this short paper, I will provide a first sketch of how basic manual actions of giving and holding and the corresponding schematic scenes may not only feed into ditransitive and transitive constructions involving some sort of transfer or object manipulation but also motivate multimodal instantiations of *existential constructions* in German discourse. To begin with, let us compare a ditransitive construction involving the verb *geben* 'to give' in (2) – which is the German translation of (1) – with an existential construction involving the impersonal expression *es gibt* 'it gives' in the sense of 'there is/are' in (3):

(2) *Marie gibt Paul ein Buch.* (Sub V Obj Obj2) (ditransitive)
'Mary gives Paul a book.'

(3) *Es gibt viele Katzen im Haus.* (intransitive)
'There are many cats in the house.'

We will look at instances where certain variants of the *es gibt construction* (Newman 1998) co-occur with unimanual variants of the palm-up open-hand gesture (PUOH; Müller 2004), as illustrated in Figure 1, and with bimanual gestures where objects are seemingly held, enclosed or grouped together by the speakers' two hands. While additional variants of the *es gibt* construction do exist, only instances actually found in the data used for the present study are considered here.

Figure 1: Multimodally instantiated *es gibt* construction ('there were no contradictions' + PUOH gesture (4)).

In this first example (4) from a multimodal corpus of German spoken discourse (compiled in the Natural Media Lab of RWTH Aachen University), an architecture student is describing his experience with a design process and stating that there were no contradictions regarding his initial intuitions:

(4) "*Also war 'ne Best- ... zum Glück 'ne Bestätigung, dass es ... dass ich ... bislang auf'm richtigen Weg war, dass es ... dass es da keine Widersprüche gab*"
'So that was a conf ... luckily a confirmation is that it ... that I ... had been on the right track so far, that there ... that there were no contradictions.'

The speaker makes a PUOH gesture with his right hand while synchronously using an *es gibt* construction in the simple past tense. The inflected verb form is placed in the clause-final position because it occurs in a subordinate clause. Note that he is talking about intangible, negated abstract entities ('no contradictions'). In the present view, this counts as an example of a multimodally instantiated existential construction.

Since frequency and conventionalization are generally crucial aspects in the formation and identification of linguistic constructions, they also play a role in the discussion on the topic of multimodal construction grammar. Since I will only be able to discuss a few examples of the structures of interest in this paper, the ideas presented are preliminary in nature. However, the German existential construction seems to be a good starting point for multimodal inquiries because it is frequently used across various discourse contexts (e. g., Newman 1998). Furthermore, it has been established for German that the PUOH gestural pattern is a *recurrent gesture* with a semi-conventionalized status (Bressem & Müller 2014; Ladewig 2014; Müller 2010). In addition, the PUOH counts among the most frequently observed and the best researched gestures across languages, including sign languages, which makes it a prime subject for future cross-linguistic work (see also, e. g., Bavelas et al. 1995; Engberg-Pedersen 2002; Kendon 2004; McNeill 1992; Parrill 2008; see also Streeck 1994, 2009 on *speech-handling*).

2 Constructions: Linguistic, interactive and multimodal dimensions

Several strands within construction grammar research have paved the way for the recently suggested multimodal turn, that is, towards a multimodal construction grammar (e. g., Schoonjans et al. 2015; Steen and Turner 2013; Zima 2014). For the construction grammarians and gesture researchers participating in this debate, this undertaking is a valuable opportunity to use multimodal data analysis to jointly foster and theorize a multimodal understanding not only of cognition and language use but also of language structure. Further theory-building and empirical cross-linguistic studies are required to see whether this premise holds.

Since the mid 1980s, several cognitive linguists have together established the framework of *construction grammar*, notably Lakoff (1987), and Fillmore and his colleagues (Fillmore 1988; Fillmore et al. 1988; Kay and Fillmore 1999). Other influential contributions include Langacker's (1987) *cognitive grammar*, Goldberg's (1995, 2006) seminal work on argument structure and a general theory of construction grammar with foci on motivation, learning, actual usage and cognitive plausibility, and Croft's (2013) *radical construction grammar*. Among more recent currents, the following appear pertinent to the investigation of multimodal spoken discourse: those advocating an embodied approach (Bergen and Chang 2005; Gibbs 2006), those working with large corpora (e. g., Fischer and Stefanowitsch 2007) and those stressing the conditioning of constructions by the dynamics of conversational interaction (e. g., Auer and Pfänder 2011; Deppermann 2011; Imo 2015; Ziem and Lasch 2015; see Dancygier and Sweetser 2014 on figurative meanings of constructions; see Hoffmann and Trousdale 2013 for a comprehensive overview).

In gesture research, the relation between grammar and gesture has been approached from various angles. A growing body of investigations into multimodal components of grammar suggests, for instance, that manual gestures as well as head and shoulder movements may not just assume functions comparable to those of verbs, nouns or adjectives (e. g., Fricke 2012; Ladewig 2012). According to some authors, they may also be part of what may qualify as multimodal constructions (see Andrén 2010 on children's gestures; Andrén 2014; Benazzo and Morgenstern 2014 on negation in language development; Schoonjans 2014 and Schoonjans et al. 2016 on modal particles; and Zima 2014 on motion events). Moreover, recurrent gestures (e. g., Ladewig 2014), such as the family of away-gestures described by Bressem and Müller (2014), exhibit a relatively high degree of conventionalization that relies on a stable formal and semantic core. Taking a Functional Discourse Grammar perspective, Kok (2016) explores the challenges posed by a multimodal grammar. Kok and Cienki (2016) lay out a Cognitive Grammar approach to gesture. Finally, Hinnell (2014) has examined gestures associated with the higher-order grammatical category of aspect using English periphrastic verb constructions (e. g., *keep talking*, *quit smoking*) and shown that conventionalization occurs across a range of variables, including gesture contours and gesture timing.

From a different vantage point, research on meta-linguistic and meta-grammatical gestures produced by linguists in the classroom has provided insights into their multimodal models of language and grammar, that is, how they conceptualize – via image schemas, metonymy and metaphor – single linguistic categories as well as larger, internally structured constructs, such as phrases and sentences, as well as the corresponding theoretical models (Mittelberg 2006, 2008, 2010).

3 Basic scenes as experiential substrate for grammatical and gestural patterns

Within construction grammar, basic manual actions – such as holding something, putting something somewhere, or giving something to somebody – have been attested a certain grammatical affinity. They underpin, for example, prototypical instances of certain argument structure constructions (Bergen and Chang 2005; Goldberg 1995, 2006). When it comes to these basic construction types, transitivity and

discourse pragmatics are core phenomena (Hopper and Thompson 1980; Hopper and Traugott 2003). As for basic transitive patterns as exemplified in (5), Goldberg holds that "(w)hereas the transitive construction and others are later abstracted or extended to cover a wider range of meanings (...), the initial meaning of the construction is an experiential gestalt. Thus, a basic pattern of experience is encoded in a basic pattern of language" (1998: 208). The point that this paper wants to make is that gestures accompanying basic ditransitive or transitive constructions are likely to (re-)enact, or to be, the corresponding experiential gestalt or basic pattern of experience.

(5) Greta is holding her pencil case. (transitive)

Indeed, just as gesture has been found to serve as substrate in grammaticalization processes in sign languages (e. g., Janzen and Shaffer 2002; Wilcox 2004), bodily actions have been shown to motivate communicative gestures through routinization as well as abstraction from object-oriented or goal-oriented actions (e. g., Calbris 2011; Hostetter and Alibali 2008; Mittelberg 2013; Müller 1998; Streeck 2009). We need to keep in mind, though, that communicative gestures typically only pretend to perform an action; they are metonymic and often rather schematic allusions to full actions, entire objects, mental or emotional states, or complex interpersonal relations (Mittelberg and Waugh 2014).

Taking these ideas a step further, we might expect, then, that linguistic constructions that recruit basic embodied manual actions and interactions with the physical and social world are particularly likely to be instantiated multimodally and thus also engender emergent multimodal patterns, or clusters, of experience. This section details the theoretical grounds for this assumption. Section 4 provides examples of gestural existential markers incorporated into what we can perhaps call multimodal constructions.

3.1 Experiential archetypes enacted through gesture

Semantic frames and in particular the concept of *scenes* (Fillmore 1977, 1982; Grady and Johnson 2002) are also powerful concepts when examining the structure and meaning of discourse-integrated gestures (Mittelberg 2017).[1] Given the present focus on syntactic frames, Goldberg's (1998: 205) *scene-encoding hypothesis* takes center stage here; it posits that "(c)onstructions that correspond to simple sentence types encode as their central senses, event types that are basic to human experience." I argue that gestures have a natural propensity to enact salient aspects of scenes and event types that are genuinely "basic to human experience" and that serve as blueprints for basic constructions.

Such *conceptual archetypes* (Goldberg 1998: 206) feed into the contextualized learning of both semantic and formal frames:

> recurrent and sharply differentiated aspects of our experience emerge as archetypes, which we normally use to structure our conceptions insofar as possible. Since language is a means by which we describe our experience, it is natural that such archetypes should be seized upon as the prototypical values of basic linguistic constructs. (Langacker 1991: 294–295)

In language development such basic structures are acquired early (Clark 1978). Central to our discussion is Slobin's (1985) insight that the grammatical marking of transitivity first applies to what he calls *prototypical events*, implying a *manipulative activity scene*, that is, some sort of physical manipulation of objects (see also Goldberg 1998: 208; Mittelberg and Joue 2017). Slobin (1985: 1175) states that "(i)n Basic Child Grammar, the first Scenes to receive grammatical marking are 'prototypical,' in that they regularly occur as part of frequent and salient activities and perceptions, and thereby become organizing points for later elaboration."

1 According to Fillmore (1977: 63) scenes "include not only visual scenes but familiar kinds of interpersonal transactions, standard scenarios, familiar layouts, institutional structures, enactive experiences, body image; and, in general, any kind of coherent segment, large or small, of human beliefs, actions, experiences, or imaginings."

As Goldberg (1998: 211) further explains, "(s)yntactic frames aid in the acquisition of verb meaning in that the formal patterns act as sort of a 'zoom lens' in directing the listener's attention to certain aspects of the nonlinguistic context." Habitual manual actions and gestures may also function as visible 'zoom lenses' or as embodied 'organizing points,' to use Slobin's (1985) wording. Pointing gestures combined with *there-constructions* are not the only practices apt to underlie mechanisms that guide joint attention (Steen and Turner 2013). I propose that actions and gestures accompanying the different linguistic uses of 'give' can evoke, for example, a scene of transfer via a double object construction, or a scene of existence (or presence) via an existential construction.

3.2 Grammaticalization processes: From ditransitive argument structure to impersonal existential constructions

A starting point for the rationale developed here was the observation that existential constructions in English and German recruit different kinds of verbs. English existential there-constructions (Lakoff 1987) combine unstressed *there* (serving a presentative, not a locative function) with an inflected form of *be*, as in (6). In contrast, German *es gibt* constructions consist of a two-place predicate with an impersonal subject: a non-referential, expletive pronoun *es* 'it' and an inflected form of the lexical verb *geben* 'to give,' as illustrated in (7) – the translation of (6). Note that the profiled element in these impersonal constructions is what *is given*, that is, the object NP marked with the accusative case.

(6) There are many reasons to celebrate. (intransitive)

(7) *Es gibt viele Gründe zu feiern*. (intransitive)

As evidenced by a well-documented path of grammaticalization (Newman 1998), the impersonal use of *geben* indeed goes back to the source meaning of manually giving something to someone and to related ditransitive constructions involving an agentive subject transferring a physical object to an animate receiver, as in (2). In addition, transitive constructions with *geben* as a two-place predicate typically combine, as exemplified in (8), a nominative subject with an accusative object NP; these constructions may express the following meanings: produce, yield, become, and lead to (Newman 1998: 316–317).

(8) *Diese Trauben geben guten Wein*. (transitive)
'These grapes make good wine.'

Finally, as an existential verb, multifunctional *geben* may also express several related meanings depending on a given context of use (Lenz 2007; Newman 1998), for example, the (future) happening of an event, the resulting consequence of something, the emergence of an entity, the existence of something or someone, or the presence of something or someone in the non-linguistic context (e. g., with a locative expression). Newman (1998) cautions us not "to take the *es gibt* construction as basically equivalent to 'there is/are'", but to "acknowledge the full range of uses to which it is put" (Newman 1998: 323).

4 Case study: Multimodal instantiations of the *es gibt* construction

This section presents various multimodal instantiations of the *es gibt* construction (Newman 1998) that were found in our multimodal corpus of spoken German discourse. Special attention is paid to a) the nature of the object NPs with which they co-occur and b) how referential and pragmatic functions may combine. In light of the generally acknowledged polysemy of gestural forms, it needs to be remembered that the gestural forms discussed in this paper may exhibit functions other than those detailed here. Besides

PUOH gestures (see Figure 1 and works cited in Section 1.2), bimanual palm-vertical open-hand gestures (PVOH; Bressem 2013) are also considered.

4.1 Palm-up open-hand gestures serving as existential markers

In (9), two dialogue partners are planning an Interrail trip through Europe. When suggesting relaxing in the Alps, the speaker shown in Figure 2 produces a PUOH concurrently with *und es gibt Berge* ('and there are mountains'). Mountains clearly do not fit on a human hand; however, she uses this gestural existential marker to point to target entities that exist in the physical world as well as in her imagination. In the moment shown here several articulators are aligned: Her fingertips and her eye gaze point in the direction of her interlocutor, and her head is slightly tilted to the same side. She further concedes that, obviously, they cannot do everything in one trip, and she uses the modal discourse particle *ja* 'yes' not just to express her subjective view but also to invoke common ground (e. g., Clark 1996; Imo 2013), that is, experiences that she and her interlocutor can relate to (see Imo 2013 on interactive functions of the modal particle *ja*). By holding her hand away from her body, she signals that she is not only offering a travel option to her conversational partner but also waiting for her reaction. Hence, this PUOH also functions as an interactive *seeking gesture* (Bavelas et al. 1995).

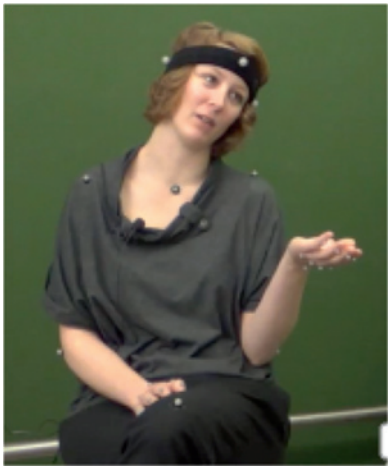

Figure 2: PUOH existential marker ('there are mountains' (9)).

(9) *Ähm, ja da können wa uns halt entspannen…*
Und es gibt Berge, man kann ja nicht alles machen
'Ehm, yes we can relax there…
and there are mountains. We obviously can't do everything.'

In (10), the architecture student describes an analogy between a musical episode and the architectural design process*: Es gab ja die Analogie zur Musik*. In this existential construction *geben* occurs in the simple past tense. The modal discourse particle *ja* 'yes' adds an epistemic function, thus indicating that this analogy was clear and obvious to him. With the PUOH shown in Figure 3 the speaker seems to be pointing to the existence of this analogy, as if it were sitting on his open palm (Mittelberg 2013; Müller 2004; Streeck 1994, 2009). His right (dominant) hand simultaneously forms into a palm-down open hand (PDOH) oriented towards his left hand. While describing his subjective associations during the design process, he is looking slightly downward, which conveys his being in a state of introspection.

(10) *Es gab ja die Analogie zur … zur Musik, also … oder … . oder auch zu 'ner Interpretation, die … 'ne musikalische Geschichte braucht immer 'ne Interpretation.*
'There was yes the analogy to … to music, so … or … or even to an interpretation which … a musical story always needs an interpretation.'

Although the existential constructions in (9) and (10) are both intransitive, two different degrees of transitivity can be observed in the concurrently produced PUOH gestures. Both gestures pretend to be holding some kind of imaginary entity, but only the gesture in Figure 2 alludes to the idea of offering, or giving, something to someone else. This can in part be explained by the discourse context: The speaker and her interlocutor are trying to agree on a travel itinerary. By contrast, the speaker shown in Figure 3 is talking about his personal design experience and is not 'reaching out' to his interlocutors, who are two researchers conducting the interview. He does not seem to be invoking common ground.

Figure 3: PUOH existential marker ('there was the analogy' (10)).

In cognitive semantic terms, we can say that both these PUOH variants instantiate the image schemas SUPPORT (Johnson 1987) and SURFACE (Mandler 1996; Mittelberg 2010), although the speakers are talking about completely different things (see Bergen and Chang 2005 on constructions and image schemas). The speaker evoking the mountain scenario (Figure 2) brings a huge reference object down to human scale so that it fits on her hand and in the local spatial and interpersonal discourse context. This pragmatically motivated, conceptual move drives the cross-modally achieved semantic processes involved in portraying the existence of something that is not present in the discourse context but salient with respect to the discourse content. Regarding Figure 3, there are additional cognitive-pragmatic processes at work: First, the imaginary entity needs to be metonymically inferred as an imaginary generic object contiguous to the visible hand; second, this reified entity then metaphorically represents the abstract concept *analogy* (Mittelberg and Waugh 2014).

4.2 Bimanual actions serving as existential markers

We now turn to variants of multimodally instantiated existential constructions, where the speakers employ their two hands to seemingly manipulate imaginary items. The potentially polysemous gestures shown in Figures 4 and 5 could – at first sight and without considering the speech content – be taken to be holding a generic, medium-sized object. In these examples, however, the speakers' hands seem to be grouping or enclosing several smaller imaginary entities referred to in speech, such as *points, reasons* or *problems*. In (11), the speaker is talking about the problems he encountered at work which prompted him to look for potential points for improvement (Figure 4).[2] In (12), the speaker shown in Figure 5, remembering the time when he was thinking of changing his Master's program, is talking about the reasons for and against such a change.

(11) *Einfach zu schauen ok, gibt´s da irgendwo Punkte* ...
'Just to see, ok, are there somewhere points ...'

(12) *Welche Gründe dafür und dagegen gibt es* ...
'What reasons for and against it are there ...'

2 See Schoonjans et al. (2015) on German multimodal constructions containing the modal particle *einfach* 'just/simply'.

Figure 4: Bimanual PVOH existential marker ('are there … points' (11)).

Figure 5: Bimanual PVOH existential marker ('what reasons … are there' (12)).

As for the embodied processes of conceptualization involved here, the two hands jointly evoke a bounded region in space, thus instantiating the image schema CONTAINMENT (Johnson 1987; Lakoff 1987) and the conceptual metaphor CATEGORIES ARE CONTAINERS (Lakoff 1987). The points or reasons referred to in the given discourse sequences seem to be loosely grouped inside the BOUNDARIES evoked by the two hands. So although the NP objects are abstract entities, the speakers minimally enact a manipulative activity scene (Slobin 1985; see Section 3.1). As evidenced by previous research (e. g., Mittelberg 2006; Müller et al. 2014; Streeck 1994), there thus seems to be a tendency to counterbalance the abstractness of the discourse contents by pretending to manipulate tangible items, thus recreating *experiential* archetypes (Goldberg 1998; Langacker 1987) for conceptual and communicative purposes.

4.3 Summary: Tendencies in the forms and functions of gestural existential markers

The observations made so far give some initial insights into discourse-shaped processes that could be said to pertain to physical reflections of emergent grammar (Hopper 1998) and *embodied grammaticalization*

(Mittelberg and Mortelmans 2013) in gestures that are integrated in multimodally instantiated existential constructions. At this point, we can identify the following tendencies in changes in intertwined form and meaning by comparing full-fledged manual actions of giving with gestural existential markers that correlate with *es gibt* constructions.

First, there is a metonymic reduction in form due to abstraction from the fully fledged, object-oriented, physical actions that serve as bodily substrate for the more abstract communicative gestures (e. g., Mittelberg and Waugh 2014; Müller 1998, 2004). For instance, the gesturing hands stay relatively close to the speaker's body, that is, they show no, or only a slight, outward movement towards a real or imagined interlocutor or receiver. Moreover, the hands tend to be relaxed rather than tense (probably because they are not actually manipulating a specific object). Single, unimanual PUOHs (Figures 1, 2 and 3) tend to be more reduced in form, effort and duration than bimanual PVOH configurations and the actions they imply (Figures 4 and 5).

Second, regarding changes in semantic structure and pragmatic functions, the following tendencies seem to be characteristic of gestural existential markers. The gestural actions that correlate with the existential constructions examined here show a decreased level of transitivity (e. g., Hopper and Thompson 1980) and iconicity (e. g., Givón 1985), resulting in a higher degree of abstraction and schematicity. This may be partly due to underpinning image-schematic structures (e. g., Johnson 1987; Lakoff 1987; Langacker 1987) and the interaction of metaphor and metonymy (e. g., Hopper and Traugott 2003). Some of these gestures perform both referential and epistemic or modal, that is, pragmatic functions, and they tend to express subjective and interactive dimensions of meaning (e. g., Bybee 2013; Hopper and Traugott 2003; Sweetser 1990). In this context it is worth noticing that, compared to prototypical pointing gestures, these PUOH and PUVH gestures exhibit a relatively muted degree of indexicality, pointing to the existence of something that is central to the speaker's subjective expression (Mittelberg 2013). The lesser the degree of iconicity and indexicality, the closer these bimodal processes seem to be situated at the juncture of grammaticalization and gesture pragmatics (e. g., Mittelberg 2017). More research is clearly called for to establish whether these initial insights hold across speakers and discourse contexts.

5 Concluding remarks: Cross-modal association and clustering

According to Bybee (2013: 68–69), "(t)he processes that create constructions – cross-modal association (for linking sound and meaning or context), chunking and categorization – are all processes that apply in other domains, such as vision and motor production." Bringing to the fore the multidimensional pragmatic context of usage events and especially interlocutors' manual actions, it has been suggested in this paper that the gestures discussed above enact aspects of what Slobin (1985) calls 'prototypical events' or 'manipulative activity scenes.' These gestures also seem to evidence what Goldberg (1998) and Langacker (1987) refer to as 'experiential gestalts' or 'conceptual archetypes,' even if only through minimal motion onsets or very schematic articulations and movements. We could thus expect that when experiential archetypes are at the root of a given construction, it is likely that gestures co-occur with its linguistic instantiations, sometimes metonymically highlighting relevant aspects of the evoked semantic frames, sometimes profiling elements of the syntactic frames. Further research is no doubt clearly needed to establish the linguistic constructions within which gestures regularly function as grammatical – and/or pragmatic – markers.

Another remaining question is whether one can speak of multimodal constructions in cases where gestures, including head and shoulder movements, are in principle optional. One type of multimodal form-meaning mapping that fulfills the criteria of conventionality and frequency is the deictic construction whose referent cannot usually be identified without the simultaneously produced pointing gesture and/or eye gaze (e. g., Fricke 2012). In Peirce's (1960) semiotic theory, symbolic signs may rely on both law-based conventionality and *habit*. Accordingly, it is emphasized here that the conventionalized nature of gestural patterns often results from cognitive habits, repetition or recurrence (e. g., Bressem 2012; Ladewig 2014;

Mittelberg 2008, 2010; Müller 2010) that are always embedded in personal and socio-cultural practices of moving within spaces, manipulating objects and interacting with other persons (see, e. g., Bourdieu's [1980] *habitus* concept; Mittelberg 2013; Streeck 2009).

From an Emergent Grammar perspective (Hopper 1998), it is warranted to consider conventionalization as a flexible and pragmatically shaped phenomenon that is a matter of degree and depends on the materiality of a given semiotic mode. For Bybee (2013: 51) too, "grammar is created by the conventionalization of commonly used discourse patterns." Discourse in face-to-face interaction is multimodal. The ambitious task of a multimodal construction grammar is to develop an empirically sound theoretical framework that can account for how linguistic constructions and gestural patterns combine into commonly used, *cross-modal clusters* in different languages, genres and contexts of use.

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