On the grammar of nominal gender inferences

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This paper makes two interrelated claims about the syntax and semantics of nominal gender. We argue that there are **two loci and two types of gender inferences within a DP**; (a) assertive gender associated with nominal roots and (b) presuppositional gender associated with syntactic gender features on the nominalizer *n*. We provide novel empirical evidence that dissociates assertive and presuppositional gender and pinpoints the position of syntactic gender in the DP.

Background. In previous work, the source of nominal gender inferences has been determined on the basis of various focus-sensitive constructions (*only*, superlatives, etc.). These diagnostics, however, rely on the assumption that φ-presuppositions project to focus alternatives, in contrast to the results of a growing body of literature (Sauerland 2016 and references therein). In response, Sudo and Spathas (2016) explain the behavior of nominal gender in Greek by allowing gender features to provide both assertive and presuppositional content. Nouns like *adherfi* 'sister' and *jatros* 'doctor', which, e.g., license different inferences under *only* in (1), differ in that only the former is specified for interpretable gender, as in (2).

(1) a. Mono i MARIA ine kali … adherfi   b. … kali jatros.
    only the Mary is good.F sibling.F   good.F doctor
    ⇒ John is a bad sibling.   ⇒ John is a bad doctor

(2) a. $[\![adherfi]\!] = \lambda x:$ female(x). female(x) & sibling(x)   b. $[\![jatros]\!] = \lambda x.$ doctor(x)

There are at least three issues with this proposal: (i) it remains largely agnostic to the locus of gender features within the DP structure, (ii) *masc* cannot be mapped to a single interpretation, as it also functions as the semantically underspecified feature in Greek (an issue left out here for reasons of space), and (iii) the dual nature of gender inferences is theoretically undesirable.

Proposal. We propose a re-interpretation of the proposal within Distributed Morphology that simultaneously tackles all three issues. We propose that there are two loci for semantically interpreted nominal gender; (a) assertive gender associated with the encyclopedic meaning of nominal roots and (b) syntactically active gender features on the nominalizer *n* (cf. Kramer 2014) interpreted presuppositionally. The interpretation of *masc* is always underspecified; maleness inferences are either the result of competition, as in much of the literature, or part of the lexical meaning of the root. Crucially, the gender inferences of roots are not grammatically privileged in any way; gender features on *n* are the *only* syntactically active features.

Features on *n*
$[\![n_{masc}]\!] = \lambda P \lambda x:$ **human(x)**. P(x)
$[\![n_{fem}]\!] = \lambda P \lambda x:$ **female(x)**. P(x)

Nominal roots
$[\![\sqrt{\ldots}]\!] = \lambda x.$ **male(x)** $\wedge \ldots$(x)
$[\![\sqrt{\ldots}]\!] = \lambda x.$ **female(x)** $\wedge \ldots$(x)
$[\![\sqrt{\ldots}]\!] = \lambda x.$ $\ldots$(x)

The nouns *adherfi* and *jatros* in (1) now differ as in (3). Notice that, unlike in the proposal in (2), *jatros is* specified for gender. But since the gender feature only provides presuppositional content, which does not project to focus alternatives, we retain the analysis of the facts in (1).

(3) a. $[\![n_{fem}\ adherfi]\!] = \lambda x:$ female(x). female(x) & sibling(x)
    b. $[\![n_{fem}\ jatros]\!] = \lambda x:$ female(x). doctor(x)

A methodological disadvantage is that we have now lost the means to diagnose the position of gender features, since focus-sensitive operators can only diagnose assertive gender. However, there exist high gender (HG) analyses which posit a designated functional head for interpretable φ-features on top of DP (e.g. Sauerland 2008), as in (4), with the interpretation in (5) for *fem*. We provide two new diagnostics that can reliably locate presuppositional gender.

(4) $[_{\varphi P}\ \varphi_{fem}\ [_{DP}\ D\ [\ \dots\ [_{nP}\ \dots\ ]]]]$ (5) $[\![fem]\!] = \lambda x\!: female(x).\ x$

Presupposition projection. A presupposition p in the scope S of a quantifiers Q like *every* and *no* projects universally, whereas one in the restriction R does not, as shown in (6) and (7).

(6) Every/No student stopped smoking. $Q(R)(S_p) \Rightarrow EVERY(R)(p)$
 ⇒ Every relevant student used to smoke.

(7) Every/No student who stopped smoking fell. $Q(R_p)(S) \Rightarrow EVERY(R)(p)$
 ⇏ Every relevant student used to smoke.

Crucially under HG gender always appears in the scope of Q, since Quantifier Raising is required to resolve a type mismatch (Sauerland 2008), as in (8) (where *TP1* is the S of *no*). This predicts universal projection. Low Gender (LG) analyses, as the one proposed here, on the other hand, predict gender to always appear in the restriction giving rise to weak projection. The prediction of LG is confirmed by examples like (9). Notice that the gender feature of *jatros* is inferred by the presence of *fem* on D, which we assume is specified via agreement.

(8) $[_{TP2}\ [_{DP}\ no\ doctor]_1\ [_{\textbf{TP1}}\ 1\ \ [_{TP}\ T\ [_{vP}\ [_{\varphi P}\ \varphi_{\textbf{fem}}\ t_1]\ [_{v'}\ \dots\ ]\ ]\ ]\ ]\ ]$

(9) Kamia jatros dhen irthe sto   parti.   ⇒ Every relevant doctor is female.
 no.F doctor not came to.the party
 'No female doctor came to the party.'

Exceptives. A presupposition p in the scope S of a quantifier Q like *every* and *no* modified by an exceptive phrase E does not apply on the referent of E, whereas one in the restriction R does.

(10) Every student except John stopped smoking. $Q(R/E)(S_p) \Rightarrow p(E)$
 ⇏ John used to smoke

(11) Every student who stopped smoking except John fell. $Q(R_p/E)(S) \Rightarrow p(E)$
 ⇒ John used to smoke.

To check the predictions of HG and LG we use examples with incompatibility between the gender of E and the gender presupposition. HG predicts such cases to be felicitous, since p in S does not apply on E. LG predicts such cases to come out as presupposition failures, since p in R does apply on E. The prediction of LG is confirmed by the infelicity of examples like (12).

(12) #Kamia jatros plin   tu Jani dhen irthe sto   parti.   ⇒ John is female.
 no.F doctor minus the John not came to.the party
 'No female doctor except John came to the party.'

Genderless *n*. In examples with *kathe* 'every' (which does not inflect for gender) like (13), *fem* on the predicative adjective is the only morphologically overt gender feature. Contra the predictions of LG, which must postulate n_{fem} in R, (13) can give rise to universal projection. Examples with exceptives (omitted) confirm this pattern. We expand the inventory of *n* to include genderless $n_\varnothing$. Since $n_\varnothing$ cannot license agreement, *fem* on the adjective is a last resort, base-generated gender feature (cf. Matushansky 2013) interpreted in the scope of *kathe*. We demonstrate that the analysis makes the correct predictions for all cases of 'semantic agreement' without postulating any type of separate 'sematic agreement' mechanism in Greek.

(13) Kathe jatros sto   nosokomio ine poli ikani. ⇒ Every doctor in the hospital is female.
 every doctor in.the hospital   is very capable.F
 'Every doctor in the hospital is female and very capable.'

Further issues. The proposal, coupled with an appropriate Principle of Competition that applies very locally at the level of choice of *n* makes the correct predictions about possible pairs of gendered nominals (cf. Bobaljik and Zocca 2011, Merchant 2016). Moreover, it allows

the unification of interpreted presuppositional gender with grammatical gender in terms of conditional presuppositions as in Percus (2011) and Merchant (2016).