

Demonstratives of Manner, of Quality and of Degree: A Neglected Subclass

Ekkehard Koenig (FU Berlin & Universität Freiburg) & Carla Umbach (ZAS, Berlin)

1. Demonstratives

Demonstratives are a typologically well-established, elementary and possibly universal grammatical category. They are a subclass of deictic expressions and, more specifically, of expressions whose reference can only be determined relative to a center of orientation, which may change with each act of utterance. This center of orientation, called ‘origo’ in Bühler’s foundational study of deixis (Bühler, 1934), is typically provided by the coordinates of the speech situation, i.e. the place, time and participants involved in an utterance. Adverbs like English *here* or *there*, for example, identify space relative to the location of a speaker and/or an addressee. The use of demonstratives is often accompanied by a gesture, e.g. a pointing finger, a movement of the head, a direction of gaze, etc. In addition to identifying a referent relative to the situation of utterance the basic function of these expressions can be characterized as establishing a joint focus of attention between speaker and addressees (cf. Diessel, 2006). Demonstratives are acquired early and gestures pointing out objects in order to share an experience with others can be found in the communicative behavior of children as young as 18 months.

As far as their distribution and syntactic properties are concerned, typological studies (Anderson & Keenan, 1985; Diessel, 1999; Dixon, 2003; Krasnoukhova, 2012) have shown that demonstratives are typically used as pronouns (Fr. *celui, celle*; Engl. *this, that*), as adnominal modifiers (Fr. *ce, cette*; Engl. *this/that book*), as adverbs (Engl. *here/there*) and as presentational (identificational) expressions (Fr. *voilà*, Ital. *ecco*, Russ. *voť*), but this list by no means exhausts the distributional potential found across languages. There are also demonstrative verbs (Dixon, 2003; 2010; Guerin, to appear) and, as our discussion of manner (quality, degree) demonstratives will show, demonstratives also occur in adjectival and adverbial positions in addition to their use as anaphoric replacements of embedded sentences.

The basic semantic structure of demonstratives is a very simple one. As a first step demonstratives can, certainly as far as European languages are concerned, simply be described in terms of two dimensions, viz. a deictic one, indicating the distance, visibility, altitude, position, etc. of a referent relative to the center of orientation and a content dimension, assigning a referent to a certain ontological type (object, human being or animal, place, direction, time, sex, number, etc.). These ontological categories also play an important role in the differentiation of interrogative and indefinite pronouns across languages. It is in this list of ontological categories that we find the categories ‘manner’, ‘quality’ and ‘degree’, which will play a central role in what follows. Assigning demonstratives to one of these ontological categories is, of course, only the beginning rather the end point of a precise semantic analysis, as will be shown in the second part of this article.

As far as the use of demonstratives is concerned, additional synchronic distinctions are generally made. In a pragmatic analysis of demonstratives various use types are distinguished, which – from a diachronic perspective - can also be regarded as focal points or stages in the grammaticalization of these deictic expressions: (i) an exophoric (gestural) use, where reference is made to entities in the external world surrounding the participants in a verbal interaction, (ii) an endophoric use, subsuming the two options anaphoric and cataphoric, where relations are established between the demonstratives and stretches of preceding or following discourse, (iii) a discourse use and (iv) a recognitional use, to mention only the

most basic distinctions. These different uses provide the source and the stages of a variety of wide-spread processes of grammaticalization, i.e. of the development of demonstratives to markers of specific grammatical constructions (cf. König, 2012, 2014).

The goal of this article is to provide a concise and yet comprehensive analysis of a neglected subclass of demonstratives, viz. demonstratives of manner, quality and degree, exemplified by English *so*, *such*, by German *so*, *solch* and by French *ainsi*, *pareil*, *tellement*. Our analysis starts out from a cross-linguistic perspective, pointing out formal and semantic differentiations typically found across languages, in order to later zoom in on a detailed analysis of data from European languages comprising syntax, semantics, use types and historical extensions in meaning and use.

The article is structured as follows: Section 2 offers a short typological sketch of the parameters of variation found in the formal and semantic properties of manner, quality and degree demonstratives. In section 3 we will apply the well-known distinctions in the use of demonstratives (exophoric vs. endophoric: anaphoric vs. cataphoric) to our subclass, pointing out how the much more complex meaning of this subclass – in comparison to adnominal, nominal, local or directional demonstratives – manifests itself in these different use types. The distinction between different use types will be taken further in section 3.3., where some wide-spread extensions in the use of manner, quality and degree demonstratives will briefly be discussed. While in the preceding sections aspects and distinctions of meaning are only identified in terms of semantic labels and discussed only informally, a precise semantic analysis will be provided in the subsequent sections. In section 4, a semantic analysis will be proposed according to which demonstratives of manner, quality and degree express ‘similarity’, thereby creating ad-hoc kinds. In section 5 constraints on the use of manner, quality and degree demonstratives are discussed providing further evidence for the similarity interpretation and showing that these demonstratives do what similarity is predicted to do from a Cognitive Science point of view, that is, sort things into kinds.

2. The Subclass of Manner, Quality, Degree Demonstratives: A Typological Sketch

As was already mentioned, the semantic categories of ‘manner’, ‘quality’ and ‘degree’ are differentiations found in the content dimension of demonstratives alongside such well-known categories as ‘person’, ‘place’, ‘direction’, ‘time’, etc. In the West Germanic and North Germanic languages these three categories are not clearly distinguished by expressions specialized for one dimension only. In German, for example, *so* can be used exophorically, i.e. accompanied by the appropriate gestures, to refer to a manner of walking, to a quality of a person or a car and to a degree, as the following examples show:

- (1) Hans geht *so* (+ mimicking or pointing gesture).
‘Hans walks like this.’
- (2) Hans ist *so* (+ mimicking or pointing gesture).
‘Hans is/looks like this.’
So ein Auto/Ein solches Auto (+ pointing gesture) möchte ich.
‘I would like to have a car like that./That’s the kind of car I would like to have.’
- (3) Der Fisch war *so* groß (+ gesture).
‘The fish was *so*/this big.’

The preceding examples show that no formal distinction is drawn between the three ontological dimensions ‘manner’, ‘quality’ and ‘degree’, except for the purely syntactic one between *so* and *solch*, where the former precedes and the latter either precedes or follows the

indefinite article¹. The reason why we have chosen German rather than English examples is the fact that the parallel and cognate forms *so* and *such* in English have more or less lost their exophoric uses, as is indicated in the translations above. Degree deixis, by contrast, can still be expressed by *so* in English (cf. (3)), but even here this lexeme tends to be replaced by the adnominal and basically local forms *this* and *that*. In addition to a lack of differentiation between the three content dimensions our three German examples also show that the gestures accompanying demonstratives of our subclass are not only pointing gestures, but may also be mimicking (imitative) ones. In addition to extensions in specific dimensions and qualities of various types, even complete events or situations may be enacted by these gestures.

There is not only a formal differentiation between our three ontological dimensions lacking in German, this language also lacks a two-term or three-term distinction in the deictic dimension, analogous to the one between *hier* ‘here’ and *dort* ‘there’ for location or *–hin* ‘hither’ and *–her* ‘thither’ for direction. If (2) is used to point out the car of one’s dreams *so* and *solch* are used irrespective of the vehicle’s distance from the speaker. This lack of differentiations in the content dimension is by no means a general feature of Indo-European or of other languages, as the following table shows:

Table 1: formal differentiation of content dimensions

	manner	quality	degree
German	so	so/solch	so
English (arch.)	(thus)	(such)	so
French	ainsi/si/tant	tel/pareil	(au)tant, tellement
Spanish	así	así	tan
Latin	sīc	talis	tantus
Japanese	koo, soo, aa	konna, sonna, anna	konnani, sonnani
Polish	tak	taki	tak

This table shows that in earlier periods of English, too, different forms were used for the three dimensions and *thus* is in fact typically used as a gloss for demonstratives of manner in descriptive grammars of other languages written in English. The brackets around these two expressions are meant to indicate that the exophoric use of these two expressions is marginal at best.

Many languages also draw a two-term or a three-term distinction in the deictic dimension, roughly corresponding to the distinction between proximal - medial – distal in locative (cf. span. *aquí, ahí, allí*) or other deictic dimensions. In Table 2 a few examples of such deictic systems are provided:

Table 2: three-term distinctions in the deictic dimension of manner deictics

	Finnish	Hungarian	Japanese	Armenian	Maceratese (Italian)
speaker proximal	näin	így	koo	ays-pes	kkuší ‘this way’
hearer proximal	noin	úgy	soo	ayn-pes	ssuší ‘that way’
(medial)					
distal	(niin)	amúgy	aa		lluší
anaphoric	niin	(archaic)		ayd-pes	

This table shows that lexical differentiations in the deictic dimension of manner, quality and degree demonstratives are found *inter alia* in Finno-Ugric, in Japanese, in Armenian and in

¹ Moreover, *solche* or (colloquially *sone*) is used as plural for singular *so ein*. Note, however, that in Hole & Klump (2000) *sone* is analyzed as a separate article.

central Italian dialects. The following examples from Finnish and Japanese illustrate the relevant deictic distinctions:

FINNISH

- (4) a. Ota-t-ko sen **näin** ? ‘Do you take it [the coffee] like this?’
 take-2SG-INT it Manner.Prox (Speaker hands over coffee to hearer)
 b. Ota-t-ko sen **noin** ? ’Do you take it like that?’
 take-2SG-INT it Manner.Med (Coffee is in front of the hearer.)
 c. Asia on **niin**. ‘That’s the way it is.’
 Matter is Manner.anaphoric (relating to preceding discourse)
- (5) a. On-ko sinu-lla tosiaan **näin** suuri koira? (Dog is close to speaker)
 Be.3SG-INT 2SG-ADESS really DEG.PROX big dog
 b. Onko sinulla tosiaan **noin** suuri koira? (Dog is close to hearer)
 c. Onko sinulla tosiaan **niin** suuri koira? (Dog is not visible, but topic of conversation)
 ‘Do you really have such a big dog?’

JAPANESE

- (6) a. Hanako-wa **ko** (+gesture) odor-u. ‘Hanako dances like this’ (speaker is dancing)
 Hanako-TOP like this dance-PRS
 b. Hanako-wa **so** (+gesture) odor-u. ‘Hanako dances like that.’ (hearer is dancing)
 Hanako-TOP like that dances-PRS
 c. Hanako-wa **aa** (+gesture) odor-u. ‘Hanako dances like that.’ (a third person is dancing)
 Hanako-TOP like that dances-PRS

A third parameter of variation relates to the formal complexity of the relevant expressions. Demonstratives, in general, and members of our specific subclass, in particular, can be simplex expressions, but they can also be complex ones, building up their meaning compositionally from two forms expressing the two relevant dimensions. Table 3 provides examples of such bi-partite forms:

Table 3: complex demonstratives

	English	Mandarin	East Futunan
speaker proximal	like this	<i>zhè-yang</i>	fene’eki ‘this way’
hearer proximal	like that	<i>nà-yang</i>	fena’aki ‘that way’
(medial)			
distal			fela’aki
anaphoric)	like that		

Both in the history of English and Mandarin these bipartite forms have replaced earlier simplex forms as a result of renewing earlier forms in their exophoric use (English *so*, Mandarin *ning*, *ruo*). As is well-known, the system of demonstratives in Japanese is consistently built up compositionally : Two components can clearly be distinguished in all cases, the first denoting the deictic dimension (*ko*- ‘speaker-proximal’, *so*- ‘hearer-proximal, medial’, *a*- ‘distal’) and the second denoting the ontological dimension (*-ko* ‘place’, *-chira* ‘direction’, *-nna* ‘quality’, *-nnani* ‘degree’, lengthening of preceding vowel ‘manner’):

Table 4: compositional make-up of demonstratives in Japanese

Japanisch	entity	definitness	place	quality	degree	manner
speaker-related: ko -	ko-re	ko-no	ko-ko	ko-nna	ko-nnani	ko-o
hearer-	so-re	so-no	so-ko	so-nna	so-nnani	so-o

related: so-						
distal: a-	a-re	a-no	aso-ko	a-nna	a-nnani	a-a

Another example of the type where the content and the proximity dimension are differentiated and find separate expressions is Armenian, as illustrated by table (5):

Table 5: The system of Modern Armenian

Proximity → Content ↓	Proximal	Medial	Distal
Manner	aypes	aydpes	aynpes
Quality	aypisi	aydpisi	aynpisi
Degree	aysqan/ayschap	aydkan/aydchap	aynkan/aynchap

Two summarize, there are three major parameters of variation concerning the formal inventory of manner, quality and degree demonstratives:

- (7) formal differentiation in the content dimension, comprising up to three options:
 - (i) no differentiation (German)
 - (ii) two-term oppositions (Spanish)
 - (iii) three-term oppositions (French, Finnish, Japanese)

- (8) formal differentiation in the deictic dimension, comprising up to three options²:
 - (i) none (German (*so*), Dutch (*zo*), French (*ainsi*), SAE, Cantonese (*gam*, *gám*))
 - (ii) two terms (Ainu: *taa* – *too*; Shoshone: *inni* – *enni*; Indonesian: *gini* – *gitu*)
 - (iii) three terms (Japanese, Finnish, Ambulas, Pangasinan, Matses, Haruai, Yucatec Maya, Makhwa)

- (9) complexity of expressions
 - (i) simple expression(s): German (*so*), Finnish (*näin*, *noin*, *niin*)
 - (ii) (only) complex expressions: English (*like this*, *like that*), Mandarin (*zhè-yang*, *nà-yang*); Japanese (*kono-yooni*, *sono-yooni*, *ano-yooni*), Wolof, Oceanic languages;
 - (iii) lexicalization (univerbation) of complex expressions: East Futunan

Of course paraphrases of morphologically simplex expressions are possible in most and perhaps all languages. The crucial difference is between languages with and without morphologically simplex demonstratives. In addition of these two parameters relating to the lexicon and to morphology, another parameter can be seen in the variability of the syntactic positions for these demonstratives. We will discuss this flexibility and variability in the distribution and category membership of the relevant demonstratives in some of the following sections. One striking fact should be mentioned at this point, however: In several regions of the world (e.g. Oceania, Australia, Africa and South America) demonstrative verbs are found that are precisely used for the dimension of manner in most cases (cf. Dixon, 2003; Guerin, 2014). In the vast majority of languages, however, this combination of features does not occur.

² In Nivkh (isolate, Russia) nominal demonstratives contrast as many as five distances from the speaker: proximal > close > medial > remote > distal (Gruzdeva, 2006: 193).

3. Use Types

3.1. Exophoric Uses

In all languages described in some detail so far, demonstratives clearly have a variety of uses in addition to the exophoric one, but there seems to be general agreement that this exophoric use is the primary and basic one. There is rich evidence for this assumption: The exophoric use is acquired very early by children, it is closely tied up with gestures and it is compatible with simple and short utterances. All of these facts suggest that demonstratives belong to a very basic layer in the evolution of languages, representing a stage when communication heavily depended on gestures. Moreover, as is shown in Koenig (2014; 2015), most other uses can easily be derived from the exophoric one by general tendencies of semantic change, whereas the opposite direction would not allow analogous generalizations.

Let us now take a brief look at meanings expressible by the members of our subclass and how they interact with gestures, in order to prepare the semantic analyses of the chapters which follow. As pointed out in the introductory section, manner, quality and degree demonstratives share many properties with the other demonstratives, but they also differ from them in striking ways: Members of the subclass under analysis are much more complex in their meaning than the other demonstratives and this applies especially to manner and quality demonstratives. In sentences like (1)-(3), these demonstratives relate to a manner of walking, to properties of persons or cars and to an extension. In contrast to other demonstratives they can be accompanied either by a pointing gesture or by a mimicking, imitative one and thus may require some acting on the part of the speaker. In examples like the following, however, the question of possible gesture requires yet another answer. In such cases the contrastive function of demonstrative is more salient than it is in (1)-(3):

- (10) a. Ich bin jetzt SO hier (und kann das nicht ändern).
'Now I am her like this and there is nothing I can do about it'
(reaction to a critical comment about the inappropriate attire of the speaker)
- b. (Wenn du dich beeilt hättest, hatten wir den Zug noch erreicht.) SO aber, müssen wir warten.
(If you had hurried up we would have caught the train) 'As it is we will have to wait.'³
- c. Beeil dich! Wir kommen SO schon zu spät.
'Hurry up! We are late as it is.'

Neither a pointing nor a mimicking gesture seems to be appropriate in these cases, which all relate to current situations involving the speaker and contrast with alternative situations expressible by counterfactual conditionals or directive speech acts.⁴

A further introductory remark is required as far as the formal properties of exophorically used demonstratives of our subclass are concerned. These demonstratives frequently manifest what in historical linguistics is called 'renewal' or 'renovation', i.e. they are often reinforced by other, more elementary, demonstratives and may thus differ formally from other uses originally derived from these exophorically used demonstratives. The following examples are cases in point:

³ Note that English *as* is the result of a fusion of Old English *eall swa*.

⁴ From a semantic point of view, these uses appear close to pure indexicals like *I, here, now* in accessing a quality of the speaker or manner of the utterance situation, rather than the quality or manner of the target of the pointing gesture, viz. the way the speaker looks like in (a) and the way the utterance situation is like in (b, c).

(11) Latin: *si + ce > sīc*; It. *ecco + si > così*; Fr. *accom sic > ensi > ainsi*; Swed. *så + här > såhär – sådär* (proximal – distal); Engl. *so > like this/that*, etc.

3.2. Endophoric Uses (anaphoric and cataphoric uses)

It is an established fact that demonstratives have endophoric uses, i.e. both anaphoric and cataphoric uses, in addition to their basic exophoric one. Information of this kind is not only available for well-described European languages, but is also found in most descriptive grammars of lesser described languages. The basic function of this endophoric use can be described as establishing and coordinating a joint focus on a discourse referent or topic of conversation ('topic continuity'; cf. Givón, 1983; Himmelmann, 1996; Diessel, 2006). The antecedents of our subgroup of demonstratives differ of course from those relevant for the other ones: They are measure phrases or degree adverbs for the degree demonstratives, attributive adjectives or relative clauses for the quality demonstratives and manner adverbials or propositions for the manner demonstratives (but see section 5 for the notion of antecedent in the similarity analysis; see also Koenig, 2014 for a detailed discussion).

GERMAN

(12) A. Der Fisch war 60 cm lang. – B. War der wirklich so lang?
'A. The fish was 20 inches long. – B. Was it that long.'

ENGLISH

(13) We were together with people who did not speak any Spanish. – B. I would avoid such people.

(14) a. (A. Your economic situation is precarious.) – B. I suppose so.
b. Apparently so.
c. If so, I will have to act immediately.
d. She only wanted to die and wished to do so where she had lived.
e. A. Did you enjoy it? – B. Very much so.

Anaphoric uses of manner demonstratives (propositional anaphors) as found in (14a) are restricted in English to verbs expressing propositional attitudes (*think, imagine, believe, expect*, etc.), evidential predicates (*appear, seem, say*, etc.) and a few other groups. Such anaphoric uses of manner demonstratives are also found in Russian, Japanese and Finnish, though not in German.

The examples listed in (14) for English would certainly justify drawing further distinctions in the syntactic analysis of anaphoric *so* for that language, between a propositional (14a) and a verb phrase anaphor (14d), for example, but this question will not be further pursued at this point.

Cataphoric uses of demonstratives relate to stretches of following discourse. Such uses are found in many languages for manner demonstratives. They invariably introduce stretches of direct speech and develop into quotative markers. In his study of quotative indexes in African languages, Gueldemann (2008: Chapter 5) shows that cataphorically used manner demonstratives frequently develop into reporting verbs or other quotative markers. In order to exemplify the phenomenon in question, we have to resort again to other languages, since English *so* has also lost its cataphoric use in addition to its exophoric one, using the nominal demonstrative *this* or the simulative preposition *like* instead:

GERMAN

- (15) Ich will es mal so sagen: "..."
'Let me put it like this...'

FRENCH

- (16) DSK s'est exprimé ainsi: ...
'DSK expressed himself like this...'

ENGLISH

- (17) She's like'...' And I'm like '...'

So far we have only discussed cases where a three-term lexical distinction in the system of demonstratives under discussion denotes either semantic distinctions in the deictic dimension (e. g. Finnish *näin*, *noin*, *niin*) or in the ontological dimension (e.g. Latin *sīc*, *talis*, *tantus*) and all three expressions have an endophoric use in addition to their primary exophoric one. Moreover, the data from the languages analyzed so far suggested that there were certain pervasive tendencies in the extension of exophoric uses to the endophoric ones: the proximal demonstrative tends to adopt a cataphoric use (e.g. Japanese *koo*), the distal member of a two-term or three-term set tends to develop an anaphoric use (e.g. Finnish *niin*) and the medial member extends its use to that of propositional anaphor, which relates more often than not to a preceding utterance of the interlocutor (e.g. Japanese *soo*). This picture, which could be used for a basic systematization in the sense of "Canonical Typology" (cf. Brown, Chumakina & Corbett, 2012), however, does not do justice to the facts of many languages. Let us briefly consider Turkish as a case in point.

In Turkish, the invariable adnominal (adjectival) demonstratives *bu*, *şu*, *o* provide the basis of the system of demonstratives, from which all the others are derived via affixation and or inflection:

- (18) a. *bu*, *şu*, *o* (adnominal, adjectival, determiners)
b. *bunlar*, *şunlar*, *onlar* (pronouns, plural; 'these, those')
c. *bura-*, *şura-*, *ora-* (locative adverbs; 'here, there, over there')
d. *böyle*, *şöyle*, *öyle* (quality, manner; 'such, like this/that')

The lexical differentiation concerns the deictic dimension and 'originally' expressed a gradation in terms of proximity, roughly describable in terms of the general comparative terms 'proximal- medial-distal' (cf. Lewis, 1967: 71f.; Göksel & Kerslake, 2005: 180; 244f.). And on the basis of our preceding discussion these distinctions found in the exophoric use could then also be assumed to have been transferred to the endophoric ones. Recent grammars and the appropriate tests with native speakers of Turkish show, however, that this description may apply to a stage in the historical development of the demonstrative system in Turkish and may still have some relevance for the series in (18a+b), but is no longer adequate as a general description of modern usage. The major changes seem to be the following: The medial term *şu* and the expressions derived from it have acquired a cataphoric use and imply that the referent has not been under discussion before. Both the members of the *bu*-series and those of the *o*-series can be used anaphorically, but only the former can be used exophorically together with a gesture. For the demonstratives denoting quality, manner and degree our informants (inter alia Süheyła Schroeder) provided the following minimal pairs together with their possible contextual embedding:

- (19) a. *Karl böyle bir araba al-dı*. 'K. bought a car like this one (+ gesture)' QUALITY
Karl like.this a car buy-Past.3SG
b. *Karl şöyle bir araba al-dı*. (speakers announces that s/he will describe the car through the gesture or words);

- c. Karl öyle bir araba al-dı. (speaker confirms that the description provided by interlocutor is correct)

- (20) a. Karl böyle koş-uyor. ‘Karl runs like this (+ gesture)’
Karl like this run-PRES.3SG
b. Karl şöyle koş-uyor. (announcement of a subsequent imitation)
c. Karl öyle koş-uyor (confirmation of preceding description)

For deictic or endophoric reference to degrees the basic adnominal demonstratives are combined with the postposition *kadar*, which derives from an Arabic noun meaning ‘amount’.

3.3. Further Uses

3.3.1. Equative comparatives

As already indicated above, demonstratives of manner, quality and degree – or the expressions derived from them – are also frequently found as markers of grammatical constructions in the synchrony of a wide variety of languages (cf. Koenig, 2012; 2014; 2015). To round off the general, typological part of our paper, three examples of such pervasive tendencies of grammaticalization will briefly be discussed, each starting out from a different demonstrative as source. Note that these tendencies will be described in terms of plausible reconstructions based on comparative evidence. Detailed historical and textual evidence demonstrating developments from ‘exophoric to anaphoric to connective’ are difficult, if not impossible, to provide. Note also that our three examples suggest that there are wide-spread, general tendencies of semantic change and grammaticalization, but also that changes in question may be somewhat different even in closely related languages.

In a recent typological study of equative comparatives, Haspelmath (2015) draws a distinction between 8 major types of comparative constructions found in the languages of the world. The dominant strategy found in European languages (Germanic, Romance, Slavic) is based on demonstratives of degree or manner, such as Germ. *so*, Engl. *as* (< *eall swa*) or Latin *tam*, as is shown by the following equivalent examples from German, English and French and their analyses given in (21d):

- (21) a. Karl ist so groß wie Peter.
b. Charles is as tall as Peter.
c. Charles est aussi grand que Pierre.
d. COMPAREE – copula – degree marker – parameter – standard marker - STANDARD

In addition to the two expressions denoting the entities under comparison, such constructions contain an expression derived from a demonstrative of degree (a degree marker), a gradable adjective and an expression typically taken from the same notional domain as the demonstrative (*as* in English, the interrogative adverb *wie* in German, *som* in Swedish) used as standard marker (cf. (21d))⁵. The striking parallelism between the relevant exophoric use of the same demonstratives in combination with dimensional adjectives and the equative comparatives suggests that comparatives can be derived from the former simple construction by adding to the exophorically used demonstrative a relative clause. In German and English this relatedness is particularly clear:

⁵ This description is a slight simplification of the variation found across European languages. Instead of a demonstrative used as degree marker we may also find an adjective with the meaning ‘equal’ (Swedish *lika*, Finnish *yhtä*) and the standard marker may also correspond to a complementizer (French *que*).

- (22) a. Karl ist so (+ gesture) groß. 'Charles is this tall/as tall as this.'
b. Karl ist so groß wie Peter (groß ist). 'Charles is as tall as Peter (is).'

Note that the relative clause is generally reduced and that in English even a gestural demonstration of height can be formulated with the help of an equative comparative construction. Gestural demonstrations of the degree of a quality are only possible, of course, for measurable dimensions. Degrees of a property on more abstract parameters can only be indicated through comparative constructions. If our speculations about the development of equative constructions go in the right direction it does not make sense to ask whether *so* or *as* in (21) are used anaphorically – a standard of comparison always concerns given information – or cataphorically, which seems to be supported by the facts of constituent order. In our view equative comparatives are directly based on utterances with exophorically demonstratives of degree and involve the replacement of a demonstration by a description, exactly as we find it for nominal reference:

- (23) a. THIS MAN/He is the thief.
b. The man with the green coat is the thief.

3.3.2. Boosters and exclamations

Our second example relates to the domain of quality and to further processes of grammaticalization starting out from exophorically used demonstratives like *so* and *solch* in German (cf. (24)). As already mentioned above, the English counterparts of these constructions (*so*, *such*) have practically lost their exophoric use and thus only manifest the extended use under discussion. (cf. (25c,d)).

- (24) a. So (+ gesture) ein Auto möchte ich haben. 'I would like to have a car like this/that.'
b. Ein solches (+ gesture) Auto möchte ich haben.

- (25) a. Karl is SO nett!
b. Ich habe SOLCHE Angst!
c. Charles is SO nice!
d. They made SUCH efforts!

The examples in (25) are the result of a change described by Bolinger (1972: 61ff.) as a semantic change from 'identifier' to 'intensifier'⁶. The extended uses of the demonstratives found in such sentences no longer identify a degree through a gesture (exophoric use) or by relating it to an antecedent (anaphoric use), but function as boosters, indicating a high degree of a quality and thus giving an exclamative quality to the utterances containing them. In contrast to the demonstratives they are derived from they no longer express similarity, but an extreme value on some scale.

A plausible reconstruction of the historical development of such sentences could relate them to a particular kind of comparative construction in which the degree of a property is identified via the (in)ability or (in)capacity of a referent to manifest a certain performance:

- (26) a. Charles is so tall that he can reach the ceiling in our house.
b. Charles is such a fool that we can't trust him.

⁶ A detailed corpus-based study of this change in English and in Dutch can be found in Ghesquière & van der Velde (2011).

The exclamatives could then be assumed to be semantic generalizations and syntactic reductions of the comparatives often called ‘consecutive’.

3.3.3. Adverbial connectives

Our final example of a general process of grammaticalization involving demonstratives of our domain, in general, and manner demonstratives, in particular, leads to adverbial connectives as targets. This development is clearly based on the anaphoric uses of the relevant demonstratives, which we already discussed in connection with propositional anaphors used as objects in languages like English, Japanese and Russian. The relevant use of former demonstratives of manner assumes the role of adverbials, typically occurring in sentence-initial position. In addition to their connective meaning these uses of manner demonstratives may denote various adverbial relations, such as causality, conditionality, inference, concessivity, etc. either alone or in combination with other expressions. A variety of different uses of this type is found in English (cf. Koenig, 1974):

- (27) a. (It is pouring down outside.) So, we cannot leave right now. (causal)
b. Even so we could leave right now (if we take a taxi). (concessive)
c. So, you don’t mind the rain. (inferential)
d. I would like to wait, so that I can get home dry. (resultative)

A conditional use of *so* is still found in formal and slightly archaic German and may introduce both the protasis, instead of the more common conjunction *wenn*, and the apodosis, replacing the more common and colloquial conjunctive adverb *dann*; such uses were also found in Early Modern English, but disappeared from language use a long time ago:

- (28) a. So er unseren Vorschlag annimmt, können wir morgen abreisen.
b. Nimmt er unseren Vorschlag an, so können wir morgen abreisen.
‘If he accepts our proposal, we can leave tomorrow’

Our list of examples shows that the relevant changes may differ even in languages as closely related as German and English. Whether the uses of the English conjunct *so* in examples like (27) are an instance of polysemy or of a vague univocal meaning will not be discussed further at this point.

4 The semantics of demonstratives of manner, quality and degree

4.1 Demonstratives expressing similarity

While in the first half of this paper, demonstratives of manner, quality and degree were examined from the point of view of typology and of their use types, the focus of the following part will be on their semantics. As mentioned in the introduction, demonstratives play a central role in natural language in creating a joint focus of attention and occur very early in language acquisition (Diessel 2006). Demonstratives also play a central role in semantics, their hallmark being the property of direct reference.

In (31a-c) examples of the exophoric/deictic use of manner, quality and degree demonstratives accompanied by a pointing gesture are shown (analogous to the examples in (1)-(3) at the beginning of the paper). We will make use of German examples in this part of

the paper since German provides a simple form for all of manner, quality and degree.⁷ It will be assumed (as is the usual practice in semantics) that the results can be transferred to corresponding demonstratives in other languages, simple as well as complex ones. For example, *so ein Auto* is assumed to be semantically equivalent to *a car like this*. For ease of exposition, demonstratives of manner, quality and degree will be subsumed under the notion of *mqd demonstratives*.

- (31) a. (speaker pointing to someone dancing):
So tanzte Anna gestern auch.
'Yesterday, Anna danced like this, too.'
- b. (speaker pointing to a mug on the table):
So eine Tasse hat Anna auch.
'Anna has such a mug / a mug like this, too.'
- c. (speaker pointing to a person):
So groß ist Anna auch.
'Anna is this tall, too.'

The semantic analysis of manner, quality and degree demonstratives starts from the idea that they express similarity.⁸ In (a), where the demonstrative occurs in an adverbial position, Anna's manner of dancing is characterized as being similar in certain respects to the dancing event the speaker is pointing at. In (b), with the demonstrative occurring in the noun phrase, Anna's mug is characterized as being similar in certain respects to the mug the speaker is pointing at. Finally, in (c) where the demonstrative combines with an adjective, Anna's height is characterized as being similar to the height of the person the speaker is pointing at. In expressing similarity, mqd demonstratives ad-hoc create novel kinds – a subkind of dancing similar to the dancing pointed at in (31a), a subkind of mugs similar to the mug pointed at in (31b), and a subkind of sizes similar to the person pointed at in (c). One has to be careful, however, not to mistake the notion of similarity employed here for the meaning of the adjective *similar* – it is not mere resemblance but rather "near-sameness" (cf. Umbach, 2014).

The semantic analysis will begin with the issue of direct reference (section 4.2), and of the relation between the target of the demonstration gesture and the reference of the linguistic phrase (section 4.3). Formal spell-out of the similarity relation will only be sketched briefly (section 4.4). The pivotal question in invoking similarity in semantics is that of the *respects of similarity*, or *features of comparison*, which is the topic of section 5. This topic will turn out to be closely connected to issues of concept formation confirming the idea of mqd demonstratives creating ad-hoc kinds (section 5.1, 5.2). Clues about the connection between features of comparison and properties of concepts stem from findings on genericity in the adnominal case and from findings on manner modification in the adverbial case. (section 5.3, 5.4). Section 6 concludes our study.

⁷ See Ehlich (1989) for an early analysis of German *so* as a demonstrative.

⁸ This is the reason why they are called *similarity demonstratives* in Umbach and Gust (2014). There is a caveat though: The notion of similarity employed in the analysis is taken from Cognitive Science and is more strict than the meaning of the adjective *similar* – similarity in this account may also be envisioned as *nearly identical* or *of the same kind*.

4.2 Direct reference

In his seminal papers (1978) and (1989), David Kaplan showed that demonstratives differ from predicates in being directly referential. Directly referential expressions take their values from the context of the utterance rather than from the circumstances of evaluation (possible worlds, past and future times). Since circumstances of evaluation can be shifted by, e.g., a counterfactual premise, the denotation of predicates may vary. Consider (32a) and (b). Although in the actual world Mary lives in Berlin, in different circumstances she could be living in some other place. Such a shift is impossible with demonstratives. Suppose in (33) that there are two mugs on the table, one on the left with a Chinese decor and the other one on the right with a Berlin advertising slogan. Suppose, furthermore, that the speaker points to the one on the left. So the sentence in (33a) is true. In (33b) the speaker is again pointing to the mug on the left and the referent of *that mug* is as before the mug the speaker is pointing to in the utterance context, that is, the Chinese one. So the sentence in (33b) is false. In (33c), however, the mug is not picked out by a pointing gesture but instead by the predicate *on the left* which is sensitive to the circumstances of evaluation. Thus the sentence in (33c) is true.

- (32) a. Mary lives in Berlin.
b. If Mary were a student at Kings College, she would live in London.
- (33) a. That mug is Chinese.
b. If the mugs had changed places, that mug would be from Berlin.
c. If the mugs had changed places, the mug on the left would be from Berlin.

Kaplan considers demonstratives like *that* and *that man* and (pure) indexicals like *I*, *here*, and *now* but not the mqd variety of demonstratives examined in this paper. So the question arises of whether the mqd variety qualify as demonstratives in the sense of being directly referential. Let us assume the same scenario as before, two mugs on the table, one from China and the other one from Berlin, and the speaker points to the Chinese one in all of (34a-d). Furthermore, assume that Anna has a mug resembling the Chinese one (and she has only one mug). So the sentences in (34a) and (b) are true.⁹ When shifting the circumstances of evaluation, as in (34c, d), the referent of *so eine Tasse / a mug like this* is nevertheless one resembling the mug the speaker points to in the utterance context, that is, the Chinese one. So, as in the example in (33b), the sentences in (34c, d) are false.¹⁰

- (34) a. So eine Tasse hat Anna auch.
b. Anna has a mug like that, too.
c. Wenn die Tassen die Plätze getauscht hätten, dann hätte Anna nicht so eine Tasse.
d. If the mugs had changed places, Anna would not have a mug like that.

The data in (34) are, first of all, evidence that mqd demonstratives are directly referential. Although there is a problem: Direct reference in Kaplan's terms means not only that the target of the demonstration gesture is the thing the speaker actually points to but, in addition, that the referent of the demonstrative phrase is identical with the target of the demonstration gesture. This seems trivial in the case of demonstratives like *diese Tasse* or *that mug*. In the

⁹ Note that there is no difference between German and English, and between simple and complex mqd demonstratives.

¹⁰ Readers who wonder what happens if the mqd demonstrative is replaced by the predicate *ähnlich / similar* are referred to Umbach (2014).

case of mqd demonstratives, however, it is plainly false: None of (34a-c) entail that Anna's mug is identical with the one the speaker points to.¹¹

Lack of identity between the target of the pointing gesture and the referent of the demonstrative phrase has been observed before. Nunberg (1993) discusses examples like *That person is usually a man* the speaker pointing to the (female) minister of defense Ursula von der Leyen. Nunberg analyses these examples as *deferred reference* assuming that the relation between the target of the pointing gesture and the referent of the demonstrative phrase can be an arbitrary relation salient in the context. In the case of mqd demonstratives, however, the relation between the target of the pointing gesture and the referent of the demonstrative phrase is not arbitrary. The referent of *so eine Tasse* or *a mug like that* is systematically related to the mug the speaker is pointing at: it is similar to the one pointed at.

4.3 The target of the demonstration gesture

When arguing that mqd demonstratives are directly referential it was tacitly assumed that the target of the pointing gesture accompanying *so eine Tasse / a mug like that* in (34) is an individual, i.e. the speaker is pointing at an actual mug. Therefore identity of referent and target had to be rejected. There is, however, another option. If it is assumed that the speaker does not point to the actual mug but rather to the kind instantiated by the mug, identity of referent and target can be preserved, the demonstrative referring to a kind instantiated by the indefinite NP. This type of analysis has been suggested by Carlson (1980) for the anaphoric use of English *such* where *such* is considered as a pronominal element relating to kinds instead of individuals. It was adapted to English *like this* and also to Polish *tak* and German *so* in Landman (2006). Landman moreover proposed an interpretation of the adverbial use of Polish *tak* and German *so*, postulating event-kinds as an ontological category in addition to (nominal) kinds. Recently, Anderson and Morzycki (2013) extended this analysis to include the ad-adjectival use of Polish *tak* and German *so*, by postulating degree-kinds (which are envisioned as kinds of states).

Although this analysis is elegant treating the three occurrences of mqd demonstratives (adnominal, adverbial, ad-adjectival) in parallel, it has two major shortcomings. First, these expressions are demonstratives and thus their primary use is exophoric/deictic. While the idea that there are kind-antecedents to be picked up in the anaphoric use may be plausible, the idea that there are kind-referents to be pointed to in the deictic use, is less convincing. The second shortcoming concerns the status of the kinds. It is well-known in the literature on generics that generic definite NPs require 'well-established' kinds, that is, kinds that are given independent of the context. This is the reason why *the coke bottle* is fine as a generic NP whereas *the green bottle* is bad in most contexts (see Krifka et al 1995).

The examples in (35) and (36) are evidence that in the case of mqd demonstratives there is no requirement for 'well-established' kinds. Compare the (a) versions in (35) and in (36). *Dieses Auto* ('this car') in (35a) allows for a generic/type reading regardless of the context it occurs in – Anna may want to buy the actual car the speaker points at or just a car of the same type. The availability of the type reading is easily explained by the fact that subkinds of the kind denoted by *car* are well-established. In contrast, *dieser Stuhl* ('this chair') in (36a) does not allow for a generic/type reading in the flea market context given in the example – (36a) can only mean that Anna wants to buy the actual chair the speaker points at. A type reading would only be available if the context would be such that *chair* subkinds are well-established, e.g., when shopping at Ikea. Now consider the examples in (35b) and (36b). In contrast to the (a) examples, there is no restriction to well-established kinds in the case of *so*: both sentences mean that Anna will buy a car /a chair similar to the one the speaker points at.

¹¹ They could only be identical by chance.

- (35) (speaker pointing to a car in the street):
- a. Dieses Auto will Anna kaufen. (token/type)
'Anna wants to buy this car.'
 - b. So ein Auto will Anna kaufen.
'Anna wants to buy such a car.'
- (36) (speaker pointing to a chair in a flea market):
- a. Diesen Stuhl will Anna kaufen. (token only)
'Anna wants to buy this chair.'
 - b. So einen Stuhl will Anna kaufen.
'Anna wants to buy such a chair.'

The examples in (35) and (36) prove that the interpretation of *so*-phrases does not hinge on the existence of previously established kinds. They do not entail, however, that there are no kinds involved, and it will in fact turn out in section 5 that there are kind-like restrictions on the similarity class created by the use of *mqd* demonstratives. That is, it will turn out that the set of mugs similar to the one pointed at in (34) is not just a subset of mugs but rather a subkind of the mug kind. Since similarity is known in Cognitive Science to be basic in classification processes (Tversky 1977), it is no surprise that similarity classes exhibit kind-like characteristics. Still, these kinds need not be given in advance and are instead created ad-hoc. There need not be a previously established subkind of mugs including the one pointed at in order for the demonstrative in (34) to be used felicitously; it is created ad-hoc by similarity.¹²

Ad-hoc kinds are described in the literature on concept formation, e.g., by Barcalou (1983) considering complex NPs expressing manners and dispositions (*ways to make friends, things that can be walked upon*). Carlson (1980), who introduced the notion of *reference to kinds* in semantics, discusses various ways to express kinds beyond simple common nouns showing that even NPs like *old white houses that have been painted only once per decade* may be used as kind-denoting. On the other hand, there are NPs failing the test for a kind-denoting reading, e.g., *alligators in the next room*.¹³ When we combine this finding with the one described above, there appears to be a three way distinction: well-established kinds vs. ad-hoc kinds vs. non-kinds (i.e. arbitrary sets). One way of creating ad-hoc kinds is by *mqd* demonstratives.

4.4 The similarity relation

The notion of similarity is highly versatile, which is why it was deemed useless in Goodman (1972): "Similarity, ever ready to solve philosophical problems and overcome obstacles, is a pretender, an impostor, a quack." (p. 437). Goodman's major criticism is that similarity is trivial without specifying the relevant respects of similarity because any two items would be similar in infinitely many ways.¹⁴ In examples like (31a,b) the respects of similarity can be obvious from the context, but the addressee could also ask for specification of the relevant respects: *In which respects is Anna's mug like this one? In which respects was Anna's dancing like this person?* In the example in (31c), however, asking for respects is infelicitous because

¹² So the final result of the similarity analysis is very close to the kind-referring analyses in Carlson (1980), Landman (2006) and Anderson & Morzycki (2013). However, the similarity analysis does not presuppose the existence of arbitrarily complex kinds and instead provides an explanation how these kinds come into existence and why there are subject to the observed constraints.

¹³ This can be tested with the help of kind-selecting predicates like *common / extinct*, cf. Krifka et al. (1995).

¹⁴ For example, a mug and a laptop both weigh less than 100kg, 101kg, 102kg, etc.

the respect is given by the adjective: ?? *In which respects is Anna as tall as this person?* This difference between the adnominal and the adverbial case, on the one hand, and the adjectival case, on the other, will be made use of in the analysis.

Since the respects of similarity, or features of comparison, as we will call them here, are decisive, the relation of similarity has to be 3-place, combining two similar items and, as a third argument, a set of relevant features of comparison. The interpretation of the sentence in (31b) is shown in (37). The mug the speaker points at (*target*) and the mug owned by Anna (*x*) are asserted to be similar with respect to a set of features of comparison *F*. However, the interpretation in (37) would be pointless without spelling out the similarity relation in more detail. This is done by the means of multi-dimensional attribute spaces, which are basically feature structures as is common in, e.g. HPSG grammar (cf. Pollard and Sag 1987), and are spanned by the features of comparison relevant in the case at hand. Such attribute spaces provide a conceptual level of representation, in addition to the level of semantics. They are close to Gärdenfors' (2000) conceptual spaces but they facilitate a qualitative instead of geometrical similarity relation and are integrated into truth-conditional semantics whereas Gärdenfors' conceptual spaces are isolated systems without connection to truth-conditional semantics.

(37) [[Anna hat so eine Tasse]] = $\exists x$. SIM(*x*,*target*,*F*) & mug(*x*) & mug(*target*) & own(Anna,*x*)

Spelling out the similarity relation in more detail raises two questions: first, the question of which features are possible and relevant in a case at hand and secondly, the question of how to make use of multi-dimensional attribute spaces in defining similarity. The latter question is fairly technical and will only briefly be addressed in the remainder of this section (for details see Umbach & Gust 2014). The first one is challenging from the point of view of combining conceptual and semantic issues. It is elaborated in section 5.

The starting point of the similarity analysis in Umbach and Gust (2014) is the parallelism of demonstratives of manner, quality and degree: In (31a) there are two events, viz. Anna's dancing yesterday and the dancing event pointed at, which are similar with respect to, say, posture, rhythm, fluency, speed, etc. In (31b) there are two individuals, namely Anna's mug and the mug pointed at, which are similar with respect to, e.g., size, form, material, manner of decoration etc. In (31c) there are two individuals again: Anna and the person pointed at, which are similar with respect to height. There are, however, three important differences between the adnominal and the adverbial case, on the one hand, and the adjectival case, on the other. First, while in the case of manner and quality there are several features of comparison, in the case of degree there is only one.¹⁵ Secondly, while in the case of manner and quality features of comparison have to be retrieved from the context, in the case of degree the feature of comparison is determined by the lexical meaning of the adjective. Third, in the case of manner and quality the range of values the features are aligned with may be of all sorts. For example, the material of mugs may be classified as porcelain vs. crockery vs. plastics, and the size of mugs may be classified as small vs. medium vs. large, or alternatively be measured in cubic centimeter. In the case of degree, however, the range of values the single feature is aligned with is always metrical, for example, height values are real numbers.¹⁶

From the point of view of measure theory, features are just dimensions and dimensions can be related to various scale types, e.g., ratio scales (with metric values), ordinal scales (where values are ordered but not metric) and nominal scales (with discrete values as with the

¹⁵ "Dimensional" adjectives like *tall* are one-dimensional. There are also multi-dimensional adjectives like *healthy*, cf. Sassoon (2011), which is unproblematic for the analysis.

¹⁶ Evaluative adjectives like *beautiful* and *tasty* presumably lack metrical values, see Umbach (to appear).

material of mugs). This suggests generalizing the notion of measure function common in degree semantics (cf. Kennedy 1999) such that it covers (i) scales other than metrical ones and (ii) more than one dimension, which is harmless from a formal point of view. Thus while adjectival measure functions map individuals to degrees, that is, values in a single ratio scale dimension, *generalized measure functions* map individuals (or events) point-wise into multi-dimensional attribute spaces with dimensions of arbitrary scale types. Examples are shown in (38).¹⁷

Two more remarks are in order. First, in mapping semantic entities (individuals/events) to points in attribute spaces, generalized measure functions warrant the integration of attribute spaces into truth-conditional semantics. Secondly, since the notion of generalized measure functions is a straightforward generalization of the notion of measure functions in degree semantics, they are familiar in semantics. In addition, the multi-dimensional attribute spaces described above are a straightforward generalization of the notion of dimensions in degree semantics. So neither generalized measure functions nor multi-dimensional attribute spaces are semantic aliens.

- (38) a. $\mu_{\text{HEIGHT}}: U \rightarrow \mathfrak{R}$
 e.g. $\mu_{\text{HEIGHT}}(\text{Anna}) = 180$
- b. $\mu_{\text{MUG}}: U \rightarrow \text{MATERIAL} \times \text{FORM} \times \text{SIZE} \times \text{DECORATION}$
 where $\mu_{\text{MUG}}(x) = \langle \mu_{\text{MATERIAL}}(x), \mu_{\text{SIZE}}(x), \mu_{\text{FORM}}(x), \mu_{\text{DECORATION}}(x) \rangle$
 and $\mu_{\text{MATERIAL}}(x) \in \{ \text{porcelain, crockery, plastics, ...} \}$
 $\mu_{\text{SIZE}}(x) \in \{ \text{small, medium, large} \}$
 $\mu_{\text{FORM}}(x) \in \{ \text{round, straight-sided, ...} \}$
 $\mu_{\text{DECORATION}}(x) \in \{ \text{Chinese, Berlin-advertising, ...} \}$
- e.g. $\mu_{\text{MUG}}(\text{Anna's mug}) = \langle \text{crockery, medium, straight, Berlin- advertising} \rangle$

Finally, the similarity relation has to be defined. Note, first, that the range of values of features/dimensions can be of different granularity. For example, the size of a mug can be measured on a three value scale (small/medium/large), but also on a much more fine-grained metric scale of cubic centimeter. Thus the range of possible values determines the granularity of measuring (in Umbach and Gust 2014 granularity is implemented in a more complex way for reasons irrelevant here). Similarity is then defined as indistinguishability in a given attribute space (with fixed features and granularity): two individuals (or events) are *similar* if and only if the points they are mapped to by the generalized measure function cannot be distinguished. Attribute spaces of different granularity may be envisioned as coarser or finer grained grid patterns. From this perspective, two mugs, for example, are similar in the sense defined here if their values with respect to material, size, form and decoration yield points in the same cell of the grid pattern.

5 Features of comparison

In the previous section the relation of similarity was defined as indistinguishability with respect to a given set of features of comparison (and the granularity of their range of values). Setting granularity aside, the features of comparison are decisive in determining whether two items are similar. This raises the question of which features are relevant in a case at hand. One

¹⁷If you are reluctant to speak of measuring in the case of generalized measure functions, call it *characterization*.

readily available answer would be that this is a matter of context, which is trivially true but at the same time unsatisfactory. Although it is clearly impossible to predict which the features of comparison are relevant in a case at hand, there are constraints on which features may possibly serve as features of comparison in combination with particular nominal or verbal predicates. For example, the feature *number of doors* would be perfect when comparing cars but not when comparing mugs – mugs don't have doors, so the number of doors doesn't qualify as a feature of comparison for mugs. But mugs as well as cars can be clean or dirty and nevertheless cleanliness doesn't qualify as a feature of comparison for neither cars nor mugs. Thus there seem to be certain constraints on which features are licensed in similarity comparison.

These constraint will be discussed in this section. It will turn out that they relate to insights into the connection between concepts and properties which are relevant in the area of generics. We will consider adnominal as well as adverbial occurrences of mqd demonstratives. (Recall, that in the case of ad-adjectival occurrences the problem of which features are relevant doesn't arise because there is only one feature of comparison, which is determined by the lexical meaning of the adjective.) While in the adnominal cases constraints on features of comparison can straightforwardly be related to connections between kinds and their properties, this is not so obvious in the adverbial cases. There is, however, a surprising parallel in the semantic literature on manner modification, which seems to relate to connections between kinds and properties, too.

For ease of exposition we will use in this section anaphoric instead of deictic examples. The examples consist of two sentences such that the first introduces an object or event with a certain property and the second includes an mqd demonstrative supposed to pick up this property. (For simplification will speak of *picking up* or *accessing the property in the antecedent sentence* although according to the similarity analysis mqd demonstratives are no kind pronouns.) As before, we will use German examples.

5.1 Adnominal cases

The examples in (39) – (41) are about bikes. In (39a) the property of Anna's bike presented in the PP is readily picked up by *so*, leading to the interpretation that Berta's bike is also one with gears. In (39b) the property of Anna's bike presented by an attributive modifier is picked up as readily, leading to the interpretation that Berta's bike is also an electric one. In (39c) there are two separate modifiers and in (39d) there is no modifier but instead a more specific noun. Still, the particular characteristics of Anna's bike are readily picked up by the mqd demonstrative in the subsequent sentence. So the examples in (39) seem to suggest that there are no problems at all.

- (39) a. Anna hat ein Rad mit Gangschaltung. Berta hat auch so ein Rad (nämlich mit Gangschaltung).
 b. Anna hat ein elektrisches Rad. Berta hat auch so ein Rad (nämlich ein elektrisches).
 c. Anna hat ein elektrisches Rad mit Gangschaltung. Berta hat auch so ein Rad (nämlich elektrisch mit Gangschaltung).
 d. Anna hat ein Mountainbike. Berta hat auch so ein Rad (nämlich ein Mountainbike).
 'Anna has a bike with gears /electric /mountain bike. Berta has a bike like that, too (namely one with gears / an electric one / a mountain bike.)'

In (40) judgments are more subtle. Can (40a) be understood such that Berta has a Greek bike? The problem speakers report with this example is that they don't have a clear picture of Greek

bikes. This is different in (40b) which is unproblematic, since Dutch bikes are a well-established kind in Germany (heavy, durable, upright sitting position ...). In (40c) Anna's bike is said to be a new one. But an interpretation such that Berta's bike is also new is consistently rejected. Although Berta's bike may share some other property with Anna's bike, the fact that it is new seems inaccessible for the demonstrative. This observation is confirmed in (40d) which can be interpreted such that Berta has a mountain bike, but not such that she has a new mountain bike.

- (40) a. ?? Anna hat ein griechisches Rad. Berta hat auch so ein Rad (nämlich ein griechisches).
 b. Anna hat ein holländisches Rad. Berta hat auch so ein Rad (nämlich ein holländisches).
 c. # Anna hat ein neues Rad. Berta hat auch so ein Rad (nämlich ein neues).
 d. Anna hat ein neues Mountainbike. Berta hat auch so ein Rad (# nämlich ein neues Mountainbike) / (nämlich ein Mountainbike).
 'Anna has Greek / Dutch / new bike / new mountain bike. Berta has a bike like that, too (namely a Greek / Dutch / new one / new mountain bike / mountain bike)'.

If, however, *new* is interpreted in the sense of *newly developed* instead of *recently purchased*, it can be picked up by the demonstrative. In (41a), Anna bought a new iPhone because she lost her old one. As with the bike in (39c), an interpretation such that Berta's iPhone shares with Anna's iPhone the property of being newly purchased is ruled out. In contrast, in (41b), Anna bought an exemplar of a novel version of iPhones. This time, the second sentence is preferably interpreted such that Berta has the same novel version. Similarly, the property of being old is accessible if meant to characterize a kind of bikes, as in (41c). This suggests that a property is accessible for the demonstrative if it is not just accidental but in some sense characteristic of the kind denoted by the noun. Truly accidental properties such as having a parking fine notice, as in (41d), appear immune to access by the demonstrative.

- (41) a. # Nachdem sie sich wochenlang über den Verlust ihres iPhones geärgert hat, hat Anna schließlich ein neues iPhone gekauft. Berta hat auch so ein iPhone (nämlich ein neu gekauftes).
 'After being angry about losing her iPhone for weeks, Anna finally bought a new iPhone. Berta has such an iPhone, too (namely a newly purchased one).
 b. Anna geht immer mit der Zeit. Jetzt hat sie sogar ein neues iPhone. Berta hat auch so ein iPhone (nämlich die neueste Version).
 'Anna is always up to date. She even has a new iPhone. Berta has such an iPhone, too (namely the latest version).
 c. Anna's Rad ist alt und verrostet. Berta hat auch so ein Rad (nämlich ein altes verrostetes, das niemand mehr stehlen würde).
 'Anna bike is old and rusty. Berta has such a bike, too (namely an old and rusty one which no one would steal)'.
 d. # Anna's Auto hat einen Strafzettel. Berta hat auch so ein Auto (nämlich eins mit einem Strafzettel).
 'Anna car has a parking fine notice. Berta has such a car, too (namely one with a parking fine notice).'

Here we have to introduce a caveat: features of comparison are not to be mistaken for properties. A feature is like a dimension or a slot in a frame-based representation, for example *color* or *number of doors* or *height*. A feature requires a value in order to turn into a property, as in *color:red* or *number of doors:three* or *height:180*. Alternatively, a feature can be seen as a function from individuals to a range of values, which is the perspective we used when defining generalized measure functions. What we need in similarity comparison are features;

we need to know in which respect Berta's bike is supposed to be similar to Anna's. This is blurred in the anaphoric examples because the antecedent sentences explicitly name a fully blown property, but is obvious in the deictic examples: When someone points to Anna's bike claiming that Berta has a bike like that, the addresses may ask: *In which respect?* and only then look for the value. In the anaphoric cases, features have to be reconstructed from properties. In (40b), for example, Anna's bike is said to be Dutch. The reconstructed feature would be *country of origin*, i.e. Berta's bike is said to be similar with respect to the country of origin.

5.2 Principled connections between properties provide features of comparison

The examples in (39) – (41) demonstrate that some but not all properties qualify as features of comparison when combined with certain nominals, raising the question of how to characterize the difference. The examples suggest that properties qualifying as features of comparison must not be accidental (cf. *new, have a parking fine notice*). Moreover, the properties qualifying as features of comparison qualify at the same time as specifications of a subkind of the kind denoted by the nominal. This is shown in the sentences in (42), which are acceptable with properties that proved accessible for the demonstrative in (39)-(41) and unacceptable otherwise. To put it the other way around, only properties specifying a subkind of the kind denoted by the noun provide features of comparison when *so* is combined with that noun. This finding finally verifies the hypothesis in section 4.3 that the similarity classes generated by mqd demonstratives constitute kinds, albeit ad-hoc ones.

- (42) a. A Dutch bike is a kind of bike.
b. # A new bike is a kind of bike.
c. A / the new iPhone is a kind of iPhone.
d. An old and rusty bike is a kind of bike.
e. # A car with a parking fine notice is a kind of car.

The finding that features of comparison are restricted to properties specifying subkinds raises the question of how to characterize properties specifying a kind, which is prominent in the debate about concept formation in cognitive psychology. Only recently has this debate been connected to the topic of genericity in linguistics by Carlson (2010), by the studies in Prasada & Dillingham (2006) and by Prasada et al. (2013). The studies provide experimental evidence that there are so-called *principled connections* between kinds and properties which an entity has because it is the kind of thing it is.

Principled connections are distinguished from factual connections relating kinds and merely statistically correlated properties. Compare (43) and (44). It is true that dogs are four-legged, as it is true that barns (in the US) are red. It is true, moreover, that dogs are four-legged by virtue of being dogs. It is false, however, that barns are red by virtue of being barns. This is evidence that being four legged is a property principally connected to the dog kind, while being red is only factually connected to the barn kind (and only in the US). More evidence is provided by explanations: If you point to a dog asking why it has four legs, the answer will be: because it is a dog. But if you point to a barn asking why it is red, the answer cannot be: because it is a barn. Being of a kind provides an explanation for principally connected properties but not for mere factual properties. Moreover, unlike mere factual properties principally connected properties license singular indefinite generics¹⁸ (cf. the examples in (43) and (44) from Prasada (2010)).

¹⁸Greenberg (2003) already showed that indefinite singular generics, but not bare plurals, require *by virtue of* generalizations / principled connections between the kind and the predicated property. Ad hoc categories may

- (43) a. Dogs are four-legged.
 b. Dogs, by virtue of being dogs, are four-legged.
 c. Why does that (pointing to a dog) have four legs? Because it is a dog.
 d. Dogs should be four-legged.
 d. A dog is four-legged.
- (44) a. Barns are red.
 b. # Barns, by virtue of being barns, are red.
 c. Why is that (pointing to a barn) red? # Because it is a barn.
 d. # Barns should be red.
 e. # A barn is red.

Coming back to mqd demonstratives, the correlation between properties specifying subkinds and properties qualifying as features of comparison can now be exploited in describing the latter as principally connected properties: Properties specifying subkinds are obviously principally connected to the subkind they specify (cf. (45)). We have to be careful, however, and distinguish kinds and subkinds. The property of having high handlebars is principally connected to Dutch bikes, cf. (46a). At the same time, the property of having (some variant of) handlebars is not principally connected to Dutch bikes but instead to bikes in general (cf. (46b, c)). Thus the correlation between features of comparison and principally connected properties has to be described more precisely: Features qualify as features of comparison (in combination with a certain nominal) if and only if the property of having this feature (instantiated with an arbitrary value) is principally connected to the kind denoted by the nominal.¹⁹

- (45) a. A Dutch bike is from the Netherlands in virtue of being a Dutch bike.
- (46) a. A Dutch bike has high handlebars in virtue of being a Dutch bike.
 b. # A Dutch bike has handlebars in virtue of being a Dutch bike.
 c. A Dutch bike / a bike has handlebars in virtue of being a bike.

5.3 Adverbial cases

Although the focus in the analysis of mqd demonstratives in this paper is on adnominal occurrences, let us briefly consider adverbial ones. In the case of adverbial occurrences the items to be compared are events instead of (ordinary) individuals. Nevertheless the semantics is basically the same the demonstrative expressing similarity (cf. section 4.1). Therefore, exactly as in the adnominal case, the question arises which features qualify as features of comparison. As in the previous section, anaphoric examples will be used consisting of two sentences. The first introduces an event with a certain property and the second includes an mqd demonstrative supposed to pick up this property. As before, we will use German examples.

lead to unacceptable indefinite singular generics if there is no principled connection, cf. (a). But if there is a principled connection (the sitting causes the flatness of the banana) the indefinite singular generic is acceptable (even if low frequency):

- a. # A carpenter in Amherst gives all his sons names ending with 'a' or 'g'.
 b. Carpenter in Amherst give all their sons names ending with 'a' or 'g'. (Greenberg 2003, p.33)
 c. A banana that has been sat on by a rhinoceros is flat.
 d. Bananas that have been sat on by a rhinoceros are flat. (Carlson 2010, p. 17-18)

¹⁹ In Umbach & Gust (2014) these features are called *criteria dimensions* of the kind.

The examples in (47) and (48) are about preparing poultry. In (47) the manner specified in the antecedent sentence is readily picked up by the demonstrative regardless of whether it is expressed by a locative modifier, as in (a), or by a manner adverbial, as in (b), or by a separate lexeme specifying a manner of preparing food, as in (c). In the examples in (48) there is again a locative modifier and an adverbial. However, in both (48a) and (b) the manner is inaccessible for the demonstrative.

- (47) a. Anna hat das Huhn im Wok zubereitet. Berta hat die Ente auch so zubereitet (nämlich im Wok).
 b. Anna hat das Huhn fettarm zubereitet. Berta hat die Ente auch so zubereitet (nämlich fettarm).
 c. Anna hat das Huhn gebraten. Berta hat die Ente auch so zubereitet (nämlich gebraten).
 'Anna prepared the chicken in the wok / low-fat style/ in the frying pan. Berta prepared the duck like this, too.'
- (48) a. # Anna hat das Huhn im Garten zubereitet. Berta hat die Ente auch so zubereitet (nämlich im Garten).
 b. # Anna hat das Huhn heimlich zubereitet. Berta hat die Ente auch so zubereitet (nämlich heimlich).
 'Anna prepared the chicken in the garden/ secretly. Berta prepared the duck like this, too.'

The examples in (49) are still about preparing poultry. In (49a) the manner adverb is not accessible by plain *so*. But it is accessible when combining the demonstrative with the relevant adverbial (cf. (49b)). This occurrence of *so* is reminiscent of the degree uses (as in example (31c)), expressing as it does that Berta's preparing of the duck was similar in the degree of reluctance (they might both be vegetarians). The example in (49c) is like (49a) in rejecting access by plain *so*. But unlike (49a) it licenses an interpretation picking up an implicit manner of preparing chicken (using Anna's recipe). In (49d) the demonstrative is combined with the adverbial yielding a degree interpretation, as in (49b).

- (49) a. # Anna hat das Huhn ungern zubereitet. Berta hat die Ente auch so zubereitet (nämlich ungern).
 b. Anna hat das Huhn ungern zubereitet. Berta hat die Ente auch so ungern zubereitet.
 c. Anna hat das Huhn lecker zubereitet. Berta hat die Ente auch so zubereitet (?? nämlich lecker) (nämlich nach Annas Rezept).
 d. Anna hat das Huhn lecker zubereitet. Berta hat die Ente auch so lecker zubereitet.
 'Anna prepared the chicken reluctantly / tastily. Berta did it this way / lit: so reluctantly, so tastily, too.'

Analogous to the adnominal case, manner modifiers accessible by the demonstrative *so* specify the features of comparison required in similarity interpretation; Berta's manner of preparing poultry is similar to Anna's with respect to the method of cooking, that is, both used a wok. Moreover, as in the adnominal case, there is a close connection to properties specifying subkinds. Consider the sentences in (50). As in the adnominal case only manner modifiers qualifying as features of comparison are acceptable in specifying subkinds of the kind denoted by the verbal predicate. We will not go into details concerning the nature of

verbal kinds; it suffices to see that nominalizations of verbal predicates can be combined with kind denoting expressions such as *kind* or *sort* etc.²⁰

Thus, analogous to the adnominal case, it can be concluded that the similarity classes generated by mqd demonstratives are in fact ad-hoc generated kinds.

- (50) a. Preparing a chicken in the wok is a kind of preparing a chicken.
b. Frying a chicken is a kind of preparing a chicken.
c. # Preparing a chicken in the garden is a kind of preparing a chicken.
d. # Preparing a chicken stealthily is a kind of preparing a chicken.

5.4 Event-internal modifiers

There are no results on manner modifiers corresponding to the results on principally connected properties in the work of Prasada and collaborators (see section 5.2). There is, however, a semantic discussion about manner modification pointing to a closely related fact. In Maienborn & Schäfer (2011) and Schäfer (2013) various types of adverbial modifiers are distinguished, including event-external modifiers and event-internal modifiers. The two types of modifiers differ in German in their syntactic base position (cf. Frey (2003)). Semantically, while event-external modifiers can be interpreted intersectively, event-internal modifiers cannot. For example, the locative modifier *im Garten* 'in the garden' in (48a) is classified as event-external since it can be interpreted as the place of the cooking event: *∃e.prepare-chicken-by-Anna(e) & in(e, garden)*. Such an interpretation would not be adequate in the case of *im Wok* 'in the wok' even though it is a locative modifier, since the wok is not the location of the cooking event but rather an instrument or method.

The difference between event-external and event-internal modifiers is described in Maienborn & Schäfer (2011) such that external ones modify the event as a whole while internal ones "specify some internal aspect of the verb's event argument, whose exact role is left semantically implicit and can only be determined when taking into account conceptual knowledge about the respective event type" (p. 1411). This idea is surprisingly close to notion of principally connected properties of a kind discussed in the previous section. We will not be able in this paper to prove that event-internal modifiers in the sense of Maienborn and Schäfer are equivalent to principally connected properties in the sense of Prasada and collaborators. It shall be sufficient to consider the sentence in (51) which is of the same form as the sentences in (43) both naming properties principally connected to kinds of individuals/events.

- (51) Preparing a chicken in the wok makes use of a wok by virtue of being the kind of cooking it is.

Let us finally look at the examples in (52) adapted from Schäfer (2013). Schäfer noted that the adverb *laut* ('loudly') has two interpretations depending on whether it serves as an event-external or an event-internal modifier. The contexts in (a) and (b) are such that they facilitate one of these interpretations.²¹ In (a) the singing of the club song by Anna was such that it

²⁰ When applying to event kinds the minimal assumption will be that they are a variety of kinds of individuals, but see more committed accounts, for example Gehrke (to appear).

²¹Note that the position of the adverbials differs in (a) and (b) (cf. Frey (2003)). The syntactic reflection of the external/internal distinction seems to be paralleled by a syntactic reflection in the adnominal case, namely the default order of adnominal modifiers, for instance *number < time/space < quality/color < material/origin*.

Without informational structure constraints (a) would be preferred over (b).

- a. a new Japanese car
b. # a Japanese new car

could be heard from far away. In (b) Anna performed the Mimi role in La Boheme in a specific way, that is, forte.

- (52) a. Anna hat laut die Vereinshymne gesungen.
'Anna sang the club song loudly in the locker room.'
b. Anna hat die Partie der Mimi laut / forte gesungen.
'Anna sang the role of Mimi forte.'

The above examples demonstrate the difference between external and internal modification again: the modification in (a) pertains to the overall event while the modification in (b) specifies an internal dimension of opera singing. In addition, it confirms the finding in (49) that event external modifiers realized by gradable adjectives cannot be picked up by plain *so* but instead require the repetition of the adverbial. This is demonstrated in (53) again. The event-external modifier *laut* ('loudly') cannot be picked up by plain *so*, but only by combining *so* with the adverb, indicating that similarity pertains to the degree of loudness rather than to the manner of singing (cf. (53a, b)). In contrast, the event-internal modifier *laut/forte* in (53c) can be accessed by plain *so*, similarity pertaining to categorical values (*piano, mezzo-piano, mezzo-forse, forte*) in this case.²²

- (53) a. # Anna hat in der Umkleide laut die Vereinshymne gesungen. Berta hat sie auch so gesungen (nämlich laut).
b. Anna hat in der Umkleide laut die Vereinshymne gesungen. Berta hat sie auch so laut gesungen.
'Anna sang the club song loudly. Berta sang it like this, too. / lit: sang it so loud, too.'
c. Anna hat den Partie der Mimi laut / forte gesungen. Berta hat sie auch so gesungen.
'Anna sang the role of Mimi forte. Berta sang it like this, too.'

6 Conclusion

This paper focuses on demonstratives of manner, of quality and of degree (*mqd demonstratives* for short), which have rarely received any attention so far. In the first part of the paper, a cross-linguistic sketch of their possible forms and uses was presented. This typological survey showed that the formal inventory varies along three major parameters. First, languages may use the same term for manner, quality and degree (e.g. German), but they may also distinguish two (e.g. Spanish) or even three of these semantic categories (e.g. French). Secondly and analogously to other demonstratives, languages may exhibit a two-term or three-term opposition in the deictic dimension (proximal, medial, distal) or no differentiation at all. Finally, *mqd* demonstratives can be realized by simple expressions (e.g. German *so*) or by complex ones (e.g. English *like this*), in which the two semantic components are encoded separately. More often than not such complex expressions lose their transparent formal make-up as a result of lexicalization.

The three use types generally distinguished for (ad)nominal or locative demonstratives (cf. Haliday & Hasan, 1976: 31ff.) are also found in the semantic domain under discussion: *mqd* demonstrative have an exophoric (deictic) and an endophoric (anaphoric as well as

This observation is explained in Bouchard (2005) such that the easier the adjectival property can be understood as denoting an ad-hoc concept when combined with the head noun, the closer to the noun will it be positioned.

This explanation is surprisingly close to the similarity analysis.

²²Many thanks to Martin Schäfer for providing this example.

cataphoric) use like other demonstratives. Due to their meaning, the referents they identify in their endophoric use may be much more complex, however, than those identified by other demonstratives. Analogously, the antecedents they relate to in their anaphoric use may be much more varied and complex than is the case for other demonstratives. In their cataphoric use they typically relate to stretches of direct speech or to ideophones. Like other demonstratives or interrogative pronouns, mqd demonstratives provide an important source for processes of grammaticalization and thus for the formal marking of various constructions. Three examples of such constructions were discussed: equative comparatives, exclamatives and adverbial clauses.

In the second part of this paper a semantic analysis of mqd demonstratives was presented, taking German *so* as its starting point. It was shown that mqd demonstratives pattern with standard demonstrative like *that* in being directly referential. Unlike standard demonstratives, however, they do not convey identity of the target of the demonstration gesture and the referent of the linguistic phrase. It was argued that mqd demonstratives refer to individuals (or events) that are similar rather than identical to the one pointed at. Moreover, it was argued, that the set of items similar to the target pointed at – the referent being one of these – has kind-like properties and thus represents a kind rather than a mere set, even if an ad-hoc generated kind.

The notion of similarity requires one or more features of comparison with respect to which two items are similar. This is trivial in ad-adjectival cases since in these cases there is only one feature of comparison which is, moreover, determined by the lexical meaning of the adjective. In adnominal and adverbial cases there are multiple features of comparison which have to be retrieved from the context. There are, however, constraints. In combination with a particular nominal or verbal predicate some, but not all features are licensed in similarity comparison. In adnominal cases results from genericity and concept formation were helpful. It turned out that features of comparison are licensed only if they yield properties principally connected to the kind denoted by the noun. Adverbial cases are not covered by these results, but there is the semantic notion of event-internal manner modification, which appears to be closely related to the idea of principally connected properties. Although it would be premature to draw definitive conclusions, it seems plausible that event-internal manner modifiers are in fact principally connected to the kind of event their occur with.

Demonstratives of manner, quality and degree are a neglected subclass and have rarely been subjected to detailed analysis up to now. We hope to have shown, however, that they are more than just a couple of lexical items that have been overlooked. They constitute an important subclass of demonstratives, exhibiting all the relevant referential and connective functions of such deictic expressions, they play an important role as grammatical markers of a wide variety of constructions and they are devices for the ad-hoc generation of kinds, thereby providing insight in the general role of demonstratives in establishing kinds.

***Thank you** for sharing your data with us or for providing us with data from your own languages: Suzie Bearune (Nengone), Östen Dahl (Swedish), Luna Filipović (Serbian), Lena Ghazaryan (Armenian), Edith Moravcsik (Hungarian), Aino Kärnä (Finnish), Tania Kuteva (Bulgarian), Claire Moyse-Faurie (Oceanic languages, French), Olga Krasnoukhova (South American languages), Akio Ogawa, Yoko Nishina (Japanese), Stéphane Robert (Wolof), Süheyla and Christoph Schroeder (Turkish), Jenneke van der Wal (Makhuwa), Alain Peyraube, Wang Lin (Mandarin).

*** The second author acknowledges financial support by the Deutsche Forschungsgemeinschaft DFG (UM 100/1-1).

References

- Anderson, S. & Keenan, E. (1985) Deixis. In: Shopen, T. (ed.) *Language Typology and Syntactic Description*. Vol. III, 259-308.
- Anderson, C., and M. Morzycki (2013) Degrees as kinds. To appear in *Natural Language and Linguistic Theory*.
- Barsalou, L. W. (1983) Ad hoc categories. *Memory & Cognition* 11: 211– 27.
- Bolinger, Dwight (1972). *Degree Words*. The Hague: Mouton.
- Bouchard, D. (2005) Sériation des adjectifs dans le SN et formation de concepts. *Recherches linguistiques de Vincennes* 34, 125-142.
- Carlson, G. N. (1980) *Reference to kinds in English*. New York and London: Garland.
- Carlson, G. (2010). Generics and concepts. In F. J. Pelletier (ed.) *Kinds, Things and Stuff*. Oxford University Press, 16-36.
- Diessel, H. (1999). *Demonstratives. Form, Functions and Grammaticalization*. Amsterdam: Benjamins.
- Diessel, H. (2006). Demonstratives, joint attention, and the emergence of grammar. *Cognitive Linguistics* 17.4: 463-489.
- Dixon, R.M.W. (2003). Demonstratives: A cross-linguistic typology. *Studies in Language* 27:1.61-112.
- Ehlich, K. (1986) *so* – Überlegungen zum Verhältnis sprachlicher Formen und sprachlichen Handelns, allgemein und an einem widerspenstigen Beispiel. In I. Rosengren (Hg.) *Sprache und Pragmatik*, Lunder germanistische Forschungen 55, 279-298.
- Frey, W. (2003) Syntactic conditions on adjunct classes. In Lang, Fabricius-Hansen, Maienborn (eds.) *Modifying Adjuncts*. Berlin: Mouton de Gruyter, 163–209.
- Gärdenfors, P. (2000) *Conceptual Spaces*. Cambridge MA: MIT Press.
- Gehrke, B. (to appear). Adjectival participles, event kind modification and pseudo-incorporation. *Natural Language and Linguistic Theory*.
- Ghesquière, L. & van der Velde, F. (2011). A corpus-based account of the development of English *such* and Dutch *zulk*: Identification, intensification and (inter)subjectification. *Cognitive Linguistics* 22.4: 765-797.
- Givón, Talmy (ed.) (1983). *Topic Continuity in Discourse: A Quantitative Cross-Language Study*. Amsterdam: Benjamins.
- Göksel, Asli & Kerslake, Celia (2005). *Turkish: A Comprehensive Grammar*. London: Routledge.
- Goodman, N. (1972) Seven strictures on similarity. In *Problems and Projects*, ed. N. Goodman, 437–447. Indianapolis and New York: The Bobbs Merrill Company.
- Greenberg, Y. (2003) *Manifestations of Genericity*. New York: Routledge.
- Gruzdeva, Ekaterina. 2006. 'How far from origo?' or what the distance means for Nivkh demonstrative reference. In Mickael Suominen, et.al. (eds.), *A man of measure. Festschrift in honour of Fred Karlsson on his 60th birthday*, 190-199. The Linguistic Association of Finland, Turku: SKY Journal of Linguistics.
- Güldemann, Tom (2008). *Quotative Indexes in African languages : A Synchronic and Diachronic Survey*. Berlin: Mouton de Gruyter.
- Guerin, Valeria (2014). Demonstrative verbs: A preliminary typology of verbal manner. Paper presented at the Weekly Seminar Series of the Language and Culture Research Centre, The Cairns Institute, James Cook University, July 2 2014.
- Halliday, M.A.K. & Hasan, Ruqaiya (1976). *Cohesion in English*. London: Longman.
- Haspelmath, M. & Buchholz, O. (1998). Equative and similitive constructions in the languages of Europe. In: van der Auwera, J. (ed.) *Adverbial Constructions in the Languages of Europe*. Berlin: Mouton de Gruyter, pp. 277-334.

- Haspelmath, Martin (2015) Equative constructions in world-wide perspective. In Treis, Yvonne & Vanhoeve, Martine (eds.) *Similative and Equative Constructions: A Cross-linguistic Perspective*. Amsterdam: Benjamins.
- Heine, Bernd & Kuteva, Tania (2002). *World Lexicon of Grammaticalization*. Cambridge: Cambridge University Press.
- Himmelmann, Nikolaus (1996). Demonstratives in narrative discourse. A taxonomy of universal uses. In Fox, Barbara (ed.) *Studies in Anaphora*. Amsterdam: Benjamins, 205-254.
- Himmelmann, Nikolaus (1997) *Deiktikon, Artikel, Nominalphrase: Zur Emergenz syntaktischer Struktur*. Tübingen: Niemeyer.
- Hole, Daniel & Klump, Gerson (2000). "Definite type and indefinite token: the article *son* in Colloquial German", *Linguistische Berichte* 182: 231-244.
- Jäger, Agnes (2010). Der Komparativzyklus und die Position der Vergleichspartikeln. *Linguistische Berichte* 224: 467-493.
- Jäger, Agnes (2012). „So manag so her bitharf: So als Vergleichspartikel und –korrelat in der Geschichte des Deutschen“, unpubl. Paper, University of Frankfurt.
- Kaplan, D. (1989). Demonstratives. In Almog, Perry & Wittstein (eds.), *Themes from Kaplan*, Oxford University Press, 481–563.
- Kennedy, C. (1999) *Projecting the Adjective: The Syntax and Semantics of Gradability and Comparison*. Garland Press, New York.
- Koenig, Ekkehard (2012). Le rôle des déictiques de la manière dans le cadre d'une typologie de la deixis. *Bulletin de la Société de Linguistique de Paris*, CVII. 11-42.
- Koenig, Ekkehard (2014) Manner deixis as source of grammatical markers in Indo-European languages. in: Viti, Carlotta (ed.) *Perspectives on Historical Syntax*. Amsterdam: Benjamins.
- Koenig, Ekkehard (2015) The deictic identification of similarity. In Treis, Yvonne & Vanhoeve, Martine (eds.) *Similative and Equative Constructions: A Cross-linguistic Perspective*. Amsterdam: Benjamins.
- Krasnoukhova, Olga (2012). *The Noun Phrase in the Languages of South America*. Utrecht: LOT.
- Krifka, M., F. Pelletier, G. Carlson, A. ter Meulen, G. Link, & G. Chierchia (1995) Genericity: An introduction. In G. Carlson & F. Pelletier (eds.) *The Generic Book*. University of Chicago Press, Chicago, pp. 1-124.
- Landman, M. (2006) Variables in natural language. Ph.D. dissertation, University of Massachusetts, Amherst.
- Lewis, G.L. (1967). *Turkish Grammar*. Oxford: Clarendon Press.
- Maienborn, C. and M. Schäfer (2011) Adverbials and Adverbs. In *Semantics. An international handbook of natural language meaning.*, vol. 2, 1390–1420. Berlin: Mouton de Gruyter.
- Nunberg, G. (1993) Indexicality and Deixis. *Linguistics and Philosophy* 16: 1-43.
- Pollard, Carl & Ivan A. Sag (1987) *Information-based Syntax and Semantics*. CSLI Lecture Notes 13. CSLI Publications, Stanford.
- Prasada, S., and E. M. Dillingham (2006) Principled and statistical connections in common sense conception. *Cognition* 99:73–112.
- Prasada, S. (2010) Conceptual representations and some forms of genericity. In F. Pelletier (ed.) *Kinds, things, and stuff*. Oxford University Press. Vol. 12, 36-59.
- Prasada, S., Khemlani, S., Leslie, S-J, Glucksberg, S. (2013). Conceptual distinctions amongst generics. *Cognition*, 126, 405-422.
- Sassoon, G. 2011. Adjectival vs. nominal categorization processes. *Belgian Journal of Linguistics* 25:104–147
- Schäfer, M. (2013) Positions and interpretations. German adverbial adjectives at the syntax-semantics interface. Berlin: De Gruyter Mouton.

- Thurmair, Maria (2001). *Vergleiche und Vergleichen. Eine Studie zu Form und Funktion der Vergleichsstrukturen im Deutschen*. Tübingen: Niemeyer.
- Tversky, A. (1977) Features of similarity. *Psychological Review* 84:327–352.
- Umbach, C. & C.Ebert (2009) German demonstrative *so*- intensifying and hedging effects. *Sprache und Datenverarbeitung* 33. 1-2/2009, 153-168.
- Umbach, C. & H. Gust (2014) Similarity Demonstratives. *Lingua* 149, 74-93.
- Umbach, C. (2014) Expressing similarity: On some differences between adjectives and demonstratives. *Proceedings of IATL 2013*, MIT Working Papers in Linguistics.
- Umbach (to appear) Evaluative propositions and subjective judgments.