Introduction: Different from English, Mandarin allows non-referential bare NP arguments not involving any functional projections or plural marking. In the presence of an adverbial duration phrase (DrP), post-verbal bare NPs are limited to the lowest position, i.e. to the right of the DrP (Huang, Li, & Li, 2009; Li, 2013; Liao, 2013, a.o.). DPs (e.g. Dem(onstrative)Ps, Num(eral)Ps, Cl(assifier)Ps, etc.), on the other hand, are required to be in a position higher than the DrP:

(1) a. Zhangsan mai-le san nian che
Zhangsan sell-ASP three year car
‘Zhangsan sold cars for three years.’
b. *Zhangsan mai-le che san nian
Zhangsan sell-ASP car three year
‘Zhangsan sold car three year’

(2) a. Lisi nian-le zhe yi-ben shu san tian
Lisi read-ASP this one-cl book three day
‘Lisi read this book for three days.’
b. *Lisi nian-le san tian zhe yi-ben shu
Lisi at one day in sell-out-ASP this one-cl book
‘Lisi sold out a car (exactly one) in a day.’

Huang, Li, and Li (2009) propose a Mandarin VP structure where the direct object of transitive verbs can compose either as the complement of V or in Spec.VP, and the DrP left-adjoins to V’. To derive the contrast in (1), they posit a constraint on the composition of non-referential NPs:

(3) A non-referential constituent which bears a theta-relation with a head H should be combined with H to form the smallest possible constituent. (Huang, Li, and Li, 2009: 95)

However, the cause of (3) is unclear, and (3) remains agnostic about the occurrence of DPs, allowing for the ungrammatical ordering possibility in (2b). By showing that Mandarin bare NPs are a case of pseudo-incorporation, I will propose an argument structure that can explain the ordering patterns in (1) and (2), as well as language variation in allowing bare NPs.

Characteristics of Pseudo-Incorporation (P-I): According to Dayal (2011, 2015), in Hindi, pseudo-incorporated NPs (P-I NPs) are non-Case-marked and can only occur in the object position. They show the following properties which Mandarin bare NPs also show.

I. Number neutrality: P-I NPs are number neutral (aspect-dependent in Hindi & Mandarin):

(4) a. Lisi mai-le yi tian che [Atelic]
Lisi sell-ASP one day car
‘Lisi sold (one or more) cars for a day.’
b. Lisi zai yi tian nei mai-chu-le che [Telic]
Lisi at one day in sell-out-ASP car
‘Lisi sold out a car (exactly one) in a day.’

II. Obligatory narrow scope: P-I NPs obligatorily take narrow scope.

(5) Lisi bixu/meiyou mai san nian che
‘Lisi must/did not sell cars for three years.’
‘There are some cars such that Lisi must/did not sell them for three years.’

III. Inability of discourse anaphora: P-I NPs cannot anteced a discourse anaphor.

(6) a. Zhangsan bu-le san nian yu
Zhangsan catch-ASP three year fish
‘Zhangsan fished for three years.’
b. #Tā/Tamen mai-le hen hao-de jiaqian
It/They sell-ASP very good price
‘It/They sold for a very good price.’

Analysis: Following Lin (2001) and Williams (2005, 2008), I will assume Mandarin verbs do not take e- or quantifier-type arguments and simply denote properties of eventualities: \([V] = \lambda e . V'(e)\) (V-to-v movement is assumed, as in Huang, Li, & Li, 2009). E- and quantifier-type arguments are introduced as specifiers of a functional head \(\Theta^0\) that immediately embeds the VP and encodes the internal theta-roles severed from the canonical denotations of verbs, similar to \(v\) (Kratzer, 1996). Non-referential bare NPs are property-type arguments: \([NP] = \lambda x, e . \lambda \Theta [V' mai-le [NP che]]\])

(7) \([\text{DP} \ [\text{ZS}] \ [\text{VP} \ [\Theta y \ [\text{DP} \ \text{san nian}]]] \ [e_\text{y}] \ [\Theta \ [\text{VP} \ [\text{V' mai-le [NP che]]]]]]\] \) \((=1a)\)
(8) \([\text{DP} \ [\text{ZS}] \ [\text{VP} \ [\Theta y \ [\text{DP} \ \text{zhe yi-ben shu}] \ [e_\text{y}] \ [\Theta \ [\text{VP} \ [\text{V' [DP \ \text{san tian}]] [\text{V' nian-le-le]]]]]]\] \) \((=2a)\)
This theory resorts to a Syntax-Semantics interface that regulates the compositions of arguments and assumes widely acknowledged modes of semantic composition (e.g. Event Identification, Predicate Modification, Function Application) for the arguments. In (7), the bare property NP directly composes with the verb, now of type <st>, via Event Identification (Kratzer, 1996) forming: [VP] = λxλe . sell(e) ∧ car(x, e). The functional head Θ^0 probes down the structure and agrees with the V head. This agreement relationship ensures strict proximity between the Θ^0 and the VP, which is necessary for restricting the internal θ-roles to the post-verbal argument position. The VP then composes with Θ^0 via Predicate Modification that is slightly modified to conjoin two “eventized” relations, forming: [Θ^1] = λxλe . sell(e) ∧ car(x, e) ∧ Theme(x, e). The open argument position in Θ^1 is existentially closed (Diesing, 1990, 1992) before the temporal modification of the DRP ([[san nian] = λQλe [Q(e) ∧ τ(e) = three-years]]). So the overall denotation of (7) would be as follows: [(7)] = λx∃e [sell(e) ∧ car(x, e) ∧ Th(x, e) ∧ τ(e) = three-years ∧ Ag(ZS, e)]. As for the DP object in (8), it cannot compose directly with V due to type mismatch, giving rise to the ungrammaticality of (2b). Its type (i.e. <e>) allows it to only compose in Spec.ΘP via Function Application, and the resulting denotation of (8) would be: [(8)] = λe∃x [read(e) ∧ Th(x, e) ∧ book(x, e) ∧ Card(x) = 1 ∧ τ(e) = three-days ∧ Ag(ZS, e)]. Finally, in order to block (ib) (i.e. property NPs composing high at Spec.ΘP) and account for language variation in bare NP composition (i.e. pseudo-incorporation), I inherit Hale and Keyser’s (1991, 1993) notions of L- and S-Syntax, as well as Lin’s (2006) Lexicalization Parameter in hypothesizing that languages differ in lexicalizing as verbs either the V root (Mandarin) or Θ^0 (V + Θ^0; English). That is, whether below Θ^0 is word-level or part of Syntax (L-Syntax) is language-dependent, whereas above Θ^0 is the Syntax proper (S-Syntax) across the board. Function Application is the required mode of argument composition in the Syntax proper, given that all English arguments are of e- or quantifier-type (Carlson, 1977). (ib) is thus blocked, and we explain why property NPs (P-I NPs) only occur as objects cross-linguistically: They necessarily compose in Comp.V below Θ^0.

**Deriving P-I properties:** Building on the current theory, we can derive number neutrality and the inability of discourse anaphora by following Dayal’s (2011) treatment for Hindi. Number neutrality, for example, arises from the iterative reading of the verb under the implementation Lasersohn’s (1995) pluractional operator (OP_PA):

(9) [VP [dp Lisi] [ɪɾ ə ŋp [e[ðp yi tian] [ mpi-le [NP che]]]]]]]]]

[OP_PA] = λPAE [Card(E) ≥ 2 ∧ ∀e∀e' E [P(e) ∧ ¬τ(e) ∧ τ(e') ∧ ∃x [between(t, τ(e'), τ(e')]] ∧ Card(x) = 1 ∧ τ(e) = three-days ∧ Agent(Lisi, E)] (redefined)

(4a) = λE [Card(E) ≥ 2 ∧ ∀e∀e' E [∃x [sell(e) ∧ car(x, e) ∧ Theme(x, e) ∧ ¬τ(e) ∧ τ(e')]] ∧ Card(E) = one-day ∧ ∃ E scopes below the plurality of events (E), permitting x to vary across the sub-events (leaving out the underlined part above for space)

Telicity is defined on atomic events (Dayal, 2011) and cannot accommodate OP_PA, hence leading to the exactly one reading under existential closure of x in the single event (4b). Existential closure of the bare NP inside ΘP also ensures narrow scope with respect to any operator higher than ΘP (e.g. the deontic modal/negation in (5)).

**Typological predictions:** The current theory predicts strict proximity between P-I NPs and verbs, modulo verb movement or scrambling. Support for this prediction can be found in Turkish and Niuean. Turkish regular and P-I NP objects, reflected by Case-marking, show positional differences in proximity with the verb (Ozyildiz, 2016):


   Ali beer-ACC fast beer-ACC drinks
   ‘Ali drinks the beer fast.’

Niuean, being a VSO language where V'-fronting is assumed (Massam, 2001), shows that only non-Case-marked bare NPs are fronted with the verb:

(iiib) a. Takafo'gaa tūmau nī e ia e tau ika
   b. Takafo'gaa ika tūmau nī a ia

   hunt always EMPH ERG he ABS PL fish
   ‘He is always fishing.’

This follows from the proposed argument structure for P-I NP objects in (iib) and (iib) (parallel to that in (7)), i.e. the complement position is the only position inside V and it is dedicated to property NPs. We can also explain the Case-marking contrast between regular and P-I objects in Hindi, Turkish, and Niuean and its correlation with the positions of the objects given the proposal of Θ^0: Spec.ΘP, right below υ, is a Case position while the complement position of V that is further down is not.