

**Demonstratives to Definites:
What Changes and What Stays the Same**

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I. Background

1a. **Dogs** are common here.

b. **The dog** is a common animal.

2a. **kutte** yehaaN aam haiN

Dogs here common are

b. **kutta** aam jaanvar hai

dog common animal is

Kind denoting noun phrases in Hindi and English can be analyzed along two dimensions:

overt marking of definiteness, on which they differ

overt marking of number, on which they agree

Porterfield and Srivastav (1988): (In)definiteness in the Absence of Articles: Evidence from Hindi and Indonesian, Proceedings of WCCFL 7.

Dayal (1992): The Singular-Plural Distinction in Hindi Generics, Proceedings of SALT 2.

I. Background

**THE OPEN HANDBOOK OF (IN)DEFINITENESS:
A HITCHHIKER'S GUIDE TO INTERPRETING BARE ARGUMENTS**
V. Dayal (ed), to appear, Open Handbooks in Linguistics, MIT Press.

Languages investigated:

<i>Cabo Verdean Creole:</i>	Marlyse Baptista & Veneeta Dayal
<i>Cuzco Quechua:</i>	Liliana Sanchez, Janett Vengoa & Veneeta Dayal
<i>Hiaki:</i>	Heidi Harley, & Veneeta Dayal
<i>Indonesian:</i>	Daniel Kaufman, Gita Martohardjono & Veneeta Dayal
<i>Korean:</i>	Sea-hee Choi, James Yoon & Veneeta Dayal
<i>Russian:</i>	Anita Soloveva, Maria Polinsky & Veneeta Dayal
<i>Xhosa:</i>	Vicki Carstens, Loyiso Mletshe & Veneeta Dayal

CVC, CQ, Indonesian, Korean: Languages that don't mark number in the nominal.

Hiaki, Russian, Xhosa: Languages that make a singular-plural distinction.

None of them have a definite determiner, though Indonesian has an atypical definite determiner that has its roots in the possessive and that has restricted reference.

II. Demonstratives and Definites

- Diachronic Perspective** The definite article has developed from the demonstrative (Greenberg 1978).
The indefinite article has developed from the numeral *one* (Givón 1981).

Demonstrative → Definite involves two changes

Emergence of $|\max(N)| = 1$

Loss of $|N| > 1$

definites presuppose uniqueness
demonstratives presuppose anti-uniqueness

Numeral *one* → Indefinite involves one change

Loss of the cardinality implicature

3a. **That dog** is sleeping and **that dog** is running around.

b. **#That sun** rises in the east.

4a. **#The dog** is sleeping and **the dog** is running around.

b. **The sun** rises in the east.

5a. **#One cow** eats grass.

On the generic reading

b. **A cow** eats grass.

6a. She didn't talk to **one doctor**, she talked to **two doctors** / **?the doctor**.

b. She didn't talk to **a doctor**, she talked to **two doctors** / **the doctor**.

II. Demonstratives and Definites

Anaphoric Readings

7a. (There were several boys and girls in the room.) The teacher was talking to a girl and a boy. She was telling **the boy/that boy**.

Deictic Readings (in a context with one dog, or more than one dog but one is salient)

7b. **That dog/The dog** is black.

Contrastive Readings (in a context with plurality of equally salient dogs)

7c. **That/#the dog** is black and **that/#the dog** is white.

$\llbracket \text{Demonstrative} \rrbracket = \lambda P. \lambda R. \iota x: \forall y [P(y) \wedge R(y) \leftrightarrow y \sqsubseteq x]$

Ahn 2022

$\llbracket \text{Definite} \rrbracket = \lambda P: |P| = 1. \iota x[P(x)]$

Link 1983

$\llbracket \text{Definite}_{\text{STRONG}} \rrbracket = \lambda P \iota x [P(x) \wedge x = y]$

Schwarz 2009

$\llbracket \text{Demonstrative} \rrbracket = \llbracket \text{Definite}_{\text{STRONG}} \rrbracket = \lambda P \iota x [P(x) \wedge x = y]$

Jenks 2018

II. Demonstratives and Anti-uniqueness

Demonstratives presuppose anti-uniqueness

Their incompatibility with Proper Names/Globally Unique entities cannot ride on indexicality:

8a. #That Mary lives in Canada.

8b. #That sun will set at 7.

Proposal: $\llbracket \text{Demonstrative} \rrbracket = \lambda i \lambda P: \exists j [j \neq i \wedge \text{ix}[P(x) \wedge f(i, x)] \neq \text{ix}[P(x) \wedge f(j, x)]]$.

$\text{ix}[P(x) \wedge f(i, x)]$

If $f = \text{location}$: $\lambda P \exists j [j \neq i \wedge \text{ix}[P(x) \wedge \text{at}(i, x)] \neq \text{ix}[P(x) \wedge \text{at}(j, x)]]$. $\text{ix}[P(x) \wedge \text{at}(i, x)]$

- With P : *dog*, pointing at location i can yield a distinct dog than pointing at location j (*deictic* reading if location j is not part of the locations in the context of evaluation, *contrastive* reading if j is part of the context locations).

$\exists j [j \neq i \wedge \text{ix}[\lambda y[y=m](x) \wedge \text{at}(i, x)] \neq \text{ix}[\lambda y[y=m](x) \wedge \text{at}(j, x)]]$. $\text{ix}[\lambda y[y=x](x) \wedge \text{at}(i, x)]$

- With P : $\lambda y [y = m]$, the property of being Mary, and pointing at Mary's location, **the at-issue content** will be satisfied but not the **the anti-uniqueness presupposition**.

Mary cannot be at two locations at the same time \Rightarrow #8a, the same holds for sun \Rightarrow #8b.

II. Demonstratives and Anti-uniqueness

Demonstratives and Amelioration by exclamation

8a. #**That Mary** lives in Canada.

8b. #**That sun** will set at 7.

9a. **That Mary** is an idiot!/**That Mary** is a saint!

9b. **That sun** is going to burn you – it's so hot!

- Question 1: Why are demonstratives restricted as in (8)? Anti-Uniqueness.
- Question 2: Why does exclamation make a difference?
- These questions can be better understood in comparison with definites.

Definites and Proper Names

- Some languages allow definites+ proper names, some don't.
- Exclamation has no ameliorating effect in languages that don't.

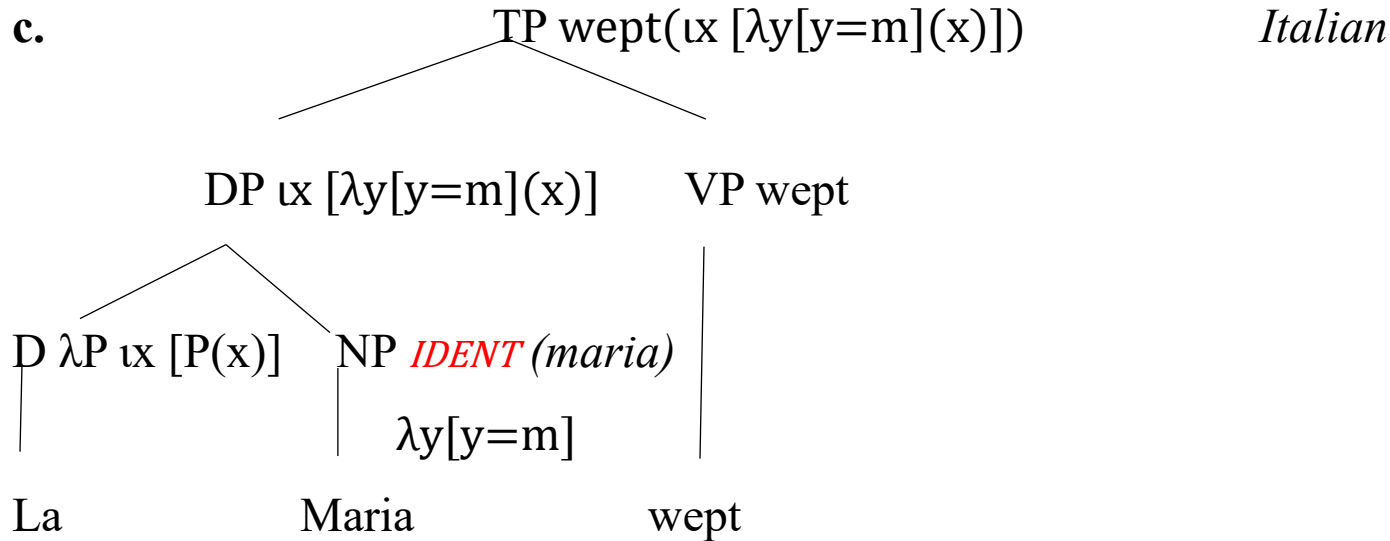
II. Definites and Proper Names

Italian

English

10a. [TP [DP ^vla [N Maria]] [VP pianse]]

b. [TP [DP *the/^v∅ [N Maria]] [VP wept]]



d. $\llbracket \text{DP} \rrbracket = m$ $\llbracket \text{TP} \rrbracket = \text{wept}(m)$ *English*

- N denotes the unique individual x named Mary (type e).
- The Italian definite combines with it via Partee's IDENT ($e \rightarrow \langle e, t \rangle$):
 $\lambda x \lambda y [x = y]$ (in this case: $\lambda y[\text{maria} = y] \Rightarrow \{\text{maria}\}$,
the uniqueness requirement of the definite determiner is met)

II. Definites and Proper Names

X-ling variation:

- English uses the basic meaning of proper names, the simplest option.
 - Italian likes to project DP and tap into IDENT: [DP La maria]; [DP Maria_i [NP t_i]]; [NP Maria]
- may not be in keeping with Chierchia's NMP.

What happens to definites + proper names when they occur with exclamative force?

Nothing!

11a. [TP [DP [√]la [N Maria]] [VP è così alta]!]

√without exclamation, √with

b. [TP [DP *the/[√]∅ [N Maria]] [VP is so tall]!]

*without exclamation, *with

II. Demonstratives and Proper Names

Exclamation repairs something that is otherwise broken.

- No language allows demonstratives+proper names (in neutral cases)
- Amelioration via exclamation seems to hold cross-linguistically.

12a. #_{[TP [DP **quella** [N Maria]] [VP pianse]]}

b. #_{[TP [DP **that** [N Maria]] [VP wept]]}

13a. _{[TP [DP **quella** [N Maria]] [VP è così alta]!] **b.** _{[TP [DP **that** [N Maria]] [VP is so tall]!]}}

- The proper name incurs an anti-uniqueness violation: $|\text{IDENT}(\llbracket \text{Maria} \rrbracket)| = 1$.
- General views on Exclamation: Exclamation introduces the dimension of degree into the calculation (McCready 2008, Rett 2011)
- The task: to put these two together in a way that zooms in on how the introduction of degree semantics repairs the *anti-uniqueness* violation.

II. The Presuppositions of Demonstratives and Definites

Demonstratives and Definites both have presuppositions – but they are not subject to competition via Maximize Presupposition.

- If $|P_S| = 1$, with P a regular common noun like *dog*, the presuppositions of both the definite and the demonstrative will be satisfied and either term can be used.
- If $|P_S| > 1$, with P a regular common noun like *dog*, only the presuppositions of the demonstrative will be satisfied and only the demonstrative will be felicitous.
- If $|P_W| = 1$, with P a globally unique noun like *sun*, only the presuppositions of the definite will be satisfied and only the definite will be felicitous.

To explore further tomorrow:

- Do demonstratives and definites compete?
- Anaphoric definites and anaphoric demonstratives are both acceptable though there may be a preference for one over the other.
- If there is preference then their distribution is not regulated by *Maximize Presupposition*.

III. The Neo-Carlsonian Approach to Bare Arguments

The neo-Carlsonian theory privileges the phenomenon of kind-reference as a key player in any cross-linguistic discussion of (in)definiteness in the nominal domain:¹

Kind-reference ≠ genericity

1a. Dodos are extinct.

b. *Gen x [dodo(x)] [extinct(x)]

c. extinct([∩]dodo)

Kind-level predicates: extinct, endangered, evolve-from, in season etc.

2a. Dodos were friendly birds.

b. Gen x [dodos(x)] [friendly-bird (x)]

c. Gen x [[∪]dodos(x)] [friendly-bird (x)]

- Every language has ways of talking about the species as a whole, or at least most languages do: Matthewson claims it doesn't hold for Salish.
 - Kind-terms are needed for kind-level predicates. Are they also needed for individual/stage-level predicates? On the ambiguity view, not (2b); on the neo-Carlsonian view, yes (2c).
 - But first, the reasons for separating out reference to kinds from genericity:

¹ See Krifka et al (1995) for a wide ranging introduction to kind reference and genericity; for a shorter introduction focusing on the developments that bear on cross-linguistic variation see Dayal (2011) and Dayal (2022).

III. The Neo-Carlsonian Approach to Bare Arguments

- 3a. Dodos are extinct.
- b. The dodo is extinct.
- c. *A dodo is extinct.

- 4a. Dodos were large birds/ate fruits and nuts.
- b. The dodo was a large bird/ate fruits and nuts.
- c. A dodo was a large bird/ate fruits and nuts.

- English also allows the definite singular to be used in kind-level predication, (3b). There is a difference in register but there is no question that both are equally grammatical.
- The singular indefinite is not acceptable (3c), except under a taxonomic reading. This reading is unavailable for *dodo bird* which is known not to have had sub-types.
- Generic statements allow all three types of statements that in some sense apply to the kind, (4).
- Based on paradigms like (3), the bare plural and the definite singular, but not the indefinite singular, are classified as kind terms. Based on paradigms like (4) all three are considered as compatible with generic statements.
- The distinction between generic statements based on individual level (that hold over significant intervals of an entity's existence) as opposed to stage level predicates (that hold only over temporary intervals) may play a role, but we set that aside for now.
- Does Gen = *all, most, typical, a few* – No X-ing difference, so we set this aside as well.
- The aspects of grammar that trigger a quantificational structure and mapping of arguments into the restriction and the scope should be predictable via independently established aspects of the grammar of particular languages intersecting with universally available options.

III. The Neo-Carlsonian Approach to Bare Arguments

(Chierchia 1998, Dayal 2004, 2011)

Connecting the Kind and the Object Domains

5a. *nom* (\cap): For any property P and world/situation s, $\cap P = \lambda s \iota P_s$, if $\lambda s \iota P_s$ is in K, undefined otherwise where P_s is the extension of P in s and K is the set of kinds.

b. *pred* (\cup): $\lambda d_{\langle s, e \rangle} \{ \lambda x [x \leq d_s]$ if d_s is defined, $\lambda x [\text{FALSE}]$ otherwise $\}$, where d_s is the plural individual that comprises all of the atomic members of the kind.

c. *DKP*: If P applies to objects and k denotes a kind, then $P(k) = \exists x [\cup k(x) \wedge P(x)]$

Chierchia 1998

- *nom* applies to number neutral properties, as long as the property is amenable to cross-world variation. It is undefined for properties like *Alice's shoes* or *the students sitting in that room* because of their anchoring to a given set of entities. Additionally, *nom* is undefined for singular terms: $*nom(N_{SING})$.
- *pred* applies to any (number neutral) kind denoting term at an evaluation index, and yields a predicate that includes all and only the individuals whose atomic parts have the relevant property at that index.
- If there are two individual cats, a and b, in some world, $pred(nom(cats)) = cats = \{a, b, a+b\}$ at that world. The standard operators that yield definite and indefinite readings, *iota* and \exists , can, in principle, apply to the property *cats*, or to $pred(nom(cats))$. That is, bare plurals as kind terms can arguably have the same interpretive options as ordinary predicates.

III. The Neo-Carlsonian Approach to Bare Arguments

Reference to kinds for bare plurals in object level statements

6a. Dogs are not barking.

Only 7a

b. Some dogs are not barking.

7a and 7b

c. A dog is not barking.

7a and 7b

7a. $\neg\exists x [\text{dogs}/\text{dog}(x) \wedge \text{bark}(x)]$

8a. $\neg\exists x [{}^{\cup}\text{dogs}/\text{dog}(x) \wedge \text{bark}(x)]$

b. $\exists x [\text{dogs}/\text{dog}(x) \wedge \neg\text{bark}(x)]$

b. $\exists x [{}^{\cup}\text{dogs}/\text{dog}(x) \wedge \neg\text{bark}(x)]$

- Bare plurals in object level statements as ordinary indefinites predicts parallel interpretations for (6a)-(6c).
- The bare plural can be constrained from having this reading if they are kind terms that get existential force through the rule of DKP in (5c). The LF in (9a) gives syntactic scope to the bare plural in (6a) but the interpretation lowers it to take scope under negation:

9a. $[\text{dogs}_i [\text{not} [t_i \text{barking}]]]$

b. $[[\text{dogs}]] = {}^{\cup}\text{dogs}$

b. $[[\text{not barking}]] = \lambda x [\neg\text{barking}(x)]$

c. $[[\text{dogs not barking}]] = \lambda x [\neg\text{barking}(x)]({}^{\cup}\text{dogs})$

$\Rightarrow \neg\text{barking}({}^{\cup}\text{dogs})$

$\Rightarrow \neg\exists x [{}^{\cup}\text{dogs}(x) \wedge \text{barking}(x)]$ *via DKP*

III. The Neo-Carlsonian Approach to Bare Arguments

Readings of bare plurals unavailable to Ordinary Indefinites:

10a. Wolves get bigger as you go north from here.

b. #A wolf gets bigger as you go north from here.

c. #Some wolves get bigger as you go north from here.

- The neo-Carlsonian position is that the \exists reading of bare plurals is a kind-based reading, due to DKP, while that of the overt indefinites comes through operations which do not involve reference to kinds.
- Only (10a) has a plausible reading where the size of distinct wolves encountered on the trip north are compared because only (10a) has a kind denoting argument.

Take-away:

- The *type* of the bare plural allows it to be lowered into the argument position of the predicate.
- While the types match, the sorts do not: *bark* is an activity that only individual dogs can engage in, not the kind.
- DKP intervenes to repair the sort mismatch between an object level predicate and a kind level argument – a hyper-local sort repair, there is no way of getting non-local \exists readings for bare plurals.

III. The Neo-Carlsonian Approach to Bare Arguments

Constraints on Type Shifts

- The theory outlined above is incomplete. It makes some wrong predictions, for English bare plurals as well as cross-linguistically. Chierchia (1998) posits two principles to offset these incorrect predictions: *Ranking of (Covert) Type Shifts* and *Blocking of (Covert) Type Shifts*.

11a. *iota*: $\lambda P \iota x [P(x)]$

b. \exists : $\lambda P \lambda Q \exists x [P(x) \wedge Q(x)]$

c. \exists_f : $\lambda P \lambda Q \exists f [CH(f) \wedge \dots Q(f(P))]$ *schematic*

- Whether we use \exists as a generalized quantifier or take a choice-functional approach, bare plurals have to be blocked from tapping into it in order to capture the inert narrowest scope reading of bare plurals – not only in English-like languages but also in article-less languages like Hindi where bare plurals have been shown to have a similar scopal profile.
- Another problem is to prevent bare plurals from having definite readings in English and other articulated languages, while allowing them to have such readings in article-less languages:

12a. Some children_i came in. Children*_i / The children_i sat down.

b. kuch bacce_i andar aaye. bacce_i baiTh gaye.

Some kids inside came kids sat-down

“Some kids came in. The kids sat down.”

Hindi: Dayal 2004:403

III. The Neo-Carlsonian Approach to Bare Arguments

Constraints on Type Shifts

13a. *Ranking*: $\{\text{nom}, \text{iota}\} > \exists$

Chierchia 1998, Dayal 2004

b. *Blocking Principle* ('Type Shifting as Last Resort'): For any type shifting operation π and any X : * $\pi(X)$ if there is a determiner D such that for any set X in its domain, $D(X) = \pi(X)$.

Chierchia 1998

- *Ranking* predicts that for any bare plural that can denote kinds, the lower ranked \exists will be unavailable. Their only \exists reading is derived via DKP to their kind-level meaning.
- The cross-linguistic uniformity in the behavior of bare plurals is predicted because *nom* is universally ranked above \exists (though there are languages like Xhosa that do not follow *Ranking*)
- Since *iota* ranks above \exists , in principle, definite readings for bare plurals should be possible but this is not the case in English (12). This follows from *Blocking*: the presence of a definite determiner in English blocks definite readings for English bare plurals; the absence of a definite determiner in Hindi allows Hindi bare plurals to tap into *iota* and have definite readings.
- *nom* and *iota* do not compete: article-less languages are predicted to allow both readings.
- Does the theory allow for null D s? Yes. If we allow only null D s and no type-shifting, , something like *Ranking* and *Blocking* would have to be incorporated to get the effects.

III. The Neo-Carlsonian Approach to Bare Arguments

Number Morphology and Kind Formation

The two types of English kind terms, the bare plural and the definite singular, differ along two dimensions, number and overt marking of definiteness.

Is the definite determiner that functions in such cases different from the definite determiner that functions in ordinary definites? The definite determiner is the same, it is the noun it combines with that is different (Dayal 2004).

Given the definition of *nom*, applying it to singular terms would lead to the unwanted prediction that the resulting kind term could only be instantiated by a unique individual in any situation. This is at odds with the notion of a kind term.

14a. The lion gathers near acacia trees.

b. Lions gather near acacia trees.

Krifka et al 1995:89

15a. *The lion attacks each other.

b. Lions attack each other.

- The singular kind is conceptually plural but semantically singular.
- Singular kind formation should be thought of in terms of the common noun denoting in a taxonomy of individuals and leading to a kind term of a substantively distinct character.

III. The Neo-Carlsonian Approach to Bare Arguments

Singular kind terms are atomic in the sense that they do not allow access to their individual instantiations, though there is a clear conceptual connection to them.

The singular definite generic is the result of the standard *iota* operator applying to a (singular) predicate ranging over a set of such entities:²

16a. The dodo is extinct.

b. extinct ($\iota\{\uparrow_{TX} \text{dodo}\}$)

The up-arrow symbol stands for an atomic entity, on a par with group terms like *committee* or *team*; *iota* picks out the unique individual entity in the relevant taxonomic domain that satisfies the predicate *dodo*.

A clear prediction for article-less languages, where *iota* is not blocked from applying covertly:

17a. kutta bheDiye-se viksit huua hai

Dog wolf-from evolved has

b. evolved-from ($\iota\{\uparrow_{TX} \text{dog}\}, \iota\{\uparrow_{TX} \text{wolf}\}$)

Hindi

² The \uparrow_{TX} operator takes a singular property (type $\langle s, \langle e, t \rangle \rangle$) and shifts it to the set of taxonomic entities salient in the context (type $\langle e, t \rangle$), which can then feed into the regular determiners in the language resulting in what has been called taxonomic readings. Dayal (2004) treats the singular definite generic as a special case of such readings; it involves *iota* which requires the set to be a singleton. This can only be so in contexts where subkinds of the kind denoted by the noun are not salient.

III. The Neo-Carlsonian Approach to Bare Arguments

We now have a three-way distinction in kind terms: bare plural kind terms in English and Hindi, definite singular kind terms in English and bare singular kind terms in Hindi.³

This allows us to separate out some notable differences in their semantic profiles:

18a. #caroN taraf *baccaa* khelrahaa thaa
four ways child was playing

‘The same child was playing everywhere.’

Intended: “In each place there was a (different) child playing”

b. caroN taraf *bacce* khel rahe the
four ways children were playing

‘Children (different ones) were playing in different places.’

Hindi

(Dayal 2004:406)

- The contrast in (18) rides on number specification; the bare plural behaves in the expected way, with a DKP based \exists taking scope under the universal.
- The bare singular does not have this option - *nom* does not apply to the bare singular, the common noun must therefore denote in the taxonomic domain and shift via *iota*. There is no way to gain access to distinct individual instantiations. The other option is for the bare singular to denote in the ordinary domain but nothing changes since *iota* still ensures uniqueness and the relevant $\forall\exists$ reading remains out of reach.

³ There is a fourth kind, the definite plural generic seen in Romance languages, which will be discussed further in section 3.

III. The Neo-Carlsonian Approach to Bare Arguments

An interesting difference within singular kind terms across languages:⁴

19a. (lagtaa hai) kamre meNcuuhaa hai
seems room in mouse is

‘It seems there’s a mouse in the room.’

Hindi (Dayal 2004: 404)

b. There seems to be a mouse/*the mouse in the room.

- (19a) could be about a particular mouse that is known to both speaker and hearer, it does not have to be.
- The most plausible reading is the one where no mouse is in the common ground at all but the speaker bases their statement on indirect evidence.
- The English definite clearly lacks this reading. The locus of the contrast must be the presence of the definite determiner. We can take it that the singular definite kind term differs from the bare singular kind term in the sort of non-generic \exists predication it can lend itself to.

⁴ The theory, as it stands, does not have a clear explanation for the difference between bare singulars in (18a) vs. (19a). We will take up this challenge up in Workshop 3.

III. The Neo-Carlsonian Approach to Bare Arguments

Representative object readings

To appreciate the special properties of this reading, consider the (20a) with an episodic predicate like *come to* (other such predicates are *arrive, reach*):

20a. Horses/The horse came to America with Columbus.

Krifka et al 1995

b. I discovered rats/*the rat every day.

We understand (20a) as involving actual individual horses arriving for the first time in a country where there were no horses earlier.

In standard episodic statements, where individual instantiations are needed without any implication about the species as a whole, only the bare plural is acceptable. A once-only predicate like *discover* illustrates this in (20b). The bare plural satisfies the requirements of the predicate because DKP allows us to talk about distinct instances of the kind being discovered on different days. The definite singular is unacceptable since it can only tell us something about the kind as a whole; it does not have DKP-based \exists force.

III. The Neo-Carlsonian Approach to Bare Arguments

Number Effects in Pseudo-incorporation

Bare singular kind terms in argument position imply singularity but a caveat is needed. In a language like Hindi, a bare singular can have a number neutral interpretation when it occurs in direct object position *under certain conditions*:

21. anu puure din *cuu*haa pakaRtii rahi
Anu whole day mouse kept-catching *Hindi*
‘Anu kept catching mice (different ones) the whole day.’ *Dayal 2011:131*

- The bare singular cannot be case marked and the verbal aspect must support an atelic interpretation.
- The number neutral reading we see in (21) is independent of kind formation. It involves a property denoting noun phrase that undergoes pseudo-incorporation (Dayal 2011).
- Pseudo-incorporation is not available cross-linguistically, or the terms under which such readings may be available might differ across languages⁵
- It is also possible that the direct object position may be susceptible to indefinite readings of a kind that are not possible more generally.
 - The generalizations about bare singulars that we are focusing on are about their behavior in argument positions, including those in positions other than the direct object position.

⁵ Hungarian, for example, allows case marked nominals to be incorporated (Farkas and de Swart 2003); Turkish allows bare singulars but not bare plurals to be incorporated (Sag 2022).