Spanish gender assignment in computer and Internet related loanwords

Regina Morin

This study examines grammatical gender assignment to patent Anglicisms related to computers and the Internet in the Spanish language print and digital press. The data show that most such loanwords are consistently masculine due to factors that operate simultaneously in a non-contradictory fashion, such as non-typical phonological word shape, and synonymic and metonymic gender. A smaller number variably receive feminine and masculine gender due to hyperonymy, metonymic gender, and competing factors such as synonymic gender and phonological word shape. Only a handful are consistently feminine, almost exclusively due to synonymic gender, and rarely, metonymic gender. This study supports previous research findings that in Spanish masculine is the preferred gender in loanwords if there is no competing factor that would lead to feminine gender assignment. It also argues that semantic and phonological conditioning factors often work together in a non-contradictory way, competing only when each would assign a different gender.

1. Introduction

This study examines grammatical gender assignment in computer and Internet related loanwords in the Spanish language print and digital press. The data analyzed come from three sources. The first is a survey of newspapers from eight different Latin American countries, including one daily edition each from Columbia (Col.) (*El Tiempo*), Costa Rica (C.R.) (*La Nación*), Ecuador (Ec.) (*El Universo*), Guatemala (Guat.) (*Prensa Libre*), Dominican Republic (D.R.) (*Listín Diario*), and Uruguay (Ur.) (*El País*), and one Sunday edition each from Argentina (Arg.) (*Clarín*) and Chile (Ch.) (*El Mercurio*). These newspapers were chosen because of availability, and because they are published in Latin America. No Spanish language newspapers published in the United States were used for this study. The eight Latin American newspapers yielded a total of 823 items (articles, advertisements, letters to the editor, and miscellaneous items such as contact information, movie listings, death notices, contest entry forms) with a total of 231 different computer and Internet related borrowings of various kinds (loanwords, calques, and loanblends). The second source of data was a four week survey of *El País*, the most widely

read newspaper in Spain, with a daily circulation of 2,098,000 and a Sunday circulation of 3,252,000. I found a total of 620 items with 361 different computer and Internet related borrowings of various kinds (loanwords, calques, and loanblends). Two problems were present in these data sets. In some cases, there was no context with which to determine gender assignment, and in others, some borrowings that occurred in *El País* were not attested in the newspapers from Latin America, and vice versa. To remedy both of these problems, additional supporting evidence was gathered from the online versions of *Clarín, El Mercurio, La Nación, El País* (Sp.), *El País* (Ur.), *Prensa Libre, El Tiempo,* and *El Universo*. The website for *Listín Diario* (D.R.) did not have a search function, so it was not possible to search those archives for articles containing the borrowings in question. In addition, *El País* (Sp.) and *El País* (Ur.) both charge a subscription fee for archival searches, so while it was possible to ascertain that certain words appeared in online articles, it was only possible to view the most recent articles. Keyword searches were carried out only for borrowings found in the print versions of the newspapers surveyed, that is, online sources served only as supporting or clarifying evidence, not as sources of additional borrowings.

2. Review of the literature

Harris (1985, 1991) argues that the correlation between Spanish Aword markers@ (e.g. the bracketed elements in *muchach[a]* 'girl', *muchach[o]* 'boy', *sed[e]* 'headquarters', etc.), and grammatical gender is random and arbitrary, but that there is a regular inner core of nouns where *-o* is invariably attached to masculine stems and *-a* to feminine stems, regardless of the animacy of the referent. He also identifies a regular outer core of nouns that end in a consonant or in [-e] for syllabicity, and an irregular residue that includes all substantives not included in the regular inner and outer core. Harris' proposed classes of substantives are summarized in Table 1, which is a slightly modified version of the table appearing in Harris (1991:32):

Table 1.

Regular		Irregular Residue
Inner Core	Outer Core	
hijo (m.) 'son' hija (f.) 'daughter' cedro (m.) 'cedar' sidra (f.) 'cider	padre (m.) 'father' mujer (f) 'wife' mar (m.) 'sea' liebre (f.) 'hare'	problema (m.) 'problem' tribu (f.) 'tribe' héroe (m.) 'hero' etc.

Morin (1999) questions Harris' claim that there is a principled basis for distinguishing between substantives belonging to a regular outer core (those ending in a consonant or [-e] for syllabicity) and those belonging to an irregular residue, and proposes that Spanish substantives can be divided into only two classes, one in which the word-final vowel (*-o*, *-a*) is predictable and is an exponent of biological or grammatical gender, and the other where it is unpredictable or lacking entirely. Like Harris, Roca (1989) argues that in Spanish gender cannot be predicted on purely semantic or phonological criteria. Harris and Roca also both assume that that masculine is the unmarked gender in Spanish. However, Harris (1991) interprets unmarked gender literally as the absence of any information about gender in lexical entries. Thus, masculine nouns are unmarked for gender, while the lexical entries of feminine nouns have the single lexical gender mark *f*. Roca assumes the source of gender to be an abstract morphosyntactic binary feature ([+/-F]) encoded in the lexical representation of the items themselves. The syntactic transmission of this feature from the head noun to its modifiers is directly responsible for the agreement manifestations of gender.

Faussart et al. (1999) provide evidence that gender is an inherent characteristic of the stem itself, lending support to Harris' and Roca's proposals regarding the encoding of some form of morphosyntactic gender marking in underlying representation. An experiment conducted in the auditory modality to test the effect of gender and number agreement on lexical decisions in Spanish revealed an interaction between grammatical relation (congruent, incongruent) and violation type (number, gender). Gender violations were more disruptive than number violations. Faussart et al. assume that when the language processor encounters an incongruent condition, it is forced to repeat one or more of the operations involved in the lexical decision process, depending on the nature of the violation (gender or number). They assume that the lexical decision process includes a stage of lexical access, which consists of locating the correct lexical entry and lexical identification, a stage of readout, which makes

available properties of the entry such as number, gender, case, and semantic properties, and leads to lexical recognition, and a stage of evaluation, which leads to integration of a target deemed appropriate. If gender is an inherent characteristic of the stem, when the processor encounters a gender violation, it may be uncertain about whether the correct lexical entry has been located in the stage of lexical access. It goes back to the lexical identification state, and then repeats readout and evaluation. If number, on the other hand, is not an inherent characteristic of the stem, a number violation may only lead the processor to redo the evaluation stage to confirm that the result of the readout stage was adequate. This difference may explain the faster response to number targets than to gender targets (421 ms. vs. 436 ms. on average), and the fact that the effect of grammatical congruency was more important for gender than for number targets (156 ms. vs. 64 ms.) in the experiment discussed here. Domínguez et al. (1999) carried out three experiments to establish whether regular inflected words are listed in the lexicon as morphologically complex words or if only uninflected forms are listed, with complex forms being derived by rule. Their investigation was limited to markings of grammatical gender and number of nouns and adjectives. The material for the two gender experiments was composed of words denoting animate entities where semantic and morphosyntactic gender coalesce, and where *-a* corresponds to feminine gender and *-o* corresponds to masculine gender. The first experiment manipulated the surface frequency of masculine and feminine inflected forms of the same root morpheme. For Masculine Dominant items the frequency of the masculine form (e.g. *ciego* 'blind') was higher than for the feminine (*ciega* 'blind'), and for Feminine Dominant forms, the frequency of the feminine form was higher (e.g. *viuda* 'widow' vs. *viudo* 'widower'). This experiment found that for two words derived from the same root morpheme but contrasting in their gender marking, reaction times were faster for the more frequent member of the pair independently of their particular gender. The second experiment assessed the contribution of cumulative frequency (the frequency of the feminine form plus the frequency of the masculine form) by comparing masculine words having the same surface frequency but differing in the frequency of the corresponding feminine form. The main finding of this experiment was the absence of a cumulative frequency effect when the contrasted words, masculine inflected forms, were matched in surface frequency. When two masculine words had the same frequency but differed in the frequency of their corresponding feminine form, the reaction times were analogous. The

third experiment manipulated the relative frequency of singular and plural inflected words. It compared stem morphemes inflected in number that differed in their surface frequency. Half of the words were Singular Dominant and had a higher frequency of the singular than plural form (e.g. *cielo* 'heaven'), and half were Plural Dominant (e.g. *labio* 'lip'). This experiment found a clear frequency effect on response times for Singular Dominant items: singular forms were responded to faster than plural forms. However, no such frequency effect was found for items in which the inflected plural form is more frequent than the corresponding singular form. It appears that the frequency of the singular form constitutes the main determinant of reaction times for singular and plural words. Results of the gender experiments suggest that access time for gender information is mainly related to the surface frequency of the presented word, and not to the cumulative frequency of both masculine and feminine forms. Results of the number experiment show that access time to inflected plural forms is more strongly related to the frequency of the corresponding singular form than to their own frequencies. Dominguez et al. conclude that gender information is included in the lexical entry of each word and retrieved in a direct manner during the recognition of isolated words, but that access to inflectional number information could be mediated by the lexical entry corresponding to the inflected singular form. This difference may exist because gender constitutes a more intrinsic feature of the word than number information, or perhaps because the phonemic realization of number is perfectly systematic in Spanish, while gender assignment, as pointed out by both Harris and Roca, is largely random and arbitrary.

Ibrahim (1973:61) summarizes the principles which have been found to determine gender assignment in loanwords across languages. In loanwords with animate referents, biological sex is the overriding consideration. In loanwords with inanimate referents, gender assignment may be determined by factors as varied as synonymic or analogical gender (the borrowed word takes the gender of the native word it replaces), the gender of the suffix, homophony and rhyme, unmarked gender, also known as the masculine tendency, the gender of the loanword in the source language (rarely), and differentiation of meaning (e.g. *la bolsa* ' Stock Market'/*el bolso* 'purse'). Much research in Spanish (e.g. Chaston 1996; Zamora 1975; Zamora-Munné & Béjar 1987) has obliquely acknowledged that some of these factors are at work in the assignment of gender to loanwords in different varieties of Spanish, while at the same time, based largely on Bull (1965), ascribing an inordinate amount of importance to phonological shape,

defined as the noun ending or terminal phoneme (TP). While Harris (1985, 1991), Roca (1989), and Morin (1999) all argue that phonological shape defined as the TP is not a good predictor of gender in native Spanish words, to my knowledge, Smead (2000) was the first to argue that phonological shape, so defined, may correlate only weakly with gender assignment in loanwords in Spanish. He demonstrated in his analysis of gender assignment in Chicano Anglicisms, that the gender of a derivational suffix (or a sequence that can be interpreted as such) takes precedence over the terminal phoneme. Such a conclusion seems very plausible in light of existing research that reduces the concept of phonological word shape to the shape of the TP, and that has, in many cases, resulted in important overgeneralizations. Many such analyses consistently confuse phonemic rules with morphemic rules, and fail to distinguish between phonological sequences that form part of the noun base, and phonological sequences that form derivational suffixes. An illustrative example is to be found in Bull (1965), who gives but a nod to the importance of terminal morphemes rather than phonemes when considering gender assignment in relation to phonological word shape. He writes:

> Nouns ending in *z* (272 cases) are not included because this letter terminates the gender morpheme (*actriz*) and the noun-forming suffix used to create abstract nouns from adjectives (*pálido>palidez*). Both of these combine with adjectives ending in /a/. The remaining words ending in *z* show no significant statistical pattern and have to be memorized. (Bull 1965:108)

Bull applies this criterion selectively, and except in the case of *-z, -n*, and *-s*, disregards the importance of terminal masculine or feminine derivational suffixes that may result in a preponderance of masculine or feminine nouns with a particular terminal phoneme. A telling example is that of *-d*. According to Bull, there are 21 masculine nouns and 717 feminine nouns ending in *-d* (97% feminine). I used the Bosque & Pérez-Fernández (1987) reverse dictionary (102,012 total entries), which lists 20 masculine nouns in *-d* and 826 feminine. One noun, *huéspued* 'guest' is listed as both masculine and feminine by the *DRAE* (2005) and *VOX* (2004), and another, *cortacésped* 'lawn mower' is listed in the *DRAE* as feminine, and in *VOX* as ambiguous. A closer look at the shape of the other nouns, beyond their terminal phoneme, makes clear that it is impossible to say that 97% of nouns in *-d* are feminine. Indeed, 56 nouns end in the feminine suffix *-tud* (e.g. *juven+tud* 'youth'), and 756 end in the highly productive feminine suffix *-dad* or one of its allomorphs (e.g. *clar + (i)dad* 'clarity'). This

leaves only 20 underived masculine nouns vs. 12 underived feminine nouns, listed in (1 a-b), not ending in *-tud* or *-dad*:

(1) a. Underived masculine nouns ending in *-d* (in reverse dictionary order): *abad, nilad, rad, farad, taled, césped, caíd, cid, ardid, adalid, áspid, quid, efod, lord, milord, laúd, ataúd, alud, talud, cambalud.*
b. Underived feminine nouns ending in *-d* (in reverse dictionary order): *edad, ciudad, verdad, mitad, merced, red, pared, sed, lid, vid, salud, calicud.*

Whitley (1986) lists *ardid* 'trick'*, ataúd* 'coffin', and *césped* 'lawn' as "exceptions" to the rule established by Bull. However, there are actually more underived masculine nouns in *-d* than feminine, if we sort out terminal phoneme from terminal morpheme, as Bull correctly did in the case of *-z*. There may exist a perception that more words that end in *-d* are feminine, because some look like words ending in feminine *-dad*/*-tad* (e.g. *edad, ciudad, verdad, mitad*), and because most are higher frequency words than the majority of the masculine words in *-d*, with the possible exception of *césped* 'lawn' and, when the occasion calls for it, *ataúd* 'coffin'. Chaston (1996) found only a 76% standard article usage accuracy for nouns ending in *-d* among the Texas Chicano speakers in his study. Likewise, Natalicio (1983), in a study of native speaker intuitions regarding gender assignment, found that her subjects disagreed significantly in the case of words ending in *-d*. According to Bull's statistics, 97% of nouns ending in *-d* are feminine, but Natalicio's subjects chose the article *el* for words ending in *-d* 67% of the time, while the one word with the derivational suffix *-tud* was paired with *la* by 67% of the subjects. These results are easily explained if we keep in mind that there are nearly five times more feminine nouns ending in *-tud* than there are underived feminine nouns in *-d*, and that there are so many other feminine words ending in *-d* due to the productivity of *-dad*, and not because the TP *-d* occurs more often at the end of underived feminine than masculine nouns. It is not true that 97% of underived Spanish nouns that end in *-d* are feminine. Rather, it is true that there is no significant statistical pattern with regard to gender assignment among underived nouns ending in *-d*, and that derived nouns ending in the derivational morphemes *-tud* and *-dad* are feminine 100% of the time. So Smead (2000) is correct in ascribing greater importance to (perceived) suffixal sequences than merely to the shape of terminal phonemes. Evidence from Russian also suggests this to be a wise approach. Corbett & Fraser (2000) point out that the raw sta-

tistics only give a rough picture of what is going on in the nouns in five declensional classes in Russian because the figures do not take account of derivational morphology. For example, there are 5,150 nouns in declensional class III, but:

> ...over 4,300 of the nouns in class III have the suffix *-ost*3 which forms abstract nouns from adjectives (*star-yj* 'old', *star-ost*3 'old age'). If the suffix is labeled as belonging to class III, then the number of distinct members of the class is substantially reduced. Similarly nominalizations in *-anie/-enie* (like *razru©enie* 'destruction', derived from *razru©it*3 'destroy') inflate the figure for [declension class IV]...(Corbett & Fraser 2000:67-68)

Poplack et al. (1982) for Puerto Rican Spanish, Sánchez (1995) for the Spanish and Mexican printed press, and Smead (2000) for New Mexican and Southern Colorado Spanish, give careful consideration to conditioning factors in gender assignment in English loanwords. Poplack et al. (1982) used a variable rule analysis to show that physiological gender, phonological gender and analogical gender were significant in gender assignment in borrowed nouns in Puerto Rican Spanish, while homophony and suffixal analogy were present but did not prove significant. Sánchez (1995) discovered that a loanword can inherit the gender of its hyperonym, that is, of a superordinate category of which it is a member (e.g. *el deporte* 'sports', thus *el fútbol*, *el tenis*, etc.), and that morphological adaptation (e.g. *gol>goliza*) is a significant variable, in that the gender of the derivational suffix determines the gender of the loanword. Smead (2000), also through a variable rule analysis, identifies five factors that determine gender assignment in Chicano Anglicisms: in animate nouns biological sex, and in inanimates, the presence of a derivational suffix (or a sequence which can be interpreted as such), and to a lesser degree, the TP of the loanword, synonymic gender, and hyperonymy. Thus, gender assignment responds to morphological, phonological and semantic factors.

Corbett (1991:67) points out that there are nouns of unstable gender, and that such instability is particularly common in recent borrowings. Poplack et al. and Smead both posit that such instability may be the result of competing processes of gender assignment, for example, phonological criteria versus semantic criteria, and that speakers may not always agree as to which factor is more important in assigning gender.

3. The Data

Since the assignment of gender is only relevant for loanwords and for some loanblends, these are the only types of borrowings I will discuss in this study. A loanword (e.g. *web*) is the outright transfer of both form and content from a source language to a recipient language, with concomitant phonological and morphological adaptation (Haugen 1950). Loanblends (e.g. *página web* 'web page') are compound lexical units in which part of the phonemic shape of the word has been imported, while a native portion has been substituted for the rest (Haugen 1950:214). Most, if not all, computer and Internet related loanwords are patent Anglicisms, recognizable as such due to their phonology, morphology or orthography (Gorlach 1994; Pratt 1986; Rodríguez-González & Lillo-Buades 1997).

A total of 71 computer and Internet related loans (including one pseudo-Anglicism and one loanblend) appeared with evidence of gender assignment and will be discussed below. Forty-nine out of 71 (69%) were assigned masculine gender, 8 (11%) were feminine, and 14 (20%) were ambiguous, that is, they were variably assigned both masculine and feminine gender. In my sources, many of these loanwords are very clearly flagged as foreign items through the use of quotation marks or italics. Such flagging, which occurs most often in *El País* (Spain), and to a lesser extent in the Latin American newspapers, has been maintained in all examples cited. Loanwords that were assigned masculine gender appear in (2a-c).

(2) a. Masculine Loanwords attested in *El País* (Sp.) and Latin American newspapers: *ADSL, Bluetooth, CD, CD ROM, chat, chip, ciberticket, clic(k)/clik, cracker, drivers, DVD, DVD ROM, e-mail, gamers, gigabytes, gigaflops, hacker, hardware, hosting, hot-spot, i-pod, joystick, LAN (Local Area Network), link, megabyte, messengers, modding, Notebook, MP3, pack, P2P, phishing, PIN, router, Setup, site, software, spam, spyware, techie, weblog(s),Web Site, wiki(s)*;

b. Masculine loanwords attested in *El País* (Sp.) only: *dating on line, e-ticket, Help Desk*;

c. Masculine loanwords attested in Latin American Newspapers only: *e-paper, mouse, NIC* (Network Interface Card).

As the data in (2) show, the majority (88%) of masculine loanwords appeared in both the Spanish and Latin American print and digital press. In Spain the usual term for *mouse* is *ratón*. Keyword searches for *e-paper, mouse,* and *NIC* in *El País* online (Sp.) resulted

in no hits. Likewise, keyword searches for *dating online, e-ticket*, and *Help Desk* produced no results in any of the online Latin American newspapers.

Loanwords that were assigned feminine gender appear in (3):

(3) *Campus Party (pseudo-Anglicism), intranet, LAN party, playstation, puntocoms (loanblend), toolbar, wav (page), webcam(s).*

LAN Party exists in English, but *Campus Party* is a pseudo-Anglicism in which the English pattern is copied, thus producing non-native form that is, in fact, not English (Pratt 1986:348). I was unable to find this term in any English language glossary of Internet and computer related terms, and a Google search turned up nothing but references to Spanish language articles I had already found. I found *Campus Party* in the Spanish and Latin American data, but *LAN Party* appeared only in *El País* (Sp.). *Wav page* appears only in *El País* (Sp.), but *El Mercurio* online (Ch.) refers to *archivos wav* 'wav files'.

Loanwords that were variably assigned masculine and feminine gender appear in (4).

(4) *cookies, Desktop, firewire, Internet, IP, MB, Palm, pop-ups, PC, PDA, Tablet (PC), wi-fi.*

Loanwords attested in the data, but for which there was no evidence of gender assignment (e.g. *banners, chipset, memory stick, Ethernet, hyperlinks*, etc.) will not be discussed here. In her study on English loanwords in Chicano Spanish, Barkin (1980) claimed that unassimilated forms were either not assigned a gender or were not consistently assigned the same gender, while gender was more consistently assigned to partially or completely assimilated forms. These findings have been criticized as improbable (Poplack et al. 1982; Zamora-Munné & Béjar 1987), but in much of my data there is a certain avoidance when it comes to gender assignment, most likely because many computer and Internet related loanwords are completely unassimilated and obviously foreign. The representative examples in (5 a-b) illustrate this avoidance regarding gender assignment:

(5) a. Graba hasta 8 horas en DVD+R y hasta 128 horas en el disco duro. Transferencia del disco duro a DVD a alta velocidad. (Sp., *El País*)
'Record up to 8 hours on DVD+R and up to 128 hours on hard drive. High speed transfer from the hard drive to DVD.'

b. ...en la era de Internet y de la televisión... (Sp., *El País*)
'...in the era of the Internet and television...'

Notice especially in (5a) that DVD+R and DVD are not accompanied by any determiners while the loan translation *disco duro* is preceded by the expected *el*/*del*, and in (5b) there is no indication of the gender of *Internet*, while *televisión* is preceded by the expected determiner *la*. Barkin's claims do not seem completely improbable, either, if we look at what happens in other languages such as Russian or German. Doleschal (2000) reports that:

> ...Russian speakers often feel uncomfortable when asked about the gender of abbreviations they are not familiar with or even names of countries that are indeclinable (e.g. *Peru*). They prefer to use them with a classifier such as *gosudarstvo* n. 'state' or *strana* f. 'country'. This is evidence for the view that neologisms are not immediately assigned gender, but only if the syntactic context makes it necessary to use an agreeing form. Since this necessity probably occurs less often than the necessity to use a case form...gender may remain unspecified while declensional class must not. (Doleschal 2000:125)

According to Hickey (2000), loanwords such as the ones I am looking at here, that represent lexical material which is not integrated into the recipient language, also present a problem for gender assignment in German:

> 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 on a computer'. This is so specialized 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...The use of 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. (Hickey 2000:648)

Adverbial and adjectival loanwords (e.g. *online*) are not candidates for gender assignment, and will not be discussed unless they are also used as nouns, as is the case of *ADSL* (Asymmetrical Digital Subscriber Line) in (6 a-c):

(6) a. Línea ADSL/ servicio ADSL (Sp., *El País*)
'ADSL (adj.) line'/ 'ADSL (adj.) service'
b. Sin contar por supuesto el alquiler, luz, agua, teléfono, ADSL (carísimo, por cierto)...(Ur., *El País* online)
'Of course, that is not counting the rent, electric, water, telephone, ADSL (very expensive, to be sure)...'
c. Una nueva norma permitirá multiplicar la velocidad del ADSL por diez. (Arg., *Clarín* online)
'A new regulation will allow a tenfold increase in the speed of ADSL.'

4. Accounting for gender assignment in loanwords that are consistently masculine or feminine

4.1 Loanwords with animate referents

Biological sex is uniformly cited as the overriding factor in gender assignment among loanwords with an animate referent. There are only five such loanwords in my data: *cracker*, *gamers*, *hacker*, *techie*, and *weblogger/ blogger*. Representative data appear in (7a-c):

(7) a. Los hackers tienen un nombre para esas personas: crackers, y no quieren saber nada con ellos. (Ec., *El Universo* online)
'Hackers have a name for those people: crackers, and they want nothing to do with them.'
b. ... pero los *gamers* están más metidos en su mundo. (Sp., *El País*)
'...but the gamers are more wrapped up in their own world.'
c. ¿Qué hay de nuestros "techies" criollos? (Ch., *El Mercurio*)
'What about our home-grown techies?'

Techie corresponds quite closely to the Spanish *técnico*, listed by the *DRAE* and *VOX* as both masculine and feminine. *Hacker* is also closely associated with the synchronic creation *pirata informático*, and Rodríguez-González & Lillo-Buades (1997) list *pirata negro* as a synonym for *cracker*. See Otheguy (1991) for a discussion of the notion of loan translation vs. synchronic creation.

4.2 Synonymic or analogical gender

I follow Smead (2000) in using the term "synonymic gender" rather than the more traditional "analogical gender", based on Bookless' (1982) distinction between synonymic loans, which compete

for semantic space with a native language term, and unique loans that designate a new referent. However, it should be pointed out that many computer and internet related loans are both unique and synonymic at the same time. For example, the unique loan *e-mail* habitually occurs in the Spanish language press, but it competes for the same semantic space with the equally ubiquitous loan translation *correo electrónico* (m.), of which it is a synonym. *Weblog* is a unique loan, but it competes with *diario de Internet* and *bitácora.* So, many computer and Internet related loanwords may inherit their gender from synonyms which are, themselves, recent neologisms in Spanish.

There are 52 inanimate loanwords in the data that receive consistent gender assignment. Forty-four are masculine, and eight are feminine. Synonymic gender appears to be the primary factor that accounts for gender assignment in 25 out of 44 inanimate masculine loanwords (57%) and 7 out of 8 inanimate feminine loanwords (87.5%). That is, synonymic gender appears to be the primary factor in gender assignment in roughly 63% of all the loanwords that are not ambiguous. The representative examples in (8a- d) show that in most cases there is clear evidence of synonymic gender, since the loanwords in question are often accompanied by the very Spanish language synonyms (native or loan translation) whose gender they inherit.

(8) a. *hosting* (synonym: (m.) *alojamiento,* (m.) *hospedaje,* (m.) *servidor*)
E.g. Funcionamiento de la capa de infraestructura y **ALOJAMIENTO** (**HOSTING**) de contenidos Web y uso de servicios gratuitos del Internet. (D.R., *Listín diario*)
'Functioning of the infrastructure level and *alojamiento* (Hosting) of web contents and use of free Internet services.'
E.g. Ahora esperan ver la página que diseñaron en línea y buscan **UN *HOSTING*** (**SERVIDOR** para páginas web). (C.R., *La Nación* online)
'Now they hope to see the page they designed online, and they are looking for a Host (a server for web pages).'

b. spam (synonym: (m.) *correo basura,* (m.) *mensajes no solicitados*)
E.g. **EL SPAM** o **CORREO BASURA** que nos invade... (Sp., *El País*)
'The spam or junk mail that is invading us...'
E.g. **EL *SPAM*** (**MENSAJES NO SOLICITADOS**) ya empieza a llegar a los móviles. (Sp., *El País*)
'Spam (unsolicited messages) is already arriving on cell phones.'

c. *weblogs* (synonym: (m.) *diario de Internet,* (m.) *diario online,* (m.) *boletín en Internet, bitácora* (f.) from *cuaderno* (m.) *de bitácora*)
E.g. La blogosfera está que arde con esta iniciativa que pretende convertir en autores de **DIARIOS ONLINE** (o **WEBLOGS**, o *bitácoras*, según cómo se los quiera llamar) a personas que hasta ahora poco tenían que ver con el ciberespacio. (Arg., *Clarín* online)

'The blogosphere is burning up with this initiative that intends to turn into authors of online journals (or weblogs or logs, or however you want to call them), persons who until recently had very little to do with cyberspace.'

E.g. **LOS "BLOGS"** o **BOLETINES EN INTERNET** donde cualquiera puede publicar al momento opiniones o rumores están reproduciéndose como hongos...(Ur., *El País* online)

'Blogs or bulletins on the internet, where anyone can publish opinions or rumors instantaneously, are reproducing like mushrooms...'

d. *wikis* (synonym: (m.) *sitios colectivos*, (m.) *cuadernos virtuales*)

E.g. La tecnología de **LOS *WIKIS*, ESOS SITIOS** modificables por cualquiera... (Sp., *El País*)

'The technology of the wikis, those sites than can be modified by anyone...'

E.g. Escriba en **UN WIKI** y comparta sus conocimientos con el mundo. Estos "**CUADERNOS VIRTUALES ON LINE**" se crean y mantienen en forma colectiva...(Arg., *Clarín* online)

'Write a wiki and share your knowledge with the world. These "virtual online notebooks" are created and maintained collectively...'

The remaining masculine loanwords with synonymic gender, with their corresponding masculine Spanish language synonym(s) in parentheses, are listed in (9). All synonyms were attested in the print and digital newspapers consulted unless otherwise noted:

(9) Masculine loanwords with synonymic gender: *CD*/*CD-ROM* (*disco compacto*); *ciberticket* (*billete*/ (m.) *pasaje electrónico*); *driver(s)* (*controlador(es)*); *DVD* or *DVD ROM* (*disco*); *e-mail* (*correo electrónico*); *e-paper* (*libro electrónico*); *e-ticket* (*billete electrónico*); *hardware* (*Material*, *soporte físico*) (Rodríguez-González & Lillo-Buades 1997); *i-Pod* (*reproductor de música*); *link* (*enlace*); *messenger* (*mensajero instantáneo*/ *mensajes instantáneos*); *mouse* (*ratón*); *pack* (*paquete*); *PIN* (*número de identificación personal*); *router* (*enrutador*); *site* (*sitio*); *software* (*programa*(*s*)); *spyware* (*programas espía*); *website* (*sitio web*)

Representative evidence of synonymic gender in feminine loanwords appears in (10a-c):

(10) a. playstation (synonym: (f.) *consola*)

E.g....Sony reveló algunas características de su próxima **CONSOLA** de videojuegos: **LA PLAYSTATION** 3 (PS3). (Col., *El Tiempo* online)

'...Sony revealed some characteristics of its next videogame console: the Playstation 3 (PS3).

b. toolbar (synonym: (f.) *barra de herramientas*)
E.g. Otra pugna no menos feroz es **LA BARRA DE HERRAMIENTAS** de búsquedas, **LA *TOOLBAR***. (Sp., *El País*)
'Another no less fierce battle is the *barra de herramientas* for searches, the toolbar.'
c. webcam (synonym: (f.) *cámara web*)
E.g. El detenido era capaz de acceder a las claves bancarias e incluso activar y manejar a voluntad **LAS WEBCAM** de ordenadores privados, grabando de esta manera todo lo que ocupase el campo de visión de **LA CÁMARA**,...(Ur., *El País* online)
'The person arrested was able to access bank codes and even activate at will the web cams of private computers, in this way recording everything that occupied the camera's field of vision...'

The remaining feminine loanwords with synonymic gender, with their corresponding feminine Spanish language synonym(s) in parentheses, appear in (11). All synonyms were attested in the print and digital newspapers consulted:

(11) Feminine loanwords with synonymic gender: *Campus Party* / *LAN party* (*fiesta*); *intranet* (*red*); *wav page* (*página*).

There are two cases, *router* and *playstation*, that are not clear cut. *Router* often appears as *módem router*, and may actually get its gender metonymically from the established loanword *módem*, rather than from the neologism *enrutador*. *Playstation*, might be interpreted as a case of suffixal analogy with *-ión* or even of homophony with *estación*. That the shortened *play* in (12) receives the same gender as *playstation* may indicate that analogical gender with the feminine *consola* is the overriding factor, but it does not rule out suffixal analogy (consider *la foto(grafía)*:

(12) **LA PLAYSTATION** 2 se convierte en un teléfono con pantalla. Todo empezó con un español lejos de casa...Y éste azuzó el ingenio de Luis, que propuso en la oficina convertir **LA *PLAY*** en otra cosa. (Sp., *El País*)
'The Playstation 2 is converted into a telephone with a screen. It all started with a Spaniard who was far from home...And he stirred up the ingenuity of Luis, who proposed in the office that the play(station) be converted into something different.'

For both *router* and *playstation*, the outcome is the same no matter which factor is ultimately responsible for gender assignment. When a number of conditioning factors that would result in the same

gender assignment appears to operate simultaneously, we may not want to talk about competing processes of gender assignment at all. Consider the case of masculine gender in Spanish. Sánchez (1995) and Smead (2000) found that masculine is the preferred gender in loanwords if there is no competing factor that would lead to feminine gender assignment. Prado (1982), Roca (1989), and Harris (1991) all argue convincingly that masculine is the unmarked or default case in Spanish. Filipovic (1996) writes that in the Romance languages, the gender of Anglicisms is generally determined by the so-called masculine tendency. Typical endings in Spanish include *d, n, l, r, s, z* (Menéndez-Pidal 1966:170) and *y* (e.g. *rey* 'king'). Non-typical spellings or endings in loanwords generally result in masculine gender assignment (Butt & Benjamin 2000, Clegg 1997). Since these and other factors may operate simultaneously in a non-contradictory way (rather than competing) the precise cause of consistent masculine gender assignment may, in fact, be difficult to identify. For example, all the masculine loanwords in (8) and (9) are closely associated with masculine synonyms (and synonymic gender wins out over phonological factors in the feminine loanwords) so semantic considerations may be overriding here, but all of these loans also have something in their phonological word shape or in their spelling that is untypical in Spanish. Add to that the effects of masculine as the default gender, and you have at least three factors that work together to favor masculine gender assignment. As in the case of *Playstation*, we saw that several factors may also work together to favor feminine gender assignment, in which case, again, the precise cause of this gender assignment may be difficult to identify. When several conditioning factors are operating simultaneously, it seems that we can only be reasonably sure of which one is primarily responsible for gender assignment when they are, in fact, in competition. Take for example the feminine loanwords in (10) and (11). They are all untypical in that they present phonotactic or phonological irregularities, independently of their unusual spelling patterns, that should result in masculine gender assignment. However, they are all closely associated with a feminine synonym from which they inherit their gender. Here this semantic conditioning factor wins out over the competing phonological factor. Finally, we can also speak of competition when there is ambiguous or variable gender assignment, as we will see below.

4.3 Ellipsis or metonymic gender

Smead (2000) lists ellipsis or metonymy, where the loanword

gets its gender from an underlying noun, as one of the complexities in gender assignment among inanimates. There are only three loanwords in my data which receive their gender in this way. As shown in (13)-(15), these loans are often used as (nominalized) adjectives, so it is possible to ascertain the underlying noun from which they inherit their gender:

(13) MP3 (m.) from *el (archivo) MP3, el (formato) MP3*
a....similar AL **MP3**... (*El País*)
'...similar to MP3...'
b....está exclusivamente hecho para transformar un archivo con formato WMA a OTROS FORMATOS como EL **MP3**. (C.R., *La Nación* online)
'...it's made exclusively to transform a file in WMA format to other formats such as MP3.'
c....de hecho, compartir ARCHIVOS **MP3** puede haber ayudado al sector. (Ur., *El País* online)
'...in fact, sharing MP3 files may have helped the sector.'

(14) *el P2P* (peer-to-peer) from *el (intercambio) P2P, el/los (servicio(s)) P2P*
a. La SGAE critica a la Campus Party por no limitar EL **P2P**. (Sp., *El País*)
'The SGAE criticizes the Campus Party for not limiting P2P.'
b. Muchos usuarios, aunque no quieran pagar por música, se abstienen de usar las redes ilegales de INTERCAMBIO DE ARCHIVOS **(P2P)**. (Arg., *Clarín* online)
'Many users, even though they do not want to pay for music, refrain from using illegal (P2P) file sharing networks.'
c. Cada mes, 2.600 millones de archivos son copiados a través de la red si se toman en cuenta todos LOS SERVICIOS **P2P** (de persona a persona) -como Kazaa o Edonkey... (Ur., *El País* online)
'Every month, 2,600 million files are copied on the net if you keep in mind all the P2P (peer-to-peer) services like Kazaa or Edonkey...'

(15) *las puntocom* from *las (compañías) puntocom/ las (empresas) puntocom*
a. Cuatro años después del desplome de las *puntocoms*... (Sp., *El País*)
'Four years after the collapse of the dotcoms...'
b. Creada por un grupo de cinco diseñadores despedidos de sus trabajos en otras tantas "puntocom"... (C.R., *La Nación* online).
'Created by a group of five designers fired from their jobs in as many "dotcoms"...'

The context in (15) makes it clear that *las puntocom* refers to dotcom companies ((f.) *compañías*/ (f.) *empresas*). The fact that numbers are masculine in Spanish (e.g. *el uno, el dos, el tres*) may also contribute to masculine gender assignment of *MP3*. The case of *P2P* is not so clear because numbers are masculine, but letters are feminine (e.g. *la 'a', la 'b', la 'p'*), so the semantic factor is probably overriding here. In *las puntocom*, the non-typical ending *-m* and the *-o* in punto both probably favor masculine gender assignment, so here again, the semantic factor, competing against phonological considerations, wins out, as appears to be the case generally in consistent feminine gender assignment.

4.4 Phonological gender

The preceding data suggests that semantic factors (synonymic and metonymic gender) win out over phonological considerations to assign gender to all the consistently feminine loanwords. For the masculine loanwords there is also clear evidence that semantic factors are at work, but we cannot discount the non-contradictory role of phonological considerations. In this section we will see that there is still a group of masculine loanwords whose gender assignment can best be explained by looking at the phonological shape of the word. Here I am defining phonological shape in the sense of Clegg's (1997) non-typical endings, including consonant clusters, and Butt & Benjamin's (2000:13) "un-Spanish" spelling or endings, which generally result in masculine gender assignment. In loanwords non-typical endings such as *-p*, *-t*, *-k*, *-b*, and *-g* are often adapted through lenition, which may or may not be reflected in the spelling (e.g. *pimpón* <ping-pong, *bistec* or *bisté* <beefsteak, *el living* /ˈlibin/<living room). None of the loans in (16) is closely associated with any Spanish synonyms, and all have a spelling and/or ending (and in many cases, syllable structure and morphosyntax) that is in some way "un-Spanish":

(16) *ADSL, Bluetooth, chip(s), clic(k)/clik, chat, dating online, gigabyte, gigaflops, Help Desk, Hot Spot, joystick, LAN* (Local Area Network), *megabytes, modding, NIC, phishing, Setup*.

According to Butt & Benjamin (2000:14), the gender of abbreviations is determined by the gender of the main noun (e.g. *la ONU, la OTAN, el OVNI*), but if the gender of the underlying noun is unknown the abbreviation is masculine, unless there is a good reason otherwise (e.g. *el IRA* 'Irish Republican Army' not *la ira* 'anger'). In Spanish

ADSL is often spelled out as *Línea de Abonado Digital Asimétrica*, and *LAN* as *Redes de Área Local*. NIC is a type of card, *tarjeta*. In all three cases, the underlying noun (*línea, área, tarjeta*) is feminine, but the abbreviation is masculine. These abbreviations, unlike *ONU, OTAN* and *OVNI* are phonologically, but not morphosyntactically assimilated. Even though a speaker may say /ade ˈese ˈele/ for ADSL, the abbreviation respects English word order, and is an abbreviation of English, not of the Spanish loan translation (ADSL not LADA, LAN not RAL). I have found only one abbreviation that is completely assimilated and where gender is determined by the gender of the main noun: ICT's (Information and Communication Technologies) is routinely rendered *las TIC* (*las Tecnologías de la Información y la Comunicación*).

The masculine loanwords *modding* and *phishing* often appear with feminine Spanish language synonyms, as in the examples in (17a-b):

(17) a....**EL *MODDING* O TRANSFORMACIÓN ESTÉTICA** de los ordenadores añade color a las fiestas. (Sp., *El País*)
'modding, or the aesthetic transformation of computers, adds color to the parties.'

b. **EL PHISHING** (del inglés fishing: **PESCA**) se realiza mediante correos u ofertas engañosas... (Guat., *Prensa Libre* online)
'Phishing (from the English *fishing*) is carried out through e-mails or deceptive offers...'

Here there is clear evidence that semantic factors are passed over in favor of phonological factors that favor masculine gender assignment.

5. Accounting for ambiguous gender assignment

5.1 Hyperonymy

Sánchez (1995) discovered that a loanword can inherit the gender of its hyperonym, that is, of a superordinate category of which it is a member. She also found that gender was assigned to loanwords in the same way in the Spanish and Mexican printed press with only one exception: the loan *computer* was rendered *computadora* (f.) in the Spanish press, and *computador* (m.) in the Mexican press. These two observations account for ambiguous gender assignment in 6 of 14 (43%) of the loanwords in my data that receive variable gender

assignment. The *DRAE* (2005) lists *computador/a* (m./f.), but *ordenador* (m.) is the more usual term for *computer* in Peninsular Spanish. In the Latin American print and digital newspapers, *computador* and *computadora* are both ubiquitous, but *ordenador* also appears regularly in *La Nación* online (Costa Rica), and to a lesser extent, in the online newspapers from Uruguay and Argentina. *Computador(a)/ordenador* is the hyperonym from which the loans in (18) inherit their gender:

(18) *Desktop, Notebook, Palm, PC, PDA and Tablet (PC)*

Since *computador/a* is itself ambiguous, it follows that its hyponyms are variably masculine and feminine. For example, an advertisement for Dell Desktop Computers that appeared in print newspapers from several countries was identical except with respect to the gender assignment, as seen in (19a-b):

(19) a....con la compra de UN Desktop Dell dimension... (Colombia, *El Tiempo*)
b....con la compra de UNA Desktop Dell Dimension... (Guat., *Prensa libre*; C.R., *La Nación*)

The representative data in (20-21) clearly show that the loans in (18) receive variable gender depending on the gender of their hyperonym:

(20) a. Notebook (m.)
E.g. Pero, ¿qué es lo que más falla en UN COMPUTADOR?....Como el caso de Felipe Galleguillos. A los pocos días de comprado, SU NUEVO NOTEBOOK andaba muy lento.... (Ch., *El Mercurio* online)
'But what most often fails in a computer?...As in the case of Felipe Galleguillos. A few days after being purchased, his new notebook was very slow...'
b. Notebook (f.)
E.g. Sony Corp. presentó este martes LA PRIMERA COMPUTADORA portátil con tecnología incorporada para acceder a la internet mediante una conexión inalámbrica. LA NUEVA Vaio T350 NOTEBOOK, con precio mínimo de 2.199 dólares,... (Ec., *El Universo* online)
'Last Tuesday Sony Corporation presented the first laptop that incorporates the technology to access the Internet through a wireless connection. The new Vaio T350 Notebook, with a minimum price of 2,199 dollars...'

(21) a. PDA (m.)
E.g. **UN COMPUTADOR DE MANO** o asistente digital personal (PDA) funciona como una excelente agenda electrónica para anotar nombres...Si es nuevo en esto de **LOS PDA**, como los que utilizan el sistema operativo Palm, en esta dirección encontrará las instrucciones básicas... (C.R., *La Nación* online)
'A handheld computer or personal digital assistant (PDA) works as an excellent personal electronic memo book to write down names...If you are new to PDA's, such as those that use the Palm operating system, at this address you will find basic instructions...'

b. PDA (f.)
E.g....un dispositivo que complementa las funciones de **LAS PDA** (**COMPUTADORAS** de mano) con el celular y posibilita el acceso a Internet. (Arg., *Clarín* online)
'...a device that complements the functions of PDA's (handheld computers) with a cell phone and makes it possible to access the Internet'.

When *Desktop, Notebook, Palm,* and *Tablet (PC)* are masculine, there is clear evidence that it is in part because they are closely associated with their masculine hyperonym *computador*, but here again, phonological gender may also be at work to favor masculine gender assignment. When these are feminine, it appears that hyperonymy wins out despite the influence of phonological word shape. In the case of *PC, PDA* phonological word shape may serve to favor feminine gender assignment since letter names in Spanish are feminine, and *-a* is almost always associated with feminine gender. So when they are feminine, word shape and semantic factors work together to assign the same gender, but when they are masculine, semantic considerations win out over phonological factors.

5.2 Ellipsis or metonymic gender

Metonymy, where the loanword gets its gender from an underlying noun, accounts for variable gender assignment in the loanwords in (22).

(22) *firewire, IP, wi-fi, web*

Gender assignment is variable because the underlying noun from which the loan gets its gender can vary (e.g. *una (conexión) firewire* vs. *un (puerto) firewire*). Metonymic gender assignment is illustrated by the representative examples in (23-24):

(23) a. *la (dirección) IP* (f.)
E.g....puedes elegir entre **IP** DINÁMICA o **IP** FIJA. (Sp., *El País*)
'...you can choose between a dynamic or a fixed IP.'
E.g. La dirección nacion.co.cr es un atajo para decirle al computador que quiere ir a determinado computador, identificado por UNA ENORME DIRECCIÓN NUMÉRICA **(IP)**...(C.R., *La Nación* online)
'The address nacion.co.cr is a shortcut to tell the computer that it wants to go to a specific computer, identified by an enormous numerical address (IP)...'

b. *el (número) IP* (m.)
E.g. Todas las computadoras enlazadas online tienen UN NÚMERO DE IDENTIFICACIÓN llamado **IP**…Las visitas que se realizan a cualquier sitio web quedan registradas en un archivo de registro, o log, donde se guarda desde EL **IP** del visitante hasta el navegador y el sistema operativo de su PC. (Arg., *Clarín* online)
'All the computers that are linked online have an identification number called an IP...The visits made to any web site are registered in a registry, or log, where everything from the visitor's IP to the browser and the operating system on the PC is kept.'

(24) a. *la (tecnología) wi-fi* (f.)
E.g....o una Palm con **WI-FI** incorporad**a**, que todavía es demasiado cara. (Ch., *El Mercurio*)
'...or a Palm Pilot with wi-fi incorporated, which is still too expensive...'
E.g....para redes inalámbricas con TECNOLOGÍA **WI-FI**, e incluye una pantalla ancha. (Col., *El Tiempo* online)
'...for wireless networks with wi-fi technology, and it includes a wide screen'.

b. *el (servicio) wi-fi* (m.)
E.g. La CMT alerta sobre el riesgo de la gratuidad DEL **WI-FI** para la competencia del sector (Heading)
'The CMT warns about the risk from free wi-fi for competition in the sector'.
E.g. La Comisión del Mercado de las Telecomunicaciones (CMT) ha alertado...sobre los "riesgos" que implica la prestación de un SERVICIO GRATUITO DE **WI-FI** para la competencia efectiva del sector. (Col., *El Tiempo* online)
'The Commission for the Telecommunications Market (CMT) has warned...about the risks of a free wi-fi service for effective competition in the sector'.

The case of *web* in (25) is slightly different because the feminine and masculine do not mean exactly the same thing, unlike *el/la firewire, el/la IP*, and *el/la wi-fi*:

(25) a. *la (página) web* (f.)
E.g.. Greenpeace abre una 'web' con los productos que contienen tóxicos. (Sp., *El País*)
'Greenpeace opened a webpage listing the products that contain toxins.'
b. *el (sitio) web* (m.)
E.g. Visite el web www.nuevopolosedan.com y participe de la promoción... (C.R., *La Nación*)
'Visit the website www.nuevopolosedan.com and participate in the contest...'

Web is listed in the *DRAE* (2005) as feminine and cross-listed with *página web* 'web page'. *VOX* (2004) lists it as ambiguous, and Rodríguez-González & Lillo-Buades (1997) list it as masculine. The ambiguity disappears, however, if we understand that *el/la web* is elliptical, and that the missing underlying noun can be either masculine or feminine, and results in a differentiation of meaning. When *web* means *página* (f.) *web* 'web page', it is feminine. When it means *sitio* (m.) *web* 'web site', it is masculine.

5.3 Competing processes for gender assignment

As we saw above, the loanwords in (10) and (11) invariably receive feminine gender assignment because semantic considerations consistently win out over others, such as phonological shape. In the loanwords listed in (26), gender assignment is ambiguous, probably because no one competing factor consistently wins out over another:

(26) *cookies, Internet, MB, pop-ups, web* (meaning 'The Web')

When non-typical phonological word shape takes precedence as a conditioning factor the result tends to be masculine gender assignment, while synonymic gender results in feminine. As shown in (27 a-b), c*ookies* is closely associated with the feminine synonym *galleta*, but it also often receives masculine gender assignment, possibly due to its "un-Spanish" spelling:

(27) a. **Las cookies** (**galletas**) constituyen una herramienta muy utilizada... (Sp., *El País* online)
'Cookies (*galletas*) constitute a widely-used tool...
b. **Los cookies** son anónimos. (Ec. *El Universo* online).
'Cookies are anonymous.'

This is not a regional variation. The masculine and feminine forms both appear equally in the digital newspapers from Spain and Latin America.

Internet occurs almost exclusively with no indication of gender, most often preceded by a preposition (*por, en, de, con, a, desde, hacia*), or by nothing at all. *VOX* (2004) lists it as feminine, and notes that it frequently behaves like a proper noun, capitalized and used with no determiner. The *DRAE* (2005) lists it as ambiguous. Rodríguez-González & Lillo-Buades (1997) list it only as a noun belonging to the field of information technology. Butt & Benjamin (2000:13) remark that at the time of writing (1999) *el internet* (m.) is the more common gender, but that it is often used without an article, especially after a preposition. *Internet* was the most frequently occurring loanword in the data, attested hundreds of times in the newspapers surveyed, but it appeared with a gender marking only eleven times, and in only five of my sources. A representative example from each is listed in (28a-e):

(28) a.... uso de servicios gratuitos del Internet (m.). (R.D., *Listín diario*)
'...use of free Internet services.
b. Internet ilimitada (f.) las 24 hrs. No genera cargo telefónico. (Ch., *El Mercurio*)
'Unlimited Internet 24 hours a day. Does not generate telephone charges.'
c. Escoge tu plan: Internet ilimitado (m.)...Internet extremo (m.)... (Col., *El Tiempo*)
d. La Internet (f.) de nuestros días es bastante ciega y da pocas pistas acerca del atractivo físico de los usuarios. (C.R., *La Nación*)
'The Internet of our time is quite blind and provides few clues as to the physical attractiveness of its users.'
e.... producto del Internet rural...(Sp., *El País*)
'...a product of the rural Internet...'

In comparison, the very similar loan *intranet* is exclusively feminine, and unlike *Internet*, generally occurs with a gender marking, as in the representative examples in (29a-b):

(29) a....dentro de una intranet corporativa como en Internet. (Sp., *El País*)
'...within a corporate intranet as well as on the Internet.'
b. El Departamento de Defensa de EEUU, que creó Internet hace 40 años, ha creado ahora una intranet paralela, con tecnología sin cables...(Arg., *Clarín* online)

'The U.S. Department of Defense, which created the Internet 40 years ago, has now created a parallel intranet with wireless technology...'

The loans *intranet* and *Internet* are both closely associated with the feminine Spanish synonym *red* 'net'. However, *intranet* is always feminine, and *Internet* is ambiguous. Here again, phonological word shape may help to explain this state of affairs. An anonymous reviewer has suggested that the ending *-a* in *intra-* may favor exclusive feminine gender assignment in *intranet*, while the *-r* of *inter-* in *Internet* favors alternative masculine use. This seems more plausible than looking at the untypical ending, since both end in *-t*.

The abbreviation MB refers to *megabytes*. While it is listed as masculine in all the dictionaries consulted for this study, the data in (30) reveals that in actual practice there is some uncertainty regarding the gender assignment of this abbreviation:

(30) a. Julio Zapata ganó con **LOS MB** (m.) de El País Digital... en la promoción "Gane con **LOS MEGABYTES** de El País Digital". (Ur., *el País* online)
'Julio Zapata won with *El País Digital*'s Mb...in the "Win with *El País Digital*'s Megabytes" contest'
b. Tarjeta gráfica ATI 9000 con 64 MB dedicadas (f.)... (Sp., *El País*)
'ATI 9000 Graphics card with 64 dedicated MB...'

This ambiguity may be due to phonological considerations, since individual letters in Spanish are feminine (e.g. *la "a", la "b",* etc.), but it may also be due to association with the short form *megas* (f.), as illustrated in (31):

(31)...ofrece 1.000 megabytes de almacenamiento...están preocupados por la retención de tod**AS** es**AS MEGAS** de correo... (Sp., *El País*)
'...it offers 1,000 megabytes of storage...they are worried about retaining all those *megas* of mail...'

The case of *pop-ups* is very hard to pin down, as evidenced by the example in (32):

(32) a.....aplicaciones contra el correo basura o "spam" y contra **LOS POP-UP** (**m.**), **LAS MOLESTAS VENTANAS** (**f.**) de publicidad... (Ur., *El País* online)
'...programs against junk mail or spam, and against pop-ups, those bothersome advertising windows...'

In Peninsular Spanish *pop-ups* is routinely associated with *ventanas emergentes*, and is always feminine, as in (33):

(33) Hay un botón para bloquear las *pop-ups*...(Sp., *El País*)
'There is a button for blocking pop-ups...'

But in the Latin American newspapers, they are often referred to as *avisos, anuncios*, or *mensajes publicitarios*, all masculine, as in (34a-c):

(34) a. Las ventanas emergentes (o popups) son **ESOS AVISOS PUBLICITARIOS...** (Arg., *Clarín* online)
'*Ventanas emergentes* (pop-ups) are those advertisements...'
b. Con respecto a **LOS *POP-UPS***, éstos forman parte de la familia de **ANUNCIOS** utilizados en el Web...(C.R., *La Nación* online)
'As for pop-ups, they form part of the family of advertisements used on the Web...'
c. America Online (AOL)...va a prohibir en sus páginas **LOS MENSAJES PUBLICITARIOS** que surgen automáticamente en la pantalla (**LOS "POP-UPS"**)...(Ur., *El País* online)
'America Online (AOL) is going to prohibit on its web pages advertisements that come up automatically on the screen (pop-ups)...'

While the examples in (33) and (34a-c) point to synonymic gender assignment that is variable depending on the gender of the synonym (*ventanas emergentes* (f.) vs. *anuncios* (m.), *avisos* (m.), *mensajes publicitarios* (m.)) most closely associated with the loanword *pop-ups*, the example in (32) points to non-typical phonological word shape as the basis for masculine gender assignment. In Spanish there are roughly twenty-five words ending in *-p*, all loanwords and all masculine. There are only five words in Spanish with the word-final consonant cluster *-ps*. Two, *reps* 'rep' and *corps* 'body', are loanwords from French and *bíceps, fórceps,* and *tríceps* are learned words, not documented until the nineteenth century, rather than native Spanish words. Menéndez-Pidal (1966:11) points out that many learned words (*voces cultas*) contain consonant clusters that do not otherwise occur in native Spanish words. In addition, *bíceps, fórceps, tríceps* are somewhat unusual in that they require their own *ad hoc* rule for written accenting (Iberolenguas 2006). According to Butt & Benjamin (2000:20), words ending in *-b,-c,-f,-g,-k,-m-p,-t,-v*, or *-w*, or in any two or more consonants are almost certainly foreign words, and rather than taking 'Academy' plurals, will make the plural in *-s*, thus words like *clips, chips, tops, jeeps*, and presumably, *pop-ups*.

Above we saw that when *web* means *página web* it is feminine, and when it means *sitio web* it is masculine. Unfortunately, the representative examples in (35a-b) show that when *web* means 'The Web' there is still some remaining ambiguity:

(35) a. El Web: Disminuye uso de diarios de Internet o weblogs. (C.R., *La Nación*)
'The Web: The use of Internet journals or weblogs diminishes.'
b. Ya está en la web el sitio oficial... (Arg., *Clarín*)
'The official website is already on the Web.'

As in the case of *Internet*, when *web*, meaning *The Web* is feminine, it may be because it is closely associated with the feminine synonym *red* 'net/network'. When it is masculine, it may be due to non-typical phonological word shape. Bosque & Pérez-Fernández (1987) list only a handful of nouns in Spanish ending in *-b*, all masculine and all loanwords. The loan *(e)snob* 'snob' can be masculine or feminine because it has an animate referent.

6. Summary and conclusions

To summarize, gender assignment in the 71 computer and Internet related loanwords in my data breaks down as illustrated in (36):

(36) a. 5 animate (7%)
b. 44 inanimate masculine (62%):
c. 8 inanimate feminine (11%)
d. 14 inanimate ambiguous (20%)

In 27 of 44 masculine loanwords (61%) synonymic gender, reinforced by phonological factors, was primarily responsible for gender assignment. Phonological word shape by itself determined gender assignment in only 39% of masculine loanwords (17 of 44). Semantic factors which won out over phonological facts were responsible for gender assignment in all the consistently feminine loanwords, synonymic gender in 7 of 8 cases (87.5%), and metonymic gender in one. Hyperonymy accounted for variable gender assignment in 6 of 14 ambiguous loanwords (42%), metonymic gender accounted for the ambiguity in roughly 29% (4 of 14), and competing semantic and phonological factors accounted for the ambiguity in the remaining 29% (4 of 14).

These results show that among computer and Internet related patent Anglicisms in my data that receive stable gender assignment, synonymic gender is the most common conditioning factor, (in the case of masculines, often reinforced by phonological considerations), and accounts for 63% of all loans that are consistently masculine or feminine (25 of 44 m., and 7 of 8 f.). Metonymic gender, while present, does not often determine gender assignment. Among masculine loanwords, phonological shape often reinforces the semantic facts, but among the consistently feminine loanwords phonological word shape competes with, and loses out to, semantic considerations. My results also echo those of Sánchez (1995), which showed that if no other conditioning factors identify the loanword as feminine, it is assigned masculine gender by default. Among loanwords that are variably masculine or feminine, in most cases the ambiguity is not to be found in any inherent characteristic of the loanwords in question, but comes rather from the ambiguity found in *computador/a* (m./f.), and from different underlying nouns in the case of metonymic gender. In some cases ambiguity can be attributed to clearly identifiable competing phonological and semantic conditioning factors that operate simultaneously.

Much research has argued in the past that in inanimate nouns, phonological shape is the primary criterion for gender assignment in Spanish (e.g. Bergen 1978; Bull 1965; Zamora 1975; Zamora-Munné & Béjar 1987), but my results support Smead's (2000) findings that phonological word shape is not the primary consideration in gender assignment in the majority of cases. By itself it accounts for only 39% of the consistently masculine inanimate loans in my data. What does appear to be true, however, is that this criterion often reinforces semantic considerations that would also lead to masculine gender assignment, and competes with those that favor feminine. In addition, rather than simply equating phonological word shape with terminal phoneme, it is necessary to look at the characteristics of each word in question. Often, orthographic, phonotactic and phonological irregularities are not found only in the terminal phoneme(s) (e.g. *phishing*), rules that have been advanced that look only at terminal phonemes disregard the importance of morphological information (e.g. *-dad* is feminine), and a fair number of terminal phonemes (e.g. *b, c, f, g, h, i, j, k, p, t)* are not typically Spanish and appear largely, if not exclusively, in foreign loanwords. Thus, it is more explanatory to define phonological word shape in terms of Clegg's (1997) non-typical terminal phonemes and Butt & Benjamin's (2000) "un-Spanish" spelling or endings.

Address of the Author

The College of New Jersey (TCNJ), Department of Modern Languages, P.O. Box 7718, Ewing, NJ 18966 USA. E-mail: rmorin@tcnj.edu

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Gender has been extensively studied in Spanish heritage speakers. However, lexical frequency effects have yet to be explored in depth. This study aimed to uncover the extent to which lexical frequency affects the acquisition of gender assignment and gender agreement and to account for possible factors behind heritage language variability.Â Climate Clinics and Practice Clocks & Sleep Coatings Colloids and Interfaces Compounds Computation Computers Condensed Matter Conservation Construction Materials Corrosion and Materials Degradation (CMD) Cosmetics COVID Crops Cryptography In other words, nonce loanwords do not frequently become a permanent part of the lexicon. Consider, for example, the differences between established loanwords (shown in example (1) with the noun troca 'truck') and nonce loanwords (shown in example (2) with norse 'nurse').(1) Yo la vi, Â¿una troca verde? (07/A/255/10) 'I saw it, a green truck, right?'Â Poplack and Sankoff also found that synonymic gender, the gender associated with an existing language synonym, did not play a signifi cant role in the process.Â In Spanish the TP of a word is an excellent predictor of grammatical gender (Bull 1965:107-108;Bergen 1978;Poplack and Sankoff 1982;Teschner and Russell 1984;Smead 1998Smead , 2000Clegg 2000). Research on grammatical gender processing has generally assumed that grammatical gender can be treated as a uniform construct, resulting in a body of literature in which different gender classes are collapsed into single analysis. The present work reviews linguistic, psycholinguistic, and neurolinguistic research on grammatical gender from different methodologies and across different profiles of Spanish speakers. Specifically, we examine distributional asymmetries between masculine and feminine grammatical gender, the resulting biases in gender assignment, and the consequences of these assignm... Gender neutral language in Spanish is more difficult than gender neutral language (also called gender inclusive language) in some other languages, because its grammatical gender is pervasive, and it has no true neutral grammatical gender, at least not in standard usage. See the main article on gender neutral language for general reasons to use neutral language, common problems in using it, and its use for nonbinary people. 11) "Spanish gender assignment in computer and Internet-related loanwords." The 51st International Linguistic Association Conference, Toronto, Canada, March 31- April 2, 2006. 12) "Competing processes of gender assignment in computer and Internet-related loanwords: It's clear why it's feminine, but why is it masculine?". The 35th Annual Meeting of the Linguistics Association of the Southwest, Laredo, Texas, September 29-October 1, 2006.Â Computer- and Internet-related terminology and the preferences of native Spanish speakers". The 36th Annual Meeting of the Linguistics Association of the Southwest, Denver, Colorado, September 21-23, 2007.