Pseudo-incorporation, Event Kinds, and Atelicity

This study, analyzing its interaction with lexical aspect in Turkish, argues that pseudo-incorporation (PI) establishes taxonomic event kinds via singular kind argumentation in the event kind domain (c.f. van Geenhoven 1998, Chung & Ladusaw 2004, Dayal 2011, Sağ 2022, Luo 2022, a.o.).

Puzzle In Turkish, bare nouns and indefinites with *bir* 'one' obligatorily take narrow scope when serving as caseless direct objects (8). Caseless indefinites (8b) are analyzed to undergo VP-level $\exists$-closure in Diesing style (e.g. Kelepir 2001) while caseless bare singulars (sg) (8a) are analyzed as PI (e.g. Öztürk 2005). Sağ (2022), following Dayal's (2004) view of definite sg/taxonomic kinds, argues that Turkish PI involves sg kind argumentation. Dayal analyzes sg kinds as group-like primitive entities; despite singularity in form, they are conceptually plural, holding a relation with atomic and plural object-level entities associated with kinds. Sağ, naming this relation "belong-to," argues that it is established in PI, via a local $\exists$-closure, resulting in a number-neutral, narrow-scope interpretation. This aligns with Chierchia's (1998) Derived Kind Predication (DKP) for plural (pl) kinds, which employs a type adjusting $\exists$-closure over instances of the kind in episodic predication.

(1)   a. $[\![(8a)]\!] = \neg\exists e.\exists y[belong\text{-}to(y, \iota x_k.book_k(x_k)) \wedge read(e) \wedge Th(e) = y \wedge Ag(e) = Ali]$
      b. $[\![(8b)]\!] = \neg\exists e.\exists y[read(e) \wedge Th(e) = y \wedge book(y) \wedge Ag(e) = Ali]$

(2) $[\![\text{Ali didn't kill mosquitoes}]\!] = \neg\exists e.\exists y[^{\cup\cap}mosqs(y) \wedge kill(e) \wedge Th(e) = y \wedge Ag(e) = Ali]$

Sağ's analysis treats (8a) truth conditionally equivalent to (8b); engaging in a book-reading event entails reading at least one book. But they differ in atelicity, as tested with a *for-adverbial* with achievements in (9). While PI is felicitous, rendering (9a) atelic, a caseless indefinite is deviant (9b). The puzzle deepens with case-receiving, non-PI'ed sg kind arguments as in (10c) (cf. PI in (10a)). Known as *representative object reading*, (10c) disallows for-adverbial modification, similar to caseless indefinites. We seek to reconcile these disparities and distinguish PI from caseless indefinites and canonical sg kind arguments, drawing on Chierchia (2023), which we turn to next.

Kind Argumentation and Atelicity English bare pls have a narrow scope construal due to DKP (2), applying below for-adverbial modification. Definites similarly involve a low $\exists$-quantification over parts of the pl individual (homogeneity; Bar Lev 2021) but they are deviant with for-adverbials (3). Chierchia, treating for-adverbials as $\langle\langle v, t\rangle, \langle v, t\rangle\rangle$ type expressions in these cases (e.g. Krifka 1998), posits a "same participant" constraint on their use (5) in line with Champollion et al. (2017). Abandoning DKP, he argues that kinds can directly bear thematic roles (Landmann & Rothstein 2012), allowing bare pls to meet (5), as each cell of $\tau(e)$ has the same kind as the theme argument: $[\![\text{kill mosquitoes}]\!] = \lambda e[kill(e) \wedge Th(e) = {}^{\cap}mosquitoes]$ With definites, (5) forces the same plurality to be involved in every cell, yielding deviance with non-iterable achievements as in (3).

(3)   Ali killed mosquitoes (for an hour)/the mosquitoes in that room (*for an hour).

(4)   a.   Horses arrived in Australia with the first immigrants (for a few years).
      b.   The horse arrived in Australia with the first immigrants (*for a few years).

(5)   for an hour $(V) = \lambda e.\ V(e)$ and e lasts one hour and for each temporal cell of a salient cover of $\tau(e)$ (the run-time of e), there is an event e' in V with **the same participants** as those in every other cell of $\tau(e)$ and e is the sum of all such events e'.

Chierchia outlines three axioms for pl kind argumentation: (i) Exemplification: A *killing mosquitoes* event has parts involving instances of the mosquito kind. (ii) Antitotality: There is no suggestion that the whole kind is involved. (iii) Progressivity: The event is prolongable; unless hindered by external factors, it would tend to go on. Sg kind argumentation lacks these features. In (4b), the protagonist is the kind; a *representative* sample of the horse kind's arrival in Australia concerns the

kind as a whole (totality, no exemplification). This event is not prolongable; the kind has already arrived (cannot keep arriving). Unlike (4a), where this property applies to instances, allowing continuous arrivals, sg kind argumentation in (4b) is inherently unsuitable for atelic modification.

Back to Turkish The caseless indefinite in (9b) is forced to have an anomalous reading due to (5) (killing the same rabbit iteratively), similar to definites. However, the disparity between PI'ed (10a) and canonical (10c) sg kind argumentation needs explanation. PI aligns with pl kind argumentation in following the three principles: In (10a), (i) the protagonist of a *white lion-discovering* event is some members of the white lion kind, (ii) not the whole kind (the kind itself might have been found earlier). (iii) The event has the potential to continue. In contrast, (10c) attributes the property to the entire kind, requiring that the kind had not been found in this region earlier. The key question is what aspect of PI leads to this notable shift in sg kind argumentation. Furthermore, Sağ's PI analysis needs an adjustment akin to the "kinds as direct arguments" approach to explain compatibility with for-adverbials but in a distinct way from pl kind argumentation. Sağ argues that in Turkish bare pls do not undergo PI, one reason being that they lack name-worthiness. PI is allowed if the result conveys a canonical event type (Mithun 1984, Dayal 2011), limiting the PI'ed noun to sub-kind denoting modification, but pl kinds do not have this restriction (11).

PI and Event Kinds Positing event kinds e_k (type v_k) as a primitive (taxonomic) category distinct from event tokens e (type v), we take verbs to denote properties of event k(inds) and event t(okens) (Schäfer 2007, Gehrke & McNally 2011; cf. Schwarz 2014, Sağ 2018, Luo 2022): $[\![read_k]\!] = \lambda e_k.$ $read_k(e_k)$, $[\![read_t]\!] = \lambda e. read(e)$. Argument saturation is possible within event kinds to denote the property of a sub-event kind [see VP_k in (12)]. This is manifested as PI in languages like Turkish, via a thematic function θ_k defined on sg kinds and event kinds (e.g., theme introducing Th_k). For canonical argumentation, event-kinds type-shift to event tokens via Event Tokenizer (ET) (6). ET takes an event-kind property V_k of type $\langle v_k, t \rangle$, $\exists$-closes it, and returns a property of event tokens V of type $\langle v, t \rangle$ that *belong to* the event kind (as event kinds are taxonomic, they hold a *belong-to* relation with event tokens, akin to sg kinds). ET type-shifting entails that, for every thematic kind argument that the event kind has (if any), there is an object-level member or members of that kind, which bears the corresponding thematic role in the event token domain (7). E.g., involvement in a book-reading event kind requires a reading event token with at least one book as its theme (12).
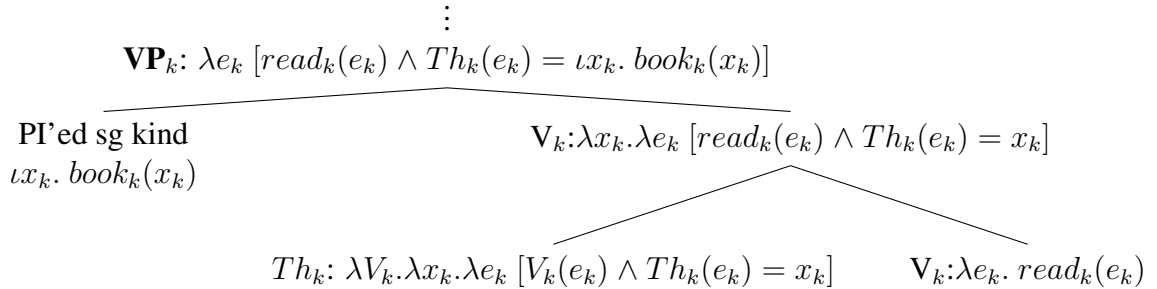
(6) ET: $\lambda V_k.\lambda e. \exists e_k [belong\text{-}to(e, e_k) \wedge V_k(e_k)]$

(7) $\exists e.\exists e_k [belong\text{-}to(e, e_k) \wedge \forall x_k [\theta_k(e_k) = x_k \rightarrow \exists y [belong\text{-}to(y, x_k) \wedge \theta_t(e) = y]]]$

PI'ed sg kind argumentation occurs at the event kind level, embedded within the $\exists$-closure of the event token. Since event quantification takes the narrowest scope, the PI'ed NP is necessarily interpreted low. Name-worthiness naturally stems from PI being an event-kind level process. Kinds are name-worthy in denoting classes of objects exhibiting regular behavior in nature (Carlson 1977). Likewise, event kinds represent well-established/typically encountered classes of events.

PI and Atelicity PI in (10a) is compatible with the for-adverbial (modifying VP_t in (10b)), as it satisfies (5); each cell of $\tau(e)$ involves the same sg kind argument at the event kind level. ET bestows PI with the three principles: Exemplification is ensured through the entailment in (7), also ensuring antitotality since, while the sg kind is involved in the taxonomy of the event kind, it is (some) members of the kind that are involved in the corresponding event token. Event kinds are progressive; one could go on engaging in the event tokens of the *white lion-discovering* event kind in this region perpetually. This contrasts with the event token of *discovering the white lion* in this region (10c), where the sg kind is introduced after the discovering event kind is tokenized (10d).

(8) a. Ali **kitap** oku-ma-dı.
Ali book read-NEG-PST
'Ali didn't do book-reading.' $[\neg > \exists$ (no books), $\#\exists > \neg]$

b. Ali **bir kitap** oku-ma-dı.
Ali one book read-NEG-PST
'It is not the case that Ali read a book.'
$[\neg > \exists$ (no books), $\#\exists > \neg]$

(9) a. Ali bir saat boyunca **tavşan** öldür-dü.
Ali one hour for rabbit kill-PST
'Ali did rabbit-killing for an hour.'

b. *Ali bir saat boyunca **bir tavşan**
Ali one hour for one rabbit
öldür-dü.
kill-PST
'*Ali killed a rabbit for an hour.'

(10) a. Kurum bu bölge-de (bir ay boyunca) **beyaz aslan** keşfet-ti.
institute this region-in one month for white lion discover-PST
'The institute did white lion-discovering in this region (for a month).'

b. ***beyaz aslan keşfet***: $[_{VP_t}$ ET $[_{VP_k}$ discover the white-lion]] $= \lambda e.\exists e_k\ [belong\text{-}to(e, e_k)\ \wedge$ $[discover_k(e_k) \wedge Th_k(e_k) = \iota x_k.\ white\text{-}lion_k(x_k)]]$

c. Kurum bu bölge-de (*bir ay boyunca) **beyaz aslan-ı** keşfet-ti.
institute this region-in one month for white lion-ACC discover-PST
'The institute discovered the white lion in this region (*for a month).'
(*keşfet* intended to mean 'discover' or 'realize,' not 'examine' in Turkish)

d. ***beyaz aslan-ı keşfet***: $[_{VP_t}\ [_{VP_t}$ ET $[_{VP_k}$ discover]] the white-lion-ACC] $= \lambda e.\ \exists e_k\ [belong\text{-}$ $to(e, e_k)\ \wedge\ discover(e_k)] \wedge Th_t(e) = \iota x_k\ [white\text{-}lion_k(x_k)]]$

(11) Ali *eski* kitap#(-lar)/ *dini* kitap(-lar) oku-du.
Ali worn.out book-PL religious book-PL read-PST
PI (no PL): #Ali did worn-out book-reading. vs. ✓ Ali did religious book-reading.
No PI (with PL): ✓ Ali read worn-out books. & ✓ Ali read religious books.

(12) ⟦*Ali kitap okudu*⟧ 'Ali did book-reading'
$\exists e.\exists e_k\ [belong\text{-}to(e, e_k) \wedge [read_k(e_k) \wedge Th_k(e_k) = \iota x_k.\ book_k(x_k)] \wedge Ag_t(e) = Ali]$
(entails: $\exists e.\exists y\ [read(e) \wedge belong\text{-}to(y, \iota x_k.\ book_k(x_k)) \wedge Th_t(e) = y] \wedge Ag_t(e) = Ali])$

$\vdots$

VP$_k$: $\lambda e_k\ [read_k(e_k) \wedge Th_k(e_k) = \iota x_k.\ book_k(x_k)]$

PI'ed sg kind
$\iota x_k.\ book_k(x_k)$

V$_k$:$\lambda x_k.\lambda e_k\ [read_k(e_k) \wedge Th_k(e_k) = x_k]$

Th_k: $\lambda V_k.\lambda x_k.\lambda e_k\ [V_k(e_k) \wedge Th_k(e_k) = x_k]$ V$_k$:$\lambda e_k.\ read_k(e_k)$

Selected Ref. (*references hyperlinked in text*) **Champollion et al 2017**. Rigid and flexible quantification in plural predicate logic. **Chierchia 2023**. Kinds, properties and atelicity. **Dayal 2004**. Number marking and indefiniteness in kind terms. **Dayal 2011**. Hindi pseudo-incorporation. **Gehrke & McNally 2011**. Frequency adjectives and assertions about event types. **Kelepir 2001**. Topics in Turkish syntax: Clausal structure and scope. **Krifka 1998**. The origins of telicity. **Landman & Rothstein**. 2012. The felicity of aspectual for-phrases, part 1: homogeneity. **Sağ 2022**. Bare singulars and singularity in Turkish. **Schäfer 2007**. On frequency adjectives. **Schwarz 2014**. How weak and how definite are weak definites?