

# Demonstratives of Manner, of Quality and of Degree: A Neglected Subclass<sup>1</sup>

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## 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. *vot*), 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

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<sup>1</sup> We would like to thank Martin Schäfer and Britta Stolterfoht as well two anonymous reviewers for constructive criticism and helpful suggestions. The second author also acknowledges financial support by the Deutsche Forschungsgemeinschaft DFG (UM 100/1-1).

verbal interaction, provides the starting point of all further developments, (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. Diessel 1999; König 2012; 2014; 2015a-b).

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 (*MQD demonstratives* for short), 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 for German and English, according to which demonstratives of manner, quality and degree express ‘similarity’, thereby creating ad-hoc kinds. It goes without saying that we cannot assume that the relevant counterparts in other languages have exactly the same semantics. Several of our detailed comparative studies (König 2012, 2014, 2015a) have shown, however, that major aspects of the analyses developed for German and English carry over to other languages. 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) a. Hans ist so (+ mimicking or pointing gesture).  
‘Hans is/looks like this.’  
b. 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 article.<sup>2</sup> The reason why we have chosen German rather than English examples is - apart from the fact that we are native speakers of that language - 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 (2b) 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<sup>3</sup>**

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

In identifying such differentiations in the content dimension, we often find that the relevant expressions are restricted to only one or two of the three use types (exophoric, anaphoric, cataphoric), generally distinguished for demonstratives. In French, for example, the degree adverb *tellement* does not have an exophoric use, which can only be expressed by the bi-partite demonstrative *comme ça* (*Il est grand comme ça*. ‘He is so/this tall’). In Russian, by contrast, the demonstratives *tak* ‘manner’ and *takoj* ‘quality, degree’ can only be used exophorically if they combine with the identificational demonstrative *vot* (*On vot takoj bol’shoj*. + gesture ‘He is this tall’). Our table also shows that in earlier periods of English 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.

<sup>2</sup> Moreover, *solche* or (colloquially *sonne*) is used as plural for singular *so ein*. Note, however, that in Hole & Klumpp (2000) *sonne* is analyzed as a separate article.

<sup>3</sup> Demonstratives of manner, quality and degree have received very little attention in the literature so far, with the exception of some studies on the ‘particle’ *so* in German or *zo* in Dutch. The comparative data presented in this section are therefore largely taken from earlier publications of one of the authors (König 2012, 2014, 2015a, b)

The brackets around these two expressions are meant to indicate that the exophoric (deictic) 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)	
<b>speaker proximal</b>	näin	így	koo	ays-pes	kkuší	‘this way’
<b>hearer proximal</b>	noin	úgy	soo	ayn-pes	ssuší	‘that way’
<b>(medial)</b>						
<b>distal</b>	(niin)	amúgy	aa		lluší	
<b>anaphoric</b>	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 central Italian dialects. The following examples from Finnish and Japanese illustrate the relevant deictic distinctions:

FINNISH (Aino Kärna, p.c.)

- (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 (Yoko Nishina, p.c.)

- (6) a. Hanako-wa **koo** (+gesture) odor-u. ‘Hanako dances like this.’ (speaker is dancing)  
       Hanako-TOP like this            dance-PRS
- b. Hanako-wa **soo** (+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 simple 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
<b>speaker proximal</b>	like this	<i>zhè-yang</i>	fene'eki 'this way'
<b>hearer proximal</b>	like that	<i>nà-yang</i>	fena'aki 'that way'
<b>(medial)</b>			
<b>distal</b>			fela'aki
<b>anaphoric)</b>	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	definiteness	place	quality	degree	manner
speaker-related: <b>ko-</b>	ko-re	ko-no	ko-ko	ko-nna	ko-nnani	ko-o
hearer-related: <b>so-</b>	so-re	so-no	so-ko	so-nna	so-nnani	so-o
distal: <b>a-</b>	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 (Lena Ghazaryan, p.c.)**

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

To summarize, on the basis of the data available to us so far, we conclude that there are (at least) 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, Finnish)
  - (ii) two-term oppositions (Spanish)
  - (iii) three-term oppositions (French, Latin, Armenian, Japanese)
  
- (8) formal differentiation in the deictic dimension, comprising up to three options:<sup>4</sup>
  - (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, Makhuwa)

<sup>4</sup> In Nivkh (isolate, Russia) nominal demonstratives contrast as many as five distances from the speaker: proximal > close > medial > remote > distal (Gruzdeva, 2006: 193).

(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.

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 to 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, 2015). In the vast majority of languages, however, this combination of features does seem not occur.

### 3. Use Types

#### 3.1. Exophoric Uses

In all the 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 among linguists 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 a current speech situation and 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, possibly representing a stage when communication heavily depended on gestures.<sup>5</sup> Moreover, as is shown in König (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 that 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 a value in the dimension of length. 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 here like this and there is nothing I can do about it'

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<sup>5</sup> We have to admit, though, that the existence of such a stage in the evolution of languages has never been clearly established and – as one reviewer pointed out to us – there appears to be reason to be skeptical that this hypothesis should ever be supported by clear evidence.

- (reaction to a critical comment about the inappropriate attire of the speaker)
- b. (Wenn du dich beeilt hättest, hätten 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.’<sup>6</sup>
- 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.<sup>7</sup> Only (10a) could be accompanied by a vigorous gesture of both hands moving up and down the sides of the speaker’s body, palms facing upwards.<sup>8</sup>

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:

- (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 the 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 degree demonstratives, attributive adjectives or relative clauses for quality demonstratives and manner adverbials or propositions for manner demonstratives (but see section 5 for the notion of antecedent in the similarity analysis; see also König 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.

<sup>6</sup> Note that English *as* is the result of a fusion of Old English *eall swa* ‘all/precisely so’.

<sup>7</sup> 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).

<sup>8</sup> This was pointed out to us by one of the reviewers.

- 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, Güldemann (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 the 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 *sic, 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 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 Süheyla 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. (speaker 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. König 2012; 2014; 2015a-b). 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 6 major types of equative comparative constructions found in the

languages of the world. The dominant strategy found in European languages (Germanic, Romance, Slavic, Balkan languages) 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, French and Russian. A rough analysis of such constructions is given in (21e):

- (21) a. Karl ist **so** groß **wie** Peter.  
 b. Charles is **as** tall **as** Peter.  
 c. Charles est **aussi** grand **que** Pierre.  
 d. Kostja **takoj** umnyj **kak** ego sestra.  
     Kostya [so smart] [as his sister]  
     ‘Kostya is as smart as his sister.’  
 e. 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, *kak* in Russian) used as standard marker (cf. (21e)).<sup>9</sup> 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:

- (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 tall) ’.

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 (*John is as tall as that*). If our speculations about the development of equative constructions go in the right direction, it is difficult to decide 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. Propositional anaphors and adverbial connectives

Our second example of a general process of grammaticalization involving demonstratives of our domain, in general, and manner demonstratives, in particular, leads to propositional anaphors and adverbial connectives as targets. These developments are clearly based on the anaphoric uses of the relevant demonstratives and are particularly evident in the form of

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<sup>9</sup> 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*).

propositional anaphors used as objects in languages like English, Japanese and Russian. As already mentioned above, after verbs of propositional attitude (*think, guess, suppose, imagine, etc.*) the anaphoric expression in object position that refers back to a preceding sentential antecedent typically takes the form *so* rather than *it*:

- (24) A. Our economic situation is very difficult.  
 B. I suppose/think/imagine...so./Apparently, so.

After some verbs (*say, expect, regret, etc.*) both *so* and *it* can be used, with a subtle contrast in meaning (*She said so. vs. She said it.*). Very similar extensions in the use of manner demonstratives can be found in Russian and in Japanese. In Japanese, it is the hearer-proximal (medial) demonstrative *soo* that is found in this use. Given that in dialogues of type (24), the anaphor relates to an utterance made by the previous speaker and current addressee, this choice is clearly motivated interactionally:

JAPANESE (Nishina, p.c.)

- (25) A. Nihon-no keizei zyookyoo-wa kanari waru-i.  
 Japan-GEN economy situation-TOP pretty bad-PRS  
 ‘The economic situation of Japan is pretty bad.’  
 B. Watashi-mo soo omo-u.  
 I.SG-too DEM.MANNER think-PRS  
 ‘I think so, too.’

In both English and Japanese, to take again these two languages as examples, manner demonstratives are also frequently found as adverbial connectives, either in combination with another expression (Engl. *if so, even so, etc.*) or in isolation. This use is again based on the anaphoric one. The relevant use of basic manner demonstratives typically occurs 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 available in English (cf. König 2014):

- (26) 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:

- (27) 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’

In Romance languages, the basic manner demonstrative (*si*) is generally used as conditional connective.

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 (26) are an instance of polysemy or of a vague univocal meaning will not be discussed further at this point.

In Japanese, too, we find adverbial connectives with the hearer-proximal (medial) manner demonstrative *soo*, in addition to those formed with the help of adnominal demonstratives. In contrast to what we saw in English, the relevant connectives are typically complex forms, combining expressions denoting an adverbial relation with the propositional anaphor *soo*. In the following list, the connectives are classified according to the relation they denote (cf. König & Nishina, 2015a: 25f.):

- (28)a. (conditional) *sositara* (< *soositara* < *soo s-itara* ‘so do-cond’), *soosureba*, *sonnara*;
- b. (causal) *souiwakede*, *sonde*, *sonotame*;
- c. (inferential) *assoo*; *sonzya*, *soizya*;
- d. (concessive) *soo-waitte-mo*, *soredemosorenanoni*, *sore-ga*
- e. (resultative) *soo site*, *sorede*, *sonokekka*;

### 3.3.3. Markers of affirmation

A third example will be mentioned only briefly. Markers of affirmation are related to demonstratives of manner in a variety of languages. Clear examples are provided by Italian and Spanish *si*, by Polish *tak*, by English *yes* (< *yeah swa*). In some other languages, the relevant expressions have a less general meaning and can only be used for affirmation in specific contexts. In French *si* can only be used after negative interrogatives (*Vous ne comprenez pas? – Si, si!*). In Finnish, the distal demonstrative of manner (*niin*) is only used in affirmations expressing certain reservations and in Russian *tak* can be used for affirmation but is used more rarely so than its counterpart in Polish. It is, moreover, interesting to note in this context that markers or particles of affirmation frequently occur as propositional anaphors, regardless of whether they derive from manner demonstratives or not.

- (29)a. (Ital.) *Penso di sì*. ‘I think so.’
- b. (Spanish) *Credo que si*.
- c. (Germ.) *Ich glaube ja*.

## 4 The semantics of demonstratives of manner, quality and degree

### 4.1 Demonstratives expressing similarity

While in the first part of this paper, demonstratives of manner, quality and degree were examined from the point of view of typology and use type, the focus of the second 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 demonstratives of manner, quality and degree are accompanied by a pointing gesture (analogous to the examples in (1)-(3) at the beginning of the paper). We will focus on German examples in this part of the paper since German provides a simple form for all of manner, quality and degree.<sup>10</sup> It seems safe to assume that the corresponding demonstratives in other languages, simple as well as complex ones, are equivalent in meaning in terms of the similarity analysis presented below. For example, German *so ein Auto* is assumed to be semantically equivalent, from the point of

<sup>10</sup> See Ehlich (1989) for an early analysis of German *so* as a demonstrative.

view of the similarity analysis, to Polish *takie auto* and English *a car like this*. For ease of exposition, demonstratives of manner, quality and degree are 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 out from the idea that they express similarity.<sup>11</sup> 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. Since similarity is, from a cognitive point of view, basic in classification processes, sets of similar items – "similarity classes" – appear closely related to kinds. It will in fact be argued that the similarity classes created by manner and quality demonstratives are ad-hoc created kinds – a subkind of dancing similar to the dancing pointed at in (31a) and a subkind of mugs similar to the mug pointed at in (31b). Degree demonstratives, however, appear slightly different, for example since they do not combine with the noun *kind*. Thus although degree demonstratives express similarity, too, the resulting similarity classes are not considered as kinds in this analysis.<sup>12</sup>

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 *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, thus confirming the idea that MQD demonstratives create ad-hoc kinds (section 5.1, 5.2). Clues about the connection between

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<sup>11</sup> This is the reason why MQDs are called *similarity demonstratives* in Umbach and Gust (2014). Note, however, that the notion of similarity employed in this paper is adopted from Cognitive Science, and is more strict than the meaning of the adjective *similar* – similarity in this analysis is not mere resemblance but rather "near-sameness" or "indistinguishability with respect to certain features".

<sup>12</sup> One reviewer suggested that the semantic asymmetry between manner and quality, on the one hand, and degree, on the other, might lead us to predict that manner and quality demonstratives coincide more frequently than either of them coincides with degree. Only some of our data confirm this prediction (e.g. Spanish: *asi/asi* vs. *tan*, Italian *cosi/cosi* vs. *tanto*). Also, in Hindi degree is expressed by an amount expression *itnaa* 'this much', while manner and quality is expressed by *aisaa* 'like this'. Finally, in English *this tall* is preferred over *tall like this*. Differences in expressing the degree cases might indicate different strategies in conceptualizing degree comparison (see, e.g., Beck et al. 2009). There are, however also languages in which quality and degree can be coded identically and differentiated from manner demonstratives (e.g. Russian (*vot*) *takoj* vs. (*vot*) *tak*), in addition to those cases where all three ontological categories are expressed differently (Latin, Armenian, Japanese) or are not differentiated at all (German), see section 2.

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.

## 4.2 Direct reference

In his seminal paper in (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 whereas predicates take their values from the circumstances of evaluation (possible worlds, past and future times) which can be shifted by, inter alia, a counterfactual premise. Suppose that the sentences in (32) are uttered in a situation where there are two mugs on the table, one with a Chinese decor and the other one with a Berlin advertising slogan. The Chinese one is in the middle while the other one is at the corner. Suppose, furthermore, that the speaker points to the mug in the middle of the table, so the sentence in (32a) is true. However, assuming that the speaker as before points to the mug in the middle, the sentence in (32b) is false. This is meant when saying that demonstratives must take their values from the context of utterance – the expression *that mug* in (32b) cannot be interpreted as being evaluated in the (counterfactual!) circumstance in which the mugs have changed places. In (32c), however, the mug is not picked out by a demonstrative but instead by the predicate *in the middle*. This sentence is true, which is evidence that predicates, unlike demonstratives, are sensitive to (possibly counterfactual) circumstances of evaluation.

- (32) a. That mug is Chinese. (true)  
b. If the mugs had changed places, that mug would be from Berlin. (false)  
c. If the mugs had changed places, the mug in the middle would be from Berlin. (true)

Kaplan considers demonstratives like *that* and *that man*, but not the MQD variety of demonstratives examined in this paper. So the question arises of whether MQDs 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. The Chinese mug is in the middle and the Berlin mug is at the corner, and the speaker points to the Chinese one in connection with all of the utterances in (33) and (34). Furthermore, Anna has a mug resembling the Chinese one (and this is the only mug she has). On these premises, the sentences in (33a) and (34a) are true.<sup>13</sup> When shifting the circumstances of evaluation, as in (33b) / (34b), 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, a mug resembling the Chinese one. So, as in the example in (32b), the sentences in (33b) / (34b) are false. Finally, if the MQD demonstrative is not used deictically but instead in an equative construction using the predicate *in der Mitte / in the middle*, the sentences are true since, as before in (32c), the predicate is sensitive to the circumstances of evaluation (cf. (33c) and (34c)).<sup>14</sup>

- (33) a. So eine Tasse hat Anna auch. (true)  
b. Wenn die Tassen Plätze getauscht hätten, dann hätte Anna nicht so eine Tasse. (false)  
c. Wenn die Tassen Plätze getauscht hätten, dann hätte Anna nicht so eine Tasse wie die in der Mitte. (true)
- (34) a. Anna has a mug like that, too. (true)

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<sup>13</sup> Note that there is no difference between German and English, and between simple and complex MQDs.

<sup>14</sup> Readers wondering what happens if the MQD demonstrative is replaced by the predicate *ähnlich / similar* are referred to Umbach (2014).

- b. If the mugs had changed places, Anna would not have a mug like that. (false)
- c. If the mugs had changed places, Anna would not have a mug like the one in the middle. (true)

The data in (34) are evidence that MQD demonstratives are directly referential. There is a problem, however: Direct reference in Kaplan's terms not only means 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 standard demonstratives as in *diese Tasse* or *that mug*. In the case of MQD demonstratives, however, it is plainly false: none of the sentences in (33) and (34) entails that Anna's mug is identical with the one the speaker points to.<sup>15</sup>

Lack of identity between the target of the pointing gesture and the referent of the phrase has been observed with demonstratives before. Nunberg (1993) discusses examples analogous to this: in pointing to the (female) minister of defense Ursula von der Leyen, someone says *That person is usually a man*. Nunberg analyzes these examples as involving *deferred reference*, i.e. as cases where the relation between the target of the pointing gesture and the referent of the demonstrative phrase is an arbitrary salient relation instead of identity. In the case of MQD demonstratives, by contrast, 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 related to the mug the speaker is pointing at by similarity.

#### 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 actual mug the speaker is pointing to. This is the reason why identity of referent and target had to be rejected. One may, however, think that the speaker does not point to the actual mug but rather to the kind instantiated by the mug. On the assumption that the demonstrative refers to a kind referent and target are identical. 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. Landman (2006) adapted Carlson's analysis to Polish *tak* and German *so*, including adverbial uses by postulating event-kinds as an ontological category in addition to (nominal) kinds. Recently, Anderson and Morzycki (2015) extended this analysis to include ad-adjectival uses of Polish *tak* and German *so* by postulating degree-kinds (which are thought of as kinds of states of individuals).

Although this analysis readily captures the observed cross-categorical uniformity, it raises a number of questions. First, there is the problem of transparency: the assumption that MQD demonstratives refer to kinds precludes a transparent analysis of complex MQD's of the *like that* form. On this assumptions complex MQD's will have to refer to kinds as do simple ones, contrary to the intuition that they are composed out of a regular demonstrative (*that*) and a predicate (*like*). In contrast, the analysis proposed in this paper starts from the idea that MQDs include a demonstrative (*that*) and a similarity (*like*) component.

More severe objections can be addressed to Anderson and Morzycki's idea of kinds, which seems oversimplified in several respects. The idea of degree kinds appears doubtful when faced with the distribution of the noun *kind* in English or *Art* in German. If degrees are kinds of states of individuals one would expect that *this kind of being tall / diese Art von groß sein* are understood as denoting a degree. However, these expressions can only be understood as denoting a way of being tall – for example, having extremely long legs, which is clearly not

<sup>15</sup> Though they could be identical by chance.

a degree meaning. In the analysis proposed here cross-categorical uniformity of MQD demonstratives is accounted for by interpreting them as expressing similarity across categories – similarity between individuals in the adnominal cases, between events in the adverbial case, and between either individuals or events in the ad-adjectival cases (depending on whether the adjective is predicated on individuals or events). There is no need, then, to postulate degree kinds in order to maintain a cross-categorical uniform interpretation.

The second shortcoming concerns the status of 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 they appear in. 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). It is shown below that in the case of MQD demonstratives there is no requirement for 'well-established' kinds. This finding cannot be accounted for with an unselectively kind-referring interpretation. The third objection against Anderson and Morzycki's simplified view of kinds relates to restrictions on the use of MQD demonstratives which cannot be explained in their account. These restrictions are discussed in section 5.

Consider the sentences in (35) and (36). The ones in (35) are uttered in the street and the ones in (36) are uttered in a flea market. Now compare the (a) versions: *Dieses Auto* ('this car') in (35a) allows for a token reading and also a generic/type reading – Anna may want to buy the actual car the speaker points at (token reading), or a car of the same type (generic/type reading). The availability of the type reading is easily explained by the fact that subkinds of the kind denoted by *car* are well-established in the street context (and presumably in any other context). In contrast, *dieser Stuhl* ('this chair') in (36a) does not allow for a generic/type reading in the presumed flea market context – (36a) can only mean that Anna wants to buy the actual chair the speaker points at. A type reading would only be available in a context where *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 wants to buy a car/chair similar to the one the speaker points at.

- (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 at 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) are evidence that the interpretation of *so*-phrases does not hinge on the existence of previously established kinds. This does not entail, however, that there are no kinds involved, and it will in fact be shown in section 5 that there are kind-like restrictions on the similarity classes 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 an arbitrary subset of mugs, but one that qualifies for establishing a subkind of the mug kind. Since similarity is known in Cognitive Science to be basic in classification processes (Tversky 1977), it does not come as a surprise that similarity classes exhibit kind-like characteristics. Still, these kinds need not be given in advance. There is no need for a previously established subkind of mugs

including the one pointed at, in order for the demonstrative in (31b) to be used felicitously; it is created ad-hoc by similarity.<sup>16</sup>

Ad-hoc kinds are described in the literature on concept formation, e.g., by Barsalou (1983) who considers complex NPs expressing manners and dispositions (*ways to make friends, things that can be walked upon*) (Barsalou speaks of *ad-hoc categories*). Carlson (1980), who introduced the notion of *reference to kinds* in semantics, discusses various ways to express kinds beyond simple common nouns and argues 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*.<sup>17</sup> When we combine this finding with the one described above, there seems 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 Goodman (1972) deemed it useless: "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.<sup>18</sup> In examples like (31a,b) the respects of similarity may be obvious from the context, but the addressee could also ask for specification of the relevant respects: *In which respect is Anna's mug like this one? In which respect was Anna dancing like this person?* In the example in (31c), however, asking for respects is infelicitous because the respect is given by the adjective: *?In which respect is Anna as tall as this person?* This difference between, on the one hand, the adnominal and adverbial cases, and, on the other, the ad-adjectival case, 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 in judging two items as similar, 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 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 (feature-based) similarity relation instead of a geometrical (distance-based) one, and they are integrated into truth-conditional semantics whereas Gärdenfors' conceptual spaces are isolated systems without connection to truth-conditional semantics.

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<sup>16</sup> One reviewer pointed out that, from a Gricean perspective, the use of MQD demonstratives might even exclude well-established kinds. In fact, if the speaker wants to express that she bought the very same type of car she would use *dieses Auto / this car* instead of *so ein Auto / a car like this*. Similarly, if the speaker wants to express that she bought the token she points to she would use the definite NP instead of the MQD phrase. In Umbach (2014) this is said to result from a Gricean implicature – as suggested by the reviewer – which can be cancelled.

<sup>17</sup> This can be tested with the help of kind-selecting predicates like *common* and *extinct*, cf. Krifka et al. (1995).

<sup>18</sup> For example, a mug and a laptop both weigh less than 100kg, 101kg, 102kg, etc.

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

Spelling out the similarity relation in more detail raises two questions: first, the question of which features are possible and relevant in a given case 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 Gust & Umbach 2015). The first question addresses the interface between conceptual knowledge and semantics. It is elaborated in section 5.

The starting point of the similarity analysis in Umbach & 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 ad-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.<sup>19</sup> Secondly, whereas 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. Thirdly, in the case of manner and quality the range of features values is not restricted to numbers. 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 centimeters. In the case of degree, however, the range of values of the (single) feature is metrical – height values, for example, are real numbers.<sup>20</sup>

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 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).<sup>21</sup>

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.

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<sup>19</sup> "Dimensional" adjectives like *tall* are one-dimensional. There are also multi-dimensional adjectives like *healthy*, cf. Sassoon (2011), which are handled in the similarity analysis by multi-dimensional spaces.

<sup>20</sup> Evaluative adjectives like *beautiful* and *tasty* presumably lack metrical values, see Umbach (2016).

<sup>21</sup> If you are reluctant to speak of measuring in the case of generalized measure functions, call it *characterization*.

- (38) a.  $\mu_{\text{HEIGHT}}: U \rightarrow \mathfrak{R}$   
 e.g.  $\mu_{\text{HEIGHT}}(\text{Anna}) = 180$
- b.  $\mu_{\text{MUG}}: U \rightarrow \text{MATERIAL} \times \text{SIZE} \times \text{FORM} \times \text{DECORATION}$   
 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.  $\mu_{\text{MUG}}(\text{Anna's mug}) = \langle \text{crockery, medium, straight, Chinese} \rangle$

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 centimeters. Thus the range of possible values determines the granularity of measuring (in Umbach & 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 thought of 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 determine whether two items are similar. This raises the question of which features are relevant. One 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 features of comparison are relevant in a given case, there are constraints on which features can possibly serve as features of comparison in comparing given items. For example, the feature *number of doors* would be perfect when comparing cars but not when comparing mugs – mugs do not have doors, so the number of doors does not qualify as a feature of comparison for mugs. But mugs as well as cars can be recently purchased and nevertheless *being recently purchased* does not 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.

Constraints on licit features of comparison are found for adnominal as well as adverbial cases of MQD demonstratives. (Recall that in the case of ad-adjektivial occurrences the problem of which features are relevant does not arise because there is only one feature of comparison, which is determined by the lexical meaning of the adjective.) In the adnominal cases the constraints can straightforwardly be related to connections between concepts and properties discussed in the area of generics. In the adverbial cases, there is no analogous discussion to refer to. There is, however, a surprising parallel in the literature on manner modification pointing in the same direction. It will be argued in this section that features of comparison – in the adnominal as well as the adverbial cases – are restricted to properties

principally connected to the kind instantiated by the compared items, warranting that the resulting similarity classes are licit subkinds.

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 we 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) and (40) 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 just 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 / an electric bike / an electric bike with gears / a mountain bike. Berta has a bike like that, too (namely one with gears / an electric one / an electric one with gears / 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 ...).<sup>22</sup> 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, being 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).

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<sup>22</sup> One reviewer suggested that *holländisches Rad* has two readings, one that literally describes the country of origin and could include, e.g., mountain bikes, and one that describes a certain type of bicycle and does not necessarily come from the Netherlands. This type of bike is called *Hollandrad* in German; the English term is *roadster*. This suggestion matches perfectly with the analysis in the next section: features to be picked up by *so* must be features licit in creating a sub-kind. The reason why sequence in (40b) is easily accepted is that there is the *Hollandrad* interpretation. An analogous interpretation of *griechisches Rad* in (40a) is not available.

- 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 bike / new 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 (41b), by contrast, 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. Annas Rad ist alt und verrostet. Berta hat auch so ein Rad (nämlich ein altes verrostetes, das niemand mehr stehlen würde).  
'Anna's bike is old and rusty. Berta has such a bike, too (namely an old and rusty one which no one would steal)'.
  - d. # Annas Auto hat einen Strafzettel. Berta hat auch so ein Auto (nämlich eins mit einem Strafzettel).  
'Anna's car has a parking fine notice (on it). Berta has such a car, too (namely one with a parking fine notice).

Here is a caveat: features of comparison are not to be mistaken for properties. A feature is like an attribute in a frame-based representation, for example *color* or *number of doors* or *height*. A feature, or attribute, requires a value in order to turn into a property, as in *color:red* or *number of doors:three* or *height:180*. Features encoding a full blown property with values *plus/minus* are borderline cases.

## 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 are at the same time licit specifications of a subkind of the kind denoted by the nominal. This is shown in the sentences in (42), which are acceptable with the 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 to be used in the interpretation of the demonstrative. This confirms the hypothesis in section 4.3 that (in the adnominal and in the adverbial case) 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 Greek bike is a kind of bike.  
 c. # A new bike is a kind of bike.  
 d. A / the new iPhone is a kind of iPhone.  
 e. An old and rusty bike is a kind of bike.  
 f. # 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 these properties, which is a prominent issue in the debate about concept formation in cognitive psychology. Only recently has this debate been connected to the topic of genericity in linguistics by Greenberg (2003) and Carlson (2010), and by the experimental studies in Prasada & Dillingham (2006) and Prasada et al. (2013) providing 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 different from mere factual (i.e. statistically correlated) connections between kinds and 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 a property 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. Finally, unlike mere factual properties principally connected properties license singular indefinite generics<sup>23</sup> (cf. the examples in (43) and (44) from Prasada (2010)).

- (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.

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<sup>23</sup>Greenberg (2003) already showed that indefinite singular generics, but not bare plurals, require *by virtue of* generalizations, i.e. principled connections between the kind and the predicated property. Ad-hoc categories may 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. Carpenters 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)

Coming back to MQD demonstratives, properties qualifying as features of comparison can now be characterized as being principally connected to the subkind they specify, cf. (45). We have to be careful, however, and distinguish kinds and subkinds. While the property of having high handlebars is principally connected to Dutch bikes, the property of having (any sort of) handlebars at all is not principally connected to Dutch bikes, but instead to bikes in general (cf. (46a, b)). 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 expression) if and only if the property of having this feature (with an arbitrary value) is principally connected to the kind denoted by the nominal.<sup>24</sup>

(45) a. A Dutch bike has high handlebars in virtue of being a Dutch bike.

(46) a. # A Dutch bike has handlebars in virtue of being a Dutch bike.

b. 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 adverbial cases, the items to be compared are events instead of (ordinary) individuals. But as in the nominal cases they express similarity (cf. section 4.1). Therefore, as in the nominal cases, the question arises which features qualify as features of comparison. We will again use anaphoric examples 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.

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 which are, however, 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 (namely in the wok / low-fat style / in the frying pan).'

(48) a. # Anna hat das Huhn im Garten zubereitet. Berta hat die Ente auch so zubereitet (nämlich im Garten).

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<sup>24</sup> In Umbach & Gust (2014) these features are called *critical dimensions* of the kind.

- 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 (namely in the garden / secretly).'

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 preceding adverbial (cf. *so unger* lit: 'so reluctantly' in (49b)). This occurrence of *so* is reminiscent of the degree uses (as in example (31c)), expressing 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 (e.g. 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 unger zubereitet. Berta hat die Ente auch so zubereitet (nämlich unger).  
'Anna prepared the chicken reluctantly. Berta prepared the duck like this, too (namely reluctantly).'
- b. Anna hat das Huhn unger zubereitet. Berta hat die Ente auch so unger zubereitet.  
'... lit: Berta prepared the duck so reluctantly, too.'
- c. Anna hat das Huhn lecker zubereitet. Berta hat die Ente auch so zubereitet (?? nämlich lecker) (nämlich nach Annas Rezept).  
'Anna prepared the chicken tastily. Berta prepared the duck like this, too (namely tastily) (namely following Anna's recipe).'
- d. Anna hat das Huhn lecker zubereitet. Berta hat die Ente auch so lecker zubereitet.  
'... lit: Berta prepared the duck so tastily, too.'

Analogous to the adnominal cases, manner modifiers accessible by MQD demonstratives specify 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 use a wok. Moreover, as in the adnominal cases, there is a close connection to properties specifying subkinds. Consider the sentences in (50). Only those manner modifiers which qualify as features of comparison in (48) 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.<sup>25</sup> Thus, analogous to the adnominal cases in (42), it can be concluded that similarity classes generated by manner 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

The findings on licit features of comparison in the nominal domain were traced back to the idea of principally connected properties discussed in the area of genericity – restrictions on

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<sup>25</sup> The minimal assumption about event kinds will be that they are instantiated by events. But see more committed accounts, for example Gehrke (to appear).

features of comparison turned out to be constraints on kind-formation. There is no discussion of principally connected properties in the verbal domain. There is, however, a discussion about manner modification focusing on a closely related idea. 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 (see 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: *Ze.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 the notion of principally connected properties of a kind discussed in the previous section. We will not be able in this paper to prove equivalence between event-internal modifiers in the sense of Maienborn and Schäfer and 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 (45) naming a property principally connected to a kind.

(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.<sup>26</sup> In (a) the singing of the club song by Anna was such that it could be heard from far away. In (b) Anna performed the Mimi role in *La Bohème* 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 one in (b) specifies an internal dimension of opera singing. In addition, the example 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-

<sup>26</sup>Note 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

This observation is explained in Bouchard (2005) in such a way 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.

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-forte*, *forte*) in this case.<sup>27</sup>

- (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 die 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. The 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 use types generally distinguished for (ad)nominal or locative demonstratives (cf. Halliday & Hasan 1976: 31ff.) are also found in the semantic domain under discussion: MQD demonstratives have an exophoric (deictic) and an endophoric (anaphoric as well as 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 in the case of 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 demonstratives like *that* in being directly referential. Unlike standard demonstratives, however, they do not convey identity but instead similarity between the target of the demonstration gesture and the referent of the linguistic phrase. It was argued that MQD demonstratives express similarity uniformly across categories – between individuals in the adnominal cases, between events in the adverbial case, and between either individuals or

<sup>27</sup> Many thanks to Martin Schäfer for providing this example.

events in the ad-adjectival cases (depending on whether the adjective is predicated on individuals or events). It was moreover argued that in the adnominal and the adverbial cases the resulting similarity classes constitute subkinds even if ad-hoc generated ones. Ad-adjectival cases seem not to yield kinds, which is obvious from the fact that they do not combine with the noun *kind* / *Art* etc.

The notion of similarity requires features of comparison with respect to which two items are similar. This is trivial in ad-adjectival cases, since 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 on the features licensed in similarity comparison that depend on the particular nominal or verbal predicate.

Making use of results from genericity and concept formation it was shown that features of comparison are restricted to properties principally connected to the kind instantiated by the compared items, thereby ensuring that the resulting similarity class can be understood as a subkind. Although stemming from the nominal area, it seems reasonable to adapt the notion of principally connected properties to verbal kinds. And although it would be premature to draw definitive conclusions, it appears plausible that event-internal manner modifiers are in fact principally connected to the kind of event they occur with.

MQD demonstratives 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. First, they constitute an important subclass of demonstratives, exhibiting the referential and connective functions of deictic expressions. Secondly, they play an important role as grammatical markers of a wide variety of constructions. Finally, 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), Natalia Zevakhina (Russian).

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