Abstract The present paper is an attempt to uncover the regularities of gender assignment in German. After introductory remarks in which the origin and manifestation of gender in various Indo-European languages are remarked on, the specific nature of German gender is discussed particularly with respect to putative gender predictability. The distinction between stem and stem extension is drawn and a detailed characterization of both in German is offered. In a following section the area of loan-words is examined from the point of view of gender and the phonological criteria used in assigning gender to loan-words are enumerated with a closing discussion of seemingly arbitrary gender in this area of the German lexicon.

1 Introduction

Among the various distinctions which the grammar of a language may evince is that of gender. It represents an axis along which a word class, that of nouns, can be divided into different types. The category of grammatical gender is one which is, however, largely semantically redundant. In this respect it can be contrasted with other grammatical categories which are semantically relevant. By this is meant that they have some extra-linguistic significance. For example the distinctions in tense made among verbs by and large reflect different chronological stages outside of language, the distinctions of aspect in, say, Russian reflect the different attitudes or standpoints of speakers describing actions, etc. The distinctions with grammatical gender in a language have no such extra-linguistic correlates (unless they overlap with natural gender). They represent a purely formal distinction in the language and are as such semantically irrelevant. In some instances, however, the category of gender may be used retroactively to make a formal distinction between semantically separate words (see examples in 1.2 below). One should be careful here not to misinterpret the role of gender. It is not true to say of a language which occasionally uses formal distinctions of gender to reflect a semantic distinction that gender has the function of making semantic distinctions.

The question which arises when reflecting on grammatical gender is how it arose (Greenberg, 1978). This question will be dealt with presently (see 2 below). Before doing so it is appropriate to stress the afunctional nature of grammatical gender, especially when examining a language such as Modern German which has this category and where gender assignment is only partly predictable. Here it is necessary to distinguish between categories which are formally redundant in a language and those which are semantically redundant. An example of the formal redundance is the type of double marking found frequently in the verbal system of a language for instance. Thus in English the -s inflection of the third person singular is formally redundant as the pronoun
accompanying the verb always delimits it sufficiently from the remaining forms of the verb which vary in person and number. Looking at Swedish, for example, one sees that the third person singular of the verb is not marked but that person and number are sufficiently distinguished pronominally. Similar instances could be cited for German where the complex morphology of the verb provides many examples of formal redundancy.

It is a valid point (Trudgill, forthcoming) that languages develop features which have no little or no function. To understand how this occurs it is important to grasp that languages are not designed, they evolve. Were they human artefacts then a conscious decision might be made to reject grammatical gender on the grounds of afunctionality. But in language evolution agreement between noun and determiner may simply arise and — importantly — because children can acquire systems with grammatical gender effortlessly, this category will be perpetuated, especially in those languages which from their type support complex morphology, e.g. German or Russian. The question as to why languages allow gender to arise is thus out of place; the point is that speakers, in morphology-based languages, do not undertake any steps to remove incipient grammatical gender from their language, should this arise. Note that complex morphology is a necessary but not sufficient condition for grammatical gender, witness Finnish with an extensive agglutinating morphology and no grammatical gender.

Here one should stress furthermore that languages cannot have just a little bit of grammatical gender: if agreement arises between different determiners and the nouns they occupy then this principle will become absolute in the language or it is dropped by later generations, particularly if phonetic indistinctiveness of determiners does not lend support to the system. For instance, it is scarcely conceivable that a language would have grammatical gender for, say, 30% or 70% of its lexicon only. Furthermore, when a language loses grammatical gender, as English did after the Old English period, then it loses it entirely.

1.1 Redundancy of gender

Grammatical gender is largely semantically redundant for the reasons outlined above. It is simply a formal property of present-day German. This assertion is obvious and yet it would seem necessary to stress it as many traditional grammarians of German, such as Erben (1980: 132f.), and even more so Brinkmann (1954: 411), tend to interpret gender functionally. For example Brinkmann, when looking at verbal derivations, states the following.

“We können durch Genus und Suffix bei Verbalbegriffen vier Möglichkeiten unterscheiden: 1) das Masculinum begrenzt einen Vorgang auf einen bestimmten Fall; 2) das Femininum zerlegt ein Geschehen in wiederholte Aktionen; 3) das Neutrum kann als substantivierte Infinitiv den Vorgang als unbestimmten Verlauf geben, der keine räumlichen und zeitlichen Grenzen hat; 4) das Neutrum faßt verschiedene Aktionen zu einem Gesamtvorgang zusammen. Beispiele sind: Lauf - Lauferei - Laufen - Gelaufe,...” (Brinkmann 1954: 411f.).

By means of gender and suffixes we can distinguish four options with verbal structures: 1) masculine gender restricts an action to an individual case; 2) feminine gender breaks an event down into repeated actions; 3) neuter gender, deriving from an infinitive used as a noun, indicates an indefinite course without any spatial or temporal limits; 4) the second type of neuter unites different actions into a whole. Examples are: Lauf - Lauferei - Laufen - Gelaufe,... (translation mine, RH)
As a description of the aspectual connotations associated with each type of verbal derivation this is entirely correct. However, the mistake which Brinkmann makes is to imagine that the particular connotation of a derivation is a property of the gender it takes. Rather the lexical items just mentioned have these connotations in themselves and in addition show a large degree of regularity in their grammatical gender due to their form.

To be precise: gender assignment in the above cases is a matter of phonology: deverbal monosyllables are nearly always masculine (more on this below). In fact the few exceptions to this rule show clearly that gender and connotation are not causally connected: die Hast ‘hurry, haste’ and das Lob ‘praise’ are both deverbal monosyllables and despite the fact that neither is masculine they are parallel to formations like der Stoß ‘thrust’, der Halt ‘stop; moral sustenance’, der Spott ‘disdain’, etc. and carry the same connotations. With regard to the remaining types of verbal derivation one can also postulate gender assignment as being phonological: -ei is an ending which always requires feminine gender, irrespective of meaning, cf. die Auskunftsei ‘information bureau’, the change from verb to noun by conversion (no formal change) always results in a neuter noun, cf. das Singen ‘singing’, etc. Verbal derivations formed by adding the prefix Ge- and deleting the -n of the infinitive are always neuter, cf. das Gedränge ‘rush, push’.

A further case of gender difference cited by Erben and which at first sight appears to be a case of semantic distinction by means of gender can be seen with the following forms: der Fluß ‘river’, das Floß ‘raft’; der Schluß ‘conclusion’, das Schloß ‘lock’. Erben maintains here “Zuweilen scheidet es (das Genus, RH) auch den Tätigkeits- vom Gegenstandsnamen” (1980: 132). But one can equally maintain that the semantic distinction is achieved here by the different vowel in the sets of related forms (/u/ versus /æ/ or /oː/). The validity of distinguishing between activity and object in the manner Erben suggests is doubtful anyway as there are many instances where the object associated with an action is masculine, cf. sprießen ‘to sprout’ and der Sproß ‘sprout, sprig’. When one considers further examples the matter would definitely appear to be phonological, cf. sprechen ‘to speak’ with der Spruch ‘saying’ and die Sprache ‘language’ where the monosyllable is masculine and the derivation with a final -e is feminine. The distinction in gender between der Fluß and das Floß would then seem to be a secondary development due to the possibility of consonant-final monosyllables being either masculine or neuter.

1.2 Gender and semantic distinctions

The sole area where grammatical gender does have a semantic function is where the only formal distinction between words of different meaning is to be found in the article they take. There is a limited set of such word pairs where two articles can occur with the same form to yield different meanings, e.g. der Leiter ‘leader, manager’, die Leiter ‘ladder’; der Band ‘volume of book’, das Band ‘twine; close relationship’; der Stift ‘pencil’, das Stift ‘monastery, institutional home’. A three-way gender distinction among native words is non-existent (though see 5.4 below for instances among English loans). Furthermore there is no connection between a particular gender and a particular meaning (see remarks in 2.2.1 below). This fact is evidence of the retrospective functionalisation of gender in the cases just cited. Consider additionally the following sets of forms: der Gehalt ‘contents’, das Gehalt ‘salary’; der Verdienst ‘salary’, das Verdienst ‘merit’. Here the meaning ‘salary’ is achieved in one case by the use of the neuter article and in the other by that of the masculine article.
Of course different articles can also be used with identical forms without a semantic distinction being involved. This applies to a small set of native words in German such as *der/das Kehricht* ‘sweepings’. It also applies to native words when viewed diachronically. But it is in the sphere of loan-words that ambiguous gender assignment is most common.

A related situation is where a word has an alternative phonological form which also takes a different article. An instance of this is the case with *der Randal* ~ *die Randale* both meaning ‘riot, row’ (Müller-Thurau, 1983:150). Contrast of this kind is still to be seen in *die Ecke* : *das Eck* ‘corner’, the latter form surviving in place names such as *Deutsches Eck* (confluence of the Rhine and the Mosel). For the present article this type of alternation is particularly interesting as it shows a change in gender which is determined by the phonological shape of a word. Before looking at the phonology of gender in German, however, some remarks on the development of gender in general are called for.

1.3 Later utilisation

Although grammatical gender does not serve a primary function of semantic distinction, it has been utilised in German for deictic purposes. Here one can see that from a synchronic point of view gender fulfills a role which is not realisable in English. Common in German is the use of gender for anaphoric reference (this point is also made by Eisenberg, 1989: 175) as in *Ich habe ein Fahrrad und einen Wagen aber ich benutze ihn (d.h. *den Wagen*) recht selten* ‘I have a bicycle and a car but I only use it (lit. ‘him’, the car) occasionally’. Analytic languages like English are forced to repeat the noun being referred back to or to employ deictic adjectives like ‘the former’ or ‘the latter’.

This kind of reference tracking may be thought to be a reason for maintaining grammatical gender in a language like German. But in fact its importance is exaggerated. Given the fact that there are only three genders in German and that in many cases reference tracking among two or more antecedents may involve those which have the same gender, or different genders but not distinguished in the grammatical case used (e.g. with the masculine and neuter in the genitive and dative), then its value as a disambiguation device should not be overestimated. As Trudgill (forthcoming) rightly points out, it would be necessary to have many more gender types to make reference tracking by gender a viable means of unambiguous anaphoric reference in a language like German.

Apart from the purpose of anaphoric deixis, there is a degree of exploitation of gender in German, simply because the possibility is there. For instance it is possible to have the following noun with each gender: *das Mehl, der Mehl, die Mehl*. The first is simply the word for the substance ‘flour’. The second refers to a male individual whose surname is *Mehl* and the third to a female with the same name. This type of behaviour is very common in spoken German and shows the exploitation of gender differences for personal reference.

Gender can also be found as a aid in identifying the meaning of a clipping. For instance the word *Information* is feminine but it is often clipped and used in the neuter in which case the reference is taken to be to a sheet of paper providing information: *das Info = das Informationsblatt* ‘sheet of paper containing information’. Another instance would be *die Boot* for *die Boot-Messe* ‘boat fair’ (*Boot* itself is neuter).
1.4 The aim of the present paper

The main question for the present paper remains: how predictable is gender from a phonological point of view? This is relevant to first language acquisition and to the native speaker competence of adults which is used when assigning gender to new formations or loan-words. It should be noted here that, despite its redundancy, gender is not a category which German speakers have difficulty with. In this respect it is a typical instance of a closed class, such as plural types or verbal endings or prepositions, in that it is internalised quite early on and does not present difficulties later on. Gender is acquired fully by all non-pathological speakers of the language; uncertainty in this area is due to the fact that some loans and occasional native words have not settled down in terms of gender. For instance speakers vacillate in their use of gender with *der / das* Bonbon ‘sweet’ and *der / das* Gummi ‘rubber’; all such instances are loanwords. The variation found in gender is not due to a lack of mastery of the gender system by native speakers. This is in marked contrast with second language learners who continually have difficulty with gender assignment.

Gender does not vary across class; it is sociolinguistically irrelevant, though in some few cases there are regional differences particularly between south German / Austria and the rest of the German-speaking area as with *der* Butter (southern form) as opposed to *die* Butter (general). Nor is gender a matter which is undergoing any significant change — for instance it is not an issue in Braun (1987). The only exception to this statement is the area of recent loans, most of all from English (more on this presently).

2 Remarks on the development of gender

It is obvious that grammatical gender has its origins in natural gender according to which objects in the world are divided into classes depending on whether they are masculine, feminine or, when they are neither or are unspecified, neuter. It is essential at the outset to grasp that grammatical gender has little to do with natural gender. The latter is a semantic universal which requires that a language provide some means of distinguishing between males and females and after this between animate and inanimate objects. Grammatical gender is a category which is not guided by semantic needs; if it were, why would one have languages like Swedish which (now) do not distinguish between masculine and feminine in grammatical gender, but between neuter — *neutrum* — and masculine and feminine together — *utrum*?

It is perhaps appropriate to stress that gender is just one of the axes along which objects of the natural world can be divided in language. Many more parameters could be, and have been taken, to attain further divisions, see for example the well-known noun classes of Bantu languages such as Swahili (Brauner/Herms, 1982: 27ff.). Given that gender is originally a specification of sex (or in the case of ‘neuter’, of its non-applicability) it is not surprising that it is foremost a property of nouns. By extension, it also applies to pronouns and adjectives and may apply to certain verb forms, cf. Russian past tense forms which are distinguished for gender or participles used adjectively, cf. the gender distinction among past participles in Italian.

However, the marking of gender with forms belonging to another word class than that of nouns is always determined by the noun which the given form is governed by. A consequence of this is that forms from word-classes such as those of adjectives, pronouns or verbs vary in their gender marking while noun forms are to a very large extent fixed
with respect to gender. Furthermore the notion of declensional class which is partly bound up with gender does not apply to gender-inflected forms from word-classes other than that of nouns. Thus the number of surface distinctions made for gender in non-nominal word-classes is always smaller than with nouns and pronouns. For example, in Irish the number of adjective types distinguished for gender is smaller than that of nouns. At most the number of adjectival distinctions can be the same as that for determiner types, the situation in German \( \text{der} : \text{die} : \text{das}, \text{guter} : \text{gute} : \text{gutes} \).

Internal distinctions in a language, e.g. special forms of adjectives, determiners, exclusive forms for nouns, etc. are characteristic of grammatical gender. This situation is very different from that of a language with only natural gender. Take English as an example of the latter. Here gender is confined (apart from personifying references to technical objects such as cars, ships, etc.) to the sex of the noun and is only evident pronominally. The lexicostylistic distinctions of gender (cf. certain adjectives putatively for women only such as \text{pretty}, \text{cute}, \text{sweet}) are optional and vary greatly among speakers. In a language with grammatical gender the distinctions are obligatory.

The development of grammatical gender from natural gender becomes obvious when all nouns of a language are specified as belonging to a particular category of the gender system (masculine or feminine; masculine or feminine or neuter; masculine/feminine or neuter, etc.). The point here is that gender specification is mandatory. But when one leaves the sphere of natural gender what value does it have to talk of an object, say Tisch ‘table’, being masculine in a language like German? The term ‘masculine’ and ‘feminine’ are labels of traditional grammar which stand for sets of MATCHING RELATIONS. What is meant by saying that Tisch is masculine is that its use in syntactic constructions must be matched by the use of certain other elements, e.g. of der as a definite article in the nominative case, of ein as an indefinite article in the nominative case, of dem as a definite article in the dative case, etc. The matching relations extend to inflectional specifications as well, to take the example of Tisch in German again: it must have -\text{es} in the genitive singular, indefinite adjectives in the nominative singular must have -\text{er}, etc. While these features were originally accompanying attributes of nouns with natural masculine gender they are the only linguistic attributes of non-animate nouns with grammatical gender because, seen semantically, non-animate nouns cannot be assigned a natural gender value.

This fact should be borne in mind as the terms ‘masculine’ and ‘feminine’ are, when referring to grammatical gender, purely labels of convenience. In a way these terms are like the designations ‘strong’ and ‘weak’ used, for example, to classify verb conjugational types or adjectival/nominal declensional types: they are the impressionistic characterisations of traditional grammar. When referring to gender the terms ‘masculine’ and ‘feminine’ retain a degree of justification in that the types of matching relations between non-animate nouns and determiners are similar to those between animate nouns and determiners the latter, of course, being based on natural gender.

Another way of saying that sets of matching relations exist in a language is to talk of agreement between forms in syntactic constructions. The term ‘agreement’ is felicitous as it allows a subdivision which is necessary when considering grammatical gender. This subdivision is that between CONCORD and GOVERNMENT. Grammatical gender in French for instance is a matter of government as nouns are not phonologically marked for gender, this only becoming clear from the government of a certain determiner or adjective by a given noun. Grammatical gender in Italian, however, is a matter of concord as gender is (normally) evident from the forms of the noun and from that of adjectives and determiners. There are of course further distinctions in the manifestation of grammatical gender in various languages. In French for example the pronominal gender distinction is
not levelled in the plural (ils o elles) whereas in English and German it is. Furthermore, gender may not always be equally obvious in every grammatical case. In German gender distinction is maximal in the nominative and accusative (singular) but is reduced to a two-way distinction (masculine/neuter and feminine) in the genitive and dative (singular).

The mention of case here leads to that of another aspect of grammatical gender: it is not identical with DECLENSIONAL TYPE, though there is a frequent correlation between the two categories. Masculine and feminine nouns can be found in one and the same declensional type (nominal paradigm) in German and in other languages (in Irish, for example). This is due to the fact that such forms show similarities in phonological shape. After all, the system of declensional types is based on phonological similarities in the case forms of groups of nouns.

In a discussion of the phonology of gender the question of declensional class cannot be ignored, however. From the phonological shape of a word and its gender the declensional class can usually be deduced. In German, masculine nouns which end in -e belong either to the so-called mixed declension type (genitive singular in -ns, cf. der Friede : des Friedens ‘peace’-NOM SG : ‘peace’- GEN SG) or to the so-called weak declensional type (genitive singular in -n, cf. der Junge : des Jungen ‘boy’-NOM SG : ‘boy’-GEN SG).

2.1 Gender as an inherited grammatical category

It is clear from a cursory examination of different language families that grammatical gender in individual present-day languages is a result of inheritance from the original parent language. There would seem to be no instances of a language developing a system of grammatical gender when there is no precedent for this in the language family to which the language belongs. One can then characterize whole language families as showing grammatical gender or not. For instance, the Finno-Ugric and the Altaic language families do not have grammatical gender, the Semitic family does (Ibrahim, 1973: 39ff.). Considering the Indo-European language family, it can be seen that one of the most notable remnants of the Indo-European ancestral language is the system of gender which to a varying extent is present in nearly all languages genetically related to this original.

However, grammatical gender has had a chequered career in the descendant languages of Indo-European. Within the Germanic group it has survived unevenly. English with its almost exclusively natural gender is one extreme; German with three genders and four cases is another, while Swedish with its two-way distinction between neuter (neutrum) and non-neuter (utrum) ranges somewhere inbetween. Irish as a Celtic language has a two-way system also though it members are divided along a masculine # feminine axis. As with all the present-day languages which have a system of less than three distinctions the systems of Swedish and Irish have arisen due to formal syncretism of two of the original three categories, masculine, feminine and neuter.

Conversely, the survival of gender distinctions in a language presupposes only slight change in its inflectional system during the language’s development. Thus the formal distinctions among the elements of the determiner paradigms of German have been instrumental in the retention of the three-way gender distinction. The gender system matches the typological profile of German as a whole: it is still highly inflected, with a series of nominal, adjectival and pronominal declensional types and a high degree of formal distinctions in the sphere of verbal conjugation. The remaining present-day Germanic languages and many of the German dialects (such as North Rhenish) have a simpler morphology and, hand-in-hand with this, a simpler gender system.
In summary one can say here that gender can declines due to phonetic attrition and loss of distinctiveness (English and German dialects). It can be regularised due to the application of a dominant pattern, Middle High German weak masculines like *Blume* ‘flower’ becoming feminine, see 4.2 below.

### 2.2 Predictability of gender

When considering the forms of words in those Indo-European languages which still maintain a gender distinction the question arises, not least for the learner of such a language, whether or not the gender of a word is derivable from the phonological shape of a word. Two types of language can be recognised here. That type where gender is obvious from the final segment of a word and that where it is not. The former type is represented by Italian where all nouns in -o are masculine, all in -a are feminine with the exception of a small class of masculine agentive nouns in -a (cf. *poeta* ‘poet’ and the like). This type is also represented by Russian where (practically) all nouns ending in a consonant are masculine, (practically) all nouns ending in -o, -e, -jo are neutral and (practically) all nouns ending in -a are feminine with a small class of masculine nouns denoting persons in -a (cf. *sluga* ‘servant’; *d’ad’a* ‘uncle’). In Russian, however, predictability is diminished as those (monosyllabic) nouns which end in a palatal consonant are either masculine or feminine, cf. *den* ‘day’ (masculine), *bol* ‘pain’ (feminine). But the situation can be very much worse than in Russian. German is notorious for the lack of predictability of gender. There are only a few guidelines for non-suffixed monosyllables and many exceptions to these. Worse still, the suffixes of disyllabic forms which normally give an unambiguous clue to the gender of a word can in some cases take all three genders, cf. -el in the following forms: *der Spiegel* ‘mirror’ (masculine), *die Regel* ‘rule’ (feminine), *das Siegel* ‘seal’ (neuter). With Mangel the difference in gender is exploited semantically: the masculine form means ‘lack, want’ and the feminine form mean ‘wringing machine’. This situation will be the object of attention in various sections below.

#### 2.2.1 Are exceptions semantically linked?

Grammatical gender is a category which leaks. Its divisions are not absolute but rather a matter of more or less. To illustrate this fuzziness take the case of nominalised infinitives which are neuter in the vast majority of instances, cf. *das Lesen* ‘reading’, *das Singen* ‘singing’, *das Essen* ‘eating; food’. This applies even if the verb form is no longer present in the language: *das Wesen* ‘person, being’. The few that are not do themselves form a semantically coherent group, thus one has *der Husten* ‘cough’, *der Schmupfen* ‘cold (medical condition)’, both referring to illness. This semantic commonality among the exceptions is certainly a feature which facilitates their acquisition by native speakers. It is a valid question whether there is a general principle involved here, namely that exceptions to a dominant formal pattern belong to a single lexical class. Another example to support such as contention would be the words *das Malz* ‘malt’, *das Salz* ‘salt’, both of which are neuter and refer to ingredients, whereas monosyllables ending in sonorant + affricate are normally masculine, e.g. *der Pelz* ‘fur’, *der Filz* ‘felt’, *der Sturz* ‘fall’, *der Falz* ‘fold’ (the latter two are deverbal formations).
2.2.2 The notion of default gender

The number of exceptions in any group of words with quasi-productive gender assignment is usually small. This fact would seem to justify the notion of DEFAULT GENDER. Consider river names which are nearly always feminine: die Elbe, die Isar, die Weichsel, die Weser, die Mosel. The masculine exceptions, like der Nil, der Rhein, would appear to be lexicalised.

Another example is seen with the ending -tum which usually requires neuter gender: das Eigentum ‘property’, from eigen ‘own’ (adj.), das Heldtum ‘heroism’, from der Held ‘hero’. There are a few exceptions here as with der Reichtum ‘richness’ and der Irrtum ‘mistake’. These cases must be treated as lexicalised and the neuter gender as the unmarked case. Evidence for this comes from new formations in which only neuter gender is found: das Amigotum ‘financial favours among cronies’ as in Das Amigotum wird die CSU noch ihre absolute Mehrheit in Bayern kosten ‘This business of backhanders will result in the loss of the absolute majority for the conservatives in Bavaria’.

3 Criteria for gender assignment

In languages with a gender distinction every noun must be assigned to one (and usually only one) determiner paradigm. It is clear from scanning the lexicon of a language with grammatical gender like German that in certain cases the gender of a noun is predictable. The most obvious case of gender predictability is where natural gender is involved. Thus in German all nouns denoting males are masculine, those denoting females are feminine. This can be taken to apply globally to the language. There only a few instances where phonology wins out over natural gender: die Wache ‘sentry’ is disyllabic with final /-∂/ (which is almost always feminine); das Mannequin ‘fashion model’ is neuter with a usually feminine referent (Helbig 1996: 63); das Weib ‘woman (obsolete or abusive)’ is also neuter.

Nouns of the type das Mädchen are different because here the gender requirement of the suffix (all diminutives in -chen are neuter) overrides natural gender, at least with regard to the article and usually to the relative pronoun when it immediately follows the noun it refers to.

3.1 Gender and lexical class

If natural gender is irrelevant, then then the two features which are responsible for gender affiliation are PHONOLOGICAL and/or LEXICAL. Of these two categories, the phonological one is by far and away the more powerful: the sound shape of a word, particularly if it consists of more than one syllable, is a strong indicator of gender. However, one should mention lexical gender assignment. This occurs with a small groups of tightly knit lexical classes. Seasons, months and days of the week are masculine for example (cf. der Frühling ‘spring’; der März ‘March’; der Donnerstag ‘Thursday’), this strict rule having lead to analogical gender re-assignment with der Mittwoch ‘Wednesday’ from die Mitte ‘middle’ + die Woche ‘week’. It soon becomes evident, however, that such semantic classes are not consistent in the gender they require. For example the names of trees are usually feminine, cf. die Zeder ‘cedar’; die Buche ‘beech’; die Pappel ‘poplar’, but a few are masculine, e.g. der Ahorn ‘maple’, der Flieder ‘lilac’, der Holunder ‘elder’ (granted, the latter two are bushes, not trees).
Other examples of such lexical classes with default gender are flowers, ships and aeroplanes (feminine); mountains, alcoholic spirits (masculine); names of countries and cities (neuter). In many such instances the gender is derived from the generic word, e.g. hotels and cinemas are neuter because one has das Hotel and das Kino, cars are masculine, deriving from der Wagen (and not from das Auto). Here neuter for cities, e.g. Das Berlin meiner Jugend ‘The Berlin of my youth’ is a noticeable exception.

In keeping with the somewhat fluid borders of gender as a grammatical category, instances are found where a mixture of lexical and phonological criteria obtain with one or the other prevailing. Thus -e is generally feminine, unless denoting a person in which case natural gender is dominant der Page ‘page (boy)’, der Matrose ‘sailor’.

3.2 The use of neuter gender

While certain lexical sets or phonological patterns may have a default gender (see discussion above) it is also true that for productive, transparent word class conversions there is a default gender, the neuter. For instance one has das Ich ‘ego’, das Du ‘the familiar address form’, das Nein ‘no’ das Wenn und Aber ‘if and but’ as pronouns and conjunctions do not have grammatical gender and hence cannot be assigned masculine or feminine.

This interpretation of neuter as the gender chosen when masculine or feminine do or cannot apply is confirmed by its use for the young of animals and humans: das Fohlen ‘foal’, das Kalb ‘calf’, das Ferkel ‘piglet’; das Kind ‘child’. Occasionally it is generic — das Schwein ‘pig’ — with gender differentiation possible with special terms — der Eber ‘boar’, die Sau ‘sow’. Occasionally a neuter may be the default with a masculine form a marked case as with das Huhn (along with die Henne) ‘hen’ but der Hahn ‘cock’. In those cases in which sex is not a very obvious feature, the gender may be determined by phonological shape as with die Spinne ‘spider’ or die Schnecke ‘snail’. There is a generic masculine suffix -erich which can be used with a limited amount of productivity, i.e. Tauberich would be understood as an explicit reference to a male pigeon.

Sommerfeldt & Starke (1992: 98) see a function of the neuter in its pejorative sense as with das Ekel (rather than specifying natural gender with der or die).

4 Generalizations on gender phonology in German

When considering the phonology of gender in a language one must start by characterising the (possible) phonological forms of words. The first distinction in this respect, which is necessary for German, is that between DERIVED and NON-DERIVED forms. Derived forms are those which have had a word-formational affix appended. Such instances are nearly always predictable for gender. For instance the suffixes -heit, -keit, -schaft are used for nominalisations and always take feminine gender as in schön ‘beautiful’ - Schönheit ‘beauty’, heiter ‘cheerful’ - Heiterkeit ‘cheerfulness’, Freund ‘friend’ - Freundschaft ‘friendship’. Care should be taken here to distinguish between affixes and syllable rhymes of stems. Thus one has die Auferstehung ‘resurrection’ (from auferstehen ‘to rise from the dead’) but der Sprung ‘leap; crack’, the latter being masculine because it is a non-suffixed deverbal (Helbig 1996: 63).

Non-derived word forms can be divided into two types: MONOSYLLABLES and EXTENDED MONOSYLLABLES. It is true of non-compounded nouns of native origin in German that they tend to be monosyllabic with a few exceptions, such as der Ahorn
where neither syllable can be interpreted as an affix (Kluge/Mitzka, 1975: 10). One should be careful not to be dogmatic about the monosyllabicity of native non-compounds. It is tempting to do so, with (Wurzel, 1970: 25ff.) for instance, but the language data do not allow such a simplified view. It is true that there are words in which the stem extension can be deleted, for example with a change of word class: *Tropfen* ‘drop’ but *es tropft* ‘it is dripping’, *tropfend* ‘soaking wet’. Other disyllabic nouns do not lose their extension, e.g. *Regen* ‘rain’ with *es regnet* (with syncope) ‘it is raining’ and *regennaß* ‘wet from rain’; *Winter* ‘winter’ with *überwintern* ‘spend the winter somewhere’ and *winterfest* ‘prepared for winter’.

What one can say of these extensions is that they show a characteristic phonological form, they all end in a sonorant, and that they have no lexical content of their own. This puts them in a different category from those extensions which are lexically transparent and quite productive such as the prefix in *Betrieb* (*be+trieb*) ‘factory; work’ or the suffix in *Feigling* (*feige+ling*) ‘coward’ or both as in *Gebilde* (*ge+bild+e*) ‘form, shape’.

The opaque stem extensions - seeing as how they are non-deletable - must be regarded as an integral part of the stem. This means that a word like *Regen* is analytically a stem-extended monosyllable but it is so already in the lexicon and the extension cannot be introduced as a stage in the derivation of the surface phonetic form. These words with sonorant stem-extension are noteworthy as their gender is unpredictable (see below for further remarks).

### 4.1 Syllable structure

In the phonological assignment of gender further considerations are of importance. The first of these concerns monosyllables. Here it would seem to be the rhyme of the syllable which is relevant to gender assignment, if any part of the word is significant. For example, monosyllables in */-o:\n/ are always masculine, irrespective of what the syllable onset consonant or consonant cluster is. Take the word *Hohn* ‘scorn’ as an instance. Syllabically it can be analysed as follows:

\[ \begin{array}{c}
\sigma \\
/ \\
onset & rhyme \\
/ & \\
peak & coda \\
[ h \ o:\ n ]
\end{array} \]

Other words with a similar syllable rhyme are: *der Lohn* ‘wages’, *der Mohn* ‘poppy’. An example of a rhyme which demands feminine gender is */-unft/. Here one sees that, although a monosyllable may be prefixed or part of a compound noun, its syllable rhyme is decisive for gender assignment: *die Zunft* ‘guild’; *die Vernunft* ‘reason’, *die Zukunft* ‘future’; *die Zusammenkunft* ‘meeting’. Two other instances of a rhyme with a definite gender are */ur, yr/ which both signal the feminine: *die Kur* ‘stay at spa’, *die Kür* ‘selection’, *die Tür* ‘door’.

In accordance with the principle that it is the end of a word which is decisive in phonological gender assignment, a prefix can never alter the gender of a word (*der Fall* ‘case’; *der Befall* ‘infestation’) with one exception: the prefix *Ge-* which is used to form
verbal derivations which are neuter. With it a final -e may or may not co-occur: die Rede ‘speech’, das Gerede ‘senseless talk’; der Berg ‘mountain’, das Gebirge ‘range of mountains’. This statement refers to the present-day language and to derivations which are still transparent. The original motivation here was the fact that collective nouns are always neuter. If one were to allow derivations which are opaque today then the change of gender on prefixation would have to include the prefix Be- given such word pairs as der Stecken ‘stick’ (obsolete, chiefly used in the phrase Dreck am Stecken haben ‘not to have a clean shirt’) and das Besteck ‘cutlery’. As the relationship of such word forms to each other can only be arrived at by a consideration of the history of German they, and sets like them, will be ignored here.

The question remains, however, to what extent is gender predictable with monosyllables? Although there are monosyllable types such as the two discussed above, /-on/ and /-unft/, which can only have one gender in Modern German this fact is incidental: it so happens to be that all monosyllables in /-on/ and /-unft/ are masculine and feminine respectively. But they are not necessarily so. Indeed there is a general principle of gender assignment which applies not only to German.

Before offering a formulation of this principle the term monosyllable must be replaced by word-stem. While it is true that in German nearly all native words are monosyllables (inasmuch as they contain no affixes) the term “word-stem” is more appropriate when referring not only to German as other languages with grammatical gender (such as Italian and Russian, see below) have polysyllabic stems. The condition on gender can now be formulated as follows:

\[(2) \quad \text{Absolute gender assignment with word-stems does not occur.}\]

If one reflects on this statement it turns out to be quite obvious. Take the examples of Russian and Italian. Both have a far-higher degree of gender predictability than German. But in both languages predictable gender holds for EXTENDED word-stems only. Consider the Italian examples in (3).

\[(3)\]
\begin{align*}
a & \quad \text{dono} \quad \text{(masc.)} & \quad \text{‘gift’} \\
b & \quad \text{città} \quad \text{(fem.)} & \quad \text{‘city’} \\
c & \quad \text{fonte} \quad \text{(masc.)} & \quad \text{‘fountain’} \\
d & \quad \text{carne} \quad \text{(fem.)} & \quad \text{‘meat’} \\
\end{align*}

All of these are extended word-stems. What is important is that gender predictability arises in (3a+b) from the stem extension, i.e. from the final /-o/ or /-a/; the monosyllable /don-/ is not predictably masculine, nor is the monosyllable /fitt-/ predictably feminine. From (3c+d) one sees that the stem extension /-e/ is not unambiguous in respect of gender (for further details of Italian gender such as exceptions, see Battaglia and Pernicone, 1971: 65ff.). Examples of Italian disyllabic stems are: alber-o ‘tree’, fratell-o ‘brother’, etc.

If one now considers Russian it can be seen that the situation with regard to gender is not, however, quite so straightforward (see also Nikunlassi, this volume).

\[(4)\]
\begin{align*}
a & \quad \text{zeml’}a \quad \text{(fem.)} & \quad \text{‘earth’} \\
b & \quad \text{okno} \quad \text{(neut.)} & \quad \text{‘window’} \\
c & \quad \text{pole} \quad \text{(neut.)} & \quad \text{‘field’} \\
d & \quad \text{stol} \quad \text{(masc.)} & \quad \text{‘table’} \\
e & \quad \text{chaj} \quad \text{(masc.)} & \quad \text{‘tea’} \\
\end{align*}
From (4a-c) one can rightly deduce (i) that nouns in */-a/ are feminine (except a few names of males, see Unbegaun, 1969: 38) and (ii) nouns in */-o/ or */-e/ are neuter. The forms in (4d-g) are problematic however. Take (4e) to start with. Here one can postulate that the non-syllabic off-glide [j] after [a] is phonemically */-j/ as suggested by the transliteration, but not by the Cyrillic alphabet (Hickey, 1985), so that nouns of the type in (4e) can be treated like those in (4d), i.e. as nouns ending in a consonant. Note further that */j/ does not, unlike other Russian consonants, form a palatal # non-palatal pair.

What is disturbing about the noun type in (4d) is that it seems to contradict the principle put forward in (2). But this is only apparently so. At this point one can compare Russian and Italian, different as they are in other respects. In both languages the five basic monophthongs */i/, */e/, */a/, */o/ and */u/ exist. All five vowels occur as stem extensions. In Italian */-o/, */-a/ cause a definite gender to be associated with the word-stem they are suffixed to. The vowels */-i/ and */-e/ occur as plural markers of those stems which have */-o/ and */-a/ in the singular. */-e/ has a secondary role as the gender marker for certain singular nouns which may be either masculine or feminine. Contrast this situation with that in Russian. The latter language has the same set of five vowels. Here */-a/ on the one hand and */-e/, */-o/ on the other have fixed gender associations (see (4a-c) above). The vowel */-i/ occurs as in Italian as a plural marker, but in Russian due to the levelling of the gender distinction in the plural only */-i/ occurs as a plural marker (with a small class of nouns where the plural (all cases) ends in a stressed */-a/). In Italian the vowel */-u/ is peripheral as a stem extension and can for all practical purposes be ignored. In Russian */-u/ is used to indicate the masculine and neuter genitive and the feminine accusative of nouns and does not occur natively as a stem extension in the nominative.

What this means is that there is no vowel which is associated with masculine gender in the singular in Russian. Masculine gender is indicated, however, by the absence of a vocalic stem extension. Thus the masculine gender of words of the type in (4d) does not result from the phonological structure of the monosyllable but from the simple fact that they are not suffixed.

Finally the words in (4f+g) need to be commented on. Here palatality of the final consonant cannot be treated as a kind of stem extension. However it is a feature of most consonants of Russian and one which has not become associated definitely with a single gender. What is significant with the palatal-final stems in Russian is that the choice of gender is between masculine and feminine. A possible account of this would be as follows: neuter is clearly indicated by */-e/ or */-o/. Masculine nouns are marked by the lack of a stem extension, i.e. by ending in a final non-palatal consonant. Thus to have a palatal-final stem masculine would not amount to suffixing the noun. On the other hand the final palatal consonants may, as with nouns in */-a/ in several languages, not only in Russian, be perceived subjectively by native speakers as being feminine. This would tie in with the fact that palatal consonants are non-linguistically referred to as ‘soft’ and non-palatal consonants as ‘hard’. A comparison with Irish is also of value in connection with palatal final stems. In this language, stems which end in palatal consonants are mainly feminine, while nouns in non-palatal consonants are mainly masculine. However, these last remarks are speculative and would require corroboration from a series of languages before being free from doubt.

Returning to German one can now examine word forms to ascertain whether (2) holds good. For the predictability of gender it is very relevant to determine whether or not this is the case as the monosyllable is the basic quantitative unit of the native German lexicon.
To prove or disprove (2) one must look at German monosyllables from the point of view of PHONOLOGICAL REGULARITY. Here the phonological elements of the syllables must be seen as classes of elements. Thus a word like Stier ‘bull’ consists of the following elements: fricative+plosive+vowel+sonorant. This classification is phonological, i.e. such phonetic details as the vocalization of the syllable-final /r/ in this word are irrelevant to its phonological classification as a sonorant.

In connection with the analysis given in (1) above it was maintained that the syllable rhyme could be taken as the relevant unit for gender assignment with monosyllables. It would be possible of course to consider merely the coda of the syllable as decisive. A word like Stier consists of the following elements: fricative+plosive+vowel+sonorant. This classification is phonological, i.e. such phonetic details as the vocalization of the syllable-final /r/ in this word are irrelevant to its phonological classification as a sonorant.

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4.2 Stem extension in German

When referring above to the second phonological type of word form which occurs in German, apart from simple, non-suffixed monosyllables, the term ‘extended monosyllable’ was used. This is intentional. What is meant is that a monosyllabic stem can be extended by the addition of phonological substance. The term disyllable (or polysyllable) instead of extended monosyllable would imply that this addition was always syllabic. From words like die Fahrt ‘drive’ from fahren ‘to drive’ and die Jagd ‘hunt’ from jagen ‘to hunt’ it is clear that monosyllables can be extended by adding only a consonant (here: /-t/) to yield a noun whose gender is predictably feminine. Note that to say that a monosyllable is extended is not supposed to imply that native speakers are conscious of the derivation of words like Fahrt by deletion of /-an/ from the infinitive and suffixation of /-t/. While such consciousness may be present with Fahrt it is progressively more unlikely in word pairs like schlagen ‘beat, defeat’, die Schlacht
‘battle’; sehen ‘to see’, die Sicht ‘sight, view’; ziehen ‘to draw; rear’, die Zucht ‘brood’. The term EXTENDED MONOSYLLABLE refers to the analysis of the phonologist and does not necessarily coincide with the awareness of the native speaker of derivational word formations.

The level of gender predictability is much higher with the extended monosyllable than with the simple monosyllable. There would seem to be a correlation also between the nature of the extension and gender predictability. Consider the following principle.

(5) The predictability of gender increases proportionally with the lexical concreteness of the suffix which extends a syllable.

To illustrate this consider a series of suffixes. The first group consists of monosyllable extensions which do not have a fixed meaning: -en, -el, -er. These occur with nouns which are masculine.

(6) -en: -el: -er:

der Boden der Schlüssel der Kiefer

‘ground’ ‘bowl’ ‘jaw’
der Regen der Deckel der Koller

‘rain’ ‘lid’ ‘rage’
der Magen der Hebel der Fehler

‘stomach’ ‘lever’ ‘mistake’

In none of the above cases is gender predictable. When these extensions represent a concrete meaning, however, then the gender assignment is automatic, for example where -en is an ending denoting a substantival verb the gender is nearly always neuter (see above): das Fahren ‘the driving’, das Schießen ‘the shooting’, etc. When -er is an ending denoting an agent noun then the gender is always masculine: der Geiger ‘the violinist’, der Maurer ‘the mason’, der Bauer ‘the farmer’. Where -er is not the extension for an agent noun the gender may be masculine as in (6) or it may vary, cf. die Butter, ‘butter’, das Wetter ‘weather’, das Zimmer ‘room’, das Lager ‘camp’. As the ending -el cannot be lexically concretised it occurs with all genders with no degree of predictability, cf. der Schlüssel ‘key’, die Trommel ‘drum’; das Segel ‘sail’.

It would seem from the above remarks that predictability is little better than with monosyllables with a phonologically fixed type of syllable rhyme. This applies to the ‘sonorant suffixes’ of (6). There is a further kind of lexically empty suffix in German, however, which shows a definite connection with gender. This is the vocalic suffix in -e. Note that it is the only vocalic suffix with German native words (apart from women’s names in -a such as Jutta, Helga, Uta and some eastern German names like -a Gera, Gotha, Jena) and so offers the only point where German can be compared with languages like Italian and Russian.

The association of the vocalic suffix -e in German is with feminine gender. This goes back in the history of German at least to the Middle High German period when many former masculine nouns in -e either changed their gender to the feminine or lost the vocalic suffix, cf. die Blume ‘flower’, die Fahne ‘flag’, die Luft ‘air’ all of which are former masculine nouns (Tschirch, 1975: 149). Only a very few nouns in -e have remained masculine into the present-day language: der Buchstabe ‘letter of the alphabet’, der Same ‘seed’ (see Mettke, 1978: 154f.). The upshot of the apocope of -e and/or of gender change is that loan-words in -e are consistently feminine (see below). Mixed forms also give way to the pressure to assign feminine gender to nouns ending in -e, for example the word Pauschale ‘lump-sum, flat payment’, which is a native stem (from
Bausch ‘bulge’) with a Romance ending, was originally neuter on its formation but has now given way to the feminine (Duden, 1975-1981: 1963).

There are also cases where in the present-day language two words are distinguished solely by the suffix -e as in the following pair: *der Spalt*, ‘crack, split’ and *die Spalte* ‘column in a newspaper’; *der Sproß*, ‘sprout, sprig’ and *die Sprossee* ‘rung of a ladder’; *das Dock* ‘dock’ and *die Docke* ‘hank, bundle’; *der Rat* ‘type of civil servant’ and *die Rate* ‘rate (of backpayment)’. The last two pairs involve a native and a loan-word. Where two native words are involved there does not have to be an etymological connection between them, e.g. *der Kohl* ‘cabbage’ and *die Kohle* ‘coal’ are similar in form by accident of phonological development.

There frequently can be a fine-edged semantic differentiation which is observed by speakers but not ever formulated. The best illustration of this is from the field of expletives where different connotations are realised by gender difference.

(7) *Jetzt sitzen wir in der Scheiße.* (general situation)

‘We’re up to our ears in shit now.’

*Mach* keinen Scheiß. (result of direct action)

‘Stop bullshitting’

There are further cases of contrast solely among loan-words which have two phonological forms (and two accompanying genders), each with a separate meaning, cf. *der Ruin* ‘ruin (figurative meaning)’ and *die Ruine* ‘ruin (building)’. Both are from French *ruine* (Duden, 1975-1981: 2194), the feminine form having later developed from the masculine with the lexical distinction given.

The above situation is to be found with quite a number of other Romance loan-words which have one form with masculine or neuter gender and a further form with feminine gender, cf. *das Tablett* ‘tray’ and *die Tablette* ‘tablet, pill’; *das Etikett* ‘etiquette’ and *die Etikette* ‘label’ (Duden 1989: 165f.). Such manipulation of a formal category to produce a lexical distinction is attested in other another area of German as well, cf. *die Spende* ‘donation’, ultimately a Latin loan-word (Duden, 1975-1981: 2441), which has a verb form with the native verb suffix -en: *spenden* ‘donate (e.g. blood)’, and a form with the Romance suffix -ieren: *spendieren* ‘give generously, treat someone to something’. Nor is this manipulation confined to the history of German. A very recent case of the exploitation of this formal difference between verb suffixes is provided by the two verbs *schockieren* ‘to shock in a moral or sexual sense’ and *schocken* ‘to shock (in an unspecified sense)’, the former being the original form and the latter a new formation with the native German verb suffix -en.

Before leaving this section on the phonology of gender with native words in German it is necessary to comment on the many lexically concrete suffixes which are associated with a single gender. Because of the types of word-formation typical of German (see Erben, 1975: 57ff.; Fleischer, 1976: 81ff.) many complex word forms are composed of a stem with a series of affixes, for example *Auferstehung* ‘resurrection’ which consists of /auf/ + /er/ + /†te/ + /u/. What is of interest here is the suffix /u/. It has the effect of imposing a fixed gender on the stem it is added to, irrespective of the gender of the stem on its own. In this case the gender imposed is feminine. Lexically concrete stem-extending suffixes form sets with given genders, for example all words showing one of the following suffixes are masculine: /-li/, /-er/ PERSONAL NOUN, /-(e)ric/ MALE OF ANIMAL SPECIES. All those belonging to the following are feminine: /hait/ /kait/; /-aft/ NOUNS OF QUALITY, /-uf/ DEVERBAL NOUNS OF ACTION.
It should be remarked at this point that the predictability of gender has nothing to do with the distinction between phonological stem suffixation (as with the ‘sonorant suffixes’ in (6) above) and derivational suffixation as with the feminine suffixes just quoted. Predictability of gender is bound to the lexical specificness and hence the productivity of a given affix (prefix or suffix). This point can be illustrated quite simply with the prefix Ge-. In those words where it has a specifiable lexical content it has a definite gender, i.e. where it denotes the object connected with the action of a verb or the nominalisation of the action typical of a verb, with a further pejorative element when an -e suffix is added, cf. schenken ‘to give a present’ and das Geschenk ‘present’ schmieren ‘to smear’ and das Geschmiere ‘smearing; scrawl (handwriting)’, both nouns being neuter. Masculine gender is used for those nouns which show ablaut in their derivation: der Gesang ‘song’ from singen ‘to sing’; der Geschmack ‘taste’ from schmecken ‘to taste’; der Geruch ‘smell’ from riechen ‘to smell’, etc. However, there are a couple of words in Ge- which are feminine; these are all derivationally opaque, or at least unproductive, and thus unpredictable in their gender: die Geschichte ‘story’, die Geschwulst ‘swelling, lump’.

The second type of suffix set without absolute gender assignment is marked by the distribution across two genders being more even, e.g. nouns ending in /-nis/ (another suffix denoting the property associated with a verb) can be either feminine or neuter: die Erlaubnis ‘permission’, die Erkenntnis ‘knowledge, understanding’; das Wagnis ‘risk’, das Verhängnis ‘catastrophe’.

When looking at suffixes such as the above type a distinction between different kinds has to be made which is relevant to gender assignment. Consider the following principle:

\[(8)\]
\[\begin{align*}
\text{a} & \quad \text{Only lexically concrete suffixes can be productive.} \\
\text{b} & \quad \text{All productive suffixes involve absolute gender assignment.}
\end{align*}\]

The first part of (8) merely specifies that the various lexically empty stem extensions (such as the sonorant suffixes in (6) above) are non-productive. The second part really just states the obvious. If a suffix can be used by a speaker to form new words at will then it is self-evident that the gender of these words must be predictable. Thus the suffixes /-nis/, /-tum/ for example are not productive.

Apart from the native suffixes listed above there are sets of foreign suffixes available to the German speaker. Paradoxically, while the vast majority of new loan-words in German are from English there is not a single English suffix used derivationally in German. All suffixes are French or Classical (Latin or Greek). Examples are: /-er/ (French) AGENT: der Aktionär ‘share holder’; /-and/ (Classical) AGENT: der Doktorand ‘doctoral student’; /-ismus/ (Classical) PROPERTY NOUN: der Realismus ‘realism’. It is evidence of the degree of integration of French and Classical loan-words into German that they can effortlessly form compounds with native German words, whereas this is practically unknown with English loan-words, cf. in Eigenregie ( < eigen ‘own’ + Regie ‘management, direction’) ‘on one’s own’; ein Zweietagenhaus ( < zwei ‘two’ + Etage ‘storey’ + Haus ‘house’) ‘a two-storeyed house’. A further aspect of French and Classical suffixes in German is that they have absolute gender assignment and that all of them are productive.

4.3 Gender and declensional class

German is well-known for the multitude of plural types which are still present in the
language. True, many of these are restricted to small lexical set and are never used with loanwords, but the statistical occurrence of core vocabulary items with a non-productive type can be considerable, for instance with umlaut plurals among common terms for animals, humans and parts of the body. 

There would appear to be a correlation between declensional class and gender assignment for native words. Take the case of *der Dorn* ‘thorn’ and *das Horn* ‘horn’. Both words are monosyllabic and have identical syllable rhymes. However, they show different plural patterns. *Dorn* take a weak plural in */-n/* (without umlaut) while *Horn* takes an unumlaut plural with */-ar/* plural. Now monosyllables with */r/*-plurals are generally neuter: *das Dorf* ‘village’, *das Kind* ‘child’, *das Wort* ‘word’, *das Buch* ‘book’, see Wiese (1996: 136-143). Synchronically one cannot say that gender determines declensional class or vice versa, but the correlation would appear to facilitate the acquisition of otherwise unpredictable gender assignment and plural formation. When a child learns *Dorf* as a neuter then it automatically knows that it takes and */r/*-plural. Furthermore this kind of plural will cause umlaut, providing the root vowel can undergo umlaut, does not apply to *Kind* for instance, but does to *Haus* ‘house’ (plural *Häuser*).

Bittner (1994: 70) has pointed out the correlation between plural ending and gender. She examined both loans and native words. With the former those feminine words in final */e/* have */-n/* but neuters with the same ending show */-s/*: *die Allee* ‘avenues’ - *die Alleen* but *das Kommittee* ‘committee’ - *die Kommittees*. Furthermore feminine words with stem-extending suffixes have a plural in */-n/* while corresponding masculines do not, e.g. *die Fabel-n* ‘fables’, *die Mauer-n* ‘walls’ but *die Hebel* ‘the handles’, *die Sprecher* ‘speakers’.

### 4.4 Notional interpretations of gender assignment

Before leaving the area of native German words one should mention that some authors have offered an interpretation of gender assignment which rests on semantic components embodied in the meaning of words with a specific gender. This view is not very widespread and would be regarded as overtly subjective by most linguists. Nonetheless Köpcke and Zuber in their investigation of */-mut* as an ending claim that the masculines are more extrovert as in *der Übermut* ‘high spirits, adventurousness’, *der Hochmut* ‘arrogance’. The feminine forms are conversely more introverted (1991:94). According to these authors this notional division would also appear to apply to the ending */nis* with instances like *die Besorgnis* ‘anxiety, concern’ which is feminine but *das Wagnis* ‘risk, daring action’ which is neuter.

### 5 Loan words, the test case for gender assignment

The mention of loan-suffixes leads naturally to the question of loan-words. In Modern German by far and away the largest number of loan-words come from English with some still from French and a handful from other languages. The majority of English loan-words have come into the language in this century. There are a couple of older English loan-words which are recognisable by the fact that their spelling has been adapted to German, e.g. *Dschungel* ‘jungle’. The process of borrowing from English is very widespread in German; in specialist areas such as in the natural sciences or medicine borrowing is particularly extreme. For the present examination only such loan-words will be looked at which occur in the language in general, although trying to determine exactly
what represents ‘the language in general’ is admittedly impracticable. But for a further reason English loan-words in specialist areas can be neglected: gender assignment is usually automatic. In medicine for instance gender assignment is rarely a matter of debate: the loan-words are given the gender of the nearest lexical equivalent; where the loan-words are of classical origin the suffixes have fixed gender assignment anyway.

5.1 The principles of gender assignment

As gender is obligatory in German every loan-word must be assigned one of the three genders. Before a word is integrated into German it can be used consciously as a foreign word in which case it takes the neuter. An example of this is das “Desktop” ‘highest-level work area with a computer, usually for integrated software’. This is so specialised that it has not been integrated into the language nor can a German noun act as a guide in gender assignment. Such words are furthermore written in inverted commas as a sign that they are deliberately regarded as foreign. This situation will be ignored in the following examination. The use of the neuter is not a specific gender assignment but is simply due to the fact that any word completely foreign to German is used with the neuter determiner for want of an established gender. This should not be confused with the situation where loanwords have been established with neuter gender, e.g. das Statement ‘statement’.

5.1.1 Lexical and phonological analogy

The assignment of gender to loan-words can follow one of two basic principles which I term LEXICAL ANALOGY and PHONOLOGICAL ANALOGY respectively. It is important to note here that in gender assignment very often a mixture of these two principles is involved. However, one can still see relatively clear cases of one principle operating as opposed to the other. Lexical analogy works by assigning the English loan-word the gender of the German noun which is closest to it in meaning. This principle has also been dubbed that of “the closest lexical equivalent” (Carstensen, 1980: 15ff.). Obvious examples of this are die Crew ‘crew’ (cf. die Mannschaft), die Story ‘story’ (cf. die Geschichte). If assignment was always by means of lexical analogy then there would be no need for this section in the present article. But it is obvious that phonological analogy plays a role in gender assignment too. The clearest example is with English suffixes which are found in German. While these are never productive (see remarks above) they follow the productive suffixes of German in gender assignment, for instance the ending -ness is feminine in phonological analogy to the ending -heit, -keit in German: die Fairness ‘fairness’, die Fitness ‘fitness’. The analogy does not incidentally have to be between an English suffix and a native German one; in many cases a Romance suffix acts as a model, cf. die Action ['eːkʃən] ‘action’ on the basis of -ion as in die Reduktion ‘reduction’. This case has incidentally led to a secondary contrast within German, cf. the Romance loan-word die Aktion ['aktsiən] ‘excessive trouble, effort; special offer’; another such set is die Promotion ['prəməʃən] (Romance loan-word) ‘doctoral degree’ and die Promotion ['prəməʃən] (English loan-word) ‘promotion (in the sense of an advertising campaign)’. The analogy operating with suffixes can furthermore be partly phonological, partly lexical as in die Publicity (with the suffix /-ti/) ‘publicity’ on the basis of such Romance loanwords as die Stabilität (with the suffix /-te:t/) ‘stability’.
In the following the operation of phonological analogy is to be examined with the exclusion of those loan-words where lexical analogy is obviously operative. This of course involves the assumption that it is possible to separate the two forces in gender assignment. However artificial the separation may seem, the attempt will still be made in the hope that light can be cast on the role of phonological considerations in gender assignment with loan-words.

5.2 Gender of vowel-final nouns

Although the number of French, or more generally Romance, loan-words which have entered German since the war is far slighter than that of English loan-words there is a substantial number of Romance loan-words from the not so distant past which form a suitable point of departure for a discussion of loan-word phonology.

The simplest type of Romance loan-word is that ending in a vowel. The vowels which can occur in word-final position in these loan-words are /-i/, /-e/, /-a/, /-o/ and /-u/. For these vowels fairly stable guidelines for gender assignment can be established:

(9) a /-e/ feminine
    /-o/ neuter (masculine)
    /-a/ feminine
b /-i/ ---
    /-u/ masculine

The first vowel /-e/ presents no difficulties for gender assignment. All loan-words ending in /-e/ are feminine: die Garage ‘garage’, die Pille ‘pill’, etc. (note that this refers to the phonological shape and not the spelling of the loan-word: Cottage from English is neuter in German, Duden 1975-1981: 471). However one must distinguish between two types of loan-word in this connection: those in which the final vowel is stressed and those where it is unstressed. The loan-words just cited are of the latter type. Loan-words of the first type are only found when the vowel is /-e/; this /-e/ goes back to /-e/ in French whereas the /-e/ as in die Sabotage ‘sabotage’ derives from French /-a/. But in German final /-a/ is interpreted phonologically as (unstressed) /-e/ (and so pronounced in North German) so that it is justified to denote nouns of the die Garage type as having final /-e/ in German. Examples of stressed /-e/ in German loan-words are: das Entrée ‘entrée’, das Separée ‘room with separate entrance’. The spelling of such words may differ according to the French original, cf. das Portrait ‘portrait’, but it is the pronunciation which is decisive. Lexical analogy or natural gender may demand a different gender in a few cases: die Matinée ‘matinée’ (cf. die Veranstaltung ‘event’, die Vorführung ‘performance’); der Chevalier ‘gentleman’ (archaic or ironic, more normal is a German form der Kavalier /'kava\'li:/). In one case gender contrast is to be found with nouns with final /-e/ (stressed vs. unstressed): das Café ‘café’ and der Kaffee ‘coffee’ where the masculine gender of the latter word is probably an analogical formation to der Tee ‘tea’.

Nouns in /-o/ in German are mostly of two types (1) originally Italian words or (2) abbreviations of longer Romance loan-words. The first type can be seen in the following forms:

(10) a das (Violin)Cello  ‘cello’
b das Konto  ‘(bank) account’
c das Fresko  ‘fresco’
The tendency for nouns in /-o/ to be treated as neuter has led to gender fluctuation with older Italian loans (originally masculine), cf. der/das Saldo ‘balance (of bank account)’. The masculine gender may be retained because of lexical analogy as in der Gusto ‘gusto’, cf. der Geschmack ‘appetite’, der Tango, der Bolero would appear to have analogical gender on the basis of der Tanz. It may be present because of the origin of the word, cf. der Sakko ‘man’s jacket’ which is not an Italian loan-word but is derived from the native word der Sack ‘sack’. Der Amigo shows natural gender prevailing again.

Many Romance (or Classical) loan-words in German can be abbreviated leading to an internal /-o/- becoming final, for instance die Demonstration ‘demonstration’ → die Demo; die Diskothek ‘discothèque’ → die Disko. In a few cases a gender change can be observed on abbreviation: die Photographie ‘photograph’ → das Photo (Foto) (probably in lexical analogy to das Bild ‘picture’), die Information ‘information’ → die / das Info where the neuter usually implies an information sheet or brochure and could be in lexical analogy to das Blatt ‘page’ or das Heft ‘booklet’.

Where the abbreviation is arrived at by simplification of a compounded noun the original gender is retained: der Espresso ‘expresso coffee’ from der Espressokaffee, der Dispo ‘credit on current account’ from der Dispositions kredit. Words which only occur in an abbreviated form or Latin loans in /-o/ are always neuter: das Ufo ‘unidentified flying object’; das Veto ‘veto’, das Ego ‘ego’.

Caution is required in this area. What might look like an interesting case of abbreviation with gender change may turn out to be a case of two different albeit related words. Thus das Lotto ‘lottery’ which is semantically related to die Lotterie involves an Italian loan and a French loan which co-exist in German and not an abbreviation made after the borrowing of the longer word.

Although there are no native words ending in /-a/ (disregarding place and person names), the assignment of feminine gender to nouns in /-a/ is a general feature of German. A glance at women’s names shows that /-a/ is a very common ending here irrespective of whether the name is of native German or Romance origin: Erika, Gisela; Maria, Sylvia, Angelika. Examples of loan-words in /-a/ are: die Kamera ‘camera’, die Aula ‘aula’; phonological analogy usually wins over lexical analogy with this ending: die Villa ‘villa’ (cf. das Haus ‘house’); however der Wodka ‘vodka’ has its gender from der Branntwein ‘brandy’ and the word for ‘panda’ is masculine (der Panda) in analogy to der Bär. There are occasional instances of neuters in /-a/ such as das Sofa ‘sofa’, das Komma ‘comma’ (possibly from das Zeichen ‘sign’). In cases where the word comes from outside the group of European languages lexical analogy may be the guideline, as with das Lama (cf. das Tier) or simply neuter because there is no obvious analogy, e.g. das Nirvana (analogous to das Gefühl ‘feeling’?). Natural gender is overriding with the kinship terms die Oma ‘granny’, der Opa ‘granddad’ which derive from Großmama and Großpapa respectively.

Among native words the ending /-i/ is for all intents and purposes restricted to diminutive or endearing forms of words such as Vati from Vater ‘father’, Mutti from Mutter ‘mother’. The /-i/ suffix can occasionally be used with terms of disrespect (the reverse of terms of endearment): die Tussi ‘stupid woman’ (ultimately from Tusnelda), der Heini ‘idiot’ (from Heinrich). Only in specialist areas does /-i/ represent an original Italian plural and can then be neuter (a collective noun), cf. das Tutti ‘tutti (all instruments of an orchestra together)’. The use of /-i/ as a loan-plural for those singular nouns in /-o/ from Italian is virtually non-existent; a plural such as die Konti from das Konto would be affected; Italian loan words in /-o/ all take the plural suffix /-s/, occasionally /-n/ (Wurzel, 1984: 125ff.).
An additional use of /-i/ is with clippings in which case the gender is that of the word from which the abbreviated form is derived. The /-i/ is frequently not contained in the full form so that it can be classified as a pseudosuffix, e.g. *der Pulli* (from *der Pullover*), *der Kuli* (from *der Kugelschreiber* ‘ball-point pen’), *der Krimi* (from *der Kriminalroman* ‘detective novel’).

The most infrequent final vowel in German is /-u/. It only occurs in morphologically opaque forms as part of the stem, the latter having gender by lexical analogy, e.g. *das Gnu* ‘gnu’ (cf. *das Tier*), *der Uhu* ‘eagle-owl’ (an onomatopoeic formation, gender probably from *der Vogel*). In a few loans from French /-u/ occurs as part of a monosyllabic stem which is masculine in German: *der Clou* ‘highlight’; the vowel may also occur in an abbreviation: *der Akku* ‘wet battery’ from *der Akkumulator*. Among German native words monosyllables in /-u/ are relatively common, usually with masculine gender: *der Schuh* ‘shoe’, *der Schmu* ‘cheat, swindle’.

5.3 Double gender and gender change

Among the English loan-words in German since the Second World War many have changed their gender or are available with two genders, for example the word for ‘gang’ was originally masculine and is now feminine (Zindler, 1959: 18 in Carstensen, 1980). With many of these words it is a case of lexical analogy winning out over phonological analogy. With *der Gang* /ɡeŋ/ one can see the phonological analogy to German words like *der Gang* /ɡan/ ‘walk’, *der Gesang* /ɡənzɑŋ/ ‘song’, etc. The change to the feminine is obviously motivated by lexical analogy with *die Gruppe*. With the word for ‘slang’ only the masculine is available *der Slang* (the neuter found in some dictionaries, see Carstensen, 1980: 10f. is a left-over from the stage when the word was not integrated into German). In connection with lexical analogy it is interesting to note that *Slang* is not attested with feminine gender in analogy to *die Sprache*; it could have the masculine from *der Dialekt*, *der Jargon*.

Double gender with loan-words may also be due to differences within the German-speaking region. Thus in Austria *Service* is usually neuter (Carstensen, 1980:6) but in Germany it is masculine (in lexical analogy to *der Dienst*), *Dress* is feminine in Austria but masculine in Germany. This variation is not surprising given that there is a degree of variation in gender and declension with native words within the German-speaking area, for instance *Butter* is feminine in Central and Northern Germany but masculine in the South and in Austria; the word for ‘stomach’ *der Magen* and ‘car’ *der Wagen* have a plural with Umlaut (*die Mägen*; *die Wägen*), but only in the South. The differences between the Federal Republic of Germany and the former German Democratic Republic are minimal going by such works as Küfner et al. (1982). The problem in this connection is that many words common in the West are not included in Küfner et al., possibly because they belong to a milieu which officially did not exist in the East (at the time of compilation for Küfner), examples of this are *der Joint* ‘joint’, *der Deal* ‘deal’ (both referring to drugs).

5.4 Functional multiple gender

Among the many English loan-words are a number which have two or possibly three genders with a semantic distinction between them. In all these cases the borrowing was originally with one meaning and presumably with one gender. The later borrowing of an
additional meaning lead to the distinction being made via the determiner paradigm as in die Coach ‘coach (type of horse-drawn waggon; probably phonological analogy with die Kutsche)’ vs. der Coach ‘coach (sports trainer)’. In rare cases all three genders are represented with a single form: der Single ‘single, unmarried person’, die Single ‘single, type of disc’, das Single ‘single, game of tennis’, all pronounced [zɪŋl].

5.5 Idiosyncratic gender

The purpose of this final section is to see whether in the assignment of gender to loan-words from English there might still be reason for maintaining that monosyllables show typical determiner paradigms depending on their phonological shape. The justification for this assumption can be found in changes of gender which are apparently unmotivated but on which there is complete agreement among native speakers. Take the following change on clipping as an example: die Frustration ‘frustration’ > der Frust. What is peculiar here is that the gender change to masculine on abbreviation cannot be due to lexical analogy and so would appear to be phonological. But what type of native syllable structure could have served as a model here? Most nouns in /-ust/ are feminine: die Lust ‘desire, wish’, die Brust ‘breast’. Nouns which have the syllable rhyme /-o-st/ are usually masculine however: der Frost ‘frost’, der Rost ‘rust’. Two phonological possibilities for the gender change of die Frustration to der Frust can be offered, neither of which is satisfactory.

The first is that the syllable onset of Frost acted as a model; the second is simply that the gender change was idiosyncratic. Now while gender assignment is usually idiosyncratic with monosyllables, gender CHANGE is usually determined by analogy of one kind or other. Unfortunately, cases like that of der Frust are not as rare as one might like to believe. In German the word ‘shift’ exists as a masculine loan-word: der Shift. Here one can exclude lexical analogy as the native German word for ‘shift’ is die Verschiebung. But native German words in /-ft/ are overwhelmingly feminine: die Kraft ‘strength’, die Luft ‘air’, etc. (see the discussion of syllable rhymes above). Again the question poses itself: why should the gender of the loanword be so unexpected? A tentative answer can be offered if a principle is revised which has been held to hitherto. In (1) above the syllable rhyme was regarded as frequently determining the gender of native words, albeit not absolutely. Certainly the rhyme of a monosyllable is responsible in many cases for declensional class assignment. But for monosyllabic loanwords it just might be that the syllable rhyme and the syllable onset are responsible for gender assignment. This would account for the masculine gender of Frust as it has /fr-st/ in common with the masculine Frost. It would also account for the masculine gender of Shift as this has /-ft/ in common with masculine native nouns in /-ft/ like der Schaft ‘shaft, handle’ (again see above). Note that the phonologically determining factor, if at all, must be the syllable onset and the coda together as there are any amount of nouns in /fr-/ or /ʃ-/ which are not masculine.

There is, however, a more satisfactory account for masculine gender with Frust and Shift which approaches the matter from a different angle and which is in keeping with the typological profile of the language. The suggestion here is that the reason for the change is morphological. In German nouns which are derived from verbs by stripping them of their endings are invariably masculine. Such monosyllable masculine nouns from verbs are very common in the language (note that a prefix to a verb does not affect its classification as the root is still monosyllabic).
The assumption here is that on the clipping of *Frustration* German speakers were guided by default gender for nouns of the above type and somehow treated the change as a case of *frustrieren > der Frust* by deverbal derivation. This strict observation of morphology is consonant with German as a whole which keeps to strict morphological agreement even in the face of semantic interpretations to the contrary, cf. *Die Polizei ist (not sind) gekommen* ‘The police have arrived’.

6 Conclusion

Surveying the area of gender in German one can maintain that the area with least regularity is that of monosyllables which is also that of all native roots of the language. Various linguists have been tempted to see gender as due to the sound structure of the nouns which they govern. For instance Corbett (1991:33) believes that phonological criteria must be operative as a null hypothesis. Rocca (1989: 20ff.) deals with the phonology of Spanish gender with respect to gender assignment and final vowel type. Such approaches would appear to be insufficient for the complexities of German gender. Here both phonological and lexical principles are at work. There is a large degree of predictability but the unpredictable instances can only be accounted for by assuming lexicalisation, that is the gender is stored with each word as part of the entry in the mental lexicon of native speakers. In some instances there are lexical classes (days, months, seasons; numbers) which share a single gender. These groups should not be accorded undue weight as they are quite rare in the language and are fossilised, i.e. no new groups have arisen. With loans the situation is somewhat more illuminating as lexical analogy would seem to play a significant role in gender assignment. Finally the linking of loanwords to established morphological processes such as deverbal noun derivation shows the extent to which new lexical items are integrated into the grammatical system of the language and how little the typological makeup of German has been disturbed by the large influx of recent English loanwords.
Notes

* I am indebted to my Munich colleague Elke Ronneberger-Sibold (now Eichstätt) who took time and great pains to suggest improvements to this article from the point of view of the Germanist and who saved me from many a pitfall. If I have nonetheless fallen into some there is no one to blame but myself.

1) What is sociolinguistically relevant is the manner in which generic reference is realised across the sexes in German. The former practice of using the masculine form as default has come increasingly under attack so that a sentence like *Sie arbeitet als Lehrer an der Realschule* would now contain *Lehrerin* as the reference to profession. Indeed in many cases forms are rejected which, while grammatically feminine, as felt as too dependent on the corresponding masculine form, e.g. *Amtsfrau* has all but replaced the earlier *Amtmännin* (Hentschel and Weydt 1994: 151).

2) Adjectives are perfectly regular with regard to the formal realisation of gender. Typical of nouns is that their classes leak. While the vast majority of masculines take -(e)s in the genitive, there are a few ‘weak’ masculines (nasal declensional type) such as *der Mensch ‘person* cf. *des Menschen*-GEN SG.

3) In general periods of the year with a religious significance are feminine, e.g. *die Ostern ‘Easter* and *die Pfingsten ‘Whitsun* but the word for ‘Christmas’ is occasionally used as a neuter: *die Weihnachten* along side *frohes Weihnachten*.

4) Genzmer (1995: 150-164) offers a comprehensive list of words whose gender is predictable from phonological form.


6) Eisenberg (1989: 170) that about 90% of the monosyllables in German are predictable in gender. He postulates that the more consonants are to be found at the beginning or end of a word, the more likely it is to be masculine. All his examples are monosyllables. Indeed he should have specified that none of these can be feminine (the latter would require a stem-extending /-ə/ as with *die Decke*, which of course can be lost by apocope as with *die Tür from die Türe*). The choice is hence between masculine and neuter.

7) Köpcke and Zuber (1984:29) think that *kn-* is a masculine beginning for words. This may be a coincidence as it those words which show this beginning end in /-pf/ and are all masculine given this ending: *der Knopf ‘button’, der Topf ‘pot’, der Zopf ‘pleat’, der Kopf ‘head*. The masculine gender of *der Knecht ‘servant* can be adequately accounted for by the fact that the word denotes a male.

8) Loans from English are touched upon in Barbour and Levinson (1990: 257-261), Section 8.6.2. *Examples of English influence on German.*
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