# Bare Singulars and Pseudo-Incorporation in Western Armenian

Alexandros Kalomoiros

University of Pennsylvania

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- ► Main Idea: Bare singulars in Western Armenian (WA) denote unambiguously properties of (sub)kinds.
  - Previous literature (Dayal 2004): The singular (at least in English) is ambiguous between denoting a property of kinds and a property of objects.

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- This cannot be captured by restricting what can undergo PI to kind-level denotations (cf. Sağ 2019), as object-level denoting nouns can also PI.
- The modification restriction follows naturally if we assume that the bare singular always denotes a (property) of kinds in WA.

- WA allows 'Num Noun' constructions of the form 'Num N<sub>sg</sub>' (Bale et al. 2011, Bale & Khanjian 2014):
- (1) jerek (had) afagerd (2) jerek (had) afagerd-ner three (CLF) student three (CLF) student-PL

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- (1) jerek (had) afagerd (2) jerek (had) afagerd-ner three (CLF) student three (CLF) student-PL
  - 'Num Noun' constructions like (1) (covert plurals) can trigger either singular, (3), or plural, (4), verbal agreement (Sigler 1997):
- (3) jerek afagerd inga-v
   three student fall-PST.3SG
   'Three students fell'
   (4) jerek afagerd inga-n
   three student fall-PST-3PL
   'Three students fell'
  - Focus: Covert plurals that show singular agreement (non-agreeing)

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### Bare Sg Pseudo-Incorporate

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- Bare sg are number-neutral:
  - John-ə manug tasdiajarage-ts
     John-DEF child educate-PST.3SG
     'John educate child(ren)'
- Bare sg take low scope:
  - (6) John-∂ manug t∫∂ tasdiajarage-ts
    John-DEF child NEG educate-PST.3SG
    'John did not educate any children' (¬ > ∃, \*∃ > ¬)

- Animate full DPs in WA are marked dative in object position (DOM):
  - John-ə manug-i-n tasdiajarage-ts
     John-DEF child-DAT-DEF educate-PST.3SG
     'John educated the (unique) child'
  - (8) ??John manug tasdiajarage-ts
     John-DEF child-DEF educate-PST.3SG
     'John educated the child'

- Bare singulars resist the dative, even if animate:
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  - (10) ?\*John-ə manug-i tasdiajarage-ts John-DEF child-DAT educate-PST.3SG 'John loves a child'

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- So bare sg do not behave as full arguments. We can understand these patterns if we take bare sg to PI (Massam 2001).

### Covert plurals PI

- Non-agreeing Covert plurals behave just like bare sg with respect to the PI diagnostics:
- (11) shows low scope:
  - (11) jerek afagerd tf-inga-v three student NEG-fall-PST.3SG 'Three students did not fall'  $(\neg > \exists, *\exists > \neg)$

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     John-DEF 100 CLF soldier-(\*DAT) killed.PST.3SG
     'John killed 100 soldiers'
- **Conclusion:** Non-agreeing covert plurals undergo PI.
- NB: Non-agreeing covert plurals denote object-level properties.

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- Bare Sg in WA allow modification only by kind-level adjectives (this observation is also made in Sağ 2019).
  - (13) jereg, John-ə fantasi/ # hin kirk garta-ts yesterday, john-DEF fantasy/ # old book read-PST.3SG
     'Yesterday, John read fantasy/ old book(s)'
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#### • Analysis of Sag 2019:

- The bare sg is ambiguous between object-level and kind-level properties.
- The PI mechanism is restricted to apply to kind-level properties only ⇒ bare sg will never allow object-level mod in PI environments.

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## • However, WA allows PI of object-level properties. Therefore, PI in WA cannot be restricted to just kinds.

- Covert plurals show the same restrictions with regards to modification as bare singulars.
  - (14) hink (had) jevropagan zinvor mertsə-ve-ts-av
     5 CLF European soldier kill-PASS-AOR-PST.3SG
     'Five European soldiers were killed'
  - (15) hink #(had) anoti zinvor mertsə-ve-ts-av
     5 CLF hungry soldier kill-PASS-AOR-PST.3SG
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- (15) becomes fine either when the classifier is overt, or when the context supports 'hungry soldiers' as a type (i.e. we have a roster of hungry soldiers).

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- (15) becomes fine either when the classifier is overt, or when the context supports 'hungry soldiers' as a type (i.e. we have a roster of hungry soldiers).
- Claim:
  - We cannot account for these patterns by restricting PI to just kinds.
  - But we can account for them by restricting the bare sg to just kinds (leaving PI unrestricted).

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- Bare sg unambiguously denote properties of kinds.
- When bare sg/covert plural without a CLF Pl → the kind needs to be instantiated. This is costly for non-well-established kinds.
- Covert plurals with a CLF → the classifier is responsible for instantiating the kind directly. So no cost incurred during Pl.
  - Come to the breakout room for more details! -

Thank you!

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### Some syntax

• We will assume the following syntax for covert plurals (evidence for this also comes from agreement, see Kalomoiros (forthcoming)):



- Recall the patterns we are trying to capture:
  - Generalization 1: Bare singulars, and covert plurals + kind level adjectives → felicitous in an out-of-the-blue context.

#### • Generalization 2:

• Bare singulars, and covert plurals + object level adjective  $\rightsquigarrow$  felicitous only if the context establishes the relevant subkind.

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• Covert plurals with an overt classifier are fine in an out-of-the-blue context regardless of adjective type.

• From Dayal 2004: Bare sg denote properties of singular kinds. These are taxonomic individuals (technically groups in the sense of Landman 1989).

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- **Diverging from Dayal**: At least in WA, bare sg only denote properties of kinds.
- PI is broken down into three components: (1) Restriction (Chung & Ladusaw 2004), (2) Sort Adjustment (if necessary), (3) Existential Closure.

**Restriction:** If  $\alpha$  is branching node, and  $\{\beta, \gamma\}$  the set of its daughters, where  $[[\beta]] = \lambda x.P(x)$  and  $[[\gamma]] = \lambda x_1 \dots \lambda x_n.Q(x_1, \dots, x_n)$ , then  $[[\alpha]] = \lambda x_2 \dots \lambda x_n \lambda x_1$ .  $Q(x_1, \dots, x_n) \wedge P(x_1)$ .

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  - (18)  $belong to(x, y_k)$  is true iff x is an object-level entity and  $y_k$  is a kind-level entity that has x as its part/instantiation.
  - (19) **DSKP:** Let *F* be a function of the form  $\lambda x_1 \dots \lambda x_n$ .  $\alpha$ , defined on object-level entities and where  $\alpha$  is some formula. Let *k* be a singular kind. Then, restricting  $x_i$   $(1 \le i \le n)$  to *k*, i.e.  $\lambda x_1 \dots \lambda x_i \dots \lambda x_n$ .  $\alpha \wedge x_i = k$ , is equivalent to restricting  $x_i$  to the instantiations of *k*, i.e.

 $\lambda x_1 \dots \lambda x_i \dots \lambda x_n$ .  $\alpha \wedge belong - to(x_i, k)$ 

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  - (20) **Instantiation Principle:** When DSKP is used to instantiate a non-well-established kind in a context that does not support that kind, it leads to decreased contextual acceptability.

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  - (20) **Instantiation Principle:** When DSKP is used to instantiate a non-well-established kind in a context that does not support that kind, it leads to decreased contextual acceptability.
- The key is whether the belong to relation that instantiates the kind is established via DSKP or not.

### Bare Singulars



(22) 
$$[[book]] = \lambda x.x = BOOK$$

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### Bare Singulars



(22) 
$$[[book]] = \lambda x.x = BOOK$$
  
 $[[read]](\lambda x.x = OLD BOOK) \xrightarrow{Restrict} \lambda y.\lambda x.read(y)(x) \land x =$   
 $OLD BOOK \xrightarrow{DSKP} \lambda y.\lambda x.read(y)(x) \land belong - to(x, OLD BOOK)$   
 $\xrightarrow{\exists-closure} \lambda y.\exists x[read(y)(x) \land belong - to(x, OLD BOOK)].$ 

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### Bare Singulars



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$$\xrightarrow{\exists-closure} \lambda y.\exists x[read(y)(x) \land belong - to(x, OLD BOOK)].$$

 Because DSKP was used to instantiate a non-well-established kind that has no contextual support, a cost is incurred; thus 'old book' is infelicitous.



- (24)  $[[\#]] = \lambda P_{et} \cdot \lambda n_d \cdot \lambda x_e \cdot P(x) \wedge |x| = n$
- (25)  $[[soldier]] = \lambda x.x = SOLDIER$



$$\begin{array}{ll} (24) & [[\#]] = \lambda P_{et} \cdot \lambda n_d \cdot \lambda x_e \cdot P(x) \wedge |x| = n \\ (25) & [[soldier]] = \lambda x.x = SOLDIER \\ [[\#]](\lambda x.x = HUNGRY \ SOLDIER) \Rightarrow \lambda x_e \cdot x = HS \wedge |x| = 5 \xrightarrow{DSKP} \\ \lambda x_e \cdot belong - to(x, HS) \wedge |x| = 5 \xrightarrow{Restrict, \exists} \exists x[belong - to(x, HS) \wedge |x| = 5 \\ 5 \wedge were - killed(x)] \end{array}$$

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(27) 
$$[[had]] = \lambda P_{et} \cdot \lambda n_d \cdot \lambda x_e \cdot belong - to(x, \iota y P(y)) \land |x| = n$$

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DSKP is not used here, so no contextual cost is incurred.



- DSKP is not used here, so no contextual cost is incurred.
- So, we capture the patterns: Modification with object-level adjectives is costly, unless there is contextual support or an overt classifier

▶ A definite in WA, [N-DEF], can mean either 'the N kind', (28), or 'the unique N':

- (28) John-ə ∫un-ə pənat∫ənt∫e-ts
   John-DEF dog-DEF make.extinct-PST.3SG
   'John made the dog kind extinct'
- (29) John-ə manug-i-n tasdiajarage-ts John-DEF child-DAT-DEF educate-PST.3SG 'John educated the (unique) child'

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• To capture this in the absence of ambiguity of the bare singular, we need a head to instantiate the kind:



- [[child Atomizer]] =  $\lambda x_e$ .belong to(x, CHILD)  $\wedge$  Atom(x)
- This is the set of instantiations of the child-kind that are atoms.
- The definite article then will return the unique such instantiation if there is one; it will be undefined otherwise.

- Given that DSKP is a general operation, one might expect that it has no positional restrictions.
  - (32) meyu-??(mə) Marjam-i-n gə-xajte gor bee-(INDEF) Mariam-DAT-DEF INDC-sting PROG 'A bee is stinging Mariam'
- (32) would appear to go against this idea.
- But it's plausible that bare singulars just cannot move to [Spec, TP] because they lack a D layer. Full DPs on the other hand can, but they do not require DSKP to compose with the verb.

### DSKP and subject

- Covert plurals can be in [Spec, TP]. In that case, they show full agreement and take obligatorily high scope. In that case, DSKP seems to apply:
  - (33) ??hink anoti zinvor merts-ve-ts-an five hungry soldier kill-PASS-AOR-PST.3PL '5 hungry soldiers were killed'
  - (34) hink had anoti zinvor merts-ve-ts-an five CLF hungry soldier kill-PASS-AOR-PST.3PL'5 hungry soldiers were killed'
- One wrinkle is that (33) does not seem to improve in a context that supports 'hungry soldier' as a type.

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- Bale, A. & Hrayr Khanjian. 2014. Syntactic complexity and competition: The singular plural distinction in Western Armenian. Linguistic Inquiry 45(1). 1–26.
- Chierchia, G. 1998. Reference to Kinds across Language. Natural Language Semantics 6(4), 339–405.
- Chung, S. & W. A. Ladusaw. 2004. Restriction and Saturation. Cambridge, Massachusetts: MIT Press.
- Dayal, V. 2004. Number marking and indefiniteness in kind terms. Linguistics and Philosophy (27), 393–450.

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- Landman, F. 1989. Groups, I. Linguistics and Philosophy 12(5), 559–605.
- Massam, D. 2001. Pseudo Noun Incorporation In Niuean. Natural Language & Linguistic Theory 19(1), 153–197.
- Sağ, Y. 2019. The Semantics of Number Marking: Reference to Kinds, Counting, and Optional Classifiers. PhD Thesis, Rutgers.
- Sigler, M. 1997. Specificity and Agreement in standard Western Armenian. PhD Thesis, MIT.

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