Pseudo-incorporation as sub-event kind formation

This study argues that Turkish pseudo-incorporated (PI-ed) bare singulars yield sub-event kinds in line with Dayal 2011, but as singular kind arguments introduced at the event kind domain instead of properties (of type $<e,t>$) modifying the verb, contrasting with it and other analyses where they are treated as properties (e.g. van Geenhoven 1998, Farkas & de Swart 2003). This way, their (non-canonical) syntactic argument status is reflected semantically, as well as keeping them separate from canonical arguments which are introduced at the event token domain (cf. McNally & Espinal 2011).

Data PI-ed bare singulars differ from canonical arguments, e.g. definites, quantified expressions, etc., in forming a unit with the verb immediately preceding it and not receiving case marking (Öztürk 2005) (1a). So, they are unable to undergo case-driven movements like passivization. However, they can still be considered as syntactic arguments as the occurrence of an extra object with the same thematic role (1b) and the assignment of case marking associated with direct objects to other arguments are blocked (see Öztürk 2005). (Cf. with Chamorro where theme-doubling is possible, Chung & Ladusaw 2004).

(1) a. Ali **kitap** oku-du.   b. *Ali Savaş ve Barış(-ı)   **kitap** oku-du.
     Ali book read-PAST   Ali War and Peace-ACC book read-PAST
     'Ali did book-reading.' (one or more books)   Intended: 'Ali read War and Peace.'

Number neutrality, non-referentiality, and obligatory narrow scope are the hallmarks of PI, which, in this analysis, will be captured in different ways than the property analyses.

Singular Kinds Bare plurals are kinds so they can combine with kind-level predicates: *Dinazor-lar 66 milyon yıl önce yok oldu.* 'Dinosaur-s became extinct 66 million years ago.' As in English (Chierchia 1998, cf. Carlson 1977), plural kinds are derived by *nom*, i.e.$^{\cap}$: $\lambda P_{<s,et>} \lambda s \, \iota x \, [P_s(x)]$, and in object-level contexts, they undergo *pred* which returns their instantiation sets in a given s, i.e.$^{\cup}$: $\lambda k_{<s,e>} \lambda x \, [x \leq k_s]$. In episodic contexts, bare plurals are definites by covert type shifting via *iota* (Turkish lacks an overt definite D) or narrow scope existentials by *Derived Kind Predication* (*DKP*) which, drawing on *pred,* repairs sort mismatch by introducing ∃-quantification: *Kedi-ler çiftleşiyor.* '(The) Cat-s are mating.' They are number neutral as in English; the multiplicity reading disappears in downward entailing contexts and questions. Bare singulars are also kinds and they can combine with kind-level predicates: *Dinazor 66 milyon yıl önce yok ol-du.* 'The dinosaur became extinct 66 million years ago.' However, they are only interpreted as definite and singular in episodic contexts: *Kedi çiftleşiyor.* 'The cat is mating.' This would not be expected if they were number neutral as claimed in Bale at al. 2010. Like plural kinds, they would be derived by *nom,* and in episodic contexts they would get existential readings by *DKP*. Plus, since bare plurals are number neutral, the singularity of bare singulars cannot be reduced to a competition story.

Instead, they are like definite singular kinds of English (Dayal 2004). Dayal claims that common nouns are ambiguous in denoting properties of ordinary individuals and properties of (sub-)kinds (taxonomic). E.g. the noun *cat* denotes an atomic set of cats, and in a taxonomic domain it denotes a singleton set containing the unique cat-kind. The singular definite interpretation of bare singulars is derived by the combination of the former with *iota*, whereas singular kinds are derived by the combination of the latter with *iota*: $\iota X \, [P_T(X)]$, (X and P_T range over taxonomic entities and properties). Singular kinds are conceptually plural associated with the same set of instantiations as plural kinds, but grammatically they are impure atomic like groups. Since they are non-transparent to instantiations, *pred* (or Carlson's *R*) and *DKP* are unavailable, so they lack narrow scope existential readings. They can only occur with object-level predicates if they refer to the species as a representative object. The impure atomicity is further evidenced by their incompatibility with reciprocals and distributive predicates like *come from different areas* requiring access to the atomic level (Schwarzschild 1996 for groups).

PI-ed bare singulars are singular kinds, supported by the following facts, which could not be fully captured if they denoted properties of type $<e,t>$: (i) They are interpreted number neutrally although their property denotation is atomic.[1] (ii) Modification is incompatible with them (requiring indefinites or plurals) (2a) unless it operates at the taxonomic domain, establishing a sub-kind of the bare singular (2b). (2a is good if *old* refers to ancient kinds of books.) This is because singular kinds are built on taxonomic properties, not ones of ordinary objects, and they are impure atomic terms which cannot be type-shifted into sets of instantiations suitable for modification at the ordinary object level.

(2) a. *Ali *eski* **kitap** oku-du.   b. Ali *teknik*   **kitap** oku-du.
        Ali old book read-PAST   Ali technical book read-PAST
        'Ali read an old book/old books.'   'Ali did technical-book reading.

(iii) They are non-referential at the object level (both with overt and covert pronouns) (3a, Öztürk 2005), but reference to the kind itself is possible (3b). (3a&b follow 1a - In 3b, the reference is not to the object(s), if not plural anaphora would be possible with the plural inference. Instead, the reference is to the kind which, being singular, calls for singular anaphora regardless of the number inference.) This is expected since PI-ed bare singulars are kinds and introduce discourse referents at the kind level, not at the object level. *DKP*, via ∃- quantification of which they would achieve this, is also not available.

(3) a. #Reng-i/-leri   kırmızı-y-dı.   b. Polisiye tür-ü-y-dü.
        color-3SGPOSS/3PLPOSS red-COP-PAST   crime   kind-COMPOUND-COP-PAST
        'Its/their color was/were red.'   'It (the book kind) was crime genre.'

Based on their syntactic argument status and the facts given above, we propose that PI-ed bare singulars are singular kind arguments in the way shown below.

PI We follow Schäfer 2007 in that there are event kinds (e^k of type v_k) besides event tokens (e of type v) in the ontology, and verbs can denote relations involving event kinds as well as event tokens, e.g., $[\![read^{kind}]\!] = \lambda e^k [read(e^k)]$ and $[\![read^{token}]\!] = \lambda e [read(e)]$. As is the case with event tokens, argumentation also occurs with event kinds, but only with kind arguments, and this yields a sub-event kind interpretation. In light of this, the *book-reading event kind*, a sub-kind of the reading event kind, is derived as in (4). This process is PI, where a singular kind restricts an event kind by participating in it as a thematic argument.

(4) a. $[\![[Th]\ read^{kind}]\!] = \lambda x^k\ \lambda e^k\ [read(e^k) \wedge Th(e^k) = x^k]$ b. $[\![book^{kind}]\!] = \iota X[BOOK_T(X)]$
    c. $[\![book\text{-}read^{kind}]\!] = \lambda e^k\ [read(e^k) \wedge Th(e^k) = \iota X[BOOK_T(X)]]$

This sub-event kind will combine with an agent such as *Ali* to yield an interpretable sentence. Since event kinds are only compatible with kind arguments, to introduce a non-kind argument, shifting to the domain of event tokens is required. For this we propose the *ET* operator, i.e. *event-tokenizer*, which is a function from a set of event kinds to a set of event tokens instantiating an event kind in the set of event kinds (5a,b). (This instantiation relation is reflected by Carlson's *R* applied to events.) Then, the set of event tokens will combine with the agent and be existentially closed (ignoring the tense) (5c).

(5) a. $[\![ET]\!] = \lambda P_{<vk,t>}\ \lambda e\ \exists e^k\ [R(e,\ e^k) \wedge P(e^k)]$
    b. $[\![[ET]\ book\text{-}read^{kind}]\!] = \lambda e\ \exists e^k\ [R(e,\ e^k) \wedge read(e^k) \wedge Th(e^k) = \iota X[BOOK_T(X)]]$
    c. $[\![Ali\ book\text{-}read^{kind}]\!] = \exists e\ \exists e^k\ [R(e,\ e^k) \wedge read(e^k) \wedge Th(e^k) = \iota X[BOOK_T(X)] \wedge Ag(e) = Ali]$

Here, Ali is involved in a token of the *book-reading* event kind as an agent. The assertion that at least one such token exists yields the inference of reading one or more books- the instantiations the singular kind is conceptually associated with- explaining the number neutrality. Narrow scope interpretations of PI-ed singular kinds stem from the event quantifier, to which they are tied in a local way, having narrow scope wrt other quantificational elements. (*Subject PI* is also possible (Öztürk 2005), e.g. *Ali-yi arı soktu* 'Ali got bee-stung': $\exists e\ \exists e^k\ [R(e,\ e^k) \wedge sting(e^k) \wedge Ag(e^k) = \iota X[BEE_T(X)] \wedge Th(e) = Ali]$.)

Canonical arguments are introduced within event tokens, and do not participate in sub-event kinds unlike PI-ed ones, which entering the derivation within event kinds form a stricter unit with the verb. The difference in case is explained by the view that PI-ed bare singulars are complements to the verb while others are introduced by higher case-assigning heads by Öztürk, but this issue is left for future study since case marking of direct objects is associated with (non)-specificity in general (Enç 1991)[2].

Implications This study is inspired by the analysis of weak definites of English (e.g. *Lola is reading the newspaper*) in Aguilar-Guevara & Zwarts 2010 where they are argued to be singular kinds, having the same properties as PI in Turkish (cf. Schwarz 2014). This and PI in other languages can alternatively be considered within our proposal, though it comes with a generality problem: Some of these are restricted in various ways contrasting with the highly productive one in Turkish (e.g. in English stereotypical functions with a limited set of nouns). This issue is also a problem for the previous analyses and can be explained by positing language-specific lexical rules as already proposed in them.

[1] Dayal argues that atelicity is the reason for neutrality. Though in telic contexts singularity is more salient in our case, it is not necessitated. [2] Caseless indefinites with *bir* 'one' are not considered as PI in the semantic terms adopted here.