How to value gender: lexicon, agree and feature transmission under ellipsis

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gender in the grammar

• useful test-case for understanding the interactions of lexical semantics, narrow syntax and its interfaces
this talk

• an experimental study testing:
  
  • whether the gender interpretation associated with nominal roots (~bio-social gender*) maps onto gender as a syntactic feature, and its morphological realization

*Ackerman 2019
the studies

- gender under NP ellipsis (lexical semantics, agree, morphology)
- follow up: gender in NP arguments (lexical semantics versus syntactic agree only)
Gender under NP ellipsis
gender-marking pairs of nouns in English*

- **symmetric** nouns (prince ~ princess)
- **asymmetric** nouns (actor ~ actress)

*Percus 2001, Bobaljik and Zocca 2011, among others*
symmetric nouns

(1) Harry is a prince/ *princess

(2) Meghan is a *prince/ princess

• => both lexically specified for conceptual gender

• note: sociological construals of gender identities are rather complex; here, we assume that the speaker knows that Harry self-identifies as a male and Meghan as a female
further evidence: NP ellipsis*

(1) *Harry is a prince, and Meghan is too.

(2) *Meghan is a princess, and Harry is too.

*Bobaljik and Zocca 2011
asymmetric nouns

(1) Brad is an actor/ *actress

(2) Angelina is an actor/ actress

• => masculine appears unmarked
further evidence: NP ellipsis*

(1) Brad is an actor, and Angelina is too.

(2) *Angelina is an actress, and Brad is too.

*Bobaljik and Zocca 2011
Bobaljik & Zocca (2011)

- masculine form:
  - unmarked in asymmetric nouns (actor)
  - marked in symmetric nouns (prince)
- feminine form always marked (actress, princess)
Sprouse, Messick & Bobaljik (2017)

• only a partial confirmation of Bobaljik & Zocca’s proposal

• feminine gender in *actress* much easier to strip under ellipsis than feminine gender in *princess*

• unexpected if feminine gender is marked
alternative hypothesis

• structurally two different -ess

• a grammatical shift

  • from -ess denoting a female* => lexical semantics

  • to -ess being a morphological realization of \( n \) with a valued gender feature as a narrow syntax feature, i.e., emptied of its lexical meaning

*akin to \( >zh< \) in Pesetsky (2013)
motivation:
agree in nominal predicates

• copular clauses exhibit an effect of agree between the subject and a nominal predicate*

*Béjar and Kahnemuyipour 2017
number agreement

(1) Aya is the tallest student in the class

(2) Aya and Janine are the tallest students/*student in their respective classes.
agree hypothesis

- NP-NP copular clauses can exhibit **agreement in gender** as well

- => emergence of grammatical gender agreement in a class of nominals that have undergone sociologically driven re-grammaticalization
a grammatical shift

• lexicon representation undergoing a change because of changes in social attitudes

• reanalysis of -ess as a morphological reflex of agree
stage 1: actress (lexical)

Jessica$_F$

is

an

nP

\[ \sqrt{\text{actor+ ess}} \]

lexical semantics: female
no syntactic agree
stage 2: actor+ess (agree)

Jessica\textsubscript{F} is an nP

\[ \text{emergence of unvalued gender on } n \]
stage 2: actor+ess (agree)

Jessica_F

is

an

nP

-uGender ⇒ F

-ess

-ess only a morphological reflex of agree
prediction

• 2 distinct gender representations of feminine NP predicates:
  • lexically specified
  • specified syntactically by agree
  • => should be testable under ellipsis
design considerations

• lexical semantics versus syntactic agree

• adding gender on bound pronouns as a control

• => gender on bound pronouns can be easily stripped under ellipsis
what needs to be tested

• symmetric nouns, with **lexically specified gender**,

• asymmetric nouns, with **gender on n valued by agree in syntax**, and

• **pronouns** bound by (a)symmetric nouns, with gender being solely a **morphological reflex (feature transmission)** (sloppy identity)
Experiment 1
the study

• an online 7-point acceptability judgement study, comparing the acceptability of gender mismatch under NP ellipsis and pronoun ellipsis

• with Gender (whether the Male or Female noun appeared first) and Ellipsis type (NP or Pronoun) as within subject variables, and

• Noun type (Asymmetric or Symmetric) as between item variables
• participants were asked to rate a target sentence with respect to a preceding context, which in the case of the Pronoun conditions ensured sloppy identity readings
pronoun ellipsis example

The actor and the actress are performing in a play. The actor practiced his own lines. The actress practiced her own lines.

The actor practiced his lines and the actress did too.

Very bad  1  2  3  4  5  6  7  Very good

How well does the target sentence describe what is going on in the context?
Pronoun ellipsis (Asymmetric/Symmetric)

• Male:

(1) The actor practiced his lines and the actress did too.
(2) The prince practiced his lines and the princess did too.

• Female:

(3) The actress practiced her lines and the actor did too.
(4) The princess practiced her lines and the prince did too.
Andrew and Sophia live in the royal palace. They are the children of the king and queen.

Andrew is a prince and Sophia is too.

How well does the target sentence describe what is going on in the context?
NP ellipsis (Asymmetric/Symmetric)

- **Male:**
  
  (1) John is **an actor** and Mary is too.

  (2) John is **a prince** and Mary is too.

- **Female:**

  (3) Mary is **an actress** and John is too.

  (4) Mary is **a princess** and John is too.
predictions

• ellipsis licensing requires syntax & semantics parallelism

• => we expect an effect of gender mismatches in the semantic (lexical semantics) and syntactic representation (agree)
• ellipsis licensing does not require parallelism at the level of morphological realization

• => we do not expect an effect of gender mismatch in cases where morphological realizations are not identical
Prediction I

- **lexical semantics** cannot be ignored:

  - $\Rightarrow$ gender of **symmetric** nouns (prince~princess) cannot be stripped under ellipsis because the gender information is part of lexical semantics

  - $\Rightarrow$ any gender mismatch under ellipsis of symmetric nouns is expected to be rated as **ungrammatical**
Prediction II

• we expect **masculine asymmetric** nouns to be acceptable under NP ellipsis because they are fully acceptable in their unelided form

1. Angelina is an actor.
Prediction II cont’d

• if -ess in feminine asymmetric nouns (actress) is established by Agree, the agree chain & the corresponding $n$ will violate the syntactic part of the parallelism requirement

• but since agree in narrow syntax does not have semantic consequences, the semantic part of the parallelism should be satisfied

• => we expect that stripping gender (feminine) in asymmetric nouns under NP ellipsis should be significantly better (higher ratings) than stripping gender in symmetric nouns
Prediction III

• nevertheless, stripping feminine agree-based gender shouldn’t be as good as stripping gender on **bound pronouns**

  • arises solely by **morphological feature transmission**, thus it does not matter whether the antecedent is a symmetric or an asymmetric noun

• **parallelism will always be satisfied** (no syntactic agree, or lexical semantics at play)

• => we expect the Pronoun ellipsis condition to be **always acceptable** (high ratings), irrespective of the antecedent (asymmetric or symmetric)

*no agree; Kratzer 2009, Heim 2008
results

• in our z-scored rating data, we observed a significant three-way interaction ($p = 0.01$) between Gender, Ellipsis type and Noun type
results

**prediction I: lexical semantics ✓**

- *male > female (p < 0.01)*
- *asymmetric > symmetric (p < 0.01)*

**prediction II: syntactic parallelism ✓**

- Male > female (p < 0.01)

**prediction III: feature transmission ✓**

- No significant differences in pronoun ellipsis conditions —> all rated high

*plot shows predicted values from a linear mixed effects regression model

n = 64
interim summary

- **-ess** in *actress* is no longer lexically specified as female

- instead, **-ess** is a morphological realization of *n* that syntactically agrees in gender with the subject
• if -ess can be a morphological reflex of agree, what is the gender status of the asymmetric nominal without -ess, i.e., actor?
Hypothesis I

• nouns like ‘actor’ are truly underspecified for gender (stage 3 of the grammatical re-analysis)

• **Prediction**: if such a noun appears in an argument position, for example, as an agentive subject, it should be compatible with female antecedents
stage 3: actor

- DP
  - D
    - the
  - nP
    - n \sqrt{actor}

- entered...

- no unvalued gender on n;
  - no lexical gender
Hypothesis II

• arguments and NP predicates are different

• for example, because of an implicated presupposition of lexical -ess (e.g., Heim 2008, Sudo 2011; cf. Sauerland 2003) that applies only to referential uses of NP

• => if actor and actress in an argument position are in a direct competition, we expect actor to be interpreted as a male
• if argument and predicate NPs are different, then under Hypothesis II, \textbf{actor} should be interpreted as \textbf{male} in argument position
previous literature?

• Merchant 2014 argues that at least in Greek there is a difference between NP ellipsis and argument position of asymmetric nouns (~Hypothesis II)

• however, Spathas & Sudo 2019 provide empirical evidence that questions the validity of the data reported in Merchant; instead, their study (judgment elicitation from a small number of speakers) supports Hypothesis I
Experiment 2
the study

- an online 7-point acceptability judgement task, comparing the acceptability of gender mismatch with NP subjects and NP predicates

- with Gender (whether the Male or Female noun appeared first) and Syntactic Position (Subject or Predicate) as within subject variables, and

- Noun type (Asymmetric or Symmetric) as between item variables
task

- participants were asked to rate a target sentence in response to a context
- context contained an antecedent clearly gendered as female
- contrasting NP subjects (arguments) and NP predicates in the target sentences
example: NP subject

John is attending the opening performance of a play. He is watching a woman in a gold dress playing Cleopatra. He says:

That actor has a wonderful stage presence.

How well does the target sentence describe what is going on in the context?
NP subjects (Asymmetric/Symmetric)

• Asymmetric:

(1) … a woman\textsubscript{i}…. The actor\textsubscript{i} has a wonderful stage presence.

(2) … a woman\textsubscript{i}…. The actress\textsubscript{i} has a wonderful stage presence.

• Symmetric:

(3) … a woman\textsubscript{i}…. The prince\textsubscript{i} is very regal.

(4) … a woman\textsubscript{i}…. The princess\textsubscript{i} is very regal.
example: NP predicate

Harry is attending a ball at the palace. He notices a woman enter with a beautiful tiara. He says:

She is a very regal prince.

How well does the target sentence describe what is going on in the context?
NP predicates (Asymmetric/Symmetric)

- **Asymmetric**:

  1. … a woman$_i$ …. She$_i$ is a wonderful actor.
  2. … a woman$_i$ …. She$_i$ is a wonderful actress.

- **Symmetric**:

  3. … a woman$_i$ …. She$_i$ is a very regal prince.
  4. … a woman$_i$ …. She$_i$ is a very regal princess.
Predictions: asymmetric subjects

• **Context:** John is attending the opening performance of a play. He is watching a woman in a gold dress playing Cleopatra.

(1) **The actor** has a wonderful stage presence.

(2) **The actress** has a wonderful stage presence.

• **Hypothesis I (genderless actor):** no rating differences between (1) and (2)

• **Hypothesis II (arguments are different):** actress > actor
Predictions: symmetric subjects

• **Context:** Harry is attending a ball at the palace. He notices a woman enter with a beautiful tiara. He says:

(1) **The prince**<sub>i</sub> is very regal.

(2) **The princess**<sub>i</sub> is very regal.

• asymmetric nouns are lexically specified for gender
  
  • **prince** should be rated *poorly*
Predictions: asymmetric predicates

- **Context**: John is attending the opening performance of a play. He is watching a woman in a gold dress playing Cleopatra.

(1) She\textsubscript{i} is a wonderful actor.

(2) She\textsubscript{i} is a wonderful actress.

- **Hypothesis I (genderless actor)**: no rating differences between (1) and (2)

- **Hypothesis II (arguments are different)**: no rating differences between (1) and (2)
Predictions: symmetric predicates

• **Context:** Harry is attending a ball at the palace. He notices a woman enter with a beautiful tiara. He says:

(1) **She** is very regal **prince**.

(2) **She** is very regal **princess**.

• asymmetric nouns are lexically specified for gender

  • **prince** should be rated **poorly**
results

• in our z-scored rating data, we did not observe a significant three-way interaction between Gender, Position, and Symmetry
results

Three-way interaction not significant (p > 0.05)

asymmetric nouns: Gender*Position 2-way interaction (p < 0.05)

actor in subject position is rated lower than actress in subject position

BUT actress in subject position is also better than actress in predicate position

hypothesis I: genderless actor✓ (at least partially)

hypothesis II: arguments are different

*plot shows predicted values from a linear mixed effects regression model
interim summary

• actor-type (male asymmetric) nouns on the way to being truly underspecified for gender even in argument positions

• but not quite there yet
gender typology

• lexically specified gender (lexical semantics)

• gender as morphological reflex of agree in syntax (syntax & morphology)

• gender as a morphological feature transmission (only morphology)

• => reveals itself under NP ellipsis
consequences for gender under ellipsis

• gender on bound pronouns ignored

• gender as a morphological reflex of syntactic agree can be only partially ignored (contra Merchant 2014)

• lexically specified gender cannot be ignored

• => ellipsis sensitive to both syntax & semantics but not morphology
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