

Nominal Ellipsis and the Interpretation of Gender in Greek

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SuB 2015 at Universität Tübingen

Claims

- Semantics of gendered nouns in Greek
 1. Gender in presupposition and assertion
 2. Gender via competition with the other gender ('anti-presupposition')
- Nominal Ellipsis with gender mismatch
 - The behavior of 2. is theoretically puzzling.
 - We claim **competition doesn't happen under ellipsis!**

Outline

1. **DATA**: Nominal Ellipsis and three types of masc.-fem. noun pairs in Greek
2. **ANALYSIS+DATA**: Denotations of gendered noun + independent empirical support
 - ▣➔ Partial account of the Nom. Ellipsis data
3. **ANALYSIS** of the remaining puzzle:
No competition under ellipsis
- (4. **Extra**: Grammatical vs. Natural Gender)

1. NOMINAL ELLIPSIS IN GREEK

- Merchant (2014):
Three types of masc.-fem. pairs

| | | |
|----------|--|------------------|
| Sibling: | adherfos (m) – adherfi (f) | CLASS I |
| Doctor: | jatros | CLASS II |
| Teacher: | dhaskalos (m) – dhaskala (f) | CLASS III |

- **Class II nouns** have only one form ('epicene nouns'), but gender is visible on D and Adj.
- The three classes differ in their behavior under Nominal Ellipsis with gender mismatch.
(see Bobaljik & Zocca for other languages)

Nominal Ellipsis with Gender Mismatch

- **Class I** : NEGM impossible in both directions
- **Class II**: NEGM possible in both directions
- **Class III**: NEGM only possible if the antecedent is masc.

| | | M → F | F → M |
|------------------|----------------|-------|-------|
| Class I | Sibling | * | * |
| Class II | Doctor | OK | OK |
| Class III | Teacher | OK | * |

Class I

(1a) *M → F

O Petros episkefthike enan **aderfo** tu sti Veria,
the P. visited one.m brother his in.the V.

ke mia *(**aderfi**) stin Katerini

and one.f *(sister) in.the K.

‘P. visited a brother of his in V., and one*(sister) in K.’

(1b) *F → M

O Petros episkefthike mia **aderfi** tu sti Veria,
the P. visited one.f sister his in.the V.

ke enan *(**aderfo**) stin Katerini

and one.m *(brother) in.the K.

‘P. visited a sister of his in V., and one *(brother) in K.’

Class II

(2a) ^{ok}M → F

O Petros episkefthike enan jatro sti Veria,

the P. visited one.m doctor in.the V.

ke mia (jatro) stin Katerini

and one.f (doctor) in.the K.

‘P. visited one doctor.m in V., and one (doctor.f) in K.’

(2b) ^{ok}F → M

O Petros episkefthike mia jatro sti Veria,

the P. visited one.f doctor in.the V.

ke enan (jatro) stin Katerini

and one.m (doctor) in.the K.

‘P. visited a doctor.f in V., and a (doctor.m) in K.’

Class III

(3a) ${}^{\circ k}M \rightarrow F$

O Petros episkefthike **enan dhaskalo** sti Veria,
the P. visited one.m teacher.m in.the V.
ke **mia (dhaskala)** stin Katerini
and one.f (teacher.f) in.the K.
'P. visited a teacher.m in V., and a (teacher.f) in K.'

(3b) $*F \rightarrow M$

O Petros episkefthike **mia dhaskala** sti Veria,
the P. visited one.f teacher.f in.the V.
ke **enan *(dhaskalo)** stin Katerini
and one.m *(teacher.m) in.the K.
'P. visited a teacher.f in V., and a *(teacher.m) in K.'

Data Summary

| | | M → F | F → M |
|-----------|---------|-------|-------|
| Class I | Sibling | * | * |
| Class II | Doctor | OK | OK |
| Class III | Teacher | OK | * |

More masc.-fem. pairs:

Class I: **antras** (m)–**jineka** (f) ‘spouse’; **vasilias** (m)–**vasilissa** (f) ‘king/queen’

Class II: **dhimosiografos** ‘journalist’; **glossologos** ‘linguist’; **musikos** ‘musician’

Class III: **mathitis** (m)–**mathitria**(f) ‘pupil’; **nosokomos** (m)–**nosokoma** ‘nurse’

(see Merchant 2014 for a longer list)

There doesn't seem to be an obvious correlation with the morphology.

Remarks

- Merchant (2014) claims that Nominal Ellipsis with gender mismatch is available with predicative NPs, but not with argument NPs.
- (2)-(3) demonstrate that this is not the case. But Merchant's theory is tailored to derive it.
- (See our ms. for details)

2. DENOTATIONS OF GENDERED NOUNS

Proposal

- Two types of gender inferences:
 - a) Both asserted and presupposed
 - b) Due to competition with the other gender ('anti-presupposition')
- Denotations of gendered nouns:

| | Masc. | Fem. |
|--------------------------|--------------------|--------------------|
| Class I Sibling | a) asser & presupp | a) asser & presupp |
| Class II Doctor | No Gender | |
| Class III Teacher | b) competition | a) asser & presupp |

Denotations

[[**adherfos**]] = $\lambda x: \underline{\text{male}}(x). \text{male}(x) \wedge \text{sibling}(x)$

[[**adherfi**]] = $\lambda x: \underline{\text{female}}(x). \text{female}(x) \wedge \text{sibling}(x)$

[[**jatros**]] = $\lambda x. \text{doctor}(x)$

[[**dhaskalos**]] = $\lambda x. \text{teacher}(x)$

[[**dhaskala**]] = $\lambda x: \underline{\text{female}}(x). \text{female}(x) \wedge \text{teacher}(x)$

- **jatros** (doctor) and **dhaskalos** (teacher.m) have no gender inference, while the rest all assert and presuppose gender.
- There is independent support for the gender neutrality of **jatros** and **dhaskalos**.

Support 1: Unmarkedness

- **Jatros** with [masc.] and **dhaskalos** are actually gender neutral.
- They can describe mixed gendered groups. The rest cannot.

(4)

- a. O Petros ke i Maria ine kali **jiatri**.
the P. and the M. are good.m doctors
'P. and M. are good doctors.
- b. * O Petros ke i Maria ine **kales** **jiatri**.
the P. and the M. are good.f doctors

Support 1: Unmarkedness (cont.)

- Similarly, in negative sentences **jatros** with [masc.] and **dhaskalos** include female individuals.

(5)

- | | | | | | |
|----|----------------------------|------|-----|---------|--------------------------|
| a. | O Petros | dhen | exi | kanenan | jatro. |
| | the P. | not | has | no.m | doctor |
| | 'P. has no doctor.' | | | ⇒ | P. has no female doctor. |
| b. | O Petros | dhen | exi | kamia | jatro. |
| | the P. | not | has | no.f | doctor |
| | 'P. has no female doctor.' | | | ⇒ | P. has no male doctor. |

Unmarkedness of [masc.]

- The above data suggest:
 - **jatros** and **dhaskalos** are gender-neutral
 - [masc.] is actually gender-neutral.
- But **jatros** + [masc.] and **dhaskalos** usually mean masc.
- We'll claim this is due to competition with [fem.]
(6)

- | | | | | |
|----|-----------|-----|------------------|----------------|
| a. | * I Maria | ine | kalos | jatros. |
| | the M. | is | good.m | doctor |
| b. | * I Maria | ine | dhakalos. | |
| | the M. | is | teacher.m | |

Support 2: Focus

- In certain focus constructions, **the gender presupposition is ignored for alternatives** (Spathas 2010, Jacobson 2012).

(7)

Only Mary did her homework.

- (7) means all alternatives to Mary did NOT do their homework.
- [fem.] on “her” only applies to Mary.
- So the alternatives can be male.

Support 2: Focus Test

TEST: “Only John is an NP[masc.]”

- If NP doesn't assert [masc.],
⇒ female alternatives are not NP[fem.]
- If NP asserts [masc.],
⇒ female alternatives are not NP[fem.]

Support 2: Only + CLASS I

Class I nouns assert the gender

(8a)

Mono o Petros ine **aderfos** tu Jani.
only the P. is brother the.gen J.gen
'Only P. is a brother of J.' \Rightarrow **Maria is not a sister of J.**

(8b)

Mono i Maria ine **aderfi** tu Jani.
only the M. is sister the.gen J.gen
'Only M. is a sister of J.' \Rightarrow **Petros is not a brother of J.**

Support 2: Only + CLASS II

Class II nouns don't assert the gender

(9a)

Mono o Petros ine kalos jatros.

only the P. is good.m doctor

'Only P. is a good doctor.' ⇒ Maria is not a good doctor.

(9b)

Mono i Maria ine kali jatros.

only the M. is good.f doctor

'Only M. is a good doctor.' ⇒ Petros is not a good doctor.

Support 2: Only + CLASS III

Class III nouns are mixed!!

(10a)

Mono o Petros ine **dhaskalos**.

only the P. is teacher.m

‘Only P. is a teacher.’

⇒ Maria is not a teacher.

(10b)

Mono i Maria ine **dhaskala**.

only the M. is teacher.f

‘Only M. is a teacher.’

⇒ Petros is not a teacher.

Note: Superlatives

Superlatives show the same thing.

(11a)

| | | | | |
|---------------------------|-----|-----|-----------|-----------------------------|
| O Petros | ine | o | kaliteros | dhaskalos. |
| the P. | is | the | best.m | teacher.m |
| 'P. is the best teacher.' | | | | ⇒ Maria is a worse teacher. |

(11b)

| | | | | |
|---------------------------|-----|-----|----------|------------------------------|
| I Maria | ine | i | kaliteri | dhaskala. |
| the M. | is | the | best.f | teacher.f |
| 'M. is the best teacher.' | | | | ⇒ Petros is a worse teacher. |

Support 2: Data Summary

- Not all gendered nouns assert the gender.
 - Those that don't can be used to refer to mixed gendered groups.
 - Their gender specifications are ignored by focus alternatives.

| Gender in Assertion? | | Masc. | Fem. |
|----------------------|---------|-------|------|
| Class I | Sibling | YES | YES |
| Class II | Doctor | NO | |
| Class III | Teacher | NO | YES |

Denotations again

[[**adherfos**]] = $\lambda x: \underline{\text{male}}(x). \text{male}(x) \wedge \text{sibling}(x)$

[[**adherfi**]] = $\lambda x: \underline{\text{female}}(x). \text{female}(x) \wedge \text{sibling}(x)$

[[**jatros**]] = $\lambda x. \text{doctor}(x)$

[[**dhaskalos**]] = $\lambda x. \text{teacher}(x)$

[[**dhaskala**]] = $\lambda x: \underline{\text{female}}(x). \text{female}(x) \wedge \text{teacher}(x)$

- The observations above are in line with our denotations.

Partial Resolution of the Puzzle

- **Claim:** The denotations explain the behavior of **Class I** and **Class II** nouns under nominal ellipsis with gender mismatch with independently motivated assumptions.
- Assumption 1 (cf. Fiengo & May 1994):
 φ -presuppositions, but not assertions, are ignored under ellipsis.

(12)

- a. John did **his** homework. Mary didn't (do **her** homework).
- b. John is a **male** doctor. Mary isn't *(a **female** doctor).

Partial Resolution of the Puzzle (cont.)

- Assumption 2 (cf. Sauerland 2003):
the gender specifications on Det, Adj, etc. are presuppositional.
- **Class I nouns** assert the gender, so mismatches under ellipsis are not allowed in either direction.
- **Class II nouns** only specify gender on Det, Adj, etc., which are presuppositional, so mismatches are tolerated.

Class I

(1a) *M → F

O Petros episkefthike enan **aderfo** tu sti Veria,
the P. visited one.m brother his in.the V.

ke mia *(**aderfi**) stin Katerini

and one.f *(sister) in.the K.

‘P. visited a brother of his in V., and one*(sister) in K.’

(1b) *F → M

O Petros episkefthike mia **aderfi** tu sti Veria,
the P. visited one.f sister his in.the V.

ke enan *(**aderfo**) stin Katerini

and one.m *(brother) in.the K.

‘P. visited a sister of his in V., and one *(brother) in K.’

Class II

(2a) ${}^{\circ k}M \rightarrow F$

O Petros episkefthike enan jatro sti Veria,
the P. visited one.m doctor in.the V.
ke mia (jatro) stin Katerini
and one.f (doctor) in.the K.

‘P. visited one doctor.m in V., and one (doctor.f) in K.’

(2b) ${}^{\circ k}F \rightarrow M$

O Petros episkefthike mia jatro sti Veria,
the P. visited one.f doctor in.the V.
ke enan (jatro) stin Katerini
and one.m (doctor) in.the K.

‘P. visited a doctor.f in V., and a (doctor.m) in K.’

Remaining Puzzle

- So the remaining puzzle is the asymmetric nature of **Class III** nouns.
- Recall that with Class III nouns, Nominal Ellipsis with gender mismatch is possible only when the antecedent is masc.

Class III

(3a) ${}^{\circ k}M \rightarrow F$

O Petros episkefthike **enan dhaskalo** sti Veria,
the P. visited one.m teacher.m in.the V.
ke **mia (dhaskala)** stin Katerini
and one.f (teacher.f) in.the K.
'P. visited a teacher.m in V., and a (teacher.f) in K.'

(3b) $*F \rightarrow M$

O Petros episkefthike **mia dhaskala** sti Veria,
the P. visited one.f teacher.f in.the V.
ke **enan *(dhaskalo)** stin Katerini
and one.m *(teacher.m) in.the K.
'P. visited a teacher.f in V., and a *(teacher.m) in K.'

Remaining Puzzle (cont.)

[[**dhaskalos**]] = $\lambda x. \text{teacher}(x)$

[[**dhaskala**]] = $\lambda x: \text{female}(x). \text{female}(x) \wedge \text{teacher}(x)$

- Given this semantics, it is strange that Nominal Ellipsis with gender mismatch is possible at all.
- Ellipsis is usually not licensed by asymmetric entailment.

(13)

- a. J. invited two **phonologists**. M. invited four *(**linguists**).
- b. J. invited two **linguists**. M. invited four *(**phonologists**).

3. NO COMPETITION UNDER ELLIPSIS

Proposal

- Nominal Ellipsis in Greek requires **total identity**.
- So what's hidden in (3a) is actually **dhaskalos**.
- Because **dhaskalos** is gender-neutral, this is semantically coherent.

(3a') ^{ok}M → F

O Petros episkefthike enan **dhaskalo** sti Veria,
the P. visited one.m teacher.m in.the V.
ke mia (**dhaskalo**) stin Katerini
and one.f (teacher.m) in.the K.
'P. visited a teacher.m in V., and a (teacher.m) in K.'

Interaction with Focus

- That the elided noun in (3a') is actually [masc.] is supported by (14) with 'only'.
- It entails that Maria has a female teacher and **nobody else has a teacher, male or female!**
 - [fem.] on *mia* is ignored in the alternatives.
 - **dhaskalos** is gender-less (unlike **dhaskala**).

(14)

I perisoteri apo emas den ehun **dhaskalo** stin Katerini.
the more from us not have teacher.m in.the K.
'Most of us don't have a teacher in K.'

Mono i Maria exi **mia** (***dhaskalo**).
only the M. has one.f (*teacher.m)
'Only Maria has one.' ⇒ Nobody else has a teacher (in K.).

- So (3a') involves a gender mismatch within DP, but **gender mismatches are not tolerated without Nominal Ellipsis, (6).**
- Note that according to our semantics, (6b) should be semantically coherent!
- We adopt a competition-based explanation.

(6)

- | | | | | |
|----|-----------|-----|------------------|----------------|
| a. | * I Maria | ine | kalos | jatros. |
| | the M. | is | good.m | doctor |
| b. | * I Maria | ine | dhakalos. | |
| | the M. | is | teacher.m | |

Competition between genders

[[**dhaskalos**]] = $\lambda x. \text{teacher}(x)$

[[**dhaskala**]] = $\lambda x: \text{female}(x). \text{female}(x) \wedge \text{teacher}(x)$

- **The idea:** When the feminine form can be used, it needs to be used.
- Following the literature we assume that this is enforced by the principle of **Maximize Presupposition! (MP)** (Heim 1991, Percus 2006, 2010)

Competition between genders (cont.)

[[**dhaskalos**]] = $\lambda x. \text{teacher}(x)$

[[**dhaskala**]] = $\lambda x: \text{female}(x). \text{female}(x) \wedge \text{teacher}(x)$

- Roughly, MP says:
“Given a set of alternatives, use the form that has the most presuppositions.”
- Since **dhaskala** has gender presupposition and **dhaskalos** doesn't, **dhaskala** needs to be used whenever possible.
- Consequently, **dhaskalos** usually means masc. (**‘anti-presupposition’**).

Maximize Presupposition! (MP)

Maximize Presupposition!

ϕ is infelicitous in (local) context c if ψ exists such that

- i) ψ is an alternative to ϕ ;
- ii) ψ has more presuppositions than ϕ ; and
- iii) the presuppositions of ψ are satisfied in c .

- We assume masc.-fem. pairs are alternatives.
- Assuming that MP applies to Det, Adj., etc. individually, DP-internal concord is forced (cf. Percus 2006, 2010, Singh 2011).
- Crucially, our version of MP doesn't require ϕ and ψ to assert the same thing. (See Spector & Sudo (ms.) for independent motivation for this.)

(6) are made unusable due to the alternatives (6').

(6)

a. * I Maria ine kalos jatros.
the M. is good.m doctor

b. * I Maria ine dhakalos.
the M. is teacher.m

(6')

a. I Maria ine kali jatros.
the M. is good.f doctor

b. I Maria ine dhakala.
the M. is teacher.f

MP ignores elided material

- Proposal: **MP is not active under ellipsis.**
- Then (3a') with ellipsis is perfectly coherent, although its overt counterpart is ruled out.

(3a') ^{ok}M → F

O Petros episkefthike enan **dhaskalo** sti Veria,
the P. visited one.m teacher.m in.the V.
ke mia (***dhaskalo**) stin Katerini
and one.f (*teacher.m) in.the K.
'P. visited a teacher.m in V., and a (teacher.f) in K.'

Summary

[[**dhaskalos**]] = $\lambda x. \text{teacher}(x)$

[[**dhaskala**]] = $\lambda x: \text{female}(x). \text{female}(x) \wedge \text{teacher}(x)$

- Without ellipsis, the use of **dhaskala** is forced by MP whenever felicitous.
- With ellipsis, gender mismatch is tolerated, because MP is turned off.

(3a') ${}^{\circ k}M \rightarrow F$

O Petros episkefthike enan **dhaskalo** sti Veria,
the P. visited one.m teacher.m in.the V.

ke mia (***dhaskalo**) stin Katerini

and one.f (*teacher.m) in.the K.

'P. visited a teacher.m in V., and a (teacher.f) in K.'

Summary (cont.)

[[**dhaskalos**]] = $\lambda x. \text{teacher}(x)$

[[**dhaskala**]] = $\lambda x: \text{female}(x). \text{female}(x) \wedge \text{teacher}(x)$

- On the other hand, $F \rightarrow M$ is bound to violate MP: Since **dhaskala** presupposes and asserts the gender, only *mia* is compatible.

(3b') * $F \rightarrow M$

*0 Petros episkefthike mia **dhaskala** sti Veria,
the P. visited one.f teacher.f in.the V.
ke enan (**dhaskala**) stin Katerini
and one.m (teacher.f) in.the K.
'P. visited a teacher.f in V., and a (teacher.f) in K.'

Predictions

- The assumption that MP is turned off under ellipsis makes predictions beyond gendered nouns.
- However, the facts are not as simple as one might expect.
- See Appendix.

4. NATURAL VS. GRAMMATICAL GENDER

Grammatical Gender under Ellipsis

- Our analysis relies on the assumption that agreement mismatches within DP are in principle permitted.
- But grammatical gender behaves differently from natural gender in this regard (cf. Merchant 2014).
- Greek grammatical neuter nouns: **koritsi** (girl), **melos** (member), **pedhi** (child), **agori** (boy), etc.

- The ungrammaticality of (15) doesn't follow if [neut.] has no semantic contribution.
- **Tentative hypothesis:** syntax forces agreement of grammatical gender.
- If this is right, then syntax treats grammatical and natural gender differently (cf. Alexiadou 2004, Kramer 2014)

(15)

| | | | | |
|------------|--------------|--------------------|----------------|------------|
| * O Petros | episkefthike | ena | koritsi | sti Veria, |
| * the P. | visited | one.n | girl.n | in.the V. |
| ke | mia | (koritsi) | stin Katerini | |
| and | one.f | (girl.n) | in.the K. | |

'P. visited one girl in V., and one (girl) in K.'

Selected References

- Bobaljik & Zocca (2011) Gender markedness: the anatomy of a counter-example. *Morphology*.
- Jacobson (2012) The direct compositionality and “uninterpretability”. *J. of Semantics*.
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- Sauerland (2008) On the semantics markedness of phi-features. In Harbour et al. (eds.), *Phi Theory*.
- Spathas (2010) *Focus on Anaphora*. PhD thesis.
- Spector & Sudo (2014) Presupposed ignorance and exhaustification: How scalar implicature and presupposition interact.

APPENDIX

Predictions

- Maximize Presupposition (MP) is used to explain various kinds of competitions:
 - a vs. the (Heim 1991)
 - all vs. both (Percus 2006)
 - think vs. know (Percus 2006)
- Our proposal that MP is inactive under ellipsis makes predictions.
- But it turns out that the facts are not so straightforward.

All vs. Both

- “All” is infelicitous if “Both” can be used.
e.g. #‘all parents of mine’
- Prediction: “all” becomes OK with ellipsis.
- However, in sentences like (A1), “all” can be used even without ellipsis.

(A1)

[John has four sisters. Bill has two sisters.]

John will invite **all** of his sisters. Bill will (invite **all** of his sisters), too.

Think vs. Know

- “Think” vs. “know” seems to go against our prediction.
- But “know” might actually involve more than the factive presupposition (cf. ‘Gettier’s problem’).

(A2)

[Bill, but not John, has been admitted to MIT]

John thinks he’s been admitted to MIT. #Bill does (think he’s been admitted to MIT), too.

Merchant's example

- Merchant (2014) uses examples of the type in (i) to claim that NEG-M is not possible in argument positions.
- The claim is refuted by the data in, e.g., (2) and (3).
- (i) is out due to violations of the obligatory contrastive topic contour.

(i)

* O Petros exi enan **jatro** sti Veria,
* the P. visited one.m doctor in.the V.
ala dhen exi **kamia** (**jatro**) stin Katerini
but not has no.f (doctor) in.the K.
'P. has one doctor in V., but he has no (doctor.f) in K.'

Presupposed gender only

- Can we account for the contrast in, e.g., (10), keeping the assumption that gender is *always* presuppositional and never asserted?
- The idea would be that gender not figured in the alternatives implies the absence of gender at LF (Heim 2008, Kratzer 2009, a.m.o.).

(10a) Mono o Petros ine **dhaskalos**.
only the P. is teacher.m
'Only P. is a teacher.' ⇒ Maria is not a teacher.

(10b) Mono i Maria ine **dhaskala**.
only the M. is teacher.f
'Only M. is a teacher.' ⇒ Petros is not a teacher.

Presupposed gender only (cont.)

- The difference between, e.g., **dhaskalos** and **dhaskala**, then, is the presence/ absence of gender information.

[[**dhaskalos**]] = $\lambda x. \text{teacher}(x)$

[[**dhaskala**]] = $\lambda x: \text{female}(x). \text{teacher}(x)$

- Problem:** Analysis is committed to the assumption that presuppositional gender is present in focus alternatives.
- Refuted by examples in which gender cannot be the result of syntactic/ morphological mechanisms in any obvious way, as in, e.g., (14).

(14)

| | | | | | | |
|-----|------------|----------|-----|------|-----------------|----------------|
| I | perisoteri | apo emas | den | ehun | dhaskalo | stin Katerini. |
| the | more | from us | not | have | teacher.m | in.the K. |

‘Most of us don’t have a teacher in K.’

| | | | | | |
|------|--------|---------|-------|--------------|-----------------------|
| Mono | | i Maria | exi | mia | (* dhaskalo). |
| only | the M. | has | one.f | (*teacher.m) | |

‘Only Maria has one.’ ⇒ Nobody else has a teacher (in K.).