The most descriptive depiction

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SuB 30 Goethe University Frankfurt
Sept 23-27, 2025

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Iconic Gestures and the Boundaries of Grammar

- Theoretical and empirical contributions to distinguish between descriptive and depictive meaning

DESCRIPTIVE vs. DEPICTIVE meaning

distinguished along various axes:

- **at-issueness** Deictic or depictive gestures often contribute *non-at-issue* information, supplementing the message without affecting its truth conditions [Ebert and Ebert 2014; Schlenker 2019]
- **compositionality** Nonconventionalized gestures typically fall *outside the rules of syntax and semantics* [Ebert 2024]
- **particularity** Iconic content is *incompatible with descriptive operators* like negation or questions that partition the world [Davidson 2023]

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Generic vs. particular

Generic involves generalizations over situations or individuals

- kinds
- generic sentences

Particular involves specific entities in a specific situation

- demonstratives (Ebert et al. 2020; Kaplan 1989, Ahn 2022)
- iconic gestures (Davidson 2023)

Particulars do not allow generalizations

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

- Generalization over individual impossible

This talk: kind-denoting demonstratives

> Demonstratives can take **particular-selecting** rigid, iconic information and incorporate it into **kind-denoting** descriptions.

(2) That dolphin$_\rightarrow$ will be extinct soon.

     a. pointing to: 🐋

     b. referring to: Southern Resident Orcas

Other examples [Krifka et al. 1995; Nunberg 1993a; Umbach and Gust 2014, a.o.]

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

(4) That is a lion.   [Krifka et al. 1995]

This talk: kind-denoting demonstratives

> Demonstratives can take **particular-selecting** rigid, iconic information
> and incorporate it into **kind-denoting** descriptions.

Plural (*dolphins*) make kind reference more accessible:

(5)   {That dolphin$_\rightarrow$ / Those dolphins$_\rightarrow$} will be extinct soon.

    a.   pointing to: 🚀

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    a.   pointing to:
    b.   referring to: `Southern Resident Orcas`

In a number-neutral language (like Xi'anese):

(6)   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`

This talk: kind-denoting demonstratives

> Demonstratives can take **particular-selecting** rigid, iconic information and incorporate it into **kind-denoting** descriptions.

Demonstratives with iconic gestures:

(7) These lions[big head] will be extinct soon, not these lions[small head].
   a. content: big head vs. small head
   b. referring to: big-headed lion kinds vs. small-headed lion kinds

(8) These computers[big] evolved into these computers[flat].
   a. content: big vs. flat shapes
   b. referring to: big computer kinds and flat computer kinds

Kind denoting demonstratives

That demonstrative descriptions can be kind-denoting is not surprising:

- kinds are regarded as entities
- anything that can refer to an entity (names, definite descriptions, etc.) should be able to refer to kinds [Krifka et al. 1995]
- observed in many works [Krifka et al. 1995; Nunberg 1993a; Umbach and Gust 2014, a.o.]

What is noteworthy: they go beyond simply referring to well-established kinds

- deictic information picks out an actual entity first   *that dolphin$_\rightarrow$* 🐋
- iconic information composes with content of NP to form adhoc subkinds
    - these lions$_{[big\ head]}$ refer to lions with big heads

Outline

1 Demonstratives referring to kinds

- Properties: subkind, compositional
- Different contribution of deixis and depiction

2 Becoming a kind-denoting noun

- Demonstratives with deixis
- Demonstratives with depiction

3 Conclusion

- Revisiting the role of deixis in demonstratives
- Particularity orthogonal to demonstratives

Kind readings

Readings of nouns

[±specific, ±kind]

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

[Krifka et al. 1995:(31)]

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[Krifka et al. 1995:(31)]

Different readings of kind-denoting nouns

(10)   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)]

- various properties and predicates over kinds
- noun form vary widely

Kind-denoting demonstratives

Demonstratives with deixis in kind-denoting uses

(11) 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

Demonstratives with depiction in kind-denoting uses

(12) a. This lion$_{[big\text{-}head]}$ is extinct.   kind predicate

        b. These computers$_{[flat]}$ weigh 1.3kg.   average property

        c. These computers$_{[flat]}$ get lighter every year.   internal comparison

Diagnostics for kind reference

Diagnostics for kind reference

1 Compatibility with kind-level predicate *extinct*

demonstrative with deixis

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

(14) That lion→ will be extinct soon.

- target of pointing: a lion entity
- referent: a subkind of lion instantiated by target
- reading: taxonomic, specific

Diagnostics for kind reference

demonstrative with depiction

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

- referent: a subkind of lion characterized by having a big head
- reading: taxonomic, specific

Diagnostics for kind reference

Demonstrative with deixis

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

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

  - target of pointing: a car entity
  - referent: a subkind of car instantiated by target
  - reading: taxonomic, specific

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Diagnostics for kind reference

<u>2 Co-occurrence with kind-denoting nominals</u>

Demonstratives with depiction

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

- referents: subkinds of cars characterized by [open-up] and [open-side]
- reading: taxonomic, specific

Diagnostics for kind reference

3 Obligatory narrow scope with an existential reading

(19)   John fed rabbits for an hour. $adv > \exists$ [Dayal 2004 modified]

  - narrow-scope reading due to Derived kind predication (DKP) [Chierchia 1998b]

Diagnostics for kind reference

(19)   John fed rabbits for an hour. $adv > \exists$ [Dayal 2004 modified]

- narrow-scope reading due to Derived kind predication (DKP) [Chierchia 1998b]

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

(20)   Mali fanfu-di   wei uo→ tuzi.
        Mary repeatedly feed that rabbit
        'Mary repeatedly fed those→ rabbits.'   *Xi'anese*

- target of pointing: a Cottontail Rabbit entity
- referent: instantiations of Cottontail Rabbit kind across different feeding events
- taxonomic, narrow-scope (DKP)

Properites of kind-denoting demonstratives

Properties

taxonomic and specific   *That dolphin$_{\{\rightarrow, [big\text{-}head]\}}$ will be extinct soon*

- means one of the dolphin subkinds
- it is specifically referring to that subkind

demonstrative with deixis   *That lion$_\rightarrow$ will be extinct soon*

- *not* pointing directly to a kind
  - kinds cannot be pointed to [Umbach and Gust 2014; cf. Carlson 1977]
- pointing to an object-level entity and referring to the subkind it instantiates

demonstrative with depiction   *These lions$_{[big\ head]}$ will be extinct soon*

- syntactically complex: NP + gesture
- information of gesture characterizes the subkind

Question

Kind-referring expressions are generally assumed to be name-like

- Kinds are entities, and kind-referring expressions refer to those entities
- if syntactically complex, these are considered to be idiomatic ('cannot be systematically derived from the meanings of their parts' [Krifka et al. 1995:70])

Demonstratives allow composition: Deictic and depictive information combine with NP meaning compositionally

1. it refers to a subkind, characterized by/related to that information
2. the pointing and gesture contribute different meanings

Becoming kinds

Two strategies

Demonstratives with deixis

- a specific entity picked out
- it is then identified with the kind it is a member of

Demonstratives with depictions

- not pointing to a specific entity
- depiction contributes characterizing property
- the complex property turned into a kind

Demonstratives with deixis

Demonstratives with deixis

Properties

1. points to a particular entity
2. refers to the subkind

Ingredients

- Demonstrative as taking deixis into restriction of the ι operator [Ahn 2022]
- A way to identify that object with the subkind it is a member of
  - IS/ARE in Krifka et al. 1995

Demonstratives

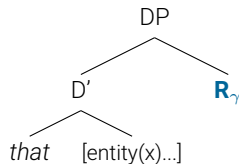Adopting the analysis of demonstratives as a modality linker [Ahn 2022]

- takes two restrictions: one descriptive (P), one deictic/depictive (R_γ)

(21) $\llbracket that \rrbracket = \lambda P.\ \lambda R_\gamma.\ \iota x{:}P(y) \wedge R_\gamma(y)$
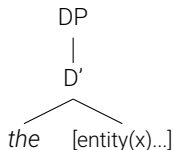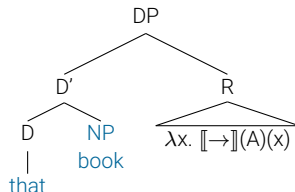

definite
'the maximal entity
that is [restriction]

demonstrative
'the maximal entity
that is [restriction]
and **also R_γ**

Deictic use

$\llbracket$that book$_{\rightarrow A}\rrbracket$ =

DP
D'
D
that
NP
book
R
$\lambda x.\ \llbracket\rightarrow\rrbracket(A)(x)$

$\iota x.\ book(x) \wedge \llbracket\rightarrow\rrbracket(A)(x)$

- $\llbracket\rightarrow\rrbracket(A)(x) = \lambda x.\ at\text{-}A(x)$ (in w_0)

'the maximal entity x that is a book and is at A in the actual world'

- location is fixed in actual world
- rigid reference to the object being pointed to

IS/ARE

Krifka et al. 1995: kind is in some way identical to the object that belongs to it; a relation IS (plural ARE) used instead of identity

(22) $IS(x,y)_{df} (x=y \lor R(x,y))$

- R(x,k): the object *x* belongs to the kind k
- 'x IS y as long as x is the same as y, or x belongs to the y kind'

(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)   [(134')]

We assume that IS is freely available to switch between reference to object and reference to the kind it belongs to

Demonstratives with deixis

<u>Ingredients</u>

- Demonstratives compose NP with deictic information (at A) and return the unique object located at A in w_0 [Ahn 2022]

  (24) $\llbracket$that dolphin$_{\to A}\rrbracket = \iota x.\text{dolphin}(x) \wedge \text{at-A}(x)$

- IS identifies that object to the kind it belongs to

  (25) $\llbracket$that dolphin$_{\to A}\rrbracket =$
      a. $\iota x.\text{dolphin}(x) \wedge \text{at-A}(x)$
      b. $\iota y.\text{IS}(\iota x.\text{dolphin}(x) \wedge \text{at-A}(x),y)$

(26) That dolphin$_{\to A}$ will be extinct soon.
    extinct-soon$(\iota y.\text{IS}(\iota x.\text{dolphin}(x) \wedge \text{at-A}(x),y))$

    a. pointing to:
    b. referring to: `Southern Resident Orcas`

Questions on IS/ARE

Why does it refer to the subkind, not the kind Dolphin?

(27) a. That$_{\rightarrow a}$ dolphin has a horn, not that$_{\rightarrow b}$ dolphin.   *object-level*
     b. That$_{\rightarrow a}$ dolphin will be extinct soon, not that$_{\rightarrow b}$ dolphin.   *kind-level*

Questions on IS/ARE

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   b. That$_{\to a}$ dolphin will be extinct soon, not that$_{\to b}$ dolphin. *kind-level*

If IS is so readily available, why aren't kind readings always available?
In other words, why don't we have (28b) as the interpretation of (28a)?

(28) a. A gorilla walked across a street into a pub.

   b. The gorilla$_{kind}$ walked across the street$_{kind}$ into the pub$_{kind}$.

[Krifka et al. 1995:(136)]

- Krifka et al. 1995: distinction between 'object-oriented mode' and 'kind-oriented mode'; is 'more pragmatic', though object-mode is more default (p.87)

We assume that the choice depends on context, QUD, relevance, etc.

Availability of kind readings

While not as readily accessible as object-talk, kind-talk can be cued by signals like number.

(29)   { %That lion$_{\to A}$ / Those lions$_{\to A}$ } will be extinct

Availability of kind readings

While not as readily accessible as object-talk, kind-talk can be cued by signals like number.

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

In language without number morphology, even with object-level predicates, the kind readings are more readily available.

(30)   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*

More on number

For languages like English, a kind term can still receive a taxonomic interpretation with object-level predicates, but this reading is easily obscured unless overtly marked (e.g., by explicit kind reference).

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

Other signals

Beyond number morphology, other cues for a kind reading can be:

- Types of predication

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

- Context
  [Testing coffee of different origins:]

  (33) That coffee$_{\rightarrow \text{Ethiopian coffee}}$ brings more acidity.   kind

  [Two cups on the table:]

  (34) That coffee$_{\rightarrow a}$ tastes more floral.   object

Demonstratives with depiction

Demonstratives with depictions

Properties

1. do not point to a specific entity
2. depiction iconically represents the property that characterizes the subkind

- for depictions, the result of combining NOUN with DEPICTION must first become a kind as it is not referring to a specific entity
- no reference to a specific entity

(35)   These lions$_{[big head]}$ will be extinct soon
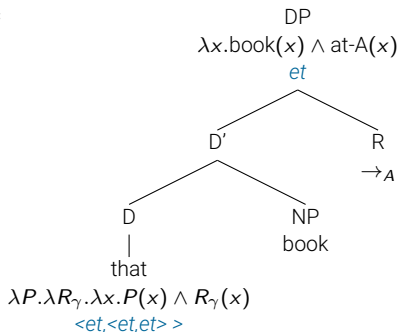   extinct-soon($^\cap[\lambda x.lion(x) \wedge big\text{-}head(x)]$)

Implications

Role of demonstratives, revisited

A possible simplification:

- Instead of returning a unique entity, demonstrative simply adds the deictic/depictive information and returns a predicate
- Then, the predicate is subject to operators like ι, $\cap$
  - similar to Coppock and Beaver 2015's treatment of definites

$[\![\text{that book}_{\to A}]\!] =$

DP
$\lambda x.\text{book}(x) \wedge \text{at-A}(x)$
et

D'

R
$\to_A$

D
|
that
$\lambda P.\lambda R_\gamma.\lambda x.P(x) \wedge R_\gamma(x)$
<et,<et,et> >

NP
book

Alternative: deferred reference

Distinct from deferred reference

Deferred reference: no explicit relation but can be congruity (Nunberg, 1993b)

- (36) [Pointing to a baseball player]
  That's what we should play at recess.   [(73)]

  (37) [With every promotion, Phoebe gets a larger desk. The speaker
  points to the new desk and says:]
  That used to be made of metal.   [(53)]

However,

- these require ambiguity for demonstratives only
- IS/ARE allows uniform analysis across all noun types

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

Adhoc kinds

Distinction between deixis and depiction:

- deixis involves IS, which identifies the object to the kind it belongs to
- depiction takes the intersection of the noun and depiction to form a kind

Prediction:

- dem+deixis can only refer to well-established kinds
- dem+depiction can form adhoc kinds

$\rightarrow$ Not verified yet, but similar observation in Umbach and Gust 2014

Deictic demonstratives refer to well-established kinds

Deictic demonstratives observed to be constrained to well-established kinds
[Umbach and Gust 2014]

(39)   [Pointing to a car on the street]
       Dieses Auto will Anna haben.   *token/type*
       'Anna wants to have this car.'   [(5)]

(40)   [Pointing to a table in a bar]
       Diesen Tisch will Anna haben.   *token only*
       'Anna wants to have this table.'   [(6)]

Conclusion

Summary

1 Demonstratives incorporating deixis/gestures into kind descriptions

- demonstratives signal that there is an additional predicate available
- iconic elements CAN be descriptive; but they require demonstrative to enter the rest of the composition
  - deixis: an instantiation turned to a kind by IS/ARE
  - iconic gestures: adding an additional characterizing property of the kind

Generic involves generalizations over situations or individuals

- kinds

- generic sentences

Particular involves specific entities in a specific situation

- demonstratives (Ebert et al. 2020; Kaplan 1989, Ahn 2022)

- iconic gestures (Davidson 2023)

Summary

2 Kind-talk is (always) possible but not (always) accessible

- kind/object difference is orthogonal to noun types; even names and demonstratives can be kinds; we just see it less often

3 Linguistic encoding can be fluid

- the boundary of genericity and particularity can be blurry
- division of labor in noun and reference:
    - nouns and determiners simply deal with content
    - whether it is kind, individual, or predicative is determined in a separate functional position
    - similar to Coppock and Beaver's analysis of 'the'

Thank you!

We hope you enjoyed **THIS**→ talk!
And that→ lion will never be extinct!

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