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Generic impersonal pronouns and number

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Generic impersonal pronouns

- **Generic impersonal pronouns:** pronouns that occur in sentences, which express a generalization about certain individuals
 - (1) In Georgien trinkt **man** Wein.
In Georgia, **one** drinks wine.

Background: Generic operator GEN

- The generic operator GEN is a covert adverb of quantification (\approx *usually*).
(Krifka et al. 1995, Mari et al. 2013)
 - (3) GEN [restrictor] [scope]
 - (4) Unicorns eat fairies and large insects.

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(4) Unicorns eat fairies and large insects.

⇒ modal universal quantifier over cases

(i.e., situations or events)

↪ “for all relevantly normal cases such that ...”

- the cases quantified over do not have to occur in the world of evaluation w_s
- Accessible worlds: “like w_s with respect to causal, statistical, or dispositional dependencies and regularities but may differ from w_s with respect to specific isolated facts”

(Kirkpatrick 2023 citing Eckardt 2000)

The question of reducibility

- Two types of generic sentences that also generalize over individuals:
 - (5) a. In Georgien trinkt **ein Linguist** Wein.
In Georgia, **a linguist** drinks wine. (indefinite singular DP)
 - b. In Georgien trinken **Linguisten** Wein.
In Georgia, **linguists** drink wine. (bare plural)
- Intuitively, sentences with generic *man* also generalize over individuals.
 - (6) In Georgien trinkt **man** (als Linguist) Wein.
In Georgia, **one** drinks wine (as a linguist).
- **Question:** Can sentences with *man* be reduced to one or the other type?



Aim of this talk

(7) In Georgien trinkt **man** Wein.
In Georgia, **one** drinks wine.

- Show that generic sentences with *man* **behave differently** than indefinite singular generics and bare plural generics **regarding number**
- Recap and explore the **morpho-syntactic number** of generic *man* and its **semantic compatibility** with singular & plural predication
- Provide a **formal proposal** for the semantics of *man* in generic sentences that captures its semantic behavior



2. Number-neutrality

Number: morpho-syntax and semantics

- **Starting assumption:** nominal count expressions that are morpho-syntactically singular denote or quantify over single entities
- (8)
- Nach dem Vortrag beantwortet_{sg} [die Sprecherin]_{sg} Fragen.
 - Nach dem Vortrag beantwortet_{sg} [sie]_{sg} Fragen.
 - Nach dem Vortrag beantwortet_{sg} [eine Sprecherin]_{sg} Fragen.
 - Nach dem Vortrag beantwortet_{sg} [jede Sprecherin]_{sg} Fragen.

After the talk, {the speaker / she / a speaker / every speaker} answers questions.

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After the talk, {the speaker / she / a speaker / every speaker} answers questions.

- Generic *man* behaves morpho-syntactically like a singular expression:
- (9) Nach dem Vortrag beantwortet_{sg} man Fragen.
After the talk, one answers questions.

Generic *man* and pluralities – I (a.o. Fenger 2018, Zifonun 2000)

- Reciprocals:

(10) Man zeichnet_{sg} **einander** im Kunstunterricht.
One draws one another in art class.

- (11) a. *{Die Frau / sie_{sg} / eine Frau / jede Frau} zeichnet_{sg} **einander**.
*{The woman / she / a woman / every woman} draws each other.
- b. {Die Frauen / sie_{pl} / Frauen / alle Frauen} zeichnen_{pl} **einander**.
{The women / they / women / all women} draw each other.

How are (11) and (13) captured formally?

- Basic assumptions – algebraic plural semantics: (leaving aside masses)
 - domain of entities D_e has a proper subset AT of atomic individuals (*atoms*)
 - atoms are the smallest members of D_e – they do not have proper parts
 - $D_e \setminus AT$ contains sums of atomic individuals (i.e. *pluralities*)
 - proper parts of pluralities can be either atoms or pluralities

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 - proper parts of pluralities can be either atoms or pluralities
 - **Reciprocals and collective predicates** place requirements on subjects
 - **Reciprocals:** the subject can be divided into two non-overlapping parts
 - **Collective predicates:** the subject has to denote an entity of sufficient non-atomic size
- ↔ both exclude subjects that denote atoms (a.o. Beck 2001, Chatain 2021)

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- ⇒ **So:** Generic *man* cannot be a “regular” singular nominal expression

“Non-regular” singular nominal expressions

- 1) **Definite singular kind DP** denote kinds that are associated with pluralities (members of the kind).
(14) [Der Dodo]_{sg} ist_{sg} ausgestorben.
The dodo is extinct. (\rightsquigarrow All dodos are dead.)
 - 2) **DPs with group nouns** denote or quantify over groups (single entities) that are associated with pluralities (members of the group).
(15) [Die Gruppe]_{sg} hat_{sg} fünf Mitglieder.
The group has five members.
- **Show:** generic *man* cannot be grouped with either type of expression

1) Generic *man* is not a definite singular kind DP

(i) Definite singular kind DPs cannot combine with reciprocals; *man* can.

(16) *[Der Löwe]_{sg} erkennt_{sg} einander am Gebrüll.

*The lion recognizes each other by the roar.

(17) [Löwen]_{pl} erkennen_{pl} einander am Gebrüll.

Lions recognize each other by their roars.

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Lions recognize each other by their roars.

(ii) Generic *man* cannot combine with (episodic) kind predicates

(a.o. Zobel 2014)

(18) a. *Man ist ausgestorben.

*One is extinct.

b. *Als Dodo ist man ausgestorben.

*As a dodo, one is extinct.

2) Generic *man* does not contribute groups

(i) German singular DPs with group nouns cannot combine with reciprocals.

(19) *[Die Gruppe]_{sg} zeichnet_{sg} einander im Kunstunterricht.
%The group draws each other in art class.

(20) [Die Gruppen]_{pl} zeichnen_{pl} einander im Kunstunterricht.
The groups draw each other in art class.

2) Generic *man* does not contribute groups

- (i) German singular DPs with group nouns cannot combine with reciprocals.

(19) *[Die Gruppe]_{sg} zeichnet_{sg} einander im Kunstunterricht.
%The group draws each other in art class.

(20) [Die Gruppen]_{pl} zeichnen_{pl} einander im Kunstunterricht.
The groups draw each other in art class.

- (ii) Examples like (21): definite sg. group DPs scope under the existential;
i.e., the members of the group hide together (a.o. de Vries 2017)

(21) Bei dem Spiel versteckt sich die Gruppe wo und einer sucht.
In this game, the group hides somewhere, and one person has to search.

⇒ sentence with *man*: players can hide in different spots

(22) Bei dem Spiel versteckt man sich wo und einer sucht.
In this game, one hides somewhere, and one person has to search.

Upshot: number-neutrality of generic *man*

- We have seen so far:
 - Generic *man* seems to be morpho-syntactically singular. . . but does not have the restrictions of singular nominal expressions.
 - Generic *man* can combine with reciprocals and collective predicates. . . in addition to combining with singular individual predicates.
 - This behavior is neither due to *man* contributing kinds or groups nor the quantificational behavior of GEN.
- Morpho-syntactic literature:
generic *man* has no morpho-syntactic number specification
 - ⇒ no morpho-syntactic restrictions
 - ⇒ contribution can be atoms and/or pluralities
- Possible semantic parallel to bare plural DPs.
(29) $[[students]] = \lambda P. \exists x[*student(x) \wedge P(x)]$

Results from previous section suggest...

- Generic sentences with *man* are not indefinite singular generics.
(cf. Kirkpatrick & Knobe 2024 on English impersonal pronouns)
 - ⇒ generic *man* can be used to express more generalizations than can be expressed with indefinite singular DPs
 - ⇒ generic sentences with *man* might be similar to indefinite singular generics wrt. the flavors of generalization expressible (still to be explored)
- Bare plural generics are better candidates.
 - ⇒ bare plurals are semantically “number-neutral”
- [Show in this section:](#)
differences between generic sentences with *man* and bare plural generics

Difference 1) “short” generic sentences

- Moltmann (2006, 2010): certain sentences with English generic *one* are unacceptable, unlike corresponding sentences with a full DP
 - (30) a. #One has parents. (vs. People have parents.)
b. #One breathes. (vs. People breathe.)
 - (31) a. #Man hat Eltern. (vs. Menschen haben Eltern.)
b. #Man atmet. (vs. Menschen atmen.)
- Zobel (2024): *man* does not contribute descriptive content
 - ⇒ GEN needs to be licensed by descriptive content that can be interpreted in its restrictor (a.o. Boneh & Doron 2013, Rimell 2004)
 - ↪ adding descriptive material improves sentences like (31):
 - (32) Als Mensch hat man Eltern. (≈ Menschen haben Eltern.)
As a human, one has parents.

als-phrases and generic *man*

- *Als*-phrases associating with *man* restrict GEN just like *wenn/if*-clauses:
(Zobel 2017, 2018)
 - (33) *Als Linguist_{sg} erforscht_{sg} man Sprache.*
As a linguist, one researches language.
 - (34) *Wenn man Linguist ist, erforscht man Sprache.*
If one is a linguist, one researches language.
- The *als*-phrase must have singular form:
 - (35) **Als Linguisten_{pl} erforscht_{sg} man Sprache.*
*As linguists, one researchs language.

Difference 2) *man* + *als*-phrase \neq bare plural

- *man* + *als*-phrase \approx bare plural – only if the predicate in the scope of GEN is a (pluralized) individual predicate:

(36) Als Linguist_{sg} erforscht_{sg} man Sprache.

As a linguist, one researches language.

(37) Linguisten erforschen Sprache.

Linguists research language.

Difference 2) *man* + *als*-phrase \neq bare plural

- *man* + *als*-phrase \approx bare plural – only if the predicate in the scope of GEN is a (pluralized) individual predicate:

(36) Als Linguist_{sg} erforscht_{sg} man Sprache.
As a linguist, one researches language.

(37) Linguisten erforschen Sprache.
Linguists research language.

- *man* + *als*-phrase $\not\approx$ bare plural – if the predicate is collective:

(38) #Als Teilnehmer trifft man sich nach einem Vortrag im Gasthaus.
#As an attendee, one meets up at a pub after a talk. (With who?)

(39) Teilnehmer treffen sich nach einem Vortrag im Gasthaus.
Attendees meet up at a pub after a talk.

Upshot: reducibility of generic sentences w/ *man*

- Differences between generic *man* and bare plurals:
 - *man* does not contribute descriptive content; bare plurals contain plural nouns
 - *man* has no number specification; bare plurals are morpho-syntactically plural
- ⇒ differences between generic sentences with *man* and bare plurals
- **Upshot:** generic sentences with *man* cannot be fully reduced to either indefinite singular generics or bare plural generics
- The effect of *als*-phrases reveals:
material interpreted in the restrictor of GEN determines whether generic sentences with *man* generalize over **atoms or pluralities**



4. Proposal: generic *man* existentially closes the subject position

Proposal: main ingredients

1. GEN is a covert adverb of quantification that (quasi-)universally quantifies over minimal situations satisfying the proposition in its restrictor.
2. Generalization over individuals is always indirect:
any indefinite (i.e., existentially quantified) expression interpreted in the restrictor of GEN covaries with the universal quantification over situations
3. *man* is an operator that existentially closes the subject position without contributing any descriptive content
 - Points 1 & 2: literature on adverbs of quantification and Quantificational Variability Effects; recent literature on GEN (Hinterwimmer & Schueler 2015, Kirkpatrick 2023)
 - Point 3: parallel to bare plurals + Section 3; Chierchia 1995

p_1 , p_2 , and $g(m)$

- The **restrictor proposition** p_1 and **scope proposition** p_2 are determined differently depending on the syntactic structure of the sentence.
(Hinterwimmer & Schueler 2015)
 - **When there is no *if*-clause:**
 p_2 is the proposition expressed by the sentence minus GEN;
 p_1 is determined via the contextually relevant focus-alternatives to the sentence minus GEN
 - **When an *if*-clause or free adjunct is present:**
 p_1 is a conjunction of the denotation of the *if*-clause or free adjunct;
 p_2 is the proposition expressed by the matrix clause minus GEN
- **Matching function $g(m)$:** (Hinterwimmer & Schueler 2015 based on Rothstein 1995)
 - The minimal situations s_2 in the scope are “matched” to their corresponding minimal situation s in the restrictor of GEN.

Illustrating the proposal for GEN – I

- **First:** the mechanics of GEN without an indefinite subject

(44) Nach einem Vortrag geht Hannah ins GASThaus.
After a talk, Hannah visits a PUB.

- Determining p_1 (restrictor) and p_2 (scope):

(45) $p_1 = \lambda s. \exists y [\text{talk}(y)(s) \wedge \text{after}(y)(s)] \wedge$
 $\exists R \in \text{ALT}_c(\llbracket \text{visit a pub} \rrbracket) [R(\text{Hannah})(s)]$

(46) $p_2 = \lambda s. \exists x \exists y [\text{pub}(x)(s) \wedge \text{talk}(y)(s) \wedge \text{after}(y)(s) \wedge$
 $\text{visit}(x)(\text{Hannah})(s)]$

- $\llbracket \text{GEN}(m)(c)(p_2)(p_1) \rrbracket^g$:

(47) $\lambda s_0. \forall s [s \in B(s_0) \wedge \text{min}(s, \lambda s_1. p_1(s_1) \wedge g(c)(s_1)) \rightarrow$
 $\exists s_2 [\text{min}(s_2, p_2) \wedge g(m)(s_2) = s]]$

Semantics for *man*

- *man* existentially closes the subject position it syntactically occupies

$$(52) \quad \llbracket \textit{man} \rrbracket^g = \lambda P_{\langle e, st \rangle} . \lambda s . \exists x \in D_e [P(x)(s)]$$

- basically Chierchia's (1995) proposal for Italian impersonal *si*
 - *man* places no restrictions regarding number on x
-
- As we have seen for indefinite singular subjects:
the universal quantification over minimal situations satisfying the
predicate lead to **indirect quantification over entities**
 $\Rightarrow \exists$ in the scope of \forall

Predictions/consequences

- Indirect quantification over individuals:
 - the predicates in the restrictor (and scope) determine the size of situation
 - therefore they determine whether the sentence generalizes over atoms or pluralities
- Predictions/consequences:
 1. If a singular predicate is part of what is existentially closed, the sentence is understood as generalizing over atoms.
 2. If a collective/reciprocal predicate is part of what is existentially closed, the sentence can be understood as generalizing over pluralities.
 3. Since GEN existentially quantifies over minimal situations in its scope, restrictor and scope need to match regarding atoms vs. pluralities.

Checking the predictions – III

- There is no conflict, when the predicates in restrictor and scope are collective/reciprocal:

(59) Wenn man einander mag, umarmt man sich.
If one likes each other, one hugs.

- **Restrictor**: minimal situations of pluralities liking each other

(60) $\lambda s. \exists X[\text{like}(X)(X)(s)]$

- **Scope**: minimal situations of pluralities hugging

(61) $\lambda s. \exists X[\text{hug}(X)(X)(s)]$

⇒ **Match**: the minimal situations in the restrictor and scope match in size

Further observations – I

- **Groups and kinds:** *man* does not contribute groups or kinds. . .
but if the restrictor predicates describe groups or kinds, generic sentences with *man* generalize over groups/kinds
- (62) Man darf **als Gemeinschaft** nicht vergessen, wofür man gegründet wurde.
One must not forget as an association, for which purpose one was founded.
- (63) Man muss **als Mannschaft** zusammenstehen!
As a team, one must hold together!
- (64) Wenn man sich nicht anpasst, stirbt man aus.
If one does adapt, one dies out.
- (65) Dinosaurier – zu viel Panzer, zu wenig Hirn. . . so stirbt man aus.
Dinosaurs – too much carapace, not enough brains. . . that way one dies out.

Summary and conclusion

Based on their behavior regarding number, generic sentences with *man* cannot be reduced to either indefinite singular generics or bare plural generics.

- German *man* is morpho-syntactically undefined for number and semantically compatible with predicates defined for atoms or pluralities.
- Possible predications of *man* in the scope of GEN can be restricted via the descriptive material interpreted in the restrictor of GEN. . .
- because the generalization over individuals arises indirectly. . .
- and quantification over situations is restricted to minimal situations.



Thank you

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