The most descriptive depiction[1]

Ying Zhang — *Rutgers University*
Dorothy Ahn — *Rutgers University*

Abstract. Deixis and depiction are commonly taken to be incompatible with the composition of descriptive grammatical content. In this paper, we present uses of demonstratives that allow deictic and depictive information to enter descriptive content in a principled way. Specifically, we show that even exophoric demonstratives that take rigid and iconic information can refer at the kind-level. We argue that the derivation of kind reference is different between deictic demonstratives and depictive demonstratives: in the former, a relevant subkind is identified from an object-level entity, while in the latter, the depictive information directly composes with the noun and forms a kind without the intermediate reference to an entity. This analysis has implications on the semantic analysis of demonstratives and highlights the ability of demonstratives to mediate between different modalities of language.

Keywords: deixis, depiction, demonstratives, kind.

1. Introduction

Iconic information that is conveyed by deixis and depiction is generally considered to be distinct from descriptive grammatical content. The two types of meaning are distinguished along various axes. For instance, while descriptive content often contributes at-issue, truth-conditional content, deictic or depictive gestures are argued to contribute secondary, not-at-issue content, supplementing the at-issue content without affecting its truth conditions (Ebert et al. 2020; Schlenker 2019; Zlogar and Davidson 2018, a.o.). Regarding compositionality, nonconventionalized gestures are often considered to be idiosyncratic and to fall outside the composition rules of syntax and semantics (McNeill, 1992; Ebert, 2024). Davidson (2023) notes that gestural information refers to particular entities and is incompatible with operators like negation or questions that partition the world, unless they have been conventionalized. A relevant conceptual distinction is that between genericity and particularity. Languages have mechanisms for expressing generalizations over situations or individuals as well as for expressing particularities that involve specific entities in a specific situation, and the two are conceptually incompatible with one another. This is shown by the degradedness of (1), where the name *Minette* refers to a specific cat entity and cannot be generalized over its possible color profiles.

(1) #Minette is infertile when she is tricolored. [Krifka et al. 1995]

Demonstratives, along with names and iconic gestures, have traditionally been associated with particularity in that they refer rigidly to specific entities (Kaplan 1989). This property is illustrated in (2), where the referent of *that linguist* with pointing to Mary (→Mary) remains constant across all situations in which the speaker meets some linguist, whereas the referent of *the linguist* may covary.

(2) a. Whenever I meet a linguist, I will talk to that$_{\rightarrow \text{Mary}}$ linguist.

[1]We would like to thank Carla Umbach, Eddy Ruys, Jiayuan Chen, Siyuan Cao, members of the MAL lab at Rutgers University, and the reviewers and audience at SuB30 for their helpful feedback. All errors are ours.

b. Whenever I meet a linguist, I will talk to the linguist.

This behavior is similar to other indexical expressions such as *actually*, *here*, and *now* in (3) that only refer to a specific group of people who are actually in the utterance context regardless of the temporal and locative displacement.

(3) It is possible that in Pakistan, in five years, only those who are actually here now are envied. [Kaplan 1989:(4)]

In this paper we explore how deictic and depictive content can enter the descriptive content through the use of demonstratives. In particular, we argue that even exophoric demonstratives that take particular-selecting rigid, iconic information such as pointing can incorporate that information into kind-denoting descriptions. In this way, demonstratives blur the line between genericity and particularity and that between descriptive content and depictive/deictic content.

The main data that we are concerned with involve demonstratives that contain deictic and depictive information and refer to kinds. First, exophoric demonstratives like English *that* and Xi'anese *uo* with pointing can refer at the kind level. When uttering (4) accompanied with a pointing gesture at the dolphin in the picture, the sentence means that some relevant subkind of dolphins, for example the Southern Resident Orca kind, will be extinct soon rather than the dolphin individual being pointed at.[2] The demonstrative here refers to the dolphin subkind, not the individual.

(4) That dolphin$_{\rightarrow}$ will be extinct soon.

a. pointing to: 

b. referring to: `Southern Resident Orcas`

Similarly, in Xi'anese, when we point to a cup of coffee and utter (5), the demonstrative can easily refer to a subkind of coffee, such as the take-out coffee.

(5) nge yijing he-lie san hui uo$_{\rightarrow}$ kafei lie.
I already drink-ASP three time that coffee SFP
'I've already had that coffee three times.' *Xi'anese*

a. pointing to: 

b. referring to: `Take-out Coffee`

Second, demonstratives with depictive, iconic gestures can also denote kinds. In (6), the demonstrative descriptions do not refer to specific entities but the big-headed and small-headed lion subkinds, characterized by the properties that the iconic gestures [big head] and [small head] depict. Since gestures tell by showing, *these lions*$_{\text{[big head]}}$ with the gesture presented at the head level has a different meaning from that with the gesture performed at the chest level. This contingency serves as evidence that gestural information contributes to the descriptive meaning.

[2]Note that previous knowledge of a well-established subkind is not required for this sentence to be uttered felicitously. If the speaker knows the exact taxonomic subkind that the individual belongs to, they may refer to that subkind. If not, some relevant property of the entity may be used to form an ad-hoc subkind. We discuss how this is constrained in Section 3.1.1.

(6) These lions$_{[\text{big head}]}$ will be extinct soon, not these lions$_{[\text{small head}]}$.
   a. content: big head vs. small head
   b. referring to: big-headed lion kinds vs. small-headed lion kinds

Note that the kind reference of demonstratives is unexpected from a traditional view that focuses on its rigidity. Even in works that treat demonstratives as non-rigid and definite-like, it is assumed that demonstratives that refer exophorically with pointing are still rigid designators at the object level (Ahn 2022). However, it is not surprising that demonstratives can refer to kinds. Since kinds are treated as entities, whatever can refer to an entity should be able to refer to kinds (Krifka et al., 1995). What is noteworthy for us is that demonstratives can go beyond simply referring to well-established kinds. The demonstrative with deixis *that dolphin* can refer to either the well-established subkind such as the Southern Resident Orcas, or refer to some ad-hod subkind derivable from a relevant, salient property of the individual. The demonstrative with depiction *these lions*$_{[\text{big head}]}$ with the big-head gesture can refer to the lion subkind characterized by big heads, meaning that the iconic information composes with the content of NP to form ad-hoc subkinds.

We derive the kind-referring use of demonstratives in this paper and argue that demonstratives with deixis and those with depiction form kinds in different ways. For demonstratives with deixis, they pick out a specific entity and identify that entity with the kind it belongs to via the relation IS/ARE in Krifka et al. (1995). For those with depiction, they don't point to a specific entity. Depictive gestures provide a characterizing property of the kind. The complex property formed by the NP content and the iconic information is turned into a kind. In developing our analysis, we incorporate ideas from recent studies on demonstratives that focus on their role of bringing iconic content into truth-conditions of the sentence. For example, Ebert et al. (2020) argue that demonstratives serve to bring gestural meaning to at-issue, and Ahn (2025) argues that demonstratives turn depictive and deictic information into descriptive content. While these studies do not in particular predict kind-referring uses, we show that kind-referring uses of demonstratives are compatible with their views with some modifications.

The rest of the paper is organized as follows. In Section 2, we show that demonstratives can indeed form the kind expressions with three diagnostics and discuss in detail the different contributions of deixis and depiction. Then, we derive kind readings of demonstratives in Section 3. We conclude by revisiting the role of deixis in demonstratives and suggesting that particularity is orthogonal to demonstratives. s before. (Pointing to a single dolphin)

2. Demonstratives referring to kinds

In this section, we show that demonstratives can form kind expressions by using three diagnostics. We then discuss the properties of kind-referring demonstratives, highlighting the difference between kind-referring demonstratives with deixis and those with depiction.

As the basis for our discussion, we assume following many others that overt forms of nouns and their meanings do not have a one-to-one correspondence: a single noun form can have many underlying meanings and a particular meaning can be expressed in different forms. The different readings of nouns can be distinguished based on whether they are specific or kind-referring (Krifka et al. 1995). Krifka et al. (1995) show that an indefinite noun, a name, and a definite

noun span the four possible combinations of specificity and kind-reference. The indefinite *a lion* in (7a) has a non-specific and non-kind reading, whereas the indefinite *a cat* in (7b) has a non-specific but kind interpretation. The proper name *Simba* in (7c) has a specific but non-kind reading. Last, the definite expression *the lion* has a specific and kind reading in (7d).

(7)
a. **A lion** has a bushy tail [-specific, -kind]
b. **A cat** shows mutations when domesticated [-specific, +kind]
c. **Simba** stood in front of my tent [+specific, -kind]
d. **The lion** / A cat, namely **the lion** [+specific, +kind]

[Krifka et al. 1995:(31)]

Given a kind-denoting noun, different meanings are possible depending on the context in which it occurs. In (8a), where the bare plural *dodos* combines with a kind predicate *extinct*, the noun refers directly to the kind. The definite description *the American family* in (8b), instead, is not directly referring to the entire kind but denotes some average property of a member of the kind. Finally, (8c) conveys an internal comparison of different instantiations of the wolf kind. This reinforces the idea that kind-denoting nouns vary widely in their form as well as the specific reading they denote.

(8)
a. Dodos are extinct. kind predicate
b. The American family contains 2.3 children. average property
c. The wolves get bigger as we travel north. internal comparison

[Krifka et al. 1995:(124)]

The same range of interpretations are possible with demonstrative descriptions that are accompanied by a pointing or an iconic gesture. We show below that demonstrative descriptions with a pointing (deictic demonstratives, henceforth) can refer to a kind (9a), an average member of the kind (9b), or result in an internal comparison within the kind (9c). Similarly, demonstrative descriptions accompanied by iconic gestures (depictive demonstratives) can occur with a kind predicate (10a), exhibit average properties (10b) and show internal comparison of a kind (10c).

(9) Demonstratives with deixis
a. That lion$_{\rightarrow}$ is extinct. kind predicate
b. These cats$_{\rightarrow}$ have 2.3 offsprings. average property
c. Those wolves$_{\rightarrow}$ get bigger as we travel north. internal comparison

(10) Demonstratives with depiction
a. This lion$_{\text{[big-head]}}$ is extinct. kind predicate
b. These computers$_{\text{[flat]}}$ weigh 1.3kg. average property
c. These computers$_{\text{[flat]}}$ get lighter every year. internal comparison

In the following sections, we discuss some diagnostics for kind reference and show that deictic and depictive demonstratives meet those diagnostics.

2.1. Diagnostics for kind reference

Here, we offer three diagnostics for kind reference of demonstratives. To show that this is not limited to English demonstratives, we also include data from Xi'anese, an unrelated language spoken in the Guanzhong region of Shaanxi, China. Xi'anese is a Chinese variety mainly spoken in the urban area of Xi'an and shares basic properties with Mandarin.

First, deictic and depictive demonstratives are compatible with a kind-level predicate, which is a characteristic of kind-referring terms (Carlson 1977; Chierchia 1998; Dayal 2004). In (11a) and (11b), the deictic demonstrative *uo→ shizi* ('that lion') combined with pointing to a particular lion in the context can combine with a kind-level predicate *juezhong* ('extinct'). Note that in this use, the target of pointing is different from the referent of the demonstrative expression. The speaker is pointing to a specific lion entity while referring to a subkind of lion instantiated by the target. The demonstrative description in this use yields a taxonomic and specific reading which involves quantification over subkinds (Krifka et al., 1995).

(11) a. uo→ shizi iao juezhong lie.
that lion will extinct SFP
'Those lions are going to be extinct.' *Xi'anese*
b. That lion→ will be extinct soon.

Likewise, the depictive demonstrative with an iconic gesture indicating a big head in (12) can also appear with the kind-level predicate *extinct*. Here, the referent is an ad-hoc subkind of lions characterized by having a big head. The demonstrative produces a taxonomic and specific reading, referring to a particular subkind of lion.

(12) This lion$_{[\text{big head}]}$ will be extinct soon.

The second diagnostics is the co-occurrence with a kind-denoting nominal (Umbach and Gust, 2014). In Xi'anese and English, the deictic demonstrative 'that car' with pointing to a specific car in the context can co-occur with a kind-denoting nominal. This is shown in (13) where *uo→ che* ('that car') is described as a new *zhong* ('kind'). The English translation in (13) also allows the same reading. Umbach and Gust (2014) show that in German, a demonstrative description *dieses Auto* 'this car' can be described as a special *Art* ('kind'). In these uses, the target of pointing is a particular car entity, but the intended referent is a car subkind, and the resulting reading is taxonomic and specific.

(13) uo→ che si zhong xin paoche.
that car be kind new sports car
'That car is a new kind of sports car.' *Xi'anese*

(14) Dieses Auto ist eine besondere Art von Limousine.
'This car is a special kind of limousine.' [Umbach and Gust 2014]

The same is found with depictive demonstratives. Imagine a speaker producing the sentence in (15) and accompanying her demonstrative descriptions with gestures indicating two different ways of opening car doors. Here, the referents of the two demonstrative expressions are the subkinds of cars characterized by the different opening mechanisms, conveyed by the gestures

[open-up] and [open-side]. Here, too, the demonstratives generate a specific and taxonomic reading as they refer to specific (and potentially ad-hoc) subkinds of cars.

(15) This car$_{[\text{open-up}]}$ is the new kind of sports car, not this car$_{[\text{open-side}]}$.


Finally, we use the obligatorily narrow scope in existential readings that kind-referring terms exhibit when occurring with object-level predicates (Chierchia 1998; Dayal 2004). When the kind-denoting bare noun *rabbits* combines with an object-level predicate *fed* as in (16), the only possible reading is the one where the existential force scopes below the adverbial *for an hour*. This is analyzed in Chierchia (1998) as involving a last-resort type-shifter *Derived Kind Predication* (DKP), which occurs locally and thus results in the characteristic narrow-scope interpretation.

(16) a. John fed rabbits for an hour. *adv* > ∃

b. $\forall t$[within-one-hour(t) → fed-at-t(j,$^{\cap}$ rabbits)]
DKP ⇒ $\forall t$[within-one-hour(t) → $\exists y$[$^{\cup\cap}$rabbits(y)&fed-at-t(j, y)]]
[Dayal 2004:(11-12); modified]

We observe that deictic and depictive demonstratives exhibit the same obligatorily narrow scope. Imagine a speaker who sees a holland lop and a cottontail rabbit, points to them and utters (17a). When in a context of determining which kinds of rabbits Mary fed, *uo tuzi* ('that rabbit') has to be interpreted under the adverbial *fanfu-di* ('repeatedly'). The same holds for English as shown in the translation of (17a), though the plural form *those rabbits* is much more preferred for this narrow-scope reading. In this use, the target of pointing is the cottontail rabbit but the referent is the instantiations of the cottontail rabbit kind across different feeding events. We follow Chierchia (1998) in characterizing this reading as a taxonomic reading that has a narrow scope derived by DKP.

(17) [Seeing one Holland Lop and Cottontail Rabbit, the speaker points at the latter and says:]

a. Mali fanfu-di wei uo$_{\rightarrow}$ tuzi.
Mary repeatedly feed that rabbit
'Mary repeatedly fed those$_{\rightarrow}$ rabbits.' *Xi'anese*

Here, too, the depictive demonstrative shows the same pattern. If the speaker is having a conversation with the same Question Under Discussion (QUD) of *Which kinds of rabbits did Mary feed?* but uses a depictive demonstrative with an iconic gesture that characterizes the Cottontail Rabbit kind like their tail, we would also observe a narrow-scope reading where Mary repeatedly fed rabbits of that kind across different feeding events.

From these diagnostics, we can conclude that deictic and depictive demonstratives can refer to kinds. They are compatible with kind-level predicates, can be described with kind-denoting nominals, and result in a narrow-scope existential reading when combined with object-level predicates.

2.2. Deictic vs. depictive demonstratives

So far, we have observed that kind-referring demonstratives result in a taxonomic and specific reading: *these lions* uttered with pointing or gesture in (18) can be interpreted as one of the lion subkinds (taxonomic) which specifically refers to that subkind (specific).

(18) These lions$_{\{\rightarrow,\,[\text{big-head}]\}}$ will be extinct soon.

The ways deictic and depictive demonstratives arrive at the taxonomic, specific reading, however, seem to differ. The crucial difference is that a deictic demonstrative has a target of pointing, namely the demonstratum, that is separate from its referent. When a deictic demonstrative is used as in (18), the speaker is pointing to an actual lion object in the context. We follow Carlson (1977) and Umbach and Gust (2014) in assuming that kinds cannot be pointed to. Thus, in order to arrive at the kind-level reading, a particular object must first be identified by pointing, and then the subkind that the particular object instantiates must be identified. In contrast, depictive demonstratives do not directly point to an individual. There is no specific entity in the context that can serve as the demonstratum. Instead, they denote kinds by creating a syntactically complex nominal that composes the NP content with a gesture which contributes the iconic information that characterizes the subkind.

Together, kind-referring uses of deictic and depictive demonstratives raise a question. Kind-referring expressions are generally considered to be name-like. Since kinds are simply entities at a different level from ordinary objects, the expressions that refer to those entities are just names. Names are assumed to lack internal content (cf. descriptive views of names), and even when names are syntactically complex, they are considered to be idiomatic rather than compositional. This property is predicted to hold for any expression that refers to kinds (Krifka et al. 1995).

Kind-referring demonstratives challenge this assumption because they allow composition: deictic and depictive content are combined with the NP information to refer to subkinds characterized by or related to that content. We further noted that, because deictic demonstratives have a separate demonstratum while depictive demonstratives do not, deixis and depiction contribute to this composition in different ways. Below, we propose a compositional analysis of kind-referring demonstratives.

3. Becoming kinds

In this section, we present our analysis of kind-referring demonstratives that require kind reference to result from a composition of depictive and deictic information with the descriptive content. In doing so, we argue that, despite the similarities discussed above, deictic and depictive demonstratives make use of two separate strategies to arrive at kind reference. For deictic demonstratives, we argue that they pick out a specific, object-level entity in the context and identify that entity with the kind it belongs to. In contrast, depictive demonstratives do not point to a specific entity but instead combine the NP content with the information provided by the iconic gesture to form a complex property first. Then, a type-shifter is used to turn that property into a kind.

3.1. Demonstratives with deixis

As discussed above, we assume that deictic demonstratives point to particular-object-level entities rather than kinds. This assumption aligns with that in Krifka et al. (1995), and is empirically motivated in Umbach and Gust (2014). Specifically, Umbach and Gust (2014) in discussing similarity demonstratives in German argue that speakers do not point directly to kinds but instead to individuals (cf. Carlson 1977). The main evidence comes from the observation that similarity demonstratives are not restricted to previously well-established kinds, suggesting that a kind can be formed from the relevant properties found within the individual being pointed to. Given that the kind-referring demonstratives in our study can also refer at the kind-level without the need for prior knowledge of specific taxonomic kinds (subkinds), we assume that the target of pointing in deictic demonstratives is an object-level individual and not kinds.

Assuming that deictic demonstratives point to object-level entities, we argue that the kind reference is derived through an operation that identifies an object with the subkind it belongs to. We borrow the analysis in Ahn (2022) where demonstratives have the ability to take deixis and incorporate it into the restriction of the ι operator to form a term that refers to a singular entity. Given this entity-referring term, we use the relation IS/ARE in Krifka et al. (1995) to identify the subkind that the entity belongs to.

Deictic reference to an entity. Ahn (2022) analyzes the demonstrative *that* in English as a modality linker that takes two restrictions of differing modalities: one descriptive and one deictic/depictive. This analysis follows a line of research that treats demonstratives as indirectly referential items rather than directly referring, rigid expressions (Kaplan 1989). In particular, it follows a view that demonstratives differ from definites in carrying two restriction slots than one (King 2001; Elbourne 2008; Nowak 2019; Simonenko 2014; Robinson 2005). That is, while a definite description takes one NP restriction and returns the unique entity that meets that NP property, a demonstrative is analyzed as taking two restrictions and returning the unique entity that meets both of those properties. Ahn's (2022) analysis differs from others in that the two argument slots of the demonstrative differ in the kinds of meanings they take. The first argument slot is for regular, descriptive NP content P, and the other is for deictic/depictive content R that is contributed by pointing and gestures. R marked with γ in (19) indicates that it can only take a property in the gestural modality. We treat this restriction of R, not as a constraint on the type of meaning it can carry, but as a constraint on the modality in which the meaning is encoded.

After taking the two relevant properties, the demonstrative returns the maximal entity that meets both the property denoted by the NP and that denoted by the gestural information R.

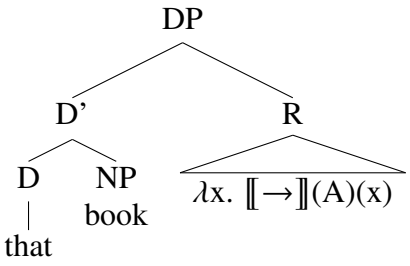
(19) $\quad [\![\text{that}]\!] = \lambda \text{P}.\ \lambda \text{R}_\gamma.\ \iota \text{x:P(y)} \wedge \text{R}_\gamma\text{(y)}$

To derive the meaning of a regular, exophoric use of a demonstrative like *that book*, we argue that *that* combines with the NP *book* and the property contributed by pointing (→). The meaning of the pointing gesture '→', according to Ahn (2022), is a two-place predicate that takes a location argument l and an entity x and returns true if and only if x is in some relation to l. The relation between x and l can be that of literal spatial existence in that x is physically located in l, or it can be more metaphorical and abstract in that x is associated with l by the conversation participants (for more discussion of how the location and the entity can be associated, see Ahn,

Kocab and Davidson in print). Under the literal, spatial meaning, 'that book' with pointing to some location A in the actual world refers to the unique entity x that is a book and is physically located at location A. Since location A is fixed in the actual world, the demonstrative in this use generates a rigid reference to the object being pointed to.

(20) a. $[\![\text{that book}_{\rightarrow \text{A}}]\!] = \iota \text{x. book(x)} \wedge [\![\rightarrow]\!](\text{A})(\text{x})$
b. $[\![\rightarrow]\!] = \lambda o.\lambda x.R(x, o)$
'associated with location o'

(21)



This analysis can be used to derive the rigid reference to the object-level entity in examples like (18) where the speaker points to a particular lion in the context. How does a kind-referring use arise from this rigid reference? We discuss below the IS/ARE relation that treats a kind and an object that belongs to that kind as interchangeable.

Switch between objects and kinds. To refer from objects to kinds, we use the relation IS/ARE in Krifka et al. (1995), based on the intuition that a kind is in some way identical to the object that belongs to it. For example, *bottle* can refer as readily to a specific bottle on your desk as to the abstract bottle kind. The relation IS (plural ARE) is defined as a disjunctive relation in (22). x IS y as long as the object x is the same as the object y or the object x belongs to the kind y.

(22) $\text{IS(x,y)} \Longleftrightarrow_{\text{df}} (\text{x=y} \vee \text{R(x,y)})$

For example, when pointing to three actual lions in the zoo, the speaker utters (23a) but the pointed target is a. The relation IS takes a and identifies it with the kind a belongs to. As a result, the demonstrative can refer to the kind LEO and can be used in a generic statement which describes the instantiations of that kind rather than the three actual lions.

(23) [Pointing to three actual lions in the zoo, the speaker says:]
a. This [a] is the lion [Leo leo]: IS(a, Leo leo).
b. It [Leo leo] lives in Africa: lives-in(Leo leo, Africa) [Krifka et al. 1995]

Given that kind can be identical to its instantiation to a certain extent, we assume that the relation IS/ARE is freely available to switch between the kind talk and object talk. To apply this to the case at hand however, we need one further step. This is because in the examples involving demonstratives, the kind is not fully specified by the noun itself. Thus, the relevant kind must be identified by extracting some property from the individual. We assume that pointing to an individual can highlight the properties that are relevant for identifying the kind, and that only the properties that are principally associated with a kind are considered salient enough to be used to create one (König and Umbach 2018). The following section provides a more detailed discussion of how the relevant properties for kind derivation are determined.

Illustration. We illustrate by using the example in (24) where the target is the specific dolphin in the picture but the referent of the demonstrative is the Southern Resident Orca kind it belongs to.

(24) That dolphin$_{\rightarrow A}$ will be extinct soon.
extinct-soon(ιy.IS(ιx.dolphin(x)$\wedge$at-A(x),y))
a. pointing to: 
b. referring to: `Southern Resident Orcas`

To derive the kind reading, the deictic demonstrative *that* composes with the NP and the deictic information, returning the unique entity that is a dolphin and is located at A in the actual world (Ahn, 2022). This is shown in (25a). Then, when combining with a kind-level predicate, ɪs identifies that object to the kind it belongs to. Consequently, the demonstrative refers to (25b) which is the unique kind-level entity that (25a) is a member of.

(25) $[\![$that dolphin$_{\rightarrow A}]\!]$ =
a. ιx.dolphin(x)$\wedge$at-A(x)
b. ιy.IS(ιx.dolphin(x)$\wedge$at-A(x),y)

3.1.1. Identifying the right property

One question that remains is how the relevant subkind is identified, as an individual may have various properties that constitute a subkind. One answer comes from a subclass of demonstratives, namely demonstratives of manner, quality and degree (MQD demonstratives; König and Umbach 2018). Like standard demonstratives, MQD demonstratives such as German *so* can be directly referential. What makes them different from the canonical ones is that they appeal to similarity rather than identity to connect the target of pointing and the referent of the demonstrative phrase. The resulting referent is a similarity class which forms an ad-hoc subkind. The relation between the pointed target and the similarity class is based on the properties which are principally connected to a kind and can function as licit specifications of a subkind of the kind denoted by the nominal. For instance, given the bike kind, newness is not qualified as a principally related property and thus cannot be pointed to.[3] Three diagnostics show this constraint. Recall that kind expressions are compatible with kind-denoting nominals as shown before. In (26), we see a contrast between a true kind *a Dutch bike* and *a new bike*: *a Dutch bike* is compatible with the *kind*, whereas *a new bike* is not. This can be explained by the fact that newness is not a principally connected property to a kind.

(26) a. A Dutch bike is a kind of bike.
b. #A new bike is a kind of bike. [König and Umbach 2018]

Second, principally connected properties can license singular indefinite generics. Since dogs are four-legged by being dogs, *a dog* in (27b) is felicitous to make a generic statement about the dog kind. However, being red is not what makes a barn a barn, so the singular indefinite generic in (28b) is not licensed.

(27) a. Dogs are four-legged.

[3]We thank Carla Umbach for helpful suggestions on this topic.

b. A dog is four-legged. [König and Umbach 2018]

(28) a. Barns are red.
b. # A barn is red. [König and Umbach 2018]

Lastly, we can use ellipsis. If a property contributes to defining a kind, it should have the ability to be picked out by the demonstrative and still maintain its meaning in an elliptical clause. Consider the contrast between (29) and (30). In (29), the property of *being Dutch* is a property principally connected to kinds and thus can be selected by the demonstrative. This is shown by the fact that the ellided content in (29a) has the meaning compatible with (29b). On the other hand, *newness* is not a principally connected property of the bike kind. Therefore, the elliptical clause in (30a) cannot mean it is a new bike that Berta has (Carla Umbach, p.c).

(29) Anna has that$_{\rightarrow}$ bike (a Dutch bike),
a. Berta has, too.
b. Berta has a Dutch bike, too.

(30) Anna has that$_{\rightarrow}$ bike (new),
a. Berta has, too.
b. #Berta has a new bike, too.

Thus, combining the deictic analysis of demonstratives in Ahn (2022), the freely-available switch between objects and kinds (Krifka et al. 1995), and the constraint of principally connected properties for identification of the relevant subkind (König and Umbach 2018), we derive the kind reading of a deictic demonstrative. The deictic demonstrative first rigidly refers to an entity, but IS/ARE is available for the speaker to switch to the kind-talk. When she does, some contextually-salient, principally-connected property of the entity is used to identify the relevant subkind. The subkind does not necessarily have to be well-established, though it is constrained by the kinds of properties that are available for identifying the kind.

3.1.2. Why a subkind?

Another question we must address is why the deictic demonstrative refers to a subkind and not to the top-level kind in the taxonomic hierarchy that the object is a member of. We argue that this is straightforwardly derived from the property of the demonstrative and the parallel way in which this property applies to both object-level and kind-level reference. Demonstratives are often assumed to have anti-uniqueness requirements in that they require there to be multiple entities that meet the description. While some encode this into the lexical denotation of demonstratives (Dayal and Jiang 2021; Nowak 2019), others derive this requirement from the fact that demonstratives carry an additional restriction (Robinson 2005; Ahn 2022, 2025).[4] The latter view is that because demonstratives necessarily carry an additional restriction, the use of a demonstrative to refer to an entity signals that the NP alone is not sufficient to uniquely identify the referent. Thus, when a speaker uses a deictic demonstrative at the object-level as in (31), the addressee reasons that the simpler alternative, namely the definite description *the dolphin*, was not available, and thus concludes that the uniqueness requirement of *the* is not met in the context. This derives the anti-uniqueness effect of *that*.

[4]See Saha et al. 2024 and Chen 2026 for a way to deriving this inference through focus.

(31) That$_{\rightarrow a}$ dolphin has a horn.

Similarly, we assume that this inference is a result of competition with simpler, unmarked forms of kind reference such as bare nouns and definite descriptions. The kind-referring use of a deictic demonstrative is marked in that it is much more complex than simply using a bare noun or a definite description. The use of the marked form implies to the addressee that the relevant property in the individual is crucial in identifying the kind and that the speaker did not intend to refer to the top-level kind.

3.1.3. Constraining kind-reference

Finally, since we assume that the relation IS/ARE is freely available to switch between the object-denoting meaning and the kind-denoting meaning, a natural question arises as to why we don't refer to kinds more often. In discussing this question, Krifka et al. (1995) propose that the distinction between the object-oriented mode and the kind-oriented mode is pragmatically-governed. They argue that the object mode is more default since it is more informative and versatile in that it provides quantitative information and allows for anaphoric reference. It is also worth noting that there is language variation in their readiness to choose kind-talk over object-talk. For example, in languages which allow noun incorporation, the incorporated nouns are interpreted as kinds and systematically signal kind-talk.

However, types of predication serve as a more universal linguistic cue for a kind-level reading. For example, in (32b), *that lion* is more likely to have a kind reading with the kind predicate *extinct*, compared with the one with the object-level predicate *cute*.

(32) a. That lion is cute. *object*
b. That lion is going to be extinct. *kind*

Another linguistically-encoded signal of kind-talk found in languages like English is number. Consider (33) where the plural form allows the kind reading more readily than the singular form.

(33) { %That lion$_{\rightarrow A}$ / Those lions$_{\rightarrow A}$ } will be extinct.

This contrast is also shown with kind terms receiving a taxonomic interpretation with object-level predicates. This taxonomic reading is readily available for (34a), but it is obscured for the singular variant as in (34b) unless overtly marked with an explicit reference to kind, such as *one type of lion* (Dayal 2004).

(34) a. Most lions are majestic.
b. One (type of) lion is majestic. [Dayal 2004:(48) modified]

Such difference is irrelevant for languages like Xi'anese which does not have overt number morphology. We observe that in Xi'anese, both object-level and kind-level interpretations are readily available as in (35).

(35) uo$_{\rightarrow}$ shizi tou ke da lie.
that lion head very big SFP
'That lion / those lions has / have a very big head.' *Xi'anese*

In such languages where overt encoding is not available to mark the level at which the nouns refer, we assume that the choice is made depending on contextual cues, the QUD, as well as relevance. For example, context can play a role. In a discourse addressing the QUD of testing coffee of different origins as in (36a), the kind-reference would be more readily available for the deictic demonstrative *that coffee* that points to a cup of coffee. In a discourse simply comparing two cups of coffee on the table, the same deictic demonstrative *that coffee* would refer to the particular cup of coffee as in (36b).

(36) a. That coffee$_{\rightarrow \text{Ethiopian coffee}}$ brings more acidity. *kind*
b. That coffee$_{\rightarrow \text{a}}$ tastes more floral. *object*

In sum, we assume that kind-talk and the relevant IS/ARE operator are always available for all types of nouns including demonstrative descriptions. In the case of deictic demonstratives, the object-level rigid reference is so salient that kind-level reference is not as equally accessible and requires other cues to signal the use of it.

3.2. Demonstratives with depiction

Depictive demonstratives differ from deictic demonstratives in that there is no reference to a specific object-level entity. Instead, the iconic information contributed by the gestural depiction represents some characterizing property of the subkind. Thus, we assume that the noun and the depiction must compose first to form a predicate and is directly turned into a kind without an intermediate reference to an object-level entity. This can be done if we assume that gestures contribute $\langle e, t \rangle$ properties (Ebert et al. 2020) and that demonstratives take this gestural information as a restriction under the maximality operator (Ahn 2022).

For example, consider (37) where a depictive demonstrative refers to a subkind of lion characterized by having big heads.

(37) These lions$_{\text{[big head]}}$ will be extinct soon.

The gesture [big head] is assumed to denote a predicate that takes an entity and returns true if and only if the entity has big heads, thus on par with the descriptive modifier *with a big head.* The only difference between the gestural [big head] and the descriptive *with a big head* is that the former does not by default allow truth-conditional, at-issue composition with the rest of the sentence (Ebert et al. 2020; Schlenker 2019; Zlogar and Davidson 2018) unless a modality linker like a demonstrative is used (Ahn 2022). This explains why *with a big head* can be restrictive with a definite description as in (38a) but the gesture [big head] cannot as in (38b).

(38) a. The lion with a big head came by, but the lion with a small head didn't.
b. #The lion$_{\text{[big head]}}$ came by, but the lion$_{\text{[small head]}}$ didn't.

Note that the analysis of demonstratives adopted from Ahn (2022) in the last section involves an ι-operator and thus returns a single entity. This means that the demonstrative description *these lions$_{\text{[big-head]}}$* in (37) would return the unique entity that meets the property of being a lion with a big head, as indicated in (39).

(39) $[\![\text{these lions}_{[\text{big-head}]}]\!] = \iota x.\text{lion}(x) \wedge \text{big-head}(x)$

However, it is unclear that the reference of a unique entity is motivated in this case because there is no salient entity that uniquely meets the two properties in the context of (37). It seems more economical to turn the complex property $[\lambda x.\text{lion}(x) \wedge \text{big-head}(x)]$ directly into a kind using the type-shifter $\cap$ (Partee 1987; Chierchia 1998), resulting in the denotation in (40).

(40) $[\![(37)]\!] = \text{extinct-soon}(^{\cap}[\lambda x.\text{lion}(x) \wedge \text{big-head}(x)])$

To derive this, we modify the analysis of Ahn (2022) and argue that the demonstrative takes two properties of different modalities and returns a predicate that intersectively composes the two properties. In this updated view, the demonstrative on its own does not refer to an entity but returns a predicate. The characterization of demonstratives as a modality linker, however, is maintained as we assume following the Unique Modality Hypothesis in Ahn (2022) that predicates of different modalities cannot simply be composed unless a linking operator like a demonstrative is used.

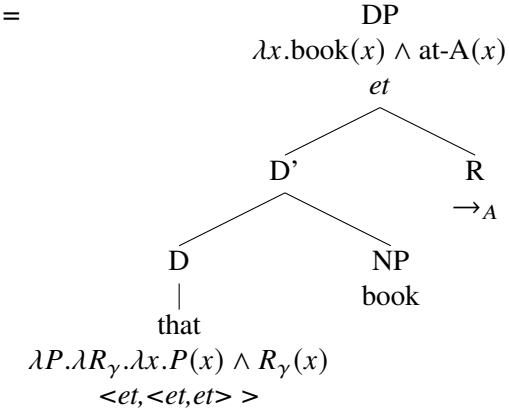
This updated analysis of demonstratives is similar to the treatment of definites in Coppock and Beaver (2015) where *the* is analyzed as returning a predicate rather than an entity. The predicate returned by *that* or *the* would then be subject to other operators, such as ι and $\cap$, depending on context. This allows for a simple derivation of depictive demonstratives that refer to kinds.

3.2.1. Going back to deictic demonstratives

Can the predicate-returning view of demonstratives explored above apply to deictic demonstratives discussed in the last section? We argue that while it is compatible with deictic demonstratives, the kind-referring use still requires the additional IS/ARE operator. We discuss below the motivation for keeping this distinction between deictic and depictive demonstratives.

First, note that the alternative analysis of demonstratives where they return predicates rather than entities can apply to deictic demonstratives in a parallel way. For example, *that* in (41) can be analyzed as combining with the NP predicate *book* and the deictic information and returning the predicate forming the intersective predicate $\lambda x.\text{book}(x) \wedge \text{at-A}(x)$. Just like the depictive counterpart, this deictic predicate can be turned into an object or a kind depending on the type-shifter used.

(41) $[\![\text{that book}_{\rightarrow \text{A}}]\!] =$



However, unlike the depictive demonstrative, we cannot argue that the kind reference of the deictic demonstrative is derived simply by type-shifting the property into a kind using ∩. There is an important distinction between the depictive and the deictic demonstratives in this use in that in the former, the iconic gesture *characterizes* the kind while in the latter, the pointing *identifies* a relevant member. The characterization of having a big head can be straightforwardly derived using ∩, as the resulting kind is characterized by the property of being a lion and having a big head. The kind-level entity returned by a deictic demonstrative like *that book*$_{\rightarrow A}$, however, is not characterized by the property of being located at A. The location of the entity is just a way to identify the relevant object-level demonstratum and is not relevant to the identification of the subkind being referred to.

This distinction can be illustrated by the contrast between (42a) and (42b). In (42a), the location A is merely used to identify the relevant demonstratum, namely the specific dolphin entity in the context. In (42b), imagine that a speaker is looking at a picture of a classroom with students and is pointing to the chair in the center of the first row. Here, the location A is characteristic of the relevant type of student the speaker wants to refer to.

(42) a. That dolphin$_{\rightarrow \mathrm{A}}$ will be extinct soon.
b. That student$_{\rightarrow \mathrm{A}}$ is the smartest.

We argue that (42b) is the result of directly applying the type-shifter ∩ on the predicate, while (42a) is the result of first referring to a unique object-level entity using ι on the predicate and then identifying the relevant subkind using IS/ARE. Based on this difference, we continue to assume that the kind reading of a deictic demonstrative involves a separate mechanism from that of a depictive demonstrative.

3.3. Ad-hoc vs. well-established kinds

Given the separate treatment of deictic and depictive demonstratives in kind reference, one prediction we make is that the former would be more subject to a requirement of a well-established kind. Deictic demontratives derive the kind reference through IS/ARE which identifies a subkind based on a given object-level entity. As discussed in König and Umbach (2018), there are restrictions on the types of properties that can be used to identify the relevant subkind from an individual. Because the identification of the property depends on saliency and previously known information about the taxonomic hierarchy, we expect deictic demonstratives to be constrained. Note that this does not necessarily limit the referents of deictic demonstratives to well-established kinds, but to those that are derivable from a limited set of properties. Such constraint is not predicted for depictive demonstratives in our analysis, as depictive demonstratives simply create a kind term from a property that is iconically depicted. There is no restriction on the kinds of properties that can be depicted. The only constraint seems to be whether a generic interpretation of the property is available or at least coercible.

That deictic demonstratives are restricted to well-established kinds is observed in Umbach and Gust (2014). In particular, Umbach and Gust (2014) show that when a deictic demonstrative is used pointing to a car, both a token reading and a type reading are possible, while only a token reading is possible if pointing to a table. This is argued to be because a car kind is well-established while a table kind is not, at least in a bar setting.

(43) a. [Pointing to a car on the street]
Dieses Auto will Anna haben. *token/type*
'Anna wants to have this car.'
b. [Pointing to a table in a bar]
Diesen Tisch will Anna haben. *token only*
'Anna wants to have this table.' [Umbach and Gust 2014:(5-6)]

Such constraint is not available for similarity demonstratives, which is the reason against deriving them from identity with previously established kinds. The distinction we find in our paper between deictic and depictive demonstratives extends this idea. Even similarity demonstratives are expected to be relatively constrained compared to depictive demonstratives in that the properties used to establish similarity are constrained. Demonstratives with depictions fall on the other end of the spectrum where any ad-hoc kind is possible as long as the depiction can be interpreted generically.

4. Conclusion

In this paper, we have shown that demonstratives can incorporate deixis and gestures into kind descriptions. This, along with previously observed phenomena such as similarity demonstratives (Umbach and Gust 2014), challenges the categorical distinction often drawn between generics and particulars and the association of demonstratives and iconic information with particularity. We argue in this work that the kind reference can be derived straightforwardly if we assume that demonstratives combine predicates of different modalities and that the reference between objects and kinds is fluid. Under this view, depiction and deixis can also become descriptive in referring to kind-level entities, though they crucially require demonstratives to enter the composition with the rest of the descriptive material (Ebert et al. 2020; Ahn 2022). Moreover, deictic and depictive demonstratives arrive at the kind-level reference through different means: deixis picks out a specific instantiation which is then turned into a kind by IS/ARE; depiction adds a characterizing property for the relevant subkind. This dichotomy correctly predicts that deictic demonstratives would be more constrained to well-established kinds that depend on generic properties while depictive demonstratives would more readily refer to ad-hoc kinds.

This work also crucially assumes that the distinction between kind-level and object-level is orthogonal to the types of nouns. While demonstratives are often associated with rigid reference and reference to objects, we have shown in this paper that kind reference is readily available with contextual support. This can extend to names as well, in contrast to the example in (1) where the name *Minette* was incompatible with a generic statement. Instead of blocking the use of names in generic statements, we argue that the degradedness of (1) is a result of a pragmatic preference for names to refer to particulars (Krifka et al. 1995), the conceptual constraint of names not being relevant for subkinds of cats, and the lack of the plural marking that signals kind reference as discussed in Section 3.1.3. Note that names with plural marking can often occur with generic statements as in *Henriettas are smart*.

This view also has implications on the notion of deferred reference (Nunberg 1993). An alternative analysis for deriving kind readings of demonstratives comes from deferred reference of demonstrative descriptions, where the demonstratum and the referent of a demonstrative differ. For example, a speaker can point to a movie poster and utter (44).

(44) That was a good movie.

This use also covers cases that we call kind-reference of demonstratives, as shown by (45) from Nunberg (1993).

(45) That used to be made of metal. [Nunberg 1993:(53)]

Deferred reference, however, involves demonstratives only, and does not extend to other noun types. As we argue that the kind-level and object-level distinction is orthogonal to noun types, we maintain the analysis based on IS/ARE, which would allow for the flexibility illustrated in (46), where both the demonstrative *that* and the definite description *the thing you saw in the zoo* allow kind reference.

(46) {That / The thing you saw in the zoo} is the lion.

Finally, our analysis of demonstratives updates that of Ahn (2022) in that they are analyzed as returning a predicate rather than an individual, much in line with works such as Coppock and Beaver (2015). This allows for a clearer division of the grammatical forms and the mechanism of reference. Nouns and determiners simply deal with the content: nouns and modifiers restrict the set of entities while determiners contribute additional restrictions such as uniqueness (in the case of *the*) and deixis/depiction (in the case of *that*). Whether the resulting expression ends up referring to a kind, an individual, or a predicate is determined by a separate operation like type-shifting.

References

Ahn, D. (2022). Indirectly direct: An account of demonstratives and pronouns. *Linguistics and Philosophy 45*, 1345–1393.

Ahn, D. (2025). Definite expressions with and without deixis. In N. Webster, Y. Kiper, R. Wang, and S. L. Lyu (Eds.), *Proceedings of the 41st West Coast Conference on Formal Linguistics*, pp. 1–17. Cascadilla Proceedings Project.

Ahn, D., A. Kocab, and K. Davidson (in print). Pragmatics of spatial descriptions: Sign language loci. *Language 102*(1).

Carlson, G. N. (1977). *Reference to kinds in English*. Ph. D. thesis, University of Massachusetts at Amherst.

Chen, J. (2026). Where does anti-uniqueness come from? A case study of English demonstratives. In *Proceedings of Logic and Engineering of Natural Language Semantics (LENLS) 21*.

Chierchia, G. (1998). Reference to kinds across language. *Natural Language Semantics 6*(4), 339–405.

Coppock, E. and D. Beaver (2015). Definiteness and determinacy. *Linguistics and Philosophy 38*(5), 377–435.

Davidson, K. (2023). Semiotic distinctions in compositional semantics. In L. Fagen, S. Gray, Quain, S. Reyes, and I. Tang (Eds.), *Proceedings of the Fifty-eighth Annual Meeting of the Chicago Linguistic Society*, pp. 59–78. The Chicago Linguistic Society.

Dayal, V. (2004). Number marking and (in) definiteness in kind terms. *Linguistics and Philosophy 27*(4), 393–450.

Dayal, V. and L. J. Jiang (2021). The puzzle of anaphoric bare nouns in Mandarin: A Counterpoint to Index! *Linguistic Inquiry*, 1–20.

Ebert, C. (2024). Semantics of gesture. *Annual Review of Linguistics 10*(1), 169–189.

Ebert, C., C. Ebert, and R. Hörnig (2020). Demonstratives as dimension shifters. *Proceedings of Sinn und Bedeutung 24*.

Elbourne, P. (2008). Demonstratives as individual concepts. *Linguistics and Philosophy 31*(4), 409–466.

Kaplan, D. (1989). Demonstratives: An essay on the semantics, logic, metaphysics, and epistemology of demonstratives and other indexicals. In *Themes from Kaplan*. Oxford University Press.

King, J. (2001). *Complex demonstratives: A quantificational account*, Volume 2. MIT Press.

König, E. and C. Umbach (2018). Demonstratives of manner, of quality and of degree: A neglected subclass. In M. Coniglio, A. Murphy, E. Schlachter, and T. Veenstra (Eds.), *Atypical Demonstratives: Syntax, Semantics and Pragmatics*, pp. 285–328. De Gruyter,.

Krifka, M., F. J. Pelletier, G. Carlson, A. ter Meulen, G. Chierchia, and G. Link (1995). Genericity: An introduction. In G. N. Carlson and F. J. Pelletier (Eds.), *The Generic Book*, pp. 1–124. University of Chicago Press.

McNeill, D. (1992). *Hand and mind: What gestures reveal about thought*. University of Chicago Press.

Nowak, E. (2019). Complex demonstratives, hidden arguments, and presupposition. *Synthese 198*, 2865–2900.

Nunberg, G. (1993). Indexicality and deixis. *Linguistics and Philosophy 16*, 1–43.

Partee, B. (1987). Noun phrase interpretation and type-shifting principles. In J. Groenendijk, D. de Jongh, and M. Stokhof (Eds.), *Studies in Discourse Representation Theory and the Theory of Generalized Quantifiers*, pp. 115–144. De Gruyter.

Robinson, H. (2005). *Unexpected (In)definiteness: Plural Generic Expressions in Romance*. Ph. D. thesis, Rutgers University.

Saha, A., Y. Sağ, and K. Davidson (2024). Focus on demonstratives: Experiments in English and Turkish. In J. Kim, B. Öney, Y. Zhang, and F. L. Zhao (Eds.), *Proceedings of the 33rd Semantics and Linguistic Theory Conference*, pp. 460–479.

Schlenker, P. (2019). Gestural semantics: Replicating the typology of linguistic inferences with pro-and post-speech gestures. *Natural Language & Linguistic Theory 37*, 735–784.

Simonenko, A. (2014). *Grammatical ingredients of definiteness*. Ph. D. thesis, McGill University.

Umbach, C. and H. Gust (2014). Similarity demonstratives. *Lingua 149*, 74–93.

Zlogar, C. and K. Davidson (2018). Effects of linguistic context on the acceptability of co-speech gestures. *Glossa 3*, 73.