

## NOMINAL MORPHOLOGY OF ENGLISH COMPUTER LOANWORDS IN DUTCH

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### ABSTRACT

The nouns were selected from a corpus of 684 words, compiled both from Dutch dictionaries and electronic sources, in an attempt to identify morphological mechanisms applied to the adaptation of loanwords into Dutch, and the suitability of native paradigms and rules for words of English origin. Special attention is paid to gender assignment and plural formation. It was found that in gender assignment there is an evident trend to ascribe loanwords to the common, and within it to the masculine gender. Pluralisation does not follow native patterns which determine the application of an *-s* or *-en* suffix, and the majority of entries take an “*-s* plural”, complying with the behaviour generally observed in nouns of English origin. Moreover, for a significant number of compound words in the corpus, gender and plural forms may be predicted even for the entries that have not been yet included in Dutch dictionaries.

### 1. Introduction

Contacts between English and Dutch have been steadily increasing since 1945, however the last two decades, due to the particularly intense development of modern technologies, have witnessed a remarkable escalation in the absorption of English vocabulary into Dutch.

The aim of this paper is to present part of my research devoted to the treatment of English computer loanwords in Dutch. From the corpus of 684 nouns, verbs and adjectives, the nominal category has been selected for the purpose of the following analysis. I will briefly sketch out the available theory regarding gender assignment and plural formation. These issues will then be taken as the basis for the analysis proper, which involves the scrutiny of morphological mechanisms applied to the process of adaptation of loanwords into Dutch, and the suitability of native paradigms and rules for words of English origin.

The corpus material has been compiled from a variety of sources. Due to the partially inadequate treatment of recent loanwords by Dutch dictionaries, these had to be supplemented by other available official and unofficial electronic publications

(for a detailed list see: References – Primary sources). Van Dale *Great Dictionary of Dutch*<sup>1</sup> provided the data used as the basis for the analysis of the various aspects of integration of loanwords into Dutch on the plane of morphology.

## 2. Theoretical aspects of morphological adaptation of English nouns into Dutch

### 2.1. Gender assignment

Generally, the rules governing gender assignment in Dutch are not applicable to words of foreign origin, and as such are irrelevant to the discussion of the treatment of nominal loanwords. “The morphological integration of foreign words implies ... the gender class into which a certain word may be absorbed ... [however i]n borrowing from a language without gender classes there can be no gender borrowing” (Geerts 1975: 115). Nevertheless, every novelty has to be classified, and since English has only natural gender, contemporary loanwords absorbed into Dutch are all originally neuter. In the process of nativization they are attributed a grammatical gender, which only exceptionally follows the Dutch pattern. In the pre-war period the tri-gender distinction was still in use, and words of foreign origin were assigned to masculine, feminine, or neuter class. “While occasionally the superficial rules for Dutch gender may have been applicable ... in many cases one finds gender being attributed to English nouns without any simple explanation being immediately apparent” (Gerritsen 1986: 56). Since then the Dutch system has formally recognised the coalescence of masculine and feminine into one common gender, which to some extent has narrowed down the problem of gender assignment.

The question of the gender of English loanwords is still a grey area in Dutch linguistics. It is a subject rarely touched upon, and even when it does emerge, it is not dealt with in a satisfactory and exhaustive manner. Geerts (1975: 115-123) examined the issue of gender with respect to English nouns, which manifest endings also typical of Dutch words. The following regularity has been observed, regarding nouns borrowed from English, which behave in accordance with the rules for Dutch nouns: (i) words ending in *-er* are assigned common (masculine) gender, e.g.: *de bartender*, *de manager*, *de pullover*, *de spencer*, *de transponder*; (ii) words ending in *-ing* take without exception the common gender, but not specifically feminine, as is the case with Dutch nouns, e.g.: *de accounting*, *de dumping*, *de marketing*, *de spanking*, *de wishful thinking*; (iii) words ending in *-ment* usually fall into the neuter category, following the pattern established by French loanwords, e.g.: *het agreement*, *het entertainment*, *het management*, *het outplacement*, *het statement*; (iv) words ending in *-y*

<sup>1</sup> Van Dale *Groot Woordenboek der Nederlandse Taal*: 1992 (12<sup>th</sup> edition), 1999 (13<sup>th</sup> edition), 2000 (electronic version 1.0 based on the 13<sup>th</sup> edition of the dictionary) – henceforth referred to as GVD12, GVD13, and GVD1.0, respectively.

(including *-ity* and *-cy*), are classified either as common or as neuter gender, e.g.: *delhet body*, *het glossy*, *het hockey*, *de penalty*, *de whisky*.

The last two rules can be further developed. Nouns with the *-ment* ending may also receive the common gender, since in English they do not carry the word stress on the final syllable, as they do in French, and because of this difference there has been a tendency to assign them to a different class than words of French origin. In fact, out of the 32 *-ment* nouns borrowed from English as listed by GVD13, 7 were attributed common gender, and 3 both common and neuter. Regarding the *-y* ending, Van der Toorn et al. (1997: 560) observed two types of nouns, namely the group which keeps the original English *-y* ending, for instance *hobby*, and the group which has both the *-y* and the *-je* endings. Due to the similarity in pronunciation between *-y* and the Dutch diminutive suffix *-je* (colloquially pronounced as /i/), English loanwords are often reanalysed, to the extent that in the process of nativization “non-diminutive” forms are created, e.g.: *guppy* → *gupje*, therefore *gup*. Such nouns are ascribed the *het* article, according to the rule that diminutives in Dutch belong to the neuter class. Words which cannot undergo the *-y* → *-je* change are assigned common gender, e.g.: *de hobby*, but not *\*hobje*. Moreover, regarding the *-cy* and *-ity* endings, according to GVD13, the 11 *-cy* and 13 *-ity* English nouns listed by the dictionary, all without exception fall into the common category, with the tendency towards a further specification of gender as feminine.

Geerts (1975: 120) also remarks that there is a tendency in Dutch not to assign neuter gender to monosyllabic nouns, as a consequence of which English loanwords often take the common gender, e.g.: *de board*, *de bug*, *de job*, *de moed* ‘mood’, *de pub*. While this is not an absolute rule, e.g.: *het slop*, *het jack*, *het team*, *het golf*, *het coir*, the cases of monosyllabic English loanwords ascribed to the neuter category are very rare. This, and questions regarding the gender problem will be analysed later with respect to the corpus of computer terminology.

### 2.2. Plural formation

Dutch has clear and simple rules for pluralisation. There are three regular endings, *-s*, *-en*, and the rarely used archaic plural *-eren*, but in contrast to English the *-s* ending is much less productive in Dutch. Generally the *-en* ending is added to the singular, unless the noun belongs to the “*-s* plurals”. The historical “*-eren* plural” is preserved in and applied only to a small group of neuter nouns, either of Germanic origin, or borrowed from Latin during the Old and Early Middle Dutch period, e.g.: *lam* ‘lamb’ – *lammeren*, *kind* ‘child’ – *kinderen* ‘children’ (Donaldson 1997: 42). As was the case with gender assignment, plural formation regarding nouns of English origin does not follow native Dutch patterns, therefore presenting it here would be superfluous.

Booij and Van Santen (1998: 91), analysing the question of plural suffixes, first of all single out two types of foreign words in Dutch: *bastaardwoorden* and loan-

words. Bastard words are characterised by a higher degree of nativization than loanwords, therefore being more integrated into the native inflectional system. Following this distinction, Booij and Van Santen claim that generally the former take the *-en* ending, which is more productive in Dutch, while the latter use the *-s* ending. Van der Sijs (1996: 333) observed that “the majority of English loanwords ... have the *-s* plural”. The factors motivating the use of this suffix may be numerous. According to Van der Sijs, there is a rule by which words of foreign origin in Dutch take the *-s* plural. Geerts et al. (1984: 61) claim that it is assigned to nouns which end in a consonant and in the donor language also have the *-s* plural. Whether the suffix is re-taken by loanwords, or borrowed from the donor language, is currently beyond investigation, as both English and Dutch employ it, and if the English model nouns allow for a plural, it is without exception *-(e)s*. Van der Sijs (1996: 333) describes the following tendencies in the pluralisation of English loanwords: (i) words which end in a sibilant have the *-es* plural, though dictionaries usually give two options: *-es* and *-en*, e.g.: *lunchen/lunches*, *matchen/matches*, *speechen/speeches*<sup>2</sup>; (ii) words which end in *-tor* have two plurals, *-en* and *-s*, e.g.: *tractors/tractoren*, *transistors/transistoren*; (iii) words which end in *-y*, following the rule of apostrophe application, form the plural with the *-’s* suffix, e.g.: *baby’s* ‘babies’, *hobby’s* ‘hobbies’, *floppy’s*, however the English plural forms – *babies* etc. – are currently also common; (iv) older loanwords have *-en*, while younger loanwords have *-s*, e.g.: *boxen* – *black boxes*, *doggen* – *underdogs*, *liften* – *face-lifts*.

Gerritsen (1986: 62) presents a hard-and-fast principle: “borrowed nouns mostly do not follow the rules that determine whether a Dutch word has an *-s* or an *-(e)n* plural, but are restricted to *-s*, with some exceptions which use both options”. In the light of the contrary opinions of other scholars, and the evidence from the data, this is clearly an overstatement; this point will however be elaborated on further in the paper.

### 3. Morphological adaptation of English nominal computer loanwords

#### 3.1. Gender assignment

The corpus of nominal computer loanwords consists of 512 entries. In 44 cases one English model word was absorbed into Dutch in two or more forms, which however did not have any influence on the morphological adaptation, e.g. *voicemail*, *voice-mail* ‘voice mail’. Such instances were treated as one item with different spelling variants. The morphological data regarding nouns comes from GVD12, GVD13/GVD1.0. Although the relation of nouns listed to those not listed in dictionaries is 315 to 197, that does not represent the state of affairs satisfactorily. The 315 en-

tries included in GVD12 or GVD13 can be further broken down into nouns<sup>3</sup> present in GVD12 (183) and in GVD13 (306), of which 9 are only present in the former, and 134 only in the latter.

While 306 words were present in GVD13, and an additional 9 in GVD12, it has to be mentioned that 277 were listed in the computer context, so there is the possibility of the remaining 38 nouns actually being assigned a different gender or plural ending. Such an incidence is however very minimal, as of the 37 nouns present in a non-computer context in GVD12, and listed with the computer meaning in GVD13, only 6 actually changed gender, and 4 changed plural ending, so the error rate in this case is about 10-16%.

The following analysis of nominal computer loanwords is based almost entirely on GVD13, and only in 9 instances on GVD12, as formally it should represent the treatment of and adaptation of these words in the Dutch morphological system. The general allocation of gender in the listed entries is as follows: (i) 44 common gender (without further differentiation into masculine or feminine) nouns, e.g.: *de database*, *de firmware*, *de processing*, *de site*, *de timesharing*; (ii) 202 common gender (masculine) nouns, e.g.: *de back-up*, *de chip*, *de hacker*, *de server*, *de wizard*; (iii) 6 common gender (feminine) nouns: *de (sub)directory*, *de subroutine*, *de suite*, *de surfing*, *de virtual reality*; (iv) 2 common and neuter gender nouns: *de & het image*, *de & het packman*; (v) 9 common (masculine) and neuter gender nouns, e.g.: *de & het filter*, *de & het modem*, *de & het port*, *de & het script*, *de & het transfer*; (vi) 46 neuter gender nouns, e.g.: *het display*, *het keyboard*, *het mainframe*, *het password*, *het sample*; (vii) 5 plurale tantum nouns: *cyberbucks*, *data*, *hypermedia*, *mips*, *multimedia*; (viii) 1 unspecified: *wysiwyg*.

The most prominent category in the corpus is definitely the common gender, which comprises in total 80% of the 315 listed nouns, and an additional 3.5% of both common and neuter gender. Of these 263 words, 80% are assigned common masculine gender, which makes about 64% of the listed nouns. It is clearly observable that the common category, and especially masculine, is the most productive gender group in the corpus. In fact, common feminine nouns are only marginally present, and neuter is five and four times less numerous than common and common (masculine), respectively.

Taking into account the rules and tendencies presented in Section 2.1, it can be said that they are generally applicable to the corpus. Regarding the *-er* ending, of 58 nouns, *het register* was assigned neuter gender, *de & het (family) filter* and *de & het transfer* common (masculine) and neuter, *enter* was unspecified, and the remaining 54 constitute the common (masculine) group, e.g.: *de assembler*, *de buffer*, *de pointer*, *de scanner*, *de webmaster*. It has to be pointed out though, that of these 54

<sup>2</sup> The opinion about *-en/-es* plural in dictionaries was not confirmed by the search in GVD1.0.

<sup>3</sup> By which is meant both nouns and compound nouns.

nouns, 14 also appear in compound words, e.g.: *de desktop/home/host/in-linecomputer*, *de proxy/webserver*. Treating such multiple occurrences as one, the final number of *-er* nouns is in fact 44, but still the overwhelming majority of them (95.5%) are ascribed to the common (masculine) category. Therefore, while the *-er* rule is not without exception, it would not be an overstatement to say that it almost always holds true.

The second group of nouns, ending in *-ing*, should, according to the rule, belong to the common gender. Applying the same compound filter as with *-er* nouns, it appears that of 14 (20) words, (*computer*) *conferencing*, *posting*, and *webhosting* remain unspecified, *het string* and *het webbing* are neuter, and the remaining 9 nouns fall into the common gender category, e.g.: *de batch/data/tele/wordprocessing*, *de mailing*, *de scanning*, *de surfing*, *de upgrading*. As the total number of *-ing* nouns is rather small, any conclusions regarding their behaviour may be misleading, especially taking into account the fact that while only 64% of the above belong to the common group, as many as 21.5% remain unassigned, which theoretically could push the final number of common *-ing* nouns even to 85%. Due to the lack of more data the applicability of the *-ing* rule cannot be properly verified, however such a tendency is observable.

A similar insufficiency of words accounts for the difficulty regarding the status of the *-y* pattern. There are 12 (14) *-y* nouns, of which 8 are of common gender, e.g.: *de array*, *de gateway*, *de overlay*, *de proxy*, *de (sub)directory*, 1 is neuter – *het display*, and 2 are unspecified – *key*, (*one disk*) *country*. According to the *-y* → *-je* → ∅ rule, English words which can be treated as diminutives in Dutch are reanalysed, as a result of which they are ascribed neuter gender, while their “non-diminutive” forms are common masculine. The only *-y* noun in the corpus, *floppy*, which has the second form (*flop*), quite against the rule, belongs to the common (masculine) category. As far as the *-ment* nouns are concerned, there are only two instances in the corpus, common (masculine) and neuter *attachment* and neuter *document*, and although they both have neuter gender, no conclusions whatsoever can be drawn from such minimal available material.

As mentioned earlier, another tendency was remarked on by Geerts (1975: 120), according to which monosyllabic loanwords usually take a gender other than neuter. Analysis of the corpus material proves that this indeed is the case. Among the 53 words in question only 6 are neuter: *het font*, *het frame*, *het net*, *het pack*, *het string*, *het web*, 2 are common (masculine) and neuter: *de & het port*, *de & het script*, and 5 are unspecified: *hack*, *hoax*, *key*, *mouse*, *search*. The remaining 40 nouns are common (6), common masculine (33) or common feminine (1), which gives a total of 75% of monosyllabic entries being attributed common gender. Therefore if three quarters of all cases follow the pattern, while it may not be frequent enough to be labelled as a rule, it definitely is sufficient to be marked as a tendency.

An interesting problem emerged from the analysis of the gender of some entries. In Dutch compound nouns always take the gender of the final unit, and there has not

been any indication that loanwords should behave differently. However, this rule does not apply to all of the examples in the corpus material. 23 monosyllabic nouns are also present as final units in 59 compounds. While the latter should agree in gender with the former, in 7 instances, despite the clearly distinguishable elements, this is not the case: (i) common *mail* → common (masculine) *hemail*, *snailmail*, *voicemail*; (ii) neuter *pack* → common (masculine) *rompack*; (iii) common (masculine) and neuter *port* → common (masculine) *mainport*, *parallel port*, *serial port*. In 6 of the above examples, this does not imply a change of gender category as such, but rather a narrowing down from two options to one. Nevertheless, if the rule of gender assignment to compound nouns were absolute, even such minor alternations should not occur, as with 59 entries that means an almost 12% fallibility. Taking this into account, one might nevertheless try to predict the gender of other compounds in the corpus, which are not listed in dictionaries, and therefore were not included among the 315 instances of specified gender category. Of the 197 words, 74 comprise compound nouns whose final element appears in the corpus material in non-compounded form with ascribed gender. Bearing in mind the 12% error rate, the subsequent prediction can be attempted: (i) common gender → 20 compound nouns, e.g. *?de affiliate site*, *?de electronic publishing*, *?de file transfer*, *?de mousepad*, *?de webhosting*; (ii) common (masculine) gender → 41 compound nouns, e.g. *?de crippleware*, *?de dial-up server*, *?de multigateway*, *?de virusscanner*, *?de zip file*; (iii) common (feminine) gender → 1 compound noun, e.g.: *?de ftp-directory*; (iv) common (masculine) & neuter gender → 2 compound nouns, e.g.: *?de & het family filter*, *?de & het Javascript*; (v) neuter gender → 10 *χομπουνδ βουνοσ*, e.g.: *?het cdrom-station*, *?het diskstation*, *?het ethernet*, *?het infonet*, *?het telnet*. Taking these numbers into account in the total percentage calculation, the gender distribution would be as presented in Table 1 below.

If the numbers reflect reality, and are not simply accidental, one might predict the gender distribution for the remaining 123 unassigned nouns based on the mean percentages. As common feminine, common & neuter, common (masculine) & neuter, and plurals are only marginally present in the corpus, they should be left out for the more precise calculation. For the remaining categories the expected numbers are as follows, allowing for a fluctuation of 0.5%: common gender 18 (15.2%), common masculine 78 (63.3%), neuter 18 (14.5%). This would correspond to the total percentage of common nouns of c. 80.0%, or 410 words, of which the number of common (masculine) nouns would constitute 78.3%. It is currently impossible to verify the correctness of such predictions, however regarding the analysable nominal material of the corpus, they are quite likely.

Another question to be considered in gender assignment is its stability. The 512 nouns in the corpus may be divided into 5 groups as shown in Table 2.

Table 1. Gender distribution in the corpus material

Category	Entries with established gender		All entries
	Number	Percentage	Percentage
Common gender	44 (64)	14.0% (16.4%)	8.6% (12.5%)
Common (masculine)	202 (243)	64.0% (62.5%)	39.4% (47.5%)
Common (feminine)	6 (7)	2.0% (1.8%)	1.2% (1.3%)
Common – all	252 (314)	80.0% (80.7%)	49.2% (61.3%)
Common and neuter	2 (2)	0.6% (0.5%)	0.4% (0.4%)
Common (masculine) and neuter	9 (11)	2.9% (2.8%)	1.8% (2.1%)
Neuter	46 (56)	14.5% (14.4%)	9.0% (11.0%)
Plurale tantum	6 (6)	2.0% (1.6%)	1.2% (1.2%)
<b>Total:</b>	<b>315 (389)</b>	<b>100%</b>	<b>61.6% (76.0%)</b>
Unknown	197 (123)	—	38.4% (24.0%)
<b>Total:</b>	<b>512</b>	<b>—</b>	<b>100%</b>

Note: Numbers in brackets include entries with predicted gender.

Table 2. Gender assignment and change in the corpus material

Formula	Type of change	Number
$x_1 = x_2$	No change	160
$x_1 \rightarrow y_2$	Change of gender	12
$\emptyset \rightarrow x_2$	Ascription of gender	134
$x_1 \rightarrow \emptyset$	Loss of assigned gender	9
$\emptyset = \emptyset$	No change	197 (123)

Note:  $x_1$  is gender assigned to a noun according to GVD12,  $x_2/y_2$  according to GVD13, and  $\emptyset$  is lack of gender specification/absence of the entry in GVD12 or GVD13.

Disregarding the 197 cases of no gender information in either dictionary, the remaining categories may be classified according to the type of change as: (i)  $\emptyset \rightarrow x_2/x_1 \rightarrow \emptyset$ , and (ii)  $x_1 = x_2 / x_1 \rightarrow y_2$ . The first group is a straightforward case of gender assignment or loss. While it is not applicable to the question of gender stability, espe-

cially  $\emptyset \rightarrow x_2$  is interesting from the point of view of the productivity of gender categories. Despite the fact that the 134 nouns in question were already included in the percentage calculation presented in Table 1, it may nevertheless be relevant to point out the tendency in gender assignment, which would otherwise not be apparent. In this category the gender is distributed as follows: (i) 15 common gender nouns, e.g.: *de bitmap, de digicash, de e-mail, de mailbom, de netiquette*; (ii) 92 common (masculine) gender nouns, e.g.: *de bookmark, de chat, de cyberspace, de palmtop, de window*; (iii) 3 common (feminine) gender nouns: *de directory, de subdirectory, de virtual reality*; (iv) 3 common (masculine) and neuter nouns: *de & het e-zine, de & het faxmodem, de & het notebook*; (v) 18 neuter gender nouns, e.g.: *het applet, het cookie, het digikid, het split-screen, het web*; (vi) 3 plurale tantum nouns: *cyberbucks, hypermedia, mips*. After deducting these numbers from the totals per category given in Table 1, the distribution of gender in computer terminology is different currently than it was a decade ago.

Table 3. Gender distribution for  $\emptyset \rightarrow x_2$  in the corpus material

Gender type	GVD12 / GVD13	GVD12 vs. GVD13 – percentages
Common gender	25 / 15	15.6% vs. 11.2%
Common (masculine)	102 / 92	63.8% vs. 68.7%
Common (feminine)	1 / 3	0.6% vs. 2.2%
Common & neuter	1 / 0	0.6% vs. 0.0%
Common (masculine) & neuter	5 / 3	3.1% vs. 2.2%
Neuter	23 / 18	14.4% vs. 13.5%
Plurale tantum	3 / 3	1.9% vs. 2.2%

While 4 of the groups in the table are too minimally represented to provide for reliable analysis, in the remaining 3 there is a noticeable difference between the tendencies in GVD12, and the gender assignment regarding new nominal loanwords in GVD13. This is especially clear in the case of common (masculine) gender, where the increase in the allocation to this category is about 20.5%.

The second type of change,  $x_1 \rightarrow y_2$ , affects 12 entries. Here as many as 5 nouns shift to the common (masculine) group, and 1 to common (masculine) and neuter: (i) 3 feminine nouns  $\rightarrow$  common (masculine): *de client, de dram, de scanning*; (ii) 1 feminine & masculine  $\rightarrow$  common (masculine): *de dot*; (iii) 1 masculine & neuter  $\rightarrow$  common (masculine): *de default*; (iv) 1 neuter  $\rightarrow$  common (masculine) & neuter: *de & het attachment*. Moreover, 2 feminine and 1 masculine change to common gender, 2 feminine (masculine) to neuter, and 1 feminine (masculine) to com-

mon (feminine). When compared with the 160 nouns which retained the originally ascribed gender this gives a *c.* 7% instability rate. Furthermore, the two changes,  $\emptyset \times_2$  and  $x_1 y_2$ , clearly demonstrate an escalating productivity of the common (masculine) category.

As the masculine gender is now, together with the feminine, formally subsumed under common, and the distinction is only maintained in personal and possessive pronouns, the tendency to ascribe nominal loanwords to this category ultimately indicates the general tendency towards common gender assignment. When analysed within the group of nouns for which the gender information was obtainable from dictionaries, 80% of entries belong to the common (also masculine or feminine) category (see: Table 1). Combining these 315 nouns with the 74 compounds for which gender could be predicted, the incidence of common gender is 80.7%. These percentages are naturally lower if the total number of 512 words is taken into account, being 49.2% and 61.3%, respectively.

Another noteworthy issue is the overall tempo of gender assignment, and therefore also of integration of the borrowed English computer loanwords from the nominal category into the Dutch morphological system. Despite the time-span of two decades, many of the entries in the corpus appeared in English and entered Dutch in the 1990's. Given the adaptation period of often 10 years or less, it is remarkable that out of the 512 nouns, 315 are listed in dictionaries. The fact that up to 75% (including unlisted compounds) of all the analysed nouns are integrated into Dutch with respect to gender, signifies the promptitude of absorption and frequency of usage of computer terminology by Dutch speakers.

### 3.2. Plural formation

Obviously, gender assignment is not the only expression of nominal morphological adaptation. Another evidence of integration is plural formation. Taking as a starting point of the analysis the 315 listed nouns, the distribution of plural endings *-(e)s*, *-en*, and *-eren*, is as follows: (i) 189 “*-(e)s* plurals”, e.g.: *bit*, *cybrarian*, *firewall*, *joy-stick*, *plug-in*; (ii) 17 “*-en* plurals”, e.g.: *cybernaut*, *digibeet*, *icon*, *mailinglist*, *worm*; (iii) 2 “*-s*” or “*-en* plurals”: *cursor*, *operator*; (iv) 40 mass nouns, e.g.: *clip-art*, *e-business*, *hardware*, *prompt*, *world wide web*; (v) 5 plurale tantum nouns: *cyberbucks*, *data*, *hypermedia*, *mips*, *multimedia*; (vi) 61 cases of absence of information regarding plural forms, e.g.: *computeranimator*, *dos*, *plotter*, *technostress*, *webadres*. The *-(e)s* plural nouns can be further divided into: (i) “*-s* plurals” (176), e.g.: *browser*, *chatroom*, *desktop*, *newsgroup*, *processor*; (ii) “*-’s* plurals” (11), e.g.: *demo*, *floppy*, *macro*, *proxy*, *query*; (iii) “*-es* plurals” (2): *batch*, *crash*. Among the *-en* plural nouns the following forms occur: (i) “*-en* plurals” (12), e.g.: *chatbox*, *document*, *internaut*, *object*, *port*; (ii) “*-en* plurals” with gemination of word-final consonantal graph (6): *pad – padden*, *computergek – computergekken*, *virus – virussen*, *internet – internetten*, *intranet – internetten*, *net – netten*.

Regarding the tendencies for pluralisation of loanwords described earlier, the analysis of the corpus material has not led to dramatically different conclusions. Indeed, considering only the nouns with assigned plural, out of 209 entries only 8.6% follows the *-en* pattern, and 1.0% (two words) have two plural forms. The remaining 90.4% comprise the “*-(e)s* plurals”, which does not exactly conform with Gerritsen’s (1986: 62) claim, but definitely proves the productivity of the *-(e)s* ending in plural formation. As far as Van der Sijs’s (1996: 333) observation is concerned, that older loanwords tend to have *-en*, and younger *-s* plural, the former cannot be verified due to the scope of the corpus, and the latter is beyond any doubt true.

With respect to nouns which end in *-tor* in the singular, there are 4 occurrences in the corpus: *computeranimator* with unspecified plural, *editor – editors*, *operator – operators/operators*, and *system operator*, which is not listed in any dictionary, but most probably will have the same plural form as the final element in the compound. Such a marginal appearance of *-tor* nouns prevents any definite conclusions about the applicability of the rule to the nominal computer loanwords.

More interesting observations emerge from the analysis of *-y* nouns. Out of 13 corpus entries, 8 have specified plural forms. These do not exclusively comply with the apostrophe rule, as 4 nouns are straightforward “*-s* plurals”: *array*, *display*, *gateway*, *overlay*, and 4 are the “*-’s* plurals”: *directory*, *proxy*, *query*, *subdirectory*, of which the last example is a repetition of the first one. The reason for the apparent violation of the rule may lie in pronunciation of the <ay> cluster as /e/ or /ɛ/, in which case no apostrophe is added. This seems to be numerically confirmed by GVD13, where out of 61 words ending in <ay> only one applies the apostrophe to the plural form, and the remaining 60 are either straight “*-s* plurals” or mass nouns.

Similarly to the *-tor* nouns, nothing decisive can be concluded about the words ending in a sibilant. According to Van der Sijs (1996: 333), these take the *-es* plural, which indeed applies to the only two corpus examples listed in dictionaries: *batch*, and *crash*. Of other entries, 3 are mass nouns including the same element: *cybercash*, *digicash*, *e-cash*, 1 will probably be an “*-es* plural”: *computer-crash*, and 3 are unspecified: *macintosh*, *macintrash* and *search*.

Plural forms can be predicted for 100 compound nouns, based on their final elements: *bar*, *box*, *browser*, *buffer*, *byte*, *chip*, *computer*, *crash*, *disk*, *drive*, *file*, *frame*, *link*, *modem*, *nerd*, *pad*, *printer*, *processor*, *processing*, *provider*, *publishing*, *scan*, *site*, *server*, *station*. Of these, 10 compounds are probably mass nouns, 12 may take the *-en* plural, and 78 the *-(e)s* plural, which corresponds to an identical percentage relation: 10%, 12%, and 78%, respectively, or, excluding the mass nouns, to 13.3% and 86.7%.

Whether these predictions are correct is impossible to evaluate now, but analysing the stability of plural formation may provide an indication. Using a similar formula as in the case of gender assignment (see: Table 2), the following types of behaviour may be distinguished: (i)  $x_1 = x_2$ : 127 nouns, which have an identical plural

form in GVD12 and in GVD13; (ii)  $x_1 \rightarrow y_2$ : 5 nouns, which have a different plural form in GVD12 than in GVD13; (iii)  $\emptyset \rightarrow x_2$ : 105 nouns, of which 102 are unlisted in GVD12, and 3 do not have a specified plural; (iv)  $x_1 \rightarrow \emptyset$ : 17 nouns, of which 9 are unlisted in GVD13, and 8 do not have a specified plural; (v)  $\emptyset = \emptyset$ : 258 nouns, of which 197 are marked by absence in the dictionaries, and 61 by presence of an entry in a dictionary without information regarding plural form.

Regarding the change of assigned plural, the ratio is 3.8% vs. 96.2% of change vs. stability, respectively. The 6 entries that shift from one type of plural form to another, all in GVD13, take the *-s* ending. There are two cases of a mass noun becoming pluralised: *dram* and *font*, and three instances of transformation from an “*-en* plural” to an “*-s* plural”: *client*, *dot*, *pin*, where *client*, *dram*, and *pin* also involve an extension of meaning from a non-computer to a computer sense.

The acquisition of a plural form in the  $\emptyset \rightarrow x_2$  type is also oriented towards the *-s* ending. Excluding plurale tantum and mass nouns, the choice of the *-s* suffix prevails over the *-en* form by almost nine times (89.8% vs. 10.2%): (i) 79 “(‘)*s* plurals”, e.g.: *at-sign*, *disclaimer*, *provider*, *spam*, *upgrade*; (ii) 9 “*-en* plurals”, e.g.: *chatbox*, *computergek*, *digibeet*, *internaut*, *internet*; (iii) 1 “*-s*” or “*-en* plurals”: *operator*; (iv) 1 “*-eren* plural”: *lam*; (v) 13 mass nouns, e.g.: *cyberspace*, *freeware*, *netiquette*, *snailmail*, *web*; (vi) 3 plurale tantum nouns: *cyberbucks*, *hypermedia*, *mips*. The fact that in this case the percentage of “*-s* plurals” dropped from 90.4% of the overall number to 89.9 may be due to the 17 entries with unmarked plural form. Of these, 8 words were originally “*-s* plurals” in GVD12: *click*, *floppydrive*, *mailing*, *pack*, *package*, *parameter*, *print-out*, and *suite*, and only one an “*-en* plural”: *document*. The remaining 8 examples fell in the category of mass nouns.

While plural endings of loanwords cannot be compared with those of the original English models, since these are without exception “*-s* plurals”, plurale tantum and mass nouns provide scope for analysis. Considering the 5 plurale tantum loanwords, 4 are both plural and mass nouns in English: *cyberbucks*, *data*, *hypermedia*, *multi-media*, and 1 is plurale tantum exclusively: *mips*. Out of 40 mass nouns, 4 are originally countable or collective in English depending on context: *access time*, *encryption*, *prompt*, *scanning*, and 1 is a countable noun: *packman*. This might indicate that in the case of versatile usage only one type of grammatical information is borrowed, or that a pattern already exists in Dutch, and loanwords are adapted to it.

Considering the nominal material in the corpus, there is very little variation in plural formation. Original plurale tantum and mass nouns do not drastically shift across category and acquire a different status, and countable nouns usually take the *-(e)s* suffix, which complies with the tendencies mentioned in earlier. However, despite the fact that plurals in compound nouns can be predicted, the morphological adaptation instantiated by pluralisation is either less advanced or at least less represented by dictionary sources, when compared with gender assignment: 254 (354) vs. 315 (389), respectively.

#### 4. Conclusions

The morphological treatment of English computer loanwords, considering the material with available dictionary information shows a number of pronounced tendencies. In gender assignment there is an evident trend to ascribe loanwords to the common, and within it to the masculine gender. Pluralisation does not follow native patterns which determine the application of an *-s* or *-en* suffix, and the majority of entries take an “*-s* plural”, complying with the behaviour generally observed in nouns of English origin. Moreover, due to the significant number of compound words in the corpus, gender and plural forms may be predicted for some entries that have not been yet included in Dutch dictionaries. This, however, is not a basis for analysis, but rather is treated as a speculation, which within its limits may, at most, serve as an indication that the common (masculine) gender and “*-s* plural” could be the likely morphological attributes of the words in question.

#### REFERENCES

- Booij, G. and A. van Santen. 1998. *Morfologie. De Woordstructuur van het Nederlands*. Amsterdam: Amsterdam University Press.
- Coster, M. De. 1999. *Woordenboek van neologismen*. Amsterdam/Antwerpen: Het Taalfonds.
- Donaldson, B. 1997. *Dutch. A comprehensive grammar*. London and New York: Routledge.
- Faessen, C. 2000. *Woordenlijst*. <http://www.ouh.nl/info-alg-hulp/woordenlijst.htm>.
- Geerts, G. and H. Heestermans (eds.). 1991. *Van Dale Groot woordenboek der Nederlandse Taal. Twaalfde uitgave*. Utrecht/Antwerpen: Van Dale Lexicografie.
- Geerts, G. and H. Heestermans (eds.). 1999. *Van Dale Groot woordenboek der Nederlandse Taal. Dertiende uitgave*. Utrecht/Antwerpen: Van Dale Lexicografie.
- Geerts, G., W. Haeseryn, J. de Rooij and M.C. van den Toorn (eds.). 1984. *Algemene Nederlandse Spraakkunst*. Groningen: M. Nijhoff Uitgavers/Wolters Plantyn.
- Geerts, G. 1975. “Het genus van Engelse leenwoorden in het Duits en in het Nederlands”. In Jansen-Sieben, R., S. de Vriendt and R. Willemyns (eds.). 115-123.
- Gerritsen, J. 1986. “Dutch in contact with English”. In Viereck, W. and W.-D. Bald (eds.). 51-64. Instituut voor Nederlandse Lexicologie. 1996a. *Elektronisch Groene boekje*. Den Haag: SDU Uitgevers.
- Instituut voor Nederlandse Lexicologie. 1996b. *The 38 million words corpus*. <http://www.inl.nl/eng/corp/38mln96/>.
- Jansen-Sieben, R., S. de Vriendt and R. Willemyns (eds.). 1975. *Spel van zinnen. Album A. van Loey*. Editions de l’Université de Bruxelles.
- Koenen, L. and R. Smits. 1992. *Peptalk. De Engelse woordenschat van het Nederlands*. Amsterdam: Nijgh & Van Ditmar.
- Kolsteren, A. and Ewoud Sanders. 2000. *Vreemde woorden*. Utrecht: Uitgeverij Het Spectrum B.V.
- Kroenen, G. 2000. *Lijst van evenwoorden. Webstek voor taalverrijking*. <http://internettrash.com/users/taalverrijking/woordenlijst.html>.
- Martin, W. and G.A.J. Tops (eds.). 1998. *Van Dale Groot woordenboek Nederlands- Engels-Nederlands*. Utrecht/Antwerpen: Van Dale Lexicografie.

- Pearsall, J. and P. Hanks (eds.). 1999. *The New Oxford Dictionary of English*. Oxford: Oxford University Press.
- Poucke, J. Van. 1999. *Nederlandstalige computertermen*. <http://www.elis.rug.ac.be/rb/neder/>.
- Reinsma, R. 1999. *Neologismen*. Den Haag: SDU Uitgevers / Antwerpen: Standaard Uitgeverij.
- Sijs, N. van der. 1996. *Leenwoordenboek. De invloed van andere talen op het Nederlands*. Den Haag: SDU Uitgevers.
- Simpson, J.A. and E.S.C. Weiner. 1989. *The Oxford English Dictionary*. Oxford: Oxford University Press.
- Toorn, M.C. van der, J.M. van der Horst, J.A. van Leuvensteijn and W.J.J. Pijnenburg. 1997. *Geschiedenis van de Nederlandse taal*. Amsterdam: Amsterdam University Press.
- Valkenburg, F. and A. van Bruggen. 2002. *BTL vertaalwoordenboek*. <http://geocities.com/SoHo/Den/7522/woordenboek.html>.
- Veen, P.A.F. and Nicoline van der Sijs eds. 1997. *Etymologisch woordenboek. De herkomst van onze woorden*. Utrecht/Antwerpen: Van Dale Lexicografie.
- Viereck, W. and W.-D. Bald (eds.). 1986. *English in contact with other languages. Studies in honour of Broder Carstensen on the occasion of his 60th birthday*. Budapest: Akadémiai Kiadó.
- Vries, J. de and F. de Tollenaere. 1987. *Nederlands etymologisch woordenboek*. Leiden: Brill.
- WebReus. 2000. *Uitgelegd*. <http://uitgelegd.nl/>.
- Zijderveld, D. van. 2000. *Stichting Natuurlijk Nederlands: Woordenlijst onnodig Engels*. <http://www.vvb.org/anglowaan/woordenlijst.htm>.