

# On Inflection

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## Gender control – lexical or conceptual?

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The distinction between “grammatical” and “natural” gender is a traditional one in the study of gender systems (Corbett, 1991; Lyons, 1977). In a wide variety of gender and other noun-class languages (Dixon, 1982, Craig, 1986, Corbett, 1991; Aikhenvald, 2003) there are default classes for males and females, or alternatively, one class for all human nouns, so that the class assignment of the nouns is said to be controlled by the sex or humanness of the referent, i.e. by an aspect of the natural world outside language, hence the designation “natural gender”. On the other hand, non-human nouns are (in this view) arbitrarily assigned to classes on an item-by-item basis, i.e. class assignment is language-internally and, importantly, idiosyncratically controlled by individual lexical items themselves, hence the designation “grammatical gender”. Table 1 gives characteristic examples of these two types in standard German.

*Table 1.* Examples of natural and grammatical gender assignment

1. “natural” gender <sup>1</sup>		2. “grammatical” gender	
der Mann	‘man-M’	der Löffel	‘spoon-M’
der Suchende	‘the (male) searcher-M’	die Gabel	‘fork-F’
der Bulle	‘the bull-M’	das Messer	‘knife-N’
die Frau	‘the woman-F’	der Arm	‘arm-M’
die Suchende	‘the (female) searcher-F’	die Nase	‘nose-F’
die Kuh	‘the cow-F’	das Kinn	‘chin-N’

The arbitrary view of grammatical gender assignment is still widely held in Linguistics and Psycholinguistics. Members of a prominent psycholinguistics research team, for example, are quite explicit about this in a recent article (Miceli et al., 2002: 619):

Crucially for our purposes, a noun’s semantic content and grammatical gender have only an arbitrary relationship. This can be readily appreciated by considering the fact that closely related semantic coordinates have different grammatical genders. For example, the Italian translation of the first mem-

ber of each of the following pairs of words is masculine while the second is fem-gender: lemon/orange, grapefruit/apple, table/chair, sheet/blanket, plate/cup, glass/bottle, spoon/fork, train/car, elephant/giraffe, lion/tiger, sun/moon, and so on. Furthermore, the grammatical gender of a word is language specific. While the Italian and French translation of pencil, desk, carriage, summer, and flag are feminines and masculines, respectively; the opposite is true for sea, table, limit, river and tomato. If grammatical genders were determined by a noun's semantic properties, we would expect semantically related words to have the same gender, and that words would have the same gender across languages. Neither condition holds.

Miceli et al.'s argument can be faulted on both grounds. Their first point is in effect that gender assignment in Italian (for example) does not reflect semantic groupings of *their* a priori choice. *Lemon* and *orange* have different genders, as do *table* and *chair*, and so forth. Now it has already been extensively demonstrated that the noun class system of German has its particular principles of organization (e.g. Köpcke and Zubin, 1996; Zubin and Köpcke, 1986a,b); the noun class system of Swahili its particular principles of organization (Contini-Morava, 1996, 2004); the system of Dyrirbal its own very different principles of organization (Dixon, 1982), Manambu still very different principles of organization (Aikhenvald, 2003), and so on. Miceli et al.'s expectation that Italian classes should correlate with conceptual groupings *they* pick presupposes either that noun classes should correlate with every conceivable conceptual grouping (a logical impossibility), or that there is a universal set of conceptual dimensions for nominal classification which they have privy to, but to which gender languages do not in general conform. Their second point is that nouns in Italian and French that have the same referent (e.g. the word for 'pencil,' or for 'flag') in many cases have different genders. But this could be evidence against conceptually driven gender assignment only if, again, there were one universal conceptual system for all languages, a possibility against which much counterevidence has been presented, recently by Choi et al. (1999) and Slobin (1996). Clearly their statements presuppose, rather than demonstrate, that gender assignment outside the domain of human reference is arbitrary.<sup>2</sup>

A further complication in such systems is the fact that a subset of human nouns may diverge from their expected natural gender, a phenomenon which we will call "the natural gender problem". Examples in German are the nouns *Mädchen* 'girl' and *Weib* 'woman,' both of which are neut-gender. Such nouns have been a special focus of attention recently (Corbett

1991; Pollard and Sag, 1994/ch. 2 and elsewhere), since their syntactic interaction with agreement morphology is ambivalent. Corbett has modeled this variation by distinguishing between the controller and the target of gender assignment: the greater the syntactic distance between the two, the more likely the morphological form of the target item is to be controlled by “natural” rather than by “grammatical” gender, as in (1a-c):

- 1a. ein altes Fischerweib / \*eine alte Fischerweib  
 an old-n fishwife-n / an-f old-f fishwife-n
- 1b. **Das** alte Fischerweib, **das/?die** hinter der Theke saß,  
 the old fishwife-N, who-N/?F behind the counter sat,  
 spielte Tarot.  
 was-playing tarot.
- 1c. Ein altes Fischerweib saß hinter der Theke. Sie/Es  
 an old fishwife-N sat behind the counter. She-F/N  
 spielte Tarot.  
 was-playing Tarot.

Example (1a) illustrates how internal components of an NP, as targets, must agree in gender with the head noun (the controller). In (1b) the target is a relative pronoun which typically agrees with its head, but occasionally shifts to the “natural” gender of the referent, especially in casual speech. In (1c) the target is an anaphoric pronoun in a separate sentence. Here the natural gender shift is the norm, although the unshifted neut-gender is fully acceptable, and found often enough, especially in written German with stylistic effect, as in example 2.

- 2 a. **Ein Mädchen** geht über den Flur. Ganz langsam. Jeden Schritt verfolgt **es** angestrengt  
 b. und konzentriert mit den Augen. **Es** stützt sich auf Krücken. Die Ferse setzt auf, das Knie  
 c. ist angewinkelt, dann streckt sich das Bein. Drei Meter sind geschafft, da schießt **das**  
 d. **Mädchen** zwischen **seinen** braunen Haarsträhnen hindurch: zur Mutter, zum Arzt und zur  
 e. Krankengymnastin. "Gut?" fragt **das Mädchen** und weiß die Antwort schon selbst. Das  
 f. ganze Gesicht lacht. ...  
 g. *Swetlana* lernte, mit der Prothese zu stehen. Eine Krankengymnastin und ein

- h. Orthopädiemechaniker zeigten **ihr**, mit welcher Bewegung **sie** das Knie anwinkeln und
- i. einrasten kann. Damit **sie** nicht stürzt, wenn **sie** den künstlichen Fuß zum ersten Mal zum
- j. Schritt aufsetzt. ... "Ich kann," sagt *Swetlana*. Dann noch einmal ganz deutlich: "Ich kann
- k. gehen." Drei neue Worte, die **sie** auf Deutsch gelernt hat. Das Erste, was **sie** sagen
- l. konnte? "Schmerrrrzen!", sagt *Swetlana* mit einem langen rollenden "r".  
Aber das Wort
- m. will **sie** aus **ihrem** Repertoire streichen.
- n. *Swetlana* steht auf einem Trampolin. Ohne Krücken. *Das Mädchen* ... hüpf
- o. vorsichtig nach rechts, dann nach links. "Oh no", verkündet **sie**, als Krankengymnastin
- p. Silke Arlt **sie** dann zur nächsten Übung auffordert. ... "Nicht helfen", sagt **sie**. "Ich will es
- q. allein versuchen." <Hamburger Abendblatt 183, 2000, p. 11>

This passage comes from a newspaper story about a young girl from Eastern Europe being treated at a hospital in Hamburg. In lines (a-f) the writer takes a distant, analytical perspective of the girl's treatment, as shown by the repeated use of *Mädchen-N* (rather than her name) to refer to the girl, and the impersonal description of body-part movement in (b-c): "Die Ferse setzt auf, das Knie ist angewinkelt, dann streckt sich das Bein." 'the heel makes contact, the knee is bent, then the leg stretches out.' An aspect of the distant, analytical perspective is the repeated stylistic use of the neut-gender anaphoric pronouns *es* and *sein* in lines (a,b,d). In lines (g-q) the writer switches to a personalized perspective, marked especially by use of the girl's name *Swetlana*, and a personalized description of body-part movement in (h-i): "mit welcher Bewegung sie das Knie anwinkeln und einrasten kann." 'with which movement she can bend her knee and lock it in place.' In this context (h-p) the reporter repeatedly uses fem-gender pronouns – the typical anaphoric pronominal form for females – for anaphoric reference. Even after referring to the girl with *Mädchen-N* in (n), the reporter anaphorically refers to her with the fem-gender pronoun *sie* (o-p).

Examples of mixed fem-gender and neut-gender reference to females are rampant in the current media. In (3) from a newsmagazine, Naomi Campbell is described as a *Model*, and a *Fotogirl*, both neut-gender nouns; and the latter noun controls a neut-gender possessive pronoun. Yet in the same context Campbell is described with the fem-gender nouns *Autorin* 'fem. author' and *Schöne* 'fem. beautiful one'

3. Naomi Campbell, 24, **britisches Model** und, neuerdings, Autorin, ist ehrlicher als mancher bücherschreibende Politiker. Zwar nennt auch **das Fotogirl in seinem** ersten Roman ... den Namen des wahren Autoren nicht auf dem Buchdeckel. ... die freiberufliche Lektorin bei Heinemann, Caroline Upcher, teilt sich mit der Schönen das Copyright ... <Spiegel 37/1994, 250>.

In (4), an interview in a teen girl's magazine, Alicia Silverstone, the star of the movie "Clueless", is asked whether she identifies with the character she plays in the film. The character is referred to by the interviewer with the neut-gender NP *schrilles material girl*<sup>3</sup> 'shrill material girl-N and Silverstone describes her as *ein sehr oberflächliches Mädchen*, 'a very superficial girl-N' again a neut-gender NP. Silverstone's NP continues with a neut-gender-headed relative clause, but she reverts to fem-gender anaphoric pronouns. This illustrates Corbett's (1991) control continuum as a function of syntactic distance:

4. Interviewer: In Ihrem neuen Kassenhit "Clueless" spielen Sie **ein ziemlich schrilles "material girl"**. Wie steht's da mit der Identifikation? Silverstone: Das ist **ein sehr oberflächliches Mädchen, das** nur an Klamotten und Geld denkt – als Rollenvorbild für Kids natürlich denkbar ungeeignet. Andererseits ist **sie** sehr modern, sehr zeitgemäß – es war schon lustig, **sie** zu spielen. Interview mit Alicia Silverstone, 18 Jahre. <Allegra 11/95, 189>.

Interviewer: 'In your new box-office hit "clueless" you play a rather shrill material girl-N. Is there any identification going on there?' Silverstone: She's a very superficial girl-N, who-N thinks only about clothing and money – not particularly appropriate as a role model for kids. But otherwise she's-F very modern, very contemporary – it was really fun to play her-F. Interview with Alicia Silverstone, 18 years old.'

In this chapter we first want to extend these observations by demonstrating that *the natural gender problem* – the ambivalent morpho-syntactic behavior of human nouns such as *Mädchen* – is not unique to human reference, and is found with classes of non-human nouns in German. Names for specific makes and models of automobiles provide an extensively documented example.<sup>4</sup> In (5) the Lancia Dedra is classified as a fem-gender *Limousine* 'sedan-F', yet in spite of this fem-gender proximate antecedent, the following anaphoric pronouns *er* and *seiner* are masc-gender:

5. Lancia Dedra: die Kompakt**limousine** von hohem technischem Niveau. Mit einem CW-Wert von 0,29 gehört **er** zur Spitze **seiner** Klasse. <Hamburger Abendblatt, Jan93>.

In (6) the Mitsubishi ESR is categorized with the neut-gender nouns *Auto* and *Fahrzeug* ‘vehicle’, followed by the neut-gender relative pronoun *das* headed by *Fahrzeug*, but then the anaphoric pronouns in the following sentence revert to masc-gender, although the most recent controllers are neut-gender nouns.<sup>5</sup>

6. Ein weiteres Beispiel ist **der ESR, das Dreiliter-Auto** von Mitsubishi. **Ein Hybrid-Fahrzeug** mit vier Sitzplätzen, **das** fast geräuschfrei fährt, mit 20 Litern Treibstoff über 700 Kilometer weit kommt und trotzdem 200 km/h schnell ist. Fährt **er** durch besonders belastete Gebiete, reduziert **er** den Schadstoff-Ausstoß auf ein Minimum. <Stern 19/1994>.

This gender “clash” between pronoun and antecedent in car examples (5) and (6) is parallel to the fem-gender pronouns following a neut-gender antecedent in the human examples (2) and (4).

The general use of masc-gender pronouns for automobiles following fem- and neut-gender antecedents is echoed in the **exophoric** use of masc-gender. Example (7) is an ad for the car dealer “Meile” that contains narrative text. The example is formatted to evoke the graphic organization of the ad. The narrative starts out with an internal monologue containing the neut-gender noun *Auto*, followed by a neut-gender anaphoric pronoun in the following independent clause. But when the narrator’s attention focuses on the specific car in the picture, she reverts to a masc-gender pronoun.

7. [headline] DIE MEILE.

[Picture: a woman smiling out the window of a car]

[text:] Ich suchte **ein kleines Auto**, – aber elegant und schick sollte **es** sein, möglichst russischgrün, niedrig in den Kosten, leicht zu parken, natürlich zuverlässig und seinen Preis wert. Da stand **er** ... an der Meile. AutoMeile Nedderfeld. Hamburgs Mobilste Meile. <Hamburger Abendblatt 143/1991>.

‘I was looking for **a small car-N**. – but **it-N had** to be elegant and chick, if possible russian green, low in cost, easy to park, dependable, of course, and a good price. ... There **it-M** was, at the “mile”.’

Of particular interest in this example is the fact that the neut-gender pronouns are anaphoric to and agree in gender with *Auto-N*, representing the generic car the woman is imagining, while the masc-gender pronoun refers to the particular car that she then finds, the one depicted in the ad. Note that the only available anaphoric controller is *Auto-N*, which has the wrong gender. The apparent source of masc-gender for the pronoun is a pragmatic

projection associated with the concept ‘car’, evoked by the picture of a car in the ad.

The following example (8) is a little more complex. The car in question is introduced as *das 109 PS starke Peugeot 206 Coupé Cabriolet*. The NP has neut-gender because of the neut-gender term *Cabriolet*. The next reference to this car, however, is the humorous characterization *der Klapp-Franzose* ‘the flap-frenchie-M’, with masc-gender despite the neut-gender antecedent *Cabriolet*. The text then goes on to describe the car as *das beliebteste Cabrio*, ‘the best-loved convertible-N’ with neut-gender, followed then by masc-gender anaphoric pronouns. The proximate antecedent is neut-gender *Cabrio*, and so these pronouns apparently derive their gender from the pragmatic projection associated with car reference, not from a lexical antecedent.

8. Damit wäre schon das Basismodell [des Cooper Cabrio] etwa 1000 Euro teurer als **das 109 PS starke Peugeot 206 Coupé Cabriolet**. Eine mutige Preisgestaltung also, denn immerhin war **der Klapp-Franzose** im vergangenen Jahr **das beliebteste Cabrio** auf dem deutschen Markt. Zwar bietet **er** keine Durchlademöglichkeit und im Fond dürfte **er** trotz 20 Zentimeter mehr Außenlänge kaum mehr Platz bieten, aber **er** verfügt über ein Dach aus Metall. <Online Fokus, 2/10/2004>.

Such examples mimic exactly the behavior of controller and target genders with human nouns such as *Mädchen*. Specific nouns such as *Auto* or *Limousine* control neut- or fem-gender, and this is followed up by neut- and fem-gender relative pronouns, and occasionally neut-gender anaphoric pronouns. But with increasing syntactic and linear distance, there is a consistent shift to masc-gender, which thus appears to be the “natural” gender for automobiles. Köpcke and Zubin (2004) analyze the structure of a specific construction in the lexicon for building car-referring NPs, a construction which freely and productively produces NPs such as “der Opel Omega Caravan 2.5 TD.”



Table 2. Masc-gender NPs referring to cars containing non-masc-gender field-external nouns

Car-referring NP	gender	Lexeme in its "home" context	gender
Der 906 (von Peugeot)	M	Die 906 (number)	F
Der A 160 (von Mercedes)	M	Das "A" (letter)	N
Der Bora (von VW)	M	Die Bora (a wind)	F
Der Polo (von VW)	M	Das Polo (a sport)	N
Der Eleganz (von Mercedes)	M	Die Eleganz (-anz → fem)	F
Der Carisma (von Mitsubishi)	M	Das Charisma	N

Even the presence of non-masc-gender nouns is unable to impose gender on the NP. Examples given in Table 2 include numbers, which otherwise take fem-gender, alphabet characters, which take neut-gender, a wind taking fem-gender, a sport taking neut-gender, and so on. In their 'home' contexts these lexemes control fem- and neut-gender for the NP; but in the car context they have no gender effect. The only exceptions to this are generic lexemes denoting car body type. NPs containing nouns such as *Limousine* in (5), *Cabrio* in (8), and *Auto* in (6) and (7) are able to impose fem- and neut-gender on the NPs in which they occur. Köpcke and Zubin (2004) differentiate in the mental lexicon between FIELD-INTERNAL nouns, which as controllers impose their gender on the NP, and FIELD-EXTERNAL nouns, which do not. When there is no field-internal noun to act as NP head, the NP inherits its gender from a PRAGMATIC PROJECTION associated with the lexical field as a whole.

We have just shown that a wide variety of field-external nouns, exemplified in Table 2, are unable to impose their gender on car-referring NPs, even when they appear to be the head of the NP. Another piece of evidence favoring this PRAGMATIC PROJECTION HYPOTHESIS is the effect of the non-masculine field-internal nouns *Cabrio(let)*-N, *Coupé*-N, and *Limousine*-F. When they occur in simple NPs, they consistently impose their gender on the NP ("das **Cabrio** Cobra", "das Audi **Coupé** 100 S", "die Mercedes **Limousine**"); but extended NPs show considerable variation, as shown in Table 3: such NPs have masc-gender thirty-two percent of the time.

Table 3. The gender of extended NPs containing the head noun *Cabrio*. Data from *die TAZ (Tageszeitung)* digital database. (Table from Köpcke and Zubin, 2004)

Neut-gender	Masc-gender
das 60 Jahre alte <b>Cabrio</b>	ein echter Ford Mustang <b>Cabrio</b>
das Monroe- <b>Cabrio</b>	einen Volkswagen- <b>Cabrio</b>
das weiße Buick-Elektra- <b>Cabrio</b>	der wirklich hübsche Saab 900 <b>Ca-</b>
ein Isabella Coupe <b>Cabrio</b>	<b>brío</b> Turbo
das <b>Cabrio</b> Cobra 427	in meinen neuen <b>Cabrio</b>
sein neues Mercedes- <b>Cabrio</b>	in den <b>Cabrio</b>
das rote Corvette- <b>Cabrio</b>	den Porsche <b>Cabrio</b>
das erste eigene <b>Cabrio</b>	ein riesiger rosafarbener Cadillac-
in sein schrottiges Käfer- <b>Cabrio</b>	<b>Cabrio</b>
das neue Kompakt- <b>Cabrio</b>	ein echter <b>Cabrio</b>
sein ölleckendes <b>Cabrio</b>	
das schwarze <b>Cabrio</b>	
ein schwarzes <b>Cabrio</b>	
ihr rotes <b>Cabrio</b>	
das ersehnte Mercedes- <b>Cabrio</b>	
das 10 Stundenkilometer schnelle	
elektrische Käfer- <b>Cabrio</b>	
ins rote Käfer- <b>Cabrio</b>	

Köpcke and Zubin (2004) use the psycholinguistic production model proposed in Bock (1995), Levelt et al (1999), and elsewhere to hypothesize that the pragmatic projection for cars initially assigns masc-gender to car-referring NPs at the concept level, and then during constituent assembly, if one of the body-type nouns is inserted, the lemma-specific gender of this noun competes with the default masc-gender initially provided by the pragmatic projection, and usually wins. The fact that there is competition between two sources for gender assignment in the production process, and the fact that lemma-specific gender is the more proximate source in the model, account for the variation observed in Table 3.

A third type of evidence supporting the pragmatic projection hypothesis is found in headless NPs. A referring expression can be built combining an article with modifiers, including PPs, without a head noun. When these refer to people, as in (9), they follow the natural gender principle; when the NP refers to a male it has masc-gender, and with a female referent it has fem-gender:

9. Der/die mit den roten Haaren hat eben gewunken.  
 ‘the guy/girl with red hair just waved the=one-M/the=one-F with the red hair’

When such headless NPs refer to cars, they have masc-gender, as in (10–12):

10. Smart. **Der mit dem Glasbuckel-Kofferraum.** <www.stern.de/sport-motor>  
 ‘Smart. The=one-M WITH the glass-dome trunk.’
11. Opel Vectra Caravan V6 Diesel. **Der mit dem üppigen Hintern.**  
 <www.blick.ch>  
 ‘Opel Vectra Caravan V6 Diesel. The=one-M with the fancy rear end.’
12. ... sieht von außen echt stark aus, besonders **der mit der langen Ladefläche.** <www.ciao.com/Mazda>  
 ‘looks really sharp from the outside, especially the=one-M with the long loading surface’

A fourth type of evidence supporting the pragmatic projection hypothesis is found in exophoric contexts. Number (7) is an example of this: the pronoun in “Da stand *er*” is plausibly exophoric to the specific car (in the picture) the woman is looking at, not anaphoric to the generic car she was previously thinking of. This phenomenon is frequent in car advertisements. Example (13) provides another instance (formatted to represent the layout of the ad):

13. Heute fällt **er** auf, weil **er** neu ist. Morgen, weil **er** schön ist  
 [Picture: woman looks at a car with binoculars]  
**Der neue Mazda 323.** Kein Vergleich. <Stern 36/1994, p. 120>

Readers presumably process the occurrences of the pronoun *er* in the headline of the ad with respect to the picture, without waiting to read the text below the picture.<sup>6</sup> Furthermore, exophoric masc-gender pronouns for cars frequently occur in casual conversation. In (14) Bill uses the deictic pronoun *den* to refer to the car Adam has just arrived in. There is no discourse antecedent.

14. [Andreas drives up in a brand new red convertible]  
 Bernd: “Wo hast Du **den** denn her?”

The natural gender problem examined here is not limited to people and cars. In (15), from a newspaper article, an airplane is first identified as a *Boeing-F*,<sup>7</sup> then more generically as a *jet-M*,<sup>8</sup> followed in the next sentence

by a fem-gender anaphoric pronoun; note that the proximate controller for the fem-gender pronoun is the masc-gender noun *jet*-M:<sup>9</sup>

15. Kaum hat **die Boeing** nach dem dritten harten Hopser auf der langen und breiten Asphaltpiste aufgesetzt ... **der zweistrahlige Jet** hatte im steifen Westwind ... wie eine Nußschale auf hoher See in den Böen “getanz”. Wie auf einer Achterbahn sticht **sie** über den letzten Ausläufern der Anden durch eine Wolkenlücke hinunter ... <Frankfurter Rundschau 11/6/1988. ZB 1>.

Examples (16–18) deal with ship names. In all three the neut-gender superordinate noun *Schiff* is the proximate controller, followed by fem-gender anaphoric pronouns:

16. **Die Berlin** ... ist ... ein Qualitätsprodukt deutscher Werften. *Das Schiff* wurde 1980 in Kiel gebaut ... Mit 9570 BRT ist **sie** wesentlich kleiner als **die Europa**, dafür aber auch intimer. <Süddeutsche Zeitung 253/1987: 52>.

17. **Die Black Prince** ist *ein Schiff* der Mittelklasse mit internationalem Publikum. ... Auf dem deutschen Markt wird **sie** von Touropa und Seetours angeboten. <Süddeutsche Zeitung 253/1987: 52>.

18. **Die Atlantis** (1905, Hamburg) diente zunächst 70 Jahre lang als *Feuerschiff* Elbe 2. Nachdem **sie**<sub>1</sub> durch die automatischen Leuchtbojen überflüssig geworden war, ließ eine deutsche Eignergruppe **das Schiff** zu **einem Windjammer** mit 16 bequemen Außenkabinen umbauen. Unter Malta-Flagge kreuzt **sie**<sub>2</sub> im Juli und August 1988 in dänischen und schwedischen Gewässern. <Süddeutsche Zeitung 253/1987: 52>.

In (16) and (17) the proximate antecedent for the fem-gender pronoun (*sie*) is the neut-gender *Schiff*, yet the pronoun corresponds in gender to *die Berlin*-F in (16) and to *die Black Prince*-F in (17). In (18) the first fem-gender pronoun (*sie*<sub>1</sub>) is in a syntactic position C-commanded by *das Schiff*-N, yet it corresponds in gender to *die Atlantis*-F in the previous sentence; and the second anaphoric pronoun (*sie*<sub>2</sub>) has fem-gender, although the local controller is either *Schiff*-N or *Windjammer*-M. The shifted anaphoric pronouns in these ship examples are one piece of evidence for fem-gender as the “natural” gender of ships, i.e. as the gender of the pragmatic projection associated with the ship-referring construction in the lexicon. We have provided evidence against the pronouns inheriting their gender from a discourse antecedent. It is also unlikely that they could inherit their gender from a superordinate noun in the lexical field, since in this case it would be the neut-gender *das Schiff*.

A second piece of evidence resides in the productive assignment of fem-gender to ship names, no matter what the origin of the lexeme, be it

city or country name, or a person's name. In (16–18) we find *die Berlin*, *die Europa*, and *die Atlantis*, derived from place names which otherwise have neut-gender, and *die Black Prince*, derived from a male person's name, which otherwise has masc-gender. *Berlin* and *Europa* in (16) are typical field-external lexemes. When they designate a ship, as in (16), they have fem-gender. When they designate a train, they have masc-gender *der Berlin*, *der Europa*. When they designate a hotel or a geopolitical entity they have neut-gender: *das Berlin*, *das Europa*. *City* and *continent* are the home lexical fields for these lexemes, but even here they are genderless: Köpcke and Zubin (2004) argue that names in general do not bear lemma-specific gender, but are assigned gender by a pragmatic projection. Consistent with this hypothesis is the fact that most geographic names occur in syntactic context without articles<sup>10</sup> (19a-b) unless the NP is modified (19c-d):

- |       |                                |                                 |
|-------|--------------------------------|---------------------------------|
| 19 a. | nach Berlin, nach Europa       | 'to Berlin, to Europe'          |
| b.    | aus Berlin, aus Europa         | 'from Berlin, from Europe'      |
| c.    | das Berlin unserer Vorstellung | 'the Berlin of our imagination' |
| d.    | das alte Europa                | 'old Europe'                    |

The final examples of natural gender for inanimate nouns deal with computer programs and company names. In (20) the classic AI psycho-interview program *Eliza* is consistently pronominalized with neut-gender, despite the gender of intervening controller nouns with other genders:

20. Eines der ersten funktionierenden und bekanntesten **Sprachsysteme** ist Joseph Weizenbaums **Programm** *Eliza*. *Eliza* spielt in einem Dialog mit dem Benutzer die Rolle eines *Psychotherapeuten*. **Es** bedient sich eines geschickt erdachten Antwortschemas, durch das **es** ein erstaunlich echt wirkendes Sprachverständnis vortäuscht. (p. 130) <“Grundlagen KI: Computer mit IQ” DOS 9/1991, p. 126–132>.

*Eliza*, a girl's name, would normally pronominalize with fem-gender, and the local controller *Psychotherapeut* would normally control masc-gender pronouns. Yet neut-gender is consistently used, as it is here, for computer programs despite non-neuter local controllers. This “natural” gender for programs is particularly striking, as the actions of such AI programs are often described in anthropomorphic terms,<sup>11</sup> as in (20) above and (21) below:

21. Mit **dem neuen Ways for Windows**. ... : +Ways stellt fest, daß **es** das Wort kennt und daß es richtig geschrieben wurde; ... +oder Ways stellt ganz einfach fest, daß **es** mit der Eingabe nichts anfangen kann. **Es** fragt Sie dann, ob

es dieses Wort lernen soll oder nicht, oder ob es eine Zuordnung ist. <High-screen Reklame, DOS9/91, p. 142>.

Company names provide a more complex example of the pragmatic shift to a default (or “natural”) gender. Typical generic terms for companies are *Verband-M*, *Firma-F*, *AG-F* (= *Aktiengesellschaft*), *Unternehmen-N*, and *Konzern-N*. When company-name NPs contain or stand in apposition with one of these generic terms they typically inherit the gender of the generic term: e.g. *das Softwareunternehmen SAP* in (22). But frequently when the company name is abbreviated (*die SAP*) or referred to with an anaphoric pronoun (*ihr, sie*), as in (22), there is a pragmatic shift to fem-gender:<sup>12</sup>

22. ... gründeten sie ... **das Softwareunternehmen SAP**. ... Als SAP 1992 **ihre** R/3 Software auslieferte, war der Markt überreif. ... Für **ihr** erstes Softwareprodukt, R/2, das in Großrechenzentren eingesetzt wurde, konnte SAP die ... Aufgaben noch mit eigenem Personal besorgen. **Die SAP** ist nicht nur eine Firma, **sie** ist ein Beschäftigungsprogramm ... <Manager 11/1995, p. 45>

‘They founded the software company **SAP-N**. When SAP came out with **its-F** R/3 software in 1992, the market was overripe. ... For **its-F** first software product R/2, which was supplied to large computing centers, SAP was still able to cover maintenance with its own personnel. **SAP-F** is not just a company, **it-F** is an all-purpose program.’

**The pragmatic projection hypothesis.** Such data suggests that “natural” reference controlled by extra-linguistic reality is not the correct generalization.<sup>13</sup> The natural gender problem, we hypothesize, comes from the establishment and expansion of productive semantic fields in the lexicon itself. As a field increases in productivity, it takes on construction-like status, capable not only of providing lexical items for insertion in NPs, but also of projecting grammatical properties such as gender onto the NP. This projection is part of the construction and hence a part of the lexicon, but at the same time it is pragmatic, since it is triggered by conceptual properties of the intended referent of the NP.

Elsewhere we have shown that productive semantic fields are both numerous and diverse in their organizing principles (Köpcke and Zubin, 1996; Zubin and Köpcke, 1984, 1986a, 1986b). A typical example is found in the folk-taxonomic classification of foodstuffs. Fruits are productively classified as fem-gender, including newer borrowings such as *Kaki*, *Kumquat*, *Langsat*, *Litchi*, *Longan*, *Mango*, and *Pomelo*, all consistently fem-gender in our discourse data, despite the masc-gender of some core mem-

bers of the field, *Apfel* and *Pfirsich*. Vegetables are classified depending on the plant part from which they are derived. Stem and leaf-vegetables are masc-gender, while root and fruit-vegetables are fem-gender. This classification is currently productive: *Brokkoli*, *Zucchini* and *Melanzani* ('Eggplant') were all recently borrowed as plurals from Italian. In colloquial spoken usage, and to a great extent in printed media such as cookbooks, *Brokkoli*, a stem vegetable, is now reanalyzed as masc-gender singular, *der Brokkoli*, while *Zucchini* and *Melanzani*, fruit-vegetables, are now reanalyzed as fem-gender singular, *die Zucchini*, *die Melanzani*.

Drinks show a different type of organization, a radial structure based on core exemplar basic level terms such as *der Wein*, *der Schnaps*, *das Bier*, *die Milch*, *die Brause*, and *das Wasser*. Types of wine and liquor are consistently masc-gender, types of beer are neut-gender, and types of soda show gender variation between fem- and neut-gender, in line with the core nouns *Brause* and *Wasser*.<sup>14</sup>

The introduction of semantic fields provides an opportunity to speculate about the extent of pragmatic projections in the lexicon. Wine and beer come with such a variety of designations (referred to by region, type, grape variety, ingredients, year of production, etc.) that a pragmatic projection is needed to provide default gender to the limitless range of NPs that can be produced. On the other hand, the fact that the semantic field for fruit is large and constantly expanding does not mean that the average speaker automatically produces new fruit-referring NPs. Rather, the average speaker gradually acquires new terms for fruit and assimilates them to her lexical field for fruit in accordance with the dominant gender of the field, and in accordance with the gender she hears when first encountering a new fruit term.<sup>15</sup> In other words, the consistent gender of the fruit field is the result of lexical acquisition processes in the individual, and diachronic processes in the language.

Even the so-called "natural" assignment of gender to humans can be shown to be culture-specific and thus conceptual in a way closely linked to the lexicon, rather than being a simple mapping of biological sex onto morphological form. Lexical specializations of the gay community are a good example of this. Fem-gender nouns are used to identify gay men in drag, or otherwise playing "female" roles in the subculture: nouns such as *Schwuchtel*, *Trine*, *Transe*, *Klunte*, *Tunte*, and *Queen*. Fem-gender is also used exophorically, and to create headless NPs. Number (23), from a cartoon book by Ralf König (1988), illustrates these effects. The context of (23) is a group of gay men waking up the morning after a wild drag party.

23. A: Stöhn ... wer seid ihr überhaupt?

B: Also ... ich bin Fränzchen ... ich war gestern **die mit den Kork-Latschen und dem schwarzen schulter-freien ...**

A: Stöhn ...

B: Und das da war **die Trümmertunte** mit dem schwarzen Basthut mit den Blütenchen drauf. p. 59.

A: Groan... who are you-all, anyway?

B: Well...I'm little Franz...yesterday I was the=one-F with the cork flippers and the black strapless ...

A: groan...

B: And that=one there was the fairy hag-F with the black raffia hat with the little flowers on it.

B describes his friend with one of the typical fem-gender nouns (*Trümmertunte*) used in the gay community for drag role play and refers to himself with a fem-gender headless NP “die mit den Kork-Latschen und dem schwarzen schulter-freien ...” describing his dress the night before. Especially the latter usage points to fem-gender as the “natural” gender for men in drag. The lexicon shared by the gay community has a cluster of fem-gender nouns for female role-play, and associated with this cluster a pragmatic projection assigning fem-gender to all NPs with such reference, as well as to exophoric pronouns. The fact that fem-gender is used for men with specific socio-cultural connotations implicates that the general use of masc-gender for men also constitutes a conceptual classification, and is not an objective mapping from sex to linguistic form.

We are now ready to more fully hypothesize where the natural gender problem comes from. In general, lexical gender is based on abstract semantic and morphological controllers in the lexicon, and comes to be associated with specific lexical items by inheritance. This is borne out in the lexical domains for which we have just documented the natural gender effect for anaphoric and exophoric pronouns. Make and model names and numbers for automobiles, an extensive and open domain of referring expressions, all are consistently and productively assigned masc-gender; for example, *der Vectra Sportive* from Opel; *der Primera* from Nissan; *der MX-3* from Mazda; *der 205* from Peugeot; and *der 316i* from BMW. BMW makes both cars and motorcycles. If it's a car, it's *der BMW*; if it's a cycle it's *die BMW*. The same applies to the productive creation of referring expressions for makes and models of airplanes, names of computer programs, and names of companies. Ship names are consistently fem-gender, despite the fact that some of them are based on neut-gender geographic names,



yielding ship names such as *die Berlin* and *die Bremen*, and others are based on names of male persons, such as *die Maxim Gorki* and *die Schostakovich*.

In extreme cases gender may be controlled on the one hand by very general pragmatic principles linked to conceptual attributes of referents, as is the case with natural gender based on sex. At the other extreme a controller may apply to only one lexical item as is the case with some body part terms such as *die Hand*. But these are unusual cases at the extremes. For most of the lexicon, gender assignment is controlled by a generalization, what we are calling an abstract controller or PRAGMATIC PROJECTION. The natural gender effect arises when the following conditions converge: first, two controllers arise at different levels of generalization in the lexicon, one abstract and global, the other much more local; second, these two controllers apply to the same NP; and third, they assign different genders.

To illustrate this point, we return to the classic problem of gender assignment to humans. Remember that the natural gender principle says that gender is controlled by the sex of the referent,<sup>16</sup> while divergent grammatical gender is idiosyncratically controlled by individual lexical items. We have already supported the argument that natural gender is conceptual, i.e. lexicon-internal. It is now time to show that the often cited divergent grammatical gender of nouns such as *das Mädchen* and *das Weib* is also conceptually driven, and not idiosyncratic. In the lexical field of nouns referring to women a semantic cluster has been evolving at least since the 16th century in which neut-gender has been increasingly associated with a culturally determined cluster of social statuses especially for females, but not for males, which we call CULTURAL NORM-DIVERGENCE.<sup>17</sup> The neut-gender diminutive forms *das Mädchen*<sup>18</sup>, and South-German *Müdel*, gradually replace the fem-gender form *Maget* as the generic basic level term<sup>19</sup> for girls, specifically denoting non-mature and or premarital status. Note that historical changes on the male side are not at all parallel. *Der Knabe* was gradually replaced by another masc-gender term *der Junge* as the basic level expression. Neut-gender diminutive forms such as *Jünglein* continue to have diminutive affect, and have not become basic level referring expressions for boys. The same norm-divergence principle applies to some sex-neutral terms for children, such as the generic *das Kind*, which has always been neut-gender, the recently borrowed *das Baby* and some pejorative terms like *das Ding*, *das Gör*, *das Balg*, and *das Wurm*, all of which refer at least preferentially to girls.<sup>20</sup> We see here a pattern of neut-

gender selection for non-mature humans, preferentially for girls, and not at all for specifically male children.

A related type of human norm-divergent reference applies to women viewed as undesirable, old, unattractive, unpleasant, from a stereotypic male perspective. Neut-gender terms include *das Weib*, which has always been neut-gender, but has evolved semantically from a generic term for female adults up to about the 15th century, when it began to be restricted semantically, and was replaced by the fem-gender noun *Frau*. The neut-gender *Weib* has become a pejorative term for an old unpleasant or unattractive woman, especially in northern Germany. Other neut-gender terms with this affective loading include *das Aas*, *das Luder*,<sup>21</sup> *das Reff*, *das Ranunkel*, and *das Schrapnell*. The stereotype itself is traditional, and therefore not *consciously* evoked when these neut-gender terms are used.

Moving in a different direction within the domain of norm-divergent stereotypes leads to a cluster of terms referring to primarily young adult females as visual objects, again especially from a stereotypic male perspective. In (24) taken from the newsmagazine *Stern* we get the juxtaposition of a high jumper and a rock star referred to with fem-gender terms, and a photo model identified with the neut-gender *Modell*. Note that the generic nominal ‘high jumper’ has been inflected with the suffix *-in* to make it fem-gender, and that *Rock-Röhre* is a metaphor linked to a fem-gender noun.<sup>22</sup> Yet the neut-gender *Modell* is perfectly comfortable in this context.

24. Für den Stern stiegen *Hochspringerin* Heike Henkel, *die Düsseldorfer Rock-Röhre* Doro Pesch und **das italienische Fotomodell** Sabina Colle in drei ausgesuchte Cabrios. <*Stern* 36/1994, p. 71>.

Example (25) is taken from the women’s magazine *Brigitte* describing the former French model Inès de la Fressange. In it she is described as a *Top-Model* (25c), a *Fotomodell* (25g), and a *Mannequin* (25ag), all neut-gender terms. On the other hand, anaphoric pronouns (25chj) are consistently fem-gender. At one crucial point the relative pronoun *das* (25g) bound by the noun *Mannequin*, and the reflexive possessive pronoun *sein* (25g) bound by this relative pronoun, are both neut-gender, consistent with Corbett’s (1991) controller hierarchy hypothesis. Note that the writer slips back into fem-gender for the final linearly distant, but still syntactically controlled possessive pronoun *ihr* (25h).

- 25 a. **Das ehemalige Chanel-Mannequin** Inès de la Fressange hat jetzt eine Boutique in Paris
- b. eröffnet ... Gerade für die Generation der 15- bis 40-Jährigen Französischen ist **das**
- c. **ehemalige Top-Model** eine Art Referenz- und Identifikationsfigur, weil **sie** selbständig,
- d. aktiv, erfolgreich, humorvoll, schlagfertig, elegant und glücklich verheiratet ist. Natürlich
- e. kennt man **sie** als Laufsteg-Repräsentantin des Modehauses Chanel. Aber das allein hätte
- f. für **ihren** Ruhm nicht genügt: Inès de la Fressange war nicht einfach **ein austauschbares**
- g. **Fotomodell**, sondern eigentlich **das erste Mannequin** der 80er Jahre, **das** mit **seiner**
- h. starken Persönlichkeit Karriere machte – bis hin zum Bruch mit **ihrem** Gönner Karl
- i. Lagerfeld. Kein Wunder also, daß die Kundinnen die erste Boutique “Inès de la
- j. Fressange” geradezu belagern. “Inès”, wie **sie** allgemein genannt wird, hat sich in der
- k. piekfeinen Avenue Montaigne mitten im “Triangle d’Or” niedergelassen. <“Der eigene
- l. Stil als Markenzeichen.” <Brigitte 4/1992, p. 46>.

A sample of terms for women in this “display” role, some of them quite recently borrowed, are listed in (26a). This productive field includes:

- 26 a. das Blondchen, das Bunny, das Centerfold, das Lustobjekt, das Mannequin, das Model, das Modell, das Pinup, das Playmate, das Starlett;
- b. das Supergirlie, das Endteenie, das Video-chick.

In (26b) are listed recent appearances in the news media by terms like *das Supergirlie*, *das Endteenie*, and *das Video-chick*, all consistently with neut-gender. In this domain there are a number of neut-gender compounds with the English borrowing *girl* denoting a display role (Table 4, column A):

Table 4. Complete sample of compounds with *-girl-N* in the DWDS database (Terms were checked in Google.de for generality)

A. Stereotype: female regarded as visual object		B: New stereotype: female regarded as non-conformist	
Bunnygirl	Playgirl	Collegiegirl	Rollergirl
Chinagirl	Pretty-Girl	Cool Girl	Skriptgirl

Chorgirl	Revuegirl	Cowgirl	Soldier Girl
Covergirl	Showgirl	Cybergirl	Spice Girl
Fotogirl	Sweater Girl	Discogirl	Stuntgirl
Glamourgirl	Titelgirl	Golden Girl	Supergirl
Liftgirl	Videogirl	Karriere Girl	Tank Girl
Nummerngirl	Zeigfeldgirl	Riot Girl	Tennisgirl
Partygirl			

On the other hand, in an act of cultural one-upmanship, the current female youth culture has appropriated neut-gender norm-divergent terms for females to signify their own positively valued non-conformity with conservative sex-role expectations of the matrix culture, in particular, the rejection of stereotypic expectations of family dependence, family responsibility, and sexual innocence. Table 4, column B gives compounds with *girl-N* that conform to this new development. Number (27) taken from the youth magazine *Jetzt* presents the comic-book character “tank girl” described with both *das Girl* and *das Mädchen*. Note that despite these neut-gender nominals the fem-gender anaphoric pronoun *sie* is consistently used.

27. Sex und Saufen statt politischer Korrektheit: **Das kahlköpfige Tank Girl** ist eine Comic-Heldin ganz auf der Höhe ihrer Zeit. ... Tank Girl ist ein **Mädchen** aus dem australischen Busch. **Sie** ist 21, kahlköpfig, trägt schwere Stiefel, einen breiten Gürtel, und **sie** lebt in einem Panzer mit Surfboard obendrauf. Außerdem raucht und flucht und schießt **sie** – und sieht dabei bezaubernd aus. Eine art weiblicher Beavis & Butthead, nur cooler. <Jetzt. Das Jugendmagazin der Süddeutschen Zeitung 34, 1994, p. 23>

‘Sex and boozing instead of political correctness. **The bald-headed tank girl-N** is a comic heroine at the peak of her time. Tank girl is a **girl-N** (Mädchen) from the Australian bush. **She-F** is 21, bald-headed, wears heavy boots, a wide belt, and **she-F** lives in a tank with surfboard on the top. In addition **she-F** smokes and swears and shoots – and at the same time looks bewitching. A kind of female Beavis & Butthead, but cooler.’

In the same vein, the feminist community has recently appropriated *Weib-N* to evoke a new, and therefore quite conscious stereotype of the “non-conforming feminist”, just as teenage girls have appropriated *Mädchen-N* and *Girl-N* to evoke a new stereotype of freedom, lack of inhibition, and independence from family control and responsibility. And most recently *Superweib-N* has emerged as a modern term for the woman who does and has everything: outspoken, male partner, children, career, beauty, etc.<sup>23</sup> Example (28), taken from the mainstream women’s magazine *Brigitte*,

introduces a questionnaire that allows readers to determine the extent to which they achieve the “Superweib” ideal:<sup>24</sup>

28. Sind Sie ein Superweib? Unter den Druck, auf sämtlichen Gebieten möglichst perfekt zu sein, stellen wir uns oft genug. Testen Sie, wie gut Ihnen das gelingt ... <[www.brigitte.de](http://www.brigitte.de)>.

Note that while girls and women have appropriated these neut-gender terms for a new stereotype and reversed their affect, they still denote divergence from the traditional cultural norms for girls and women. The growth of these female-perspective appropriations in modern German society means that neut-gender nouns for women do not mark a male perspective in particular, and confirm our hypothesis that neut-gender nouns are used to signal norm-divergent status of the female referent. Whether this status is culturally downgraded or upgraded depends on the origin of perspective. This issue is elaborated in the discussion of metonymic models in Köpcke and Zubin (2003).

Having shown that neut-gender is dominant in three related clusters of female norm-divergence, we hasten to add that other culturally defined clusters of female terms never receive neut-gender. In particular, nouns denoting females in professional roles, such as *Hebamme*, *Stewardess*, *Chefin*, *Chirurgin*, *Kellnerin* are fem-gender, unless the generic masc-gender is used; nouns identifying females as kin relations, such as *Mutter*, *Tochter*, *Tante*, *Cousine*, are exclusively fem-gender, even for reference to girls and babies, and finally, nouns describing females in their sexual and/or marital function, such as *Braut*, *Ehefrau*, *Geliebte*, *Hure*, *Dirne*, are fem-gender with high consistency, showing that neut-gender norm-divergence does not apply to females in general, but rather to specific cultural stereotypes.<sup>25</sup>

We believe that lexical and discourse data such as presented here amply support the hypothesis of abstract semantic and pragmatic controllers in the lexicon for the neut-gender of norm-divergent female-referring nouns. These neut-gender clusters and their current productivity are just too extensive to be accounted for by an ever-lengthening list of lexical coincidences (cf. fn. 18). It seems apparent that for human females there are two abstract controllers in the lexicon, a very general fem-gender controller linked to perceived sex,<sup>26</sup> and a more specific neut-gender controller (or cluster of them) linked to culture-based stereotypes collectively designated the ‘norm-divergence principle.’ By this same argument, the earlier data on cars, ships, computer programs and companies suggest that the operation of

these pragmatic projections may be quite general. We hypothesize a hierarchy of abstract gender controllers in a lexicon at the lemma-level highly organized around semantic and morphological principles.

As speakers select gender for NP referring expressions in discourse production they project gender onto the NP from a high-level abstract controller called a pragmatic projection. If the projection maps gender onto a headless NP<sup>27</sup> or onto an exophoric pronoun, there is no competition, and the default gender determines the morphology of the NP. But if there is a gender-bearing lexical head in the NP, the lexical gender of this noun competes with the default gender of the projection, and usually wins. On the other hand if the nouns in the NP are field-external, they are unable to compete with the pragmatic projection for the gender of the NP. The crucial cases supporting the pragmatic projection hypothesis include gender assignment in exophora, in headless NPs, and in cases based on lexical fields dominated by a superordinate noun which *differs* in gender from the pragmatic projection. Such is the case with ships, cars, and companies, discussed in this paper, and a number of other fields as well (see Köpcke and Zubin, 2004 for additional examples and a detailed discussion of car-referring NPs). In these cases the appearance of default or “natural” gender cannot be traced back to a superordinate noun, and must be attributed to a pragmatic projection.

In more complex cases, such as the female-referent neut-gender clusters, distal pronominal targets may link to the abstract controller for their fem-gender, despite the presence of a neut-gender head noun in the antecedent NP (c.f. example 25), in accordance with Corbett’s (1991) controller hierarchy hypothesis. This suggests that in a psycholinguistic production model, NPs are initially assigned gender by an (abstract) pragmatic projection, and this gender *may be* overridden if a concrete controller nominal is sufficiently proximate. Köpcke and Zubin (2004) focus on these psycholinguistic processes.

In many cases the control of gender is indeed lexical, but our hypothesis points to a much more complex theory than the one suggested by the simple dichotomy between “natural” and “grammatical” gender presupposing that gender is assigned either by a simple pragmatic principle based on biological sex, or by a lexically-coded property of the noun itself, in which case the assignment is arbitrary. In our model there are several intermediate cases—one in which gender assignment is associated with a cluster of nouns with divergent gender within a large field, one in which it is motivated by the common gender of an entire lexical field, and one in which it

comes from a pragmatic projection linked to the referential intent of the speaker, which can compete with the lexical gender of specific nouns. Purely idiosyncratic gender assignment is the exception, rather than the rule.

## Notes

1. M, F and N will be used as abbreviations for the masculine, feminine, and neuter lexical gender of nouns (controllers), and for the morpho-syntactic gender marking of agreement targets.
2. We should hasten to add that German and other gender languages do have a core of high-frequency basic level terms which do conform to the assumption that their gender is lexically coded. Since the nouns that Miceli et al. use in their experiments are drawn from this domain, our critique does not apply to the validity of their experiments.
3. Neut-gender nouns referring to females are not sporadic in the lexicon. There is an historical cluster of them, some now archaic, and a currently growing contemporary cluster, including *material girl* in (4) and *Fotogirl* in (3), c.f. (26) for examples and further discussion.
4. Köpcke and Zubin (2004) provide an in-depth analysis based on an extensive database of automobile referring expressions.
5. Furthermore, *ESR* is an acronym for “elektronische Schlupfregelung,” a fem-gender NP. Acronyms typically inherit the gender of their expanded full forms; the masc-gender of the NP *der ESR* itself is strong evidence for the reversion hypothesis. *ESR* ought to control fem-gender.
6. The visual arrangement of pictures and text in advertisements is crucial to our argument. We assume that ad designers are expert at arranging information sources in a way that is meaningful and pleasing to the reader. In this case it would defeat their purpose to have pronouns in large-type text at the top of the page, if the reader in fact had to delay interpretation until reading the nouns in small type at the bottom of the page.
7. *Boeing* is a prime example of a field-external noun. In reference to a car it would be *der Boeing*, (supposing that there was one), in reference to an airplane or to the company it would be *die Boeing*, and in reference to a hotel or restaurant it would be *das Boeing*. The lexeme itself is not at home in any particular lexical field, and correspondingly has no stable lexical gender to impose on a NP.
8. *Jet* is a generic field-internal noun, and thus able to impose its gender on the NP.
9. In Köpcke and Zubin (2004) we support the hypothesis that a small set of generic nouns for carbody types are lexically specified for gender, and lead to

divergent gender for car-referring NPs, see the discussion of Table 2. Nouns such as *Jet* resulting in divergent gender for airplane-referring NPs are an instance of the same phenomenon.

10. There seem to be a small number of country names that do have lemma-specific gender, making them highly unusual for proper names. Not only do they take articles in all syntactic contexts, unlike the neut-gender country names, but they occur with different prepositions:

die Schweiz, die Ukraine	,Switzerland, the Ukraine'
der Irak, der Kongo	,Irak, the Congo'
in die Schweiz, in die Ukraine	,to Switzerland, to the Ukraine'
in den Irak, in den Kongo	,to Irak, to the Congo'

One can speculate that the gender marker these names have in their lexical representation causes them to select for articles when they are inserted in an NP, whereas the great mass of country names which are not lexically specified for gender therefore do not select for articles; but this speculation is currently beyond our ability to provide empirical support.

11. One might have expected anthropomorphic descriptions to lead to the use of masc-gender as the “natural” gender for computer programs.
12. “SAP” is an acronym for *Systeme, Anwendungen, Produkte* ‘systems, applications, products’, if anything a plural NP. Acronyms typically follow the gender/number of their expanded forms (c.f. fn. 5), yet in (22) SAP is clearly treated as a singular NP.
13. Attempted explanations of the natural gender problem in the literature hypothesize a direct link between gender selection for pronouns and the sex of the referent in the world.
14. Recent data show a strong trend toward fem-gender for carbonated drinks. The variation with neut-gender is gradually being eliminated, except for (carbonated) mineral waters such as *das Selters* and *das Apolonaris*.
15. We speculate that the average speaker hears fem-gender for new fruit terms because the source is likely to be a food expert bringing these terms into the German linguistic community; such experts, we speculate, do have gender-determining pragmatic projections for their domain of expertise. The author producing a book on exotic fruit, for example, would automatically assign fem-gender to the wide range of fruit terms she incorporates into the book.
16. Or, as we have pointed out in the discussion of the “drag” lexicon, controlled by a very general socio-cultural conceptualization.
17. Köpcke and Zubin (2003) is a discussion of this phenomenon.
18. A frequently encountered counterargument is that *Mädchen* and *Mädel* are neut-gender because they are morphologically-derived diminutive forms, and that their gender has nothing to do with conceptual structure. But such an alternative hypothesis would have to deal with the conspiracy of old nouns such as *Frauenzimmer* and *Weibsbild*, derived from disparate sources and all neut-



gender, as well as the growing conspiracy of new neut-gender nouns such as *Playgirl* (why not neut-gender *Playboy?*), *Groupie* (why not neut-gender *Roadie?*), *Model* (why not neut-gender *Dressmann?*) and many others (some listed in (26)). The null hypothesis could attempt to salvage itself by insisting that these newly borrowed nouns are all entering the language with neut-gender by analogy with *Mädchen*, which is morphologically neut-gender. But then we have just come full circle to a slightly different version of the conceptual structure hypothesis, with the added feature that *Mädchen* is the historical source of the cluster. An examination of entries in Grimm and Grimm (1984) suggests that 15–16<sup>th</sup> century changes in the meaning of *das Weib* are in fact the origin of the cluster, and that the appropriation of *das Mädchen* as the basic level term for girl occurred well after the cluster had begun to develop.

19. “Basic level term” is a psychological concept in the literature on folk taxonomy and categorization theory. In a hierarchy of terms that can be used to refer to a particular referent-type, the basic level is the *default* form of reference, the one used in contexts in which no special attribute or relation is predicated, and in consequence the most frequently used. In English *girl* is the basic level term for non-mature females, and is otherwise neutral; other terms such as *princess*, *tramp*, *teenybopper*, etc. predicate particular additional qualities. In German *Mädchen* is the basic level term corresponding to English *girl*.
20. Note that the latter two, *Balg* and *Wurm*, are neut-gender variants of masc-gender nouns that have non-human reference: *der Balg* ‘animal skin’ and *der Wurm* ‘worm’.
21. *Luder* has recently come back in an older meaning: a woman who uses sexuality to attract men.
22. Of particular interest is the fact that *Rockröhre*, as a metaphor, can in principle be applied to both men and women. But a Google-sample from the internet shows that it is almost entirely limited to female rock stars.
23. The earliest entry for *Superweib-N* in the database of the *Digitales Wörterbuch der deutschen Sprache* is 1995.
24. We take it to be significant that *Brigitte* and other mainline news Media have chosen *Superweib-N*, and not *Superfrau-F*, to evoke this concept.
25. Köpcke and Zubin (2003) discuss these stereotypes and the data that support them, and point out the metonymic structuring of these referential phenomena.
26. Or more precisely, socio-culturally conceptualized sex.
27. Headless, because (a) no noun is syntactically available to serve as head of the NP, or (b) the available noun is *field-external*, see Köpcke and Zubin (2004).

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