Null objects from a crosslinguistic and developmental perspective, University of Minho

Generic and Indefinite Null Objects
(Comparing Czech to Italian and English)

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1 Null objects in the literature

1. Generic null objects (GNO)

(1) Questo cartello mette in guardia___ contro le valanghe.
   ‘This sign cautions against avalanches.’ Rizzi 1986:(1-b)

(2) L’ambition amène___ à [PRO commettre des erreurs].
   ‘Ambition leads to make mistakes.’ Authier 1989:(4-b)

– syntactically represented as pronouns, namely proarb (Rizzi 1986, Authier 1992a,b), or DPs (Landau 2010); consisting of a set of ϕ-features, possibly Case-marked, also specified as [+human], [+generic]

2. Indefinite null objects (INO)

(3) John read___ (for days) / John was reading___.

– not present in syntax at all; represented in the lexicon as a part of a lexical entry for a given verb, typically as a result of ∃-quantification

(4) a. argument structure conversion:
   x EAT y → (∃y) x EAT y (Bresnan 1978; Dowty 1978)

b. inference rules for two lexical predicates:
   x EAT ≡ (∃y) x EAT y (Fodor and Fodor 1980)

c. enriching LCS structure with a “zero” argument:
   \[\text{[CAUSE([\text{Thing}_a])], [\text{Event}\text{GO}([\text{Thing}_0]), [\text{Path}\text{TO}([\text{Place}\text{IN}([\text{Thing}\text{MOUTH-OF([\alpha]])}]))])]}\] (Cote 1996)

3. Definite null objects (sometimes called ‘anaphoric’)
(5) John won. / John called. / John noticed.
- analyzed as silent definite descriptions (Condoravdi and Gawron 1996, Pedersen 2011, Williams 2012); probably lexically specified (Cote 1996)

4. Lexicalized null objects (have an idiomatic meaning)

(6) John closed. / John hung up.

1.1 Where we are heading

**GNO** correspond (just) to little n (a.k.a. nominalizer) bearing [iGender], but no other ϕ-features semantically interpreted as an individual variable, restricted by property Persona, that gets bound by GEN-operator (Krifka *et al.* 1995)

(7) Nominal Fseq with GNO-corresponding node (framed)

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DP
  D NumP
    Num nP
    [iGender: ]
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INO have to be derived by a generalized type-shifting ∃-closure, operating on event-introducing argument-seeking little v (verbalizer, Marantz 2013)

(8) Intransitivization

\[ \exists \rightsquigarrow \lambda T(e,vt)\lambda e(v)\exists x [T(x)(e)] \]

(where e is the type of individuals, v is the type of events, t is the type of propositions)

2 Generic null objects (GNO)

2.1 Outline

1. Support for their presence in syntax
2. Semantic formalization
3. Featural composition of GNO (Gender, +HUM, number, person) and its comparison to pronouns
2.2 GNO are represented as syntactic arguments

GNO in Czech control into infinitival clauses (9-a), bind anaphors (9-b), and count as subjects of argumental small clauses (9-c) (just like GNO in Italian and French).

(9) a. Šikovný učitel přiměje [PRO₁ chodit na hodinu včas].
   skilled teacher makes go to class on time
   ‘A skilled teacher makes (one) come to classes on time.’

   b. Ani ta nejlepší ochránka neochrání před sebou samým.
      neither the best security.NOM.SG.F not-protects.PF before self alone.INST.SG.M
      ‘Not even the best security guard protects (one) from oneself.’

   c. Pravidelné požívání marihuany dělá otupělým.
      regular consumption.NOM marijuana.GEN makes.IMPF dull.INST
      ‘Regular consumption of marijuana makes (one) dull.’

Unlike Italian, but on a par with French, Czech does not allow GNO to become subjects of adjoined SCs. Such constructions get reanalyzed as substantivized adjectives.

(10) Un dottore serio visita[nude].
    a doctor serious visits nude.PL
    ‘A serious doctor visits (one) nude.’

Rizzi 1986:(14-a)

(11) a. Ten doktor vyšetřuje lidi nahé.
      this doctor examines people naked.ACC.PL
      ‘This doctor examines people naked, i.e. they are naked during the exam.’

    b. Ten doktor vyšetřuje[nahé].
      this doctor examines naked.ACC.PL
      ‘This doctor examines naked ones, i.e. those who are naked.’

On the other hand, in French, *nu* can only modify the subject *un docteur*. The same is true for Czech, providing the adjective’s case and ϕ-features are in concord with those of the subject.

(12) a. Un docteur sérieux examine[nu].
    ‘A serious doctor examines nude.’

    b. Správný doktor vyšetřuje nahé.
       right doctor.NOM.SG.M examines naked.NOM.SG.M
       ‘A right doctor examines naked, i.e. while being himself naked.’

2.3 GNO’s interpretation

- Authier (1989): GNO should be semantically treated as variables which are subject to unselective binding by an overt or null adverb of quantification, in the sense of Lewis 1975

(13) a. D’habitude,[Null Adverb] trop de choucroute rend [e]_{[e]} obèse.
    Usually too much sauerkraut makes obese.

    b. For most x’s, x a person, too much sauerkraut makes x obese. Authier 1989:(42)

- Authier provided a couple of tests for GNO as operator-bound variables
1. GNO lead to scope ambiguities in sentences with one more quantified expression ⇒ are subject to Quantifier Raising (May 1977); see (14) for Czech
2. GNO in equative structures have identical reference ⇒ have to be ‘linked’ by a single operator (Lebeaux 1984); see (15) for French

(14) Na téhle základně pořád něco nutí porušovat pravidla, i když uvnitř chce být člověk spořádný.
‘At this base, something always pushes (one) to break the rules even if one wants to be orderly.
Reading A: There is some thing x s.t. in every situation, x forces one to break rules even if one wants to be orderly.
Reading B: In every situation, there is some thing x s.t. x pushes one to break rules even if one wants to be orderly.

(15) Une thérapie qui réconcilie [e] avec soi-même le matin est une thérapie qui réconcilie avec soi-même le soir.
‘A therapy which reconciles (one) with oneself in the morning is a therapy which reconciles (one) with oneself in the evening.

(16) a. PRO to know him is PRO to love him.
   Lebeaux 1984:(17-d)
b. ∀x ((PROx to know him) is (PROx to love him))

(17) a. [PRO respektovat někoho v Americe] je jako [PRO přehnaně někoho obdivovat v Česku].
   Czechia
   ‘To respect someone in America is like overly admire someone in Czechia.’
   b. Terapie, která kdysi uklidňovala, je terapie, která v dnešní době pomáhá ke splnění životního snu.
   ‘A therapy which once calmed (one) is a therapy which nowadays helps (one) in fulfilling (one’s) life dream.’

• I argue that GNO’s semantics is best captured with Krifka et al.’s (1995) generic operator GEN (modeled after Heim’s 1982 tripartite quantificational structure, involving operator, restrictor, and nuclear scope).

• An important aspect of GEN is that it does not quantify only over individual variables but also over “reference situations” or “ensembles of cases”, to use the terminology of Schubert and Pelletier 1989.

(18) Employing GEN to capture the logical form of a sentence with GNO
   a. Mozartova hudba rozveseluje.
   ‘Mozart’s music cheers (one) up.’
b. GENx,y,s[R(x, Mozart’s musick), persony(y), y is listening to x in s][x cheers up y in s]
   where s is the situation index, k is a kind, and R is the realization relation which relates kinds
to their instances1

⊕ GEN’s quantification over GNO variable eliminates the need for the feature [+generic], somewhat
arbitrarily posited for GNO by Rizzi (1986).
⊕ GEN’s quantification over s also explains why the sentences with GNO have always generic time
reference, i.e. why they are interpreted habitually.

(19) Ambiguity of Czech imperfectives (habitual vs. ongoing):
   Karel kouří.impf. ‘Charles smokes / Charles is smoking.’

(20) Only habitual interpretation of imperfectives allowed if GNO present:
   a. Dobrý policajt chrání /lidi před fyzickým i psychickým terorem.
      good policeman protects people from physical and psychical terror
      ‘A good policeman protects (one)/people from both physical and psychical terror.’
   b. Právě teď tam jeden policajt chrání (*/lidi před partou chuligánů.
      right now there one policeman protects (*one) / some people from a group of
      ‘There is a policeman protecting (*one) / some people from a group of hooligans right now.’

2.4 Syntactic “structure” of GNO

2.4.1 Gender

GNO’s gender reflected on regular adjectives predicated of GNO via PRO (21), and on reflexive adjectives
sám, samý bound by GNO within the same clause (22), or outside of the embedded non-finite clause (23):

(21) Taková zkušenost naučí [PROi zůstat klidn-ý/C#klidn-á],
    such experience teaches stay calm-NOM.SG.M/calm-NOM.SG.F
    ‘Such experience will teach (one) to stay calm.’

(22) Ani ti nejlepší bodyguardi neochrání /sebou sam-ým / C#sebou sam-ou.
    neither the best bodyguards not-protect.PF from self alone-INST.SG.M / self alone-INST.SG.F
    ‘Not even the best bodyguards protect (one) from oneself.’

(23) Kázání toho mnicha přimějí [PROi uvidět sebe sam-a / C#sebe sam-u v
    preaching that monk urge see self alone-ACC.SG.M / self alone-ACC.SG.F in
    pravém světle],
    right light
    ‘Preaching of that monk urges (one) to see oneself truthfully.’

(24) Nás nový lak na nehty učí [PROi vážit si sebe sam-a / sebe sam-é].
    our new polish for nails teaches esteem self alone-GEN.SG.M / self alone-GEN.SG.F
    ‘Our new nail polish teaches (one) to respect oneself.’

1I follow the neo-Carlsonian approach (Carlson 1989, Chierchia 1998, Dayal 2004), in treating bare plurals and mass terms
(such as Mozart’s music) as kind-denoting. When they combine with object-level predicates as in (18-a), the predicates access
their instantiation sets via R. Notation taken from Dayal 2011a:1091.
If GNO are replaced by overt generically interpreted nouns in the examples above, the gender on the adjective has to agree with the grammatical gender of the noun, e.g.:

(25) Náš nový lak na nehty učí člověka \[ \text{PRO}_1 \text{ vážit} \text{ si sebe}_1 \text{ sam-\text{-}ého} \] / our new polish for nails teaches human.ACC.SG.M esteem self alone-GEN.SG.M / *sebe$_1$ sam-é].
    self alone-GEN.SG.F
    ‘Our new nail polish teaches one to respect oneself.’

⇒ As a first approximation, GNO seem to exhibit ‘natural gender’ = when the grammatical gender of an expression corresponds to the biological gender of its referent; cf. Wechsler and Zlatić (2000:803)
⇒ To what extent is natural gender grammaticalized in Czech nominals?

Gender marking of Czech overt nouns

• mostly idiosyncratic gender of root nouns (root + inflectional ending), including names of people and animals, cf. Alexiadou 2004

(26) moř-e – růž-e – soudc-e
    sea-NOM.SG.N – rose-NOM.SG.F – judge-NOM.SG.M

• regular gender of derived nouns (root + nominalizing suffix + inflect.)

(27) mý-dl-o – hloup-ost-∅
    wash-DL-NOM.SG.N – dull-OST-NOM.SG.F
    ‘a soap’ – ‘dullness’

• regular and interpretable gender of derived nouns
  – denote names of professions or people with certain characteristics
  – grammatically masculine, can refer to both male and female entities
  – if the feminine suffix (esp. -k-a) is attached to these nouns, they denote exclusively in the domain of female individuals

(28) a. uči-tel-∅ – uči-tel-k-a
    teach-er-NOM.SG.M – teach-er-K-NOM.SG.F
    ‘a teacher’ – ‘a female teacher’

b. stav-ař-∅ – stav-ař-k-a
    build-er-NOM.SG.M – build-er-K-NOM.SG.F
    ‘a builder’ – ‘a female builder’

c. chytr-ák-∅ – chytr-ač-k-a
    smart-AK-NOM.SG.M – smart-AK-K-NOM.SG.F
    ‘a smart man/person’ – ‘a smart woman’

d. muzik-ant-∅ – muzik-ant-k-a
    music-ian-NOM.SG.M – music-ian-K-NOM.SG.F
    ‘a musician’ – ‘a female musician’
⇒ the nominalizing suffixes of these nouns spell-out their n-head and are associated with an interpretable gender feature (iGender): if its value is specified as [Masc], the noun can refer to both masculine and feminine individuals, if it is specified as [Fem], the noun denotes feminine entities only; see Percus 2011:179 for the concrete mechanism to derive this.

Back to GNO’s gender

• GNO have [iGender] on a par with nouns in (28); cf. Kramer (2009, 2014) for locating interpretable gender feature on n

• in contrast to (28), GNO’s n-node is covert (← no overt root that it would attach to)

• [iGender:Masc] is the semantically unmarked value.²
  (The proposed semantics fits the generally accepted view of bare nPs as property-denoting; Abney 1987, Borer 2005a, a.o.)

(29) a. \[[iMasc]\] = λxλs[Persona(x,s)]
b. \[[iFem]\] = λxλs[Female(x,s) ∧ Persona(x,s)]

Note on “Human-ness”

⊕ No more need to posit an extra feature [+human] associated with GNO, as in Rizzi 1986 – it follows from the presence of [iGender] itself
  (NB! [iGender] ≠ biological gender, i.e. male or female)
  See also (13-b) or (18-b) where the only descriptive content contributed by the null object was the property “person” restricting the generically quantified object variable: “GENx,s,...[Person_s(x)...)...”

⊕ The advantage of including personified entities and other human-like creatures in GNO’s denotation. They are perceived as ‘personas’, but we hesitate to label them as [+human], i.e. members of the human kind
  cf. the same observation by Safir (2000:10) for generic one in English, extended by Moltmann (2006:259) to arbitrary PRO – even though both of these are traditionally associated with [+human] feature as well

(30) I na planetách, kam nikdy ne-vkročí lidé, dokáže Mozartova hudba rozveselit .
even on planets where never not-enter people can  Mozart’s music cheer up.PF
‘Mozart’s music can cheer (one) up even on the planets which people never enter.’

2.4.2 Number

Adjectives predicated of GNO as well as reflexives bound by GNO are typically sg. Pl is allowed to a limited extent as well, with varying degree of acceptability for different speakers and in different contexts.

²The semantic unmarkedness of masculine gender has to be distinguished from grammatical/morphological defaultness, cf. Sauerland (2008). Morphologically default gender in Czech is neuter which arises if there is no gender specification at all, as e.g. in the case of impersonal passives or loanwords into Czech with uncommon endings which cannot fit into the Czech declension system.
(31) Ani nejlepší ochrank-a neochrání před sebou samý-m / neither best security-NOM.SG.F not-protects before self alone-INST.SG.M / sebou samý-m-i. 
self alone-INST.PL
‘Not even the best security guard protects (one) from oneself.’

(32) Tahle speciální meditac-e usmířuje se sebou samý-m / this special meditation-NOM.SG.F reconciles with self alone-INST.SG.M / sebou samý-m-i. 
self alone-INST.PL
‘This special meditation reconciles (one) with oneself.’

(33) Každá přežitá nehoda dělá ostrážitější-m / every survived accident makes more alert-INST.PL.M / ostrážitější-m-i. 
ostražitější-m-pl
‘Each survived accident makes (one) more alert.’

The use of SG vs. PL form in the examples above is not associated with a major difference in meaning, which is the case for overt generically quantified objects as well, as shown in (34).3

(34) Současný systém student-a / student-y zotročuje. 
current system student-ACC.SG.M / student-ACC.PL.M enslaves. 
‘The student is / Students are enslaved by the current system.’

What is not explained is why the plural form is degraded for GNO when it is equally acceptable for overt generic objects.

(35) Ani nejlepší ochrank-a neochrání člověk-a před sebou samý-m / neither best security-NOM.SG.F not-protects human-ACC.SG from self alone-INST.SG.M / sebou samý-m-i. 
people-ACC.PL from self alone-INST.PL 
‘Not even the best security guard protects one from oneself / people from themselves.’

If the semantics of a verb and/or the presence of a reciprocal requires a plural object, as in (36), the structure with GNO is grammatical.

(36) Taková propaganda jenom znesvářuje mezi sebou navzájem. 
such propaganda just disunites between selves mutually 
‘Such propaganda just disunites (people) among themselves.’

(37) Taková propaganda jenom znesvářuje člověk-a / lid-i mezi sebou 
such propaganda just disunites human-ACC.SG / people-ACC.PL between selves mutually 
‘Such propaganda just disunites one/people among themselves.’

1. GNO cannot be specified for SG and PL number values as overt count nouns are. If they were, we

3But see Dayal (2004) on the difference between generic quantification of kind-denoting bare plurals, accessing kind’s instantiations in different situations, vs. bare singulars ranging over entities in the taxonomic domain.
would expect both number values to be equally acceptable in the contexts such as those in (31) through (33).

2. GNO cannot be underspecified for number, as e.g. mass nouns, which appear in the morphologically default number (sg in Czech). If they were, we would expect them to cause ungrammaticality in the contexts which require morphologically plural objects, such as the one in (36). Moreover, we would expect the morphologically default number to arise on all agreeing elements, and plural endings to be completely ungrammatical, which is not the case either.

⇒ GNO do not project NumP where sg/pl value is specified

Consequences of missing NumP for GNO’s case-assignment

(38) a. Časté pití dělá__ otupělým / *otupělého
frequent drinking makes dull-inst.sg.m / dull-acc.sg.m
‘Drinking alcohol frequently makes (one) dull.’

b. Časté pití dělá člověk-a otupělým / otupělého
frequent drinking makes human-acc.sg.m dull-inst.sg.m / dull-acc.sg.m
‘Drinking alcohol frequently makes one dull.’

⇒ If GNO do not project Num, their inability to be assigned Acc is expected


+ the semantic reason for the presence of a DP in nominal projections = D as a precondition for their argumenthood (Longobardi 1994) – disappeared in the light of the research on kind terms (Chierchia 1998) and definitely interpreted bare nouns in article-less languages (Dayal 2004).

• Case features are visible at the level of the maximal extended projection of the nominal (Preminger 2011:159) – in Czech, a noun has to have number in order to be assigned case, i.e. KaseP (Bittner and Hale 1996) selects (at least) NumP, cf. the existence of separate declension paradigms for each grammatical number and synthetic expression of gender, number and case in one exponent

2.4.3 Person

• Controversy: 3rd person pronouns are underspecified for person feature, i.e. 3rd person = non-person (Harley and Ritter 2002, Panagiotidis 2002, Adger and Harbour 2007, to name a few) vs. 3rd person pronouns have to be specified as [-Participant, –Author] (Nevins 2007)

• Nevins (2007): impersonals are truly underspecified for [±Participant, ±Author], since their interpretation allows any of the combinations:


(pragmatics usually prefers one)

4That number features are generated in a separate functional projection was proposed by many authors, see e.g. Ritter 1991, Carstens 1991, Panagiotidis 2000, Borer 2005a.
• The same is true for GNO, modulo their interpretable gender: they refer to any member from the union of the speaker, the addressee, and everyone else, i.e. none of the possible combinations of [±Participant, ±Author] is applicable to GNO in itself (The same sort of involvement of the speaker and the addressee was attested for English generic one and for arbitrary PRO; Moltmann 2006, 2010.)

⇒ GNO do not have a person feature (as expected if they don’t project D)

(39) Jógová cvičení sice uklidňují Ale já jsem / ty jsi výjimka, mě/tebe ne-uklidňují.
yoga exercises indeed calm.IMPF but I am / you are exception me/you not-calm
‘Indeed, yoga exercises calm (one), but I am / you are an exception, they don’t calm me/you.’

2.5 Summary: GNO as pronominal nouns or “pro-nPs”

Two alternative structural templates of pronouns:

(40) Abney 1987

\[
\text{DP} \quad \begin{array}{c}
\text{D} \\
\text{\textbf{\{}[±Part]\textbf{\}}} \\
\text{\textbf{\{}[±Auth]\textbf{\}}} \\
\text{NumP} \\
\text{Num} \\
\text{[Sg/Pl]} \\
\end{array}
\text{NP} \\
\text{e}_{N/one} \\
\text{[Masc/Fem/Neut]}
\]

⇒ The only thing that pronouns and GNO have in common that regular nouns do not have is their conceptual emptiness: neither GNO, nor other pronouns have a concept-denoting, descriptive root.

• If nouns start the derivation as category-neutral roots, which combine with a categorizing head n, see esp. the works of Marantz (1997, 2001) and Arad (2003, 2005), there’s no need to posit an empty noun with gender features in the lexicon, as in (41) – its function is fulfilled by n

• GNO corresponds precisely to such “pronominal” n = bearing only categorial feature and gender features, but not merging with a root; see also Déchaine and Wiltschko (2002, 2003) who argue that pronouns can be DPs, ϕPs or NPs

• Panagiotidis (2003:414): phonologically null empty nouns, i.e. nouns which cannot bear any concept-denoting features, are restricted to bearing just semantic, LF-interpretable features that canonically appear as derivational morphemes, such as gender or honorific features (as in Japanese ‘N-pronouns’)

• So, should they be characterized as the “smallest of pronouns” or as the “emptiest of nouns”? (Vote, please!)
3 Indefinite null objects (INO)

(43)  
a. Táta často vyřezává__ / zrovna teď vyřezává__ / *vyřežte__.
Daddy often carves.IMPF / right now carves.IMPF / carves.PF
‘Daddy often carves / is carving right now / will carve out.’
b. Táta něco vyřezává / něco vyřeže.
Daddy something carves.IMPF / something carves.PF
‘Daddy is carving something / will carve something out.’

(44)  
a. Celý večer u nás doma zabralo vyřezávání__/*vyřezání__.
whole evening at us home took carving.IMPF/carving.PF
‘A whole evening at our home was taken up by carving.’
b. Celý večer u nás doma zabralo vyřezávání/vyřezání soch-y.
whole evening at us home took carving.IMPF/carving.PF statue-GEN.SG
‘A whole evening at our home was taken up by carving a statue.’

• highly productive, found with different lexical semantic classes of verbs
• can denote both human-like and non-human entities
• combine only with imperfectives, in contrast to definite NO (I won), overt indefinite pronouns, see (43-b), and also in contrast to GNO, see (45)
• the imperfectives can have either a habitual or a continuous (progressive-like) interpretation, see (43-a)

(45)  
Mozartova hudba rozveseluje__ / rozveselí__.
Mozart’s music cheers up.IMPF / cheers up.PF
‘Mozart’s music cheers (one) up (hab.) / cheers (one) up.’

3.1 Outline

1. Evidence against INO’s syntactic representation

2. Deriving INO: need for an ∃-closing type-shifter and semantic parallelism with indefinite bare plural and mass nouns (BP&MN)

3. Three arguments in support of INO’s productive, syntax-based derivation:
   (a) morphosyntactic one: secondary imperfectives take INO
   (b) syntactico-semantic one: perfectives are incompatible with INO
   (c) pragmatic one: INO licensed by context in a systematic way

3.2 INO are not syntactic arguments

INO introduce a new discourse entity, which can be subsequently referred to with a pronoun (see Cote 1996:158 for the same conclusion in English).

(46)  
a. Karel jedl__ rychle. Bylo to vynikající.
Charles ate.IMPF quickly was it delicious
‘Charles was eating quickly. It was delicious.’
b. Marie malovala a Karel ji to pořád chválil.
Mary painted.IMPF and Charles her it always praised
‘Mary was painting and Charles was always praising it for her.’

INO cannot serve as binders for Condition A.

(47) a. Karel maloval nějaké objekty vedle sebe a nějaké nad sebe.
Charles drew.IMPF some objects next self/selves and some above self/selves
‘Charles drew some objects next to himself/themselves and some above himself/themselves.’
b. Karel maloval vedle sebe a nad sebe.
Charles drew.IMPF next self/selves and above self/selves
‘Charles drew next to himself and above himself.’

(48) a. Karel včera na schůzi zbytečně poštával ty lidi proti sobě.
Charles yesterday at assembly unnecessarily prompted.IMPF those people against self.
‘Yesterday at the assembly, Charles was unnecessarily prompting people against himself/themselves.’
b. Karel včera na schůzi zbytečně poštával proti sobě.
Charles yesterday at assembly unnecessarily prompted.IMPF against self
‘Yesterday at the assembly, Charles was unnecessarily prompting against himself.’

(49) INO cannot serve as argumental SC subjects
a. Karel právě dělá svým rozhodnutím nějakého člověka velmi nešťastným.
Charles just makes.IMPF his decision.INST some human very unhappy.INST.SG.M
‘Charles is just making someone very unhappy by his decision.’
b. Karel právě dělá svým rozhodnutím nějaké lidi velmi nešťastnými.
Charles just makes.IMPF his decision.INST some people very unhappy.INST.PL
‘Charles is just making some people very unhappy by his decision.’
c. *Karel právě dělá svým rozhodnutím velmi nešťastnými/nešťastnými.
Charles just makes.IMPF his decision.INST very unhappy.INST.SG/PL
‘Charles is just making very unhappy by his decision.’

(50) INO do not easily control into infinitival clauses
a. Marie ne-může vzít telefon, protože zrovna učí.
Mary not-can pick phone because just teaches.IMPF
‘Mary cannot pick up the phone because she is teaching right now.’
b. *Marie ne-může vzít telefon, protože zrovna učí [PRO zpívat].
Mary not-can pick phone because just teaches.IMPF sing.INF
‘Mary cannot pick up the phone because she is teaching to sing right now.’
c. Marie ne-může vzít telefon, protože zrovna učí zpěv-0/zpěv-u.
Mary not-can pick phone because just teaches.IMPF singing-ACC.SG.M/-DAT.SG.M
‘Mary cannot pick up the phone because she is teaching singing right now.’
3.3 Deriving INO

3.3.1 Low-scope indefiniteness only

(51) Každý student četl nějakou knihu.
    every student read.IMPF some book
    A: ∀y [student(y) → ∃x [book(x) ∧ y read x]]
    B: ∃x [book(x) ∧ ∀y [student(y) → y read x]]

(52) Každý student četl.
    every student read.IMPF
    A: ∀y [student(y) → ∃x [readable(x) ∧ y read x]]
    B: #∃x [book(x) ∧ ∀y [student(y) → y read x]]

INO do not interact with other, non-nominal Q-expressions either.

(53) Karel něco překládá všude.
    Charles something translates.IMPF everywhere.
    A: ∀y [place(y) → ∃x [thing(x) ∧ K. translates x at y]]
    B: ∃x [thing(x) ∧ ∀y [place(y) → K. translates x at y]]

(54) Karel překládá všude.
    Charles translates.IMPF everywhere.
    A: ∀y [place(y) → ∃x [thing(x) ∧ K. translates x at y]]
    B: #∃x [thing(x) ∧ ∀y [place(y) → K. translates x at y]]

(55) Karel teď ne-čte.
    Charles now not-reads.IMPF
    A: ¬∃x [K. is reading x]
    B: #∃x ¬[K. is reading x]

Interestingly, the same sort of narrow scope is attested with BP&MN in English, as the contrast between (56) and (57) shows.

(56) Everyone read a book on giraffes.
    A: ∀x [person(x) → ∃y [book(y) ∧ x read y]]
    B: ∃y [book(y) ∧ ∀x [person(x) → x read y]]

(57) Everyone read books on giraffes.
    A: ∀x [person(x) → ∃y [book(y) ∧ x read y]]
    B: #∃x [book(x) ∧ ∀x [person(x) → x read y]]

Carlson further observes that bare plurals sometimes exhibit the “narrowest” scope, which is not attested at all with a corresponding singular indefinite:

(58) #∃x [rabbit(x) ∧ ∀t:∈3hrs [AT (Max killed x, t)]]

(59) Max killed rabbits for three hours.
    ∀t:∈3hrs [∃x [rabbit(x) ∧ AT (Max killed x, t)]]
The same sentence with INO is not pragmatically odd because INO gets interpreted within the scope of *for*-adverbial, just like BP.

(60) Vrah zabíjel několik dní v kuse.
    murderer killed several days in piece

    ‘A murderer killed/was killing for several days in a row.’

### 3.3.2 \( \exists \)-closure as a type-mismatch resolver

(61) Standard verbal Fseq (partial); v and Asp connected by a head movement (Schoorlemmer 1995)

\[
\begin{align*}
5: & \text{AspP} \\
4: & \text{AspImp/Pf} \\
3: & \text{vP} \\
2: & \text{NP/e1} \\
1: & \text{v + \emptyset}
\end{align*}
\]

Standard accompanying semantics; aspect expressed as an inclusion relation between the reference time \( t \) and the temporal trace of an event \( \tau(e) \)

(Klein 1994; Paslawska and von Stechow 2003)

\[
\begin{align*}
1: & \lambda x \lambda e \left[ \text{verb}(e) \land \text{Theme}(x)(e) \right] \\
2: & x \\
3: & \lambda e \left[ \text{verb}(e) \land \text{Theme}(x)(e) \right] \\
4a: & \lambda \lambda t \exists e \left[ E(e) \land t \subseteq \tau(e) \right] \text{ (Imperfective)} \\
4b: & \lambda \lambda t \exists e \left[ E(e) \land \tau(e) \subseteq t \right] \text{ (Perfective)} \\
5: & \lambda t \exists e \left[ \text{verb}(e) \land \text{Theme}(x)(e) \land t \subseteq \tau(e) \right] \text{ (or ... } t \supseteq \tau(e)\text{)}
\end{align*}
\]

If no nominal phrase for v to merge with \( \Rightarrow \) type mismatch between the denotation of vP and that of Asp. ⊖

(62) \[
\begin{align*}
4: & \text{AspP} \\
3: & \text{AspImpf} \\
2: & \text{vP} \\
1: & \text{v + \emptyset}
\end{align*}
\]

\( \Rightarrow \) Need for a local type-adjustment operation allowing objectless transitive verbs to participate in the semantic derivation – which is what (63) does. ⊖

(63) **Intransitivization** (as a syntax-sensitive rule): If \([v] \in D_{(e,vt)}\), then \([v_{\text{Intransitivized}}] = \lambda e \exists x [v(x)(e)]\)

(64) \[
\begin{align*}
4: & \text{AspP} \\
3: & \text{AspImpf} \\
2: & v_{\text{Intr.}} \\
\exists & 1: \text{v}
\end{align*}
\]

1: \( \lambda x \lambda e \left[ \text{verb}(e) \land \text{Theme}(x)(e) \right] \)

2: \( \lambda e \exists x \left[ \text{verb}(e) \land \text{Theme}(x)(e) \right] \) \text{ (after (63))}

3: \( \lambda \lambda t \exists e \left[ E(e) \land t \subseteq \tau(e) \right] \)

4: \( \lambda t \exists e \exists x \left[ \text{verb}(e) \land \text{Theme}(x)(e) \land t \subseteq \tau(e) \right] \)

### 3.3.3 More parallelism between INO and bare plurals

Chierchia (1998): low-scope indefinite reading of BP&MN comes about as a result of \( \exists \)-quantifying, type-adjusting operation (called Derived Kind Predication); see also Dayal 2011b:145.
• BP (&MN) primarily denote properties that shift to kinds in argument positions, via the nominalizing ∩-operator (so they can directly merge with kind-selecting predicates)

\[(65) \quad \text{Dogs are widespread.} \iff \text{widespread}(∩\text{DOGS})\]

• In episodic contexts, “the type of the predicate is automatically adjusted by introducing a (local) existential quantification over instances of the kind” (Chierchia 1998:364).

\[(66) \quad \text{Derived Kind Predication (DKP)}\]

If \(P\) applies to objects and \(k\) denotes a kind, then \(P(k) = \exists x[∪k(x) \land P(x)]\)

\[(67) \quad \text{Indefinite BP – indefinite null objects parallelism}\]

a. \([_{vP}\text{read books}] \iff \lambda x\lambda e[\text{read}(e)\land \text{Theme}(e, x)](∩\text{books})\]

\[\iff \lambda e\exists x[\text{read}(e)\land \text{Theme}(e, x)\land (∪∩\text{books}(x))] \quad \text{(via DKP)}\]

b. \([_{v}\text{read}] \iff \lambda x\lambda e[\text{read}(e)\land \text{Theme}(e, x)]\]

\[\iff \lambda e\exists x[\text{read}(e)\land \text{Theme}(e, x)] \quad \text{(via Intransitivization)}\]

3.4 Why intransitivization as an operation located in syntax?

3.4.1 To explain INO of secondary imperfectives (SI)

\[(68) \quad \text{Jan zapiso-va-l} / \text{přerovná-va-l} / \text{rozdá-va-l} / \text{zmodernizová-va-l} / \text{oslav-va-l}.\]

I. note-ipf-pst reorganize-ipf-pst give-ipf-pst modernize-ipf-pst celebrate-ipf-pst

‘Ian was making notes / reorganizing / giving away / modernizing / celebrating.’

It has been extensively argued that SI are derived morphosyntactically, by affixation (-va-) in the head Asp, from the common, often prefixed verbal stem that they share with perfectives (Ramchand 2004, Romanova 2004, Jablońska 2007), so they are in a way similar to progressive -ing forms in English.

\[(69) \quad \text{Syntactic derivation of secondary imperfectives by -va-suffixation}\]

\[
\text{AspP} \\
\downarrow \text{AspImpf} \\
/ -va \uparrow \\
\downarrow (NP_{\text{Theme}}) \\
\downarrow v \uparrow \sqrt{\text{PREFIX+ROOT}} \\
\downarrow \text{STEM VOWEL}
\]

NB! The forms in (68) presumably do not exist in the lexicon at all. The morphologically simpler, perfective counterparts of these verbs in (70) are ungrammatical with INO, despite having the same lexical semantics.
If $\exists$-closure operates on the v-projection before the Asp-head merges, as captured in (64), the existence of INO expected for all eventive argument-taking verbal stems.

⇒ This, of course, leaves us with the question why INO do not surface in the case of perfectives.

### 3.4.2 To allow systematic account of INO’s incompatibility with perfectives

Dvořák (2017): the direct object of monotransitive perfective verbs must move from its base-generated position in Spec,vP to Spec,Asp$\text{Pf}$, to satisfy Asp$\text{Pf}$’s quantificational requirements – formalized as an EPP-like feature ($Q_{\text{Pf}}$) constituting the perfective aspectual head, loosely modelled after Borer 2005b

(71) Valuing perfectivity feature by an NP-movement:

⇒ INO unable to satisfy the unvalued $Q_{\text{Pf}}$ due to their non-existence as syntactic arguments (see 3.2), hence the ungrammaticality exemplified in (43-a) and (70).

**INO – BP&MN parallelism attested once again**

- In Dvořák 2017, I show that monotransitive **perfectives in Czech can take as complements different syntactico-semantic types of NPs** (overt quantifier phrases, singular count nouns, definite/specific BP&MN, kind-denoting BP&MN, and generically-interpreted BP&MN)

  - **with one exception**: indefinitely-interpreted BP&MN (see also Krifka 1992).

(72) Jan četl knihy. × #Jan pře-četl knihy.

‘Jan read.IMPf books.’ ‘Ian read.PF books (completely).’

- The incompatibility of indef. BP&MN with perfectives follows naturally under their account in (67-a): A BP/MN that merges in Spec,v as the direct internal argument and becomes existentially closed-off within a vP as a result of Chierchia’s type-adjusting mechanism in (66) is consequently unable to move to Spec,Asp$\text{Pf}$ (see Giorgi and Pianesi 2001 for a related proposal in Italian).

⇒ Under (63), this parallelism between INO and BP&MN is expected.
3.4.3 To account for INO’s contextual licensing

Only some predicates combine with INO out of the blue (thoe typically used in linguistic examples), but many others allow INOs only in the contexts that supply (linguistically or extra-linguistically) the property/kind instantiated by a given INO; see the contrast between two imperfective verbs, čte ‘reads’ and sbírá ‘collects’ below.

(73) a. Jan čte__.
    Jan reads.IMPF
b. *Jan přečte__ – *Jan sebere__.
    Jan will read.PF
(74) Do večera musíme mít deset košů švestek. Proto Jan od časného rána sbírá__
    Before evening must have ten buckets plums so Ian from early morning collects.IPF
    ‘We have to have ten buckets of plums before evening. That’s why Ian is picking from the early morning.’
(75) [The whole class is collecting trash in a park, but Ian isn’t. Sue asks:]  
    Proč Jan ne-sbírá__? 
    why Ian not-collects.IMPF
    ‘Why doesn’t Ian collect?’

Moreover, context also influences the INO meaning in the case of verbs like ‘read’ that allow what could be called the ‘default’ or ‘prototypical’ INO (Rice 1988, Cote 1996).

(76) a. When my tongue was paralyzed, I couldn’t eat or drink.
    Fillmore 1986:96
b. I’ve tried to stop drinking.
    c. All the cows got oil in their troughs and they are finally drinking. [as a part of an experiment].

While it is not desirable to embed all of these different restrictions on INO interpretation in the lexicon (Haegeman 1987), they could be elegantly encoded as a presupposition for the application of (8).

(77) $\exists_{\text{intr}} \leadsto \lambda T_{(e,vt)} \begin{cases} 
\lambda e \exists x[T(x)(e)] \text{ if } C \text{ supplies the kind that } x \text{ instantiates;} \\
\text{undefined otherwise}
\end{cases}$

What makes read-type verbs special is that they are **pragmatically associated with objects belonging to a single natural kind or class of entities**, so the “context of the verb itself” can supply the kind that INO instantiates.

(Cf. Hale and Keyser 2005:17 for the verbs like dance: “rich enough in semantic features to license the empty category as (their) complement”. This EC equals a hyponym of dance, i.e. a member of the class of entities which qualify as dances.)

**NB!** This is the major **difference between INO and indef. BP&MN** – the latter’s restricting property always expressed overtly as their nominal root.
References


202–212.


Thank you!

Kanizsa triangle  Gestalt psychologists use the Kanizsa Triangle to describe the law of closure, which claims that objects grouped together are seen as a whole. This means that we perceive objects as being whole even when they are incomplete; we ignore gaps and we complete contour lines to form familiar figures and shapes.