

Two generations, two strategies: The fate of bare English-origin nouns in Ukrainian¹

Svitlana Budzhak-Jones
Shana Poplack

University of Ottawa

ABSTRACT

The status of lone nouns of one language in discourse of another is often ambiguous, since they typically provide few indications of their language membership. Making use of the facts of linguistic variability in each of Ukrainian and English, we examine the quantitative conditioning of such forms in bilingual performance data. Results yield a synchronic portrait of the integrated loanword, even when it bears no surface indication of that integration, is neither recurrent nor widespread, and has no history of attestation or other status in the language. Distinguishing the languages involved in the contact situation (Canada) as produced by the first generation (G_1) or the second generation (G_2), further reveals that G_1 speakers incorporate *borrowed* items – nonce or established – into recipient language discourse by applying to them the fine details of their native language constraints on linguistic variability. In contrast, G_2 speakers' treatment of English-origin nouns coincides neither with their own treatment of Ukrainian nouns nor with G_1 speakers' treatment of Ukrainian or English-origin nouns.

KEYWORDS: Language contact, code-switching, borrowing, variation, bilingualism

1. INTRODUCTION

The categorization of intrasentential incorporations in one language into discourse otherwise of another is often ambiguous. This is especially true of lone lexical items, since it is difficult to discern their language membership, and hence their status as *code-switches*, here defined as sentence elements generated by the grammar of their lexifier language, or *loanwords*, elements integrated into the grammar of a recipient language. This problem is perhaps the most contentious in the current literature on code-switching, and is at the root of the controversies currently raging over the applicability of any of the plethora of

code-switching models now available (e.g. Belazi et al. 1994, di Sciullo et al. 1986, Myers-Scotton 1993, Sankoff and Poplack 1981, Santorini and Mahootian 1995). The key questions revolve around whether code-switching and borrowing are generated by a single grammatical process, and if not, how to distinguish between them.

The Ukrainian-English contact situation presents an interesting test case for this debate. The complex nominal inflectional system of Ukrainian comprises three grammatical categories (gender, number and case), each combination of which is obligatorily expressed, with few exceptions, by a single surface form. In addition, relevant modifiers and predicates must agree in each of these categories with Ukrainian nouns. In English, on the other hand, all functions fulfilled by Ukrainian case inflections are conveyed by word order and/or prepositions, gender is expressed only in pronouns with animate or anthropomorphized antecedents, and number agreement applies only to 3rd person singular in the present tense.

These facts will have repercussions on all Ukrainian-English language mixture involving nouns, which are generally reported to constitute the largest part of any bilingual corpus empirically studied (e.g. Berk-Seligson 1986, Eze in preparation, Ghafar Samar 1996, Poplack and Meechan 1995, Poplack et al. 1988, Turpin 1995). Assuming that loanwords are morphologically and syntactically integrated into a recipient language (Haugen 1950, Poplack 1993, Weinreich 1953/1968), English-origin nominals that have been *borrowed* into Ukrainian should carry Ukrainian inflections and show relevant noun-modifier and subject-predicate agreement within the clause. This is in fact what we observe for many such nouns in the data on which this study is based (section 3), like *car* in (1).

1. Chetverta hodyna, chy pjata hodyna, koly vin
 Fourth-F.sg.Nom hour-F.sg.Nom, or fifth-F.sg.Nom hour-F.sg.Nom, when he
 kinchaje pracju, maje podibnu rich znovu: do *cary*,
 finishes work-F.sg.Acc has similar-F.sg.Acc thing-F.sg.Acc again: to car-F.sg.Gen,
zastartuje caru, ide dodomu. (03/B/048)²
 starts car-F.sg.Acc, drives home.

'When he finishes his work at four or five o'clock, he does the same thing: goes to the car, starts the car and drives home'.

However, most English-origin nouns in otherwise Ukrainian discourse are bare, like *therapist* in (2).

2. Vona rozpovidala takomu *therapist*, sho vona dumaje. (10/A/311)
 She told-F.sg such-M.sg.Dat therapist-Ø what she thinks
 'She was telling that therapist what she thought'.

Many scholars (Bentahila and Davies 1991, Boeschoten 1990, Eliasson 1989, Gardner-Chloros 1991, Myers-Scotton 1988, Myers-Scotton 1990, Treffers 1990) have simply assumed such nouns to be code-switches, and have even reported them as violations of recipient language grammar, donor language grammar or both (e.g. Backus 1992, Bentahila and Davies 1983, Berk-Seligson 1986, Boeschoten and Verhoeven 1985, Bokamba 1988, Muysken 1987, Romaine 1989). In this paper we show that this assumption is unwarranted in the absence of information on the behavior of bare nouns in each of the languages involved in the contact situation.

Bare nouns constitute a special challenge to any theory of code-switching or borrowing, since they typically provide few indications, other than etymological, as to their language membership. This problem of determining their status is exacerbated in the Ukrainian-English contact situation. Because Ukrainian word order is comparatively free (e.g. Kulyk 1965), code-switches to English pose no syntactic conflict. This diminishes the utility of the syntactic criterion (Meechan and Poplack 1995, Poplack 1980, Poplack and Meechan 1995, Poplack et al. 1987) for distinguishing code-switches from loanwords, since most English-origin material occurs at syntactic sites consistent with the word order of both of the languages in contact (Budzhak-Jones in preparation). Nor is phonetic shape a reliable criterion, since this has been amply demonstrated to be variable, not only in loanwords and code-switches, but in monolingual discourse as well (Boyd et al. 1991, Poplack et al. 1988). Most important, bare nouns are grammatical, under well-defined conditions, in both Ukrainian and English. Thus, an English-origin noun cannot simply be assigned to one or the other of the languages in contact by virtue of being bare alone.

We invoked earlier the widespread if vague characterization in the literature that loanwords undergo *integration* into a recipient language, although precisely what this entails has never been entirely clear. In this paper we formulate and test a very precise (and stringent) hypothesis about loanword integration. Making use of the facts of inherent linguistic variability in *Ukrainian*, and the comparative method detailed below, we establish the status of lone English-origin nouns in otherwise Ukrainian discourse by examining the fine details of quantitative conditioning of their occurrence in natural performance data. If the distribution of overt and null Ukrainian inflections on English-origin nouns patterns like that of their monolingual Ukrainian counterparts, then the relevant English-origin nouns – with or *without* an overt Ukrainian inflection – can only be construed as borrowings (whether nonce or established). If they do not display Ukrainian patterns, they may, but need not, result from code-switching. As a corollary to this observation, we also test, on another language pair, the findings of Poplack and Meechan (1995) that apparently identical bare English-origin nouns may fulfill different functions in discourse, and that this too may be distinguished by the same method. Finally, we seek to establish whether and how the status as native or non-native of the languages involved

in the contact situation affects the treatment of English-origin (and Ukrainian) nouns, if at all.

2. NOMINAL INFLECTION IN STANDARD UKRAINIAN

Standard Ukrainian, as described in e.g. Ditel' (1993), Vyxovanec et al. (1982), Rusaniv'skyj et al. (1991), Ivchenko (1965), Kulyk (1965), Zhovtobryj et al. (1959) and Pljushch (1994), among others, has an extremely rich nominal inflection system, marking three genders (masculine, feminine and neuter), two numbers (singular and plural) and seven cases (nominative, genitive, dative, accusative, instrumental, locative and vocative). Each combination is represented by a single portmanteau form affixed to the noun stem, as exemplified in (3), where the affix *-i* simultaneously denotes feminine gender, singular number and locative case of the noun stem *shkol-* 'school'.

3. Vzhe v serednij **shkoli** ja xodyla v misti. (09/A/347)

Already in high-F.sg.Loc school-F.sg.Loc I went-F.sg in town-F.sg.Loc

'I was already in the city for high school'.

Since Ukrainian word order is relatively free, these inflections are all obligatory according to prescriptive grammar (e.g. Ditel' 1993), which further stipulates that modifiers and predicates must agree in inflection with the relevant noun. In (4) the demonstrative pronoun *ti* 'those', adjective *rizni* 'different' and ordinal numeral *dva* 'two' agree in number and case with the noun *mista* 'cities'. In (5), both the predicate *bazovana* 'based' and the demonstrative pronoun *taka* 'such' agree in gender and number with the subject *hrupa* 'group'.³

4. Ja znaju sho ti je dva rizni mista. (11/B/178)

I know-1sg that those-Nom is/are two-Nom different-pl.Nom cities-N.Nom.

'I know that those are two different cities'.

5. To je taka hrupa dlja molodyx bazovana na

That is such-F.sg.Nom group-F.sg.Nom for young-pl.Gen based-F.sg. on

relihiyjnyx temax. (09/A/168)

religious-pl.Gen topics-F.Gen.

'That is a religious group for young people like that'.

Moreover, depending on declensional class, each noun stem admits at least 10 different portmanteau marks of number and case per gender, as shown in Table 1. With the exception of nominatives, masculine and some feminine inanimate and neuter accusatives, as well as a few genitive plurals, all other combinations of number, case and gender require an overt inflection. To illustrate the complexity of the inflectional apparatus that must be applied to

Table 1: Noun conjugation in Ukrainian (simplified) (abstracted from Ditel' 1993 and Rusaniv's'kyj et al. 1991)

	Nominative	Genitive	Dative	Accusative	Instrumental	Locative	Vocative
Singular Feminine	-a, -ja, \emptyset	-y, -i, -i	-i, -i	-u, -ju, \emptyset	-oju, -eju, -jeju, -ju	-i, -i	-o, -e, -je
Singular Masculine	\emptyset , -o	-a, -ja, -ju	-ovi, -evi, -jevi, -u, -ju	-a, -ja, \emptyset (inanim.)	-om, -em, -jem	-ovi, -evi, -jevi, -u, -ju, -i, -i	-y, -e, -ju,
Singular Neuter	-o, -e, -á, -já	-a, -ja, -aty, -jaty, -eni	-u, -ju, -ati, -jati, -eni	-o, -e, -á, -já	-om, -em, -am, -jam, -enem	-i, -u, -ju, -ati, -jati, -eni	-o, -e, -a, -ja
Plural Feminine	-y, -i, -i	\emptyset ,* -j, -ej	-am, -jam	-y, -i, -i	-amy, -jamy	-ax, -jax	-y, -i, -i
Plural Masculine	-y, -i, -i	-iv, -ej, \emptyset	-am, -jam	-iv, -i, -i, -y, \emptyset	-amy, -jamy	-ax, -jax	-y, -i, i
Plural Neuter	-a, -ja, -ata, -jata, -ena	\emptyset , -en, -at, -jat, -iv	-am, -jam, -atam, -jatam, -enam	-a, -ja, -at, -jat, -ata, -jata, -ena	-amy, -jamy, -atam, -jatamy, -enamy	-ax, -jax, -atax, -jatax	-a, -ja, -ata, -jata, -ena

* The genitive plural zero ending involves suffix omission and hence, differs from the zero-marked nominative singular masculine.

nouns (native and borrowed) in Ukrainian according to the interacting parameters of number, gender and case, we furnish in Table 1 a simplified version of the standard Ukrainian noun conjugation system.

3. DATA AND METHOD

The Ukrainian language in Canada

Since the first wave of mass immigration to Canada in the late 19th century, Ukrainians have come to constitute the fifth largest ethnic group in the country, and for much of this time, their language has ranked among the most widely spoken. It comes as no surprise then that the Ukrainian language in Canada has been the focus of so much scholarly interest. Most studies concentrate on the historical, demographic, dialectal or socio-political features of 'Canadian Ukrainian' (Gerus-Tarnawecka 1983a, Isajiw 1983, Lupul 1982, 1985, Rudnycky 1969, 1971, 1972, 1973, Simovych 1981, Woycenko 1965). Others describe its phonological, morphological, lexical, syntactic and semantic peculiarities (Aponiuk 1994, Budzhak 1989, 1990, Chumak-Horbatsch 1987,

Foster 1965, Gerus-Tarnawecka 1983a, 1983b, 1994, Rudnyckyj 1951, Shymkiw 1988, Zhluktenko 1964, 1990). Differences between Canadian Ukrainian and standard literary Ukrainian as spoken in Ukraine are frequently invoked (Gerus-Tarnawecka 1983b, Zhluktenko 1990), largely on the basis of anecdotal observations that the grammar of the former has undergone simplification, and that its lexicon has been infiltrated by vast numbers of elements taken from surrounding languages. These lexical 'innovations' are generally reported to follow the grammatical rules of standard Ukrainian, though cases of non-assimilation (i.e. bare forms) are also noted. However, none of these studies has attempted a systematic analysis of the behavior of English-origin nouns as actually *used* in a bilingual speech community, nor has any explanation been offered for the fact that some of them are inflected with Ukrainian morphology while others are not. The present study is intended to fill this gap.

The speakers

The data on which this study is based were provided by seven speakers of Ukrainian currently residing in Ottawa, Canada. All are members of the same dense and multiplex extended network centering around cultural, educational and religious community organizations where Ukrainian is used regularly. With two exceptions, sample members are highly educated, having obtained university degrees in Canada. All are bilingual in Ukrainian and English, albeit with varying degrees of proficiency.

Two men and two women in the sample, ranging in age from 57–76, were born and raised in Western Ukraine. They migrated to Canada during the third of three major immigration 'waves' (Budzhak 1987, Zhluktenko 1990) as young adults, after having fully acquired Ukrainian. At the time of the interview they had been living in Canada for at least forty years. For these *first generation* (G_1) speakers, Ukrainian is both the first language acquired and the current primary language, here defined as the language given and received the most in the course of normal daily interaction. These speakers report using Ukrainian daily at home, in church and in community dealings. Two further women and a man, aged 20–31, were born in Canada to Ukrainian parents (of the same Western Ukrainian regions and immigration wave). Although these speakers also report having acquired Ukrainian first, they currently use it only sporadically, mostly in communication with their elders. In what follows we refer to them as *second generation* (G_2) speakers. For them, the primary language of interaction with peers, siblings, neighbors and colleagues is English. In ensuing sections we examine the relationship between nominal inflection and the extra-linguistic factor of generation, which subsumes acquisitional differences as well as the current status of Ukrainian as native or non-native.

The data

Spontaneous one-on-one interactions with these speakers were recorded by the first author (a proficient bilingual in Ukrainian and English) among members of her extended social network. Informal conversations were carried out in Ukrainian, with use of English left entirely to the discretion of the informant.⁴ The resulting bilingual corpus comprises at least one hour of rich informal interaction per speaker, for a total of approximately 10 hours. Except for the odd *stretch* of (i.e. code-switch to) English discourse in the recordings of the Ukrainian G₂ speakers, as in examples (6) and (20) below, the overwhelming majority of other-language material consists of *lone* English-origin elements, mostly nouns. We noted above that lone elements are the most contentious for any theory of language mixture, since from informal examination alone, it is impossible to tell whether they are borrowings or code-switches. Their behavior will constitute our focus in what follows.

6. Ta', ale vony, THEY WON'T EVEN GO OUT, jak kazhut'. (12/A/211)
 Yeah, but they as say-3pl
 'Yeah, but they, they won't even go out, as they say'.

Procedure

From the bilingual conversations constituting our corpus, all lone English-origin nouns, as in (1) and (2), as well as compounds functioning as a unit (see 7), were extracted.

7. Shchos' distav *heart attack* i pomer. (02/A/140)
 Something got-M.sg heart attack-M.sg.Acc and died-M.sg
 'Somehow he had a heart attack and died'.

Following Zhluktenko (1964, 1990), we focus in this study on English-origin forms acquired in the Canadian contact situation. Forms of English and/or other etymological origins appearing in *Slovník ukráíns'koí movy* (Bilodid 1977) (e.g. *korespondent*- 'correspondent' and *pres*- 'press' in 8, *shkol*- 'school' in 3, *hrup*- 'group' in 5) are not considered here. Proper and geographical names (such as *Dynasty* in 9) were also excluded.

8. Ja vidtodi stav takym . . . *korespondentom* dlja
 I since-then became-M.sg such-M.sg.Inst correspondent-M.sg.Ins for
 ukráíns'koí *presy*. (08/A/074)
 Ukrainian-F.sg.Gen press-F.sg.Gen

'Since then I've become a kind of correspondent for the Ukrainian press'.

9. I to bulo take shche *Dynasty* bula dobra
 And that-N.sg.Nom was-N such-N.sg.Nom again 'Dynasty' was-F good-F.sg.Nom
story, vzhe nema. (02/A/317)
 story-Ø already has-not

'And there was also that *Dynasty*, it used to be a good story, not any more'.

The resulting corpus contains 399 English-origin nominals, some occurring with Ukrainian inflections, as in (1), and others bare, as in (2). For purposes of comparison, a subsample of 481 Ukrainian nouns was extracted from the same recordings to yield an approximately equal number of Ukrainian and English-origin nouns.

Every lone English-origin noun was first coded according to whether it bore an overt Ukrainian inflection or not. Overtly marked nouns were further subdivided into those exhibiting the standard Ukrainian inflectional paradigm (Ditel' 1993, Rusanivs'kyj et al. 1991, Zhovtobrjux and Kulyk 1959), and those bearing an overt Ukrainian inflection distinct from that required by standard grammar. We refer to these in what follows as *standard marking* and *non-standard marking*, respectively. Standard marking is exemplified in (10), where the English-origin stem *represent-* received the masculine singular instrumental inflection required by standard Ukrainian grammar.

10. Ja buv їх *representantom* na konferencii. (08/A/068)
 I was-M their representative-M.sg.Ins on conference-F.sg.Loc

'I was their representative at the conference'.

Non-standard marking is exemplified in (11), where the English-origin noun *yard-* is inflected with the Ukrainian masculine singular genitive inflection *-a*, rather than the standard masculine singular locative inflection *-i*.

11. Dekoly my tam na- na *back yarda*, my kazhem, na- zzadu
 Sometimes we there on on back yard-M.sg.Gen we say-1pl on behind
 xaty, to- to ne raz my troshka sydily. (01/B/112)
 house-F.sg.Gen so so not once we little sat-pl

'Sometimes we would sit for a while in- in the back yard, as we say. In-behind the house'.

Uninflected English-origin nouns were similarly distinguished. One class comprises unmarked nouns which do not require an overt mark in standard Ukrainian, such as inanimate masculine nouns in the accusative. The bare English-origin noun *mortgage* in (12) is thus considered to feature a *standard null mark*.

12. To vzhe varta shos' dobre, znajesh, jak ty na sebe
Then already worth something good, know-2sg, if you-sg for self-Refl.

beresh toj *mortgage*. (09/B/105)

take-2sg that-M.Acc mortgage-M.sg.Acc

'If you take that mortgage on, it should be worth something, you know'.

A second type of bare noun in the data would feature an overt mark in standard Ukrainian, as in (13), where both tokens of the animate English-origin noun *friend* require the plural accusative *-iv*. We refer to such tokens as *non-standard null marks*.

13. Bo to ti divky maly bahato *friend*, a cej, vin ne
Because so those girls-F.Nom had-pl many friend-Ø, and this-M.Nom he not

mav *friend*. (01/B/021)

had-M.sg friend-Ø

'Because those girls had many friends, and this one, he didn't have any friends'.

The comparative method

While the examples in (1–2) and (11–13) are suggestive of the extent of inflectional variability in English-origin nouns, they cannot reveal its ultimate source. To determine whether the observed variability in assigning (standard or non-standard) Ukrainian inflections to lone English-origin nouns is a product of Ukrainian grammar, we must ascertain whether the constraints on that variability are the same as those operating in the putative source(s). This necessarily involves incorporating an analysis of the same speakers' Ukrainian into the equation. The logical extension of this exercise would of course involve detailed comparison of inflectional variability on lone English-origin and Ukrainian nouns, as detailed in section 6 below, with that of English nouns in the *English* discourse of these same individuals, as well as in their (multi-word) code-switches to English, as illustrated in Poplack and Meechan (1995) and Meechan and Poplack (1995). As noted above, however, there is virtually no English discourse of either type in these data. We therefore analyzed the Ukrainian nouns in Ukrainian discourse (exemplified in 3–5) according to exactly the same criteria as the lone English-origin nouns in Ukrainian discourse. Moreover, although this procedure of analyzing *monolingual* portions of the data to study *bilingual* phenomena is still relatively rare (but see e.g. Budzhak-Jones in preparation, Eze 1995a, Eze in preparation, Ghafar Samar 1996, Meechan and Poplack 1995, Moynzadeh 1996, Poplack et al. 1987, Sankoff et al. 1990, Turpin 1995), we contend that the status of lone other-language items simply cannot be

established in its absence. The same method is replicated in comparing the treatment of these items across speaker generations.

Our use of standard Ukrainian grammar as a point of reference is a necessary methodological tool universal to the variationist study of the speech community. It implies nothing about the quality, or even the existence, of a speech variety conforming to such a grammar. There was no empirical information about variable *usage* of Ukrainian inflections prior to the results presented in section 6. Here we simply adopt the working hypothesis that the categories and distinctions developed by traditional (prescriptive and descriptive) linguists will be useful in the explanation of this variability, regardless of the variety of Ukrainian under study. That G₁ speakers use non-standard marking or agreement for Ukrainian nouns 5 percent, 10 percent or 15 percent of the time does not mean to us that they are in error; rather that the standard rule we have inferred as being part of the grammar only applies 95 percent, 90 percent or 85 percent of the time. It is these rates, and the variable factors conditioning them, that are compared for different types of speakers, nouns and inflectional marks, with the goal of measuring the variable integration of English-origin nouns into Ukrainian within the community. The conclusions we draw are thus based, *not* on direct comparison of speaker behavior with an external reference point, but rather on comparison of speaker behavior with regard to each other and to each language of origin.

Figure 1 summarizes the marking distinctions examined in each of the Ukrainian and English-origin nouns of G₁ and G₂ speakers. If the distribution and patterning of null and overt marks on the latter parallels those of the former, this will be evidence that the English-origin nouns in question are functioning as if they were Ukrainian, i.e. are the product of borrowing. To test this possibility, we coded every noun extracted from our corpus, whether English-origin or monolingual Ukrainian, according to a number of morphological, syntactic and discourse factors hypothesized to affect the occurrence of an overt inflection. The next sections detail the codes assigned to each noun.

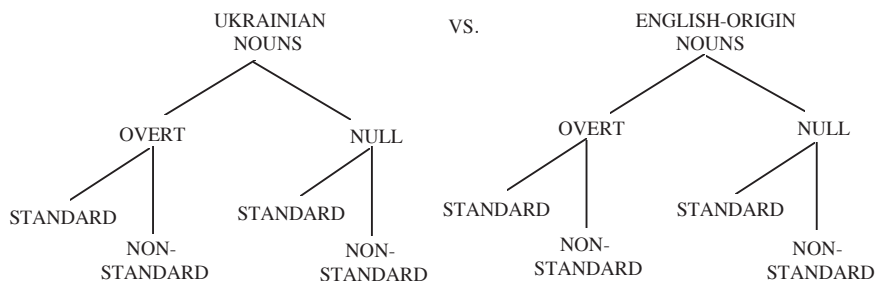


Figure 1: Comparison of inflectional marking of Ukrainian and English-origin nouns

4. CODING

Number

We first distinguished singular from plural number, as determined by standard Ukrainian rules of number inflection (see section 2). Where nouns are bare, (semantic) number is determined by discourse context. For example, *therapist* in (2) was coded as singular, since the demonstrative pronoun *takomu* 'such' modifying it, is overtly marked for singular. *Friend* in (13) was coded for plural since it is accompanied by the plural quantifier *bagato* 'many'. Since most plural nouns require an obligatory overt inflection (in contrast to singular nouns, which remain unmarked for number), it is reasonable to expect more non-standard marking in plural contexts.

Gender

Standard Ukrainian distinguishes three genders – masculine, feminine and neuter – assigned on the basis of biological sex where applicable; otherwise, largely on the basis of the (morpho)phonological form of the noun stem. With few exceptions, nouns ending in consonants are masculine, nouns ending in *-a* and *-ja* feminine, and nouns ending in *-o* or *-e* neuter. English nouns of course lack this grammatical category.

Although Gerus-Tarnawecka (1983a) invokes 'the obliteration of grammatical gender' in Canadian Ukrainian, Zhluktenko (1964) had already reported that most English-origin nouns were in fact assigned Ukrainian gender on the basis of their phonological form. Others received a gender distinct from that required by their phonological form, whether by analogy with a Ukrainian counterpart or for some other (unstated) reason. Determination of the basis for assignment of masculine, feminine or neuter gender to the English-origin nouns in our corpus is beyond the scope of this research (although see Poplack et al. 1982 for a comparative analysis of factors contributing to assignment of Spanish and French gender to English-origin nouns). In this study, we code English-origin nouns according to the gender they actually received, where discernable. Thus *cary* and *caru* in (1) were coded as feminine by virtue of the feminine inflections *-y*, and *-u*, respectively. Where gender is ambiguous, as with bare nouns, we code animate nouns according to the physiological gender of their referent, as inferred from agreement or anaphoric reference. Hence, *architect* in (14), referring to *bat'ko* 'father', was coded as masculine, as was *therapist* in (2), whose modifier, *takomu* 'such', is marked for masculine.

14. A *bat'ko* *buv* *ïi* *architect*, *i* *vin* *tezh* *buv*
 And father-M.sg.Nom was-M her architect-Ø and he also was-M
vykladachem *takym* *v* *instytuti* *sylikativ*. (07/B/212)
 instructor-M.sg.Ins such-M.sg.Ins in institute-M.sg.Loc silicates-M.Gen

'But her father was an architect, and he was also an instructor in the Silicate Institute'.

Inanimate nouns were coded according to the gender that would have been assigned to a Ukrainian word with the corresponding phonetic form (determined by the speaker's actual pronunciation), as per the Ukrainian gender assignment rules described above. For example, both Ukrainian *televizor* 'TV set' and English-origin *cable* in (15) were coded as masculine on the basis of their consonantal ending.

15. My- my distaly malen'kyj *televizor*, my distaly takyj
 We- we got-pl small-M.sg.Acc TV-set-M.sg.Acc we got-pl such-M.sg.Acc
 malen'kyj chorno-bilyj vid joho kuzyna, ale my ne
 small-M.sg.Acc black-&-white-M.sg.Acc from his cousin-M.sg.Gen but we not
 majemo *cable*, to my . . . distajemo *CBC* i . . . *Global*, ja dumaju.
 have-1pl cable-Ø, therefore we receive-1pl CBC and Global, I think-1sg.

(10/A/126)

'We- we got a small TV set, we got one of those small black and white ones from our cousin, but we don't have cable, so we only get CBC and . . . Global, I think'.

Due to the plethora of gender marks, which differ according to case and number (Table 1), as well as under-representation of many cases in different genders, for ensuing quantitative analyses we simply distinguish masculine nouns (which admit null inflections) from non-masculine forms (which should be overtly marked). Our expectation is that masculine nouns will display less non-standard marking.

Case

Case in Ukrainian is syntactically assigned by a verb, preposition, cardinal numeral, quantifier or another noun. Since all case assigners in our data are Ukrainian, required case (nominative, genitive, dative, accusative, instrumental or locative) could be determined by reference to the case assigner, for both native Ukrainian and lone English-origin nouns. For example, in (16), the quantifier *troxy* 'some' assigns genitive to *vyna* 'wine', as does the preposition *do* 'to' to *superintendent*.

16. To ja navit' *troxy* davav tam vyna do eh *superintendent*.
 So I even some gave-M.sg there wine-N.sg.Gen to superintendent-Ø

'So I even gave some wine to the superintendent'. (11/B/371)

Because some of the cases were very sparsely represented (e.g. dative), and others unevenly distributed across corpora, we ultimately distinguished only

required nominative from non-nominative case. Nouns in the nominative as well as inanimate masculine (e.g. *televizor* 'TV set' in 15), feminine nouns ending in a consonant, and neuter nouns in the accusative, none of which are marked for case, were coded as nominative. All other nouns require an overt case inflection (Table 1); these were grouped as non-nominative cases. As previously, our expectation is that nominative case (which admits null marking) will display less non-standard inflection.

Agreement

In Standard Ukrainian, modifiers (e.g. adjectives, ordinal numerals, demonstrative pronouns, participles, etc.) must also agree with their heads in each of the grammatical categories of number, gender and case. To compare the rates of *agreement* in native Ukrainian and lone English-origin nouns, we coded each token according to the *number*, *gender* and *case* of the inflection on its associated modifier(s) and/or verb (all of which were Ukrainian). For example, a modifier ending in *-a* was coded as feminine, one ending in *-i* or *-y*, as plural, etc., in accordance with the requirements of Ukrainian grammar. When gender and case inflection on the modifiers corresponded to the mark – overt or null – on the noun, that noun was coded as participating in the relevant *agreement*⁵. For example, in (17), the modifiers *dvojakyj* 'two kinds of' and *takyj* 'such' (see also e.g. 2, 4, 5, and 15 among others) agree with *mushroom* in all grammatical categories. *Mushroom* was thus coded as participating in agreement.

17. Ta vse majemo dvojakyj takyj, my kazhemo,
Well always have-1pl two-kinds-M.sg.Acc such-M.sg.Acc we say-1pl

mushroom, to eh- z grybiv *sauce*. (02/A/023)
mushroom-M.sg.Acc it from mushrooms-Gen sauce-M.sg.Nom

'Well, we always have two kinds of those, as we say, mushrooms, or mushroom sauce'.

In addition, the predicate agrees with nouns in subject position in gender and number in the past, and in number in present and future. Therefore, *bat'ko* 'father' in (14) was coded as agreeing with its predicate, as was *investigacija* 'investigation' in (18).

18. Ja ne bachyv shche nigde shob cilkovyta stoprocentova
I not saw-M.sg yet nowhere that total-F.sg.Nom hundred-percent-F.sg.Nom

investigacija bula provedena i vyjasnennja chomu
investigation-F.sg.Nom was-F conducted-F.sg.Nom and elucidation-N.sg.Nom why

ce sja stalo. (04/B/029)
this-N.Nom Refl. happened-N.sg

'I haven't seen anywhere that a one hundred percent total investigation was conducted to find out why it happened'.

Discourse flagging

To the extent that speakers are sensitive to the requirements of standard grammar, non-standard marking may be flagged. Of course, speech errors and other dysfluencies are by no means restricted to mixed constructions. To assess whether lone English-origin nouns showed any particular propensity to be flagged, we compared signals demonstrating speaker awareness in the vicinity of lone English-origin and monolingual Ukrainian nouns. These included production flags, such as audible pauses and false starts, metalinguistic commentary (e.g. *jak kazhut* 'as they say' in 6, *my kazhemo* 'we say' in 17, *ne znaju jak skazaty* 'I don't know how to say it' in 19, etc.), and demonstrative pronouns (e.g. *takyyj* 'such as, this' as in 2, 15, 17) which sometimes function to introduce other-language nouns where one member of a language pair lacks a determiner (e.g. Eze 1995b, Poplack et al. 1987), as is the case in Ukrainian.

19. My buly na taki . . . *elevations* . . . *ne znaju jak skazaty*. (12/A/036)

We were on such-pl.Acc elevations-Ø not know-1sg how to-say

'We were on those . . . elevations . . . I don't know how to say it'.

Table 2 summarizes our expectations with regard to the linguistic factors. To the extent that inflectional variability exists in Ukrainian, we predict that most non-standard marking will occur in contexts where (1) an *overt*, as opposed to a null, Ukrainian mark is required, and (2) the noun in question should participate in agreement, because here application of an additional rule is involved. As far as the lone English-origin elements are concerned, if they have been borrowed into Ukrainian, they should display like (variable) patterns of overt and null inflection. If they result from code-switches to English, they will display inflectional patterns associated with that language.

5. THE ANALYSIS

The nouns thus coded were analyzed in two ways. First, overall rates of non-standard marking, here defined as any inflection, null or overt, which is at variance with the requirements of standard Ukrainian grammar, were obtained for each of the categories described above. In section 6 these are systematically compared, first by language of origin (Ukrainian versus English), and then across speaker generations (G_1 versus G_2).

Of course simple differences in raw frequency may be due to any one of a number of factors. Decisive evidence on the language membership of the lone English-origin nouns can only come from determining the grammar giving rise to them, as may be inferred from the constraint hierarchy conditioning the variable appearance of Ukrainian inflections on them. This study is innovative in language contact research in appealing, for this purpose, to the stepwise multiple regression procedure incorporated in GoldVarb 2.0 (Rand and Sankoff

Table 2: Predicted contributions of linguistic factors to inflectional variability

Category	Factor	Standard mark	Expected rate of non-standard marking
Number	Singular	null	less
	Plural	inflection	more
Gender	Masculine	null	less
	Non-masculine	inflection	more
Case	Nominative	null	less
	Non-nominative	inflection	more
Agreement	No modifier	as required on noun	less
	Modifier(s)	agree(s) with noun	more

1990), a variable rule application for the Macintosh. This procedure determines which factors contribute statistically significant effects to the probability that an application value (here, non-standard inflection) will obtain, as well as the relative weight of each. We make use of these features to uncover the grammar underlying the lone English-origin items in two ways: by ascertaining (1) whether the factor effects are statistically significant, and if so, (2) whether they are ordered in the same way. This enables us to compare both the hierarchy and the importance of factors contributing to the probability of non-standard marking of English-origin nouns with those for Ukrainian nouns.

To conclude unambiguously that the lone English-origin nouns have been *integrated*, i.e. *borrowed*, into Ukrainian, we impose the following severe requirement, viz. not only should the same factor groups be selected as significant to the probability of non-standard marking in both English-origin and Ukrainian nouns, but they should also display parallel constraint hierarchies. Code-switches to English, on the other hand, should display the same patterning as monolingual English nouns, which in the case of nominal inflection, would bear no resemblance to that of either Ukrainian nouns, or by extension, those borrowed into Ukrainian. We do not pursue this analysis here as there are no *stretches* of English in the data (section 3).

We use the same comparative method to determine whether G_1 speakers, by virtue of their native command of Ukrainian, show different patterns of variable marking of either lone English-origin or monolingual Ukrainian nouns from those of the G_2 speakers. Since English is the primary language of the latter, it is conceivable that their Ukrainian nouns may pattern differently.

6. RESULTS

Distributional analysis

Figure 2 gives the overall distribution of inflectional marking of monolingual Ukrainian and lone-English origin nouns in the speech of G_1 and G_2 speakers, according to the requirements of standard Ukrainian grammar. Although the majority of nouns we have studied features standard marking, a first notable finding is the existence of variability in inflectional marking even in the Ukrainian of the 'control group': the highly educated G_1 speakers, suggesting that it is inherent in the language.⁶ The conditioning of this variability provides the basis for the ensuing analyses.

We next observe a remarkable parallelism in distribution, both across languages and across speaker cohorts. Rates of Ukrainian nouns with non-standard marks increase, by the same factor of magnitude, as we move from Ukrainian to lone English-origin nouns within each language cohort. They increase again as we move from G_1 to G_2 speakers, such that nearly half the lone English-origin nouns of the latter receive a non-standard mark.

Figure 2 shows that in the Ukrainian of both G_1 and G_2 speakers, most of the non-standard marking is due to selection of a non-standard *overt* mark. With the lone English-origin nouns we note a reversal: here almost all of the non-standard marking is due to *lack* of an overt mark where one would have been required in standard Ukrainian. Moreover, this trend is much accentuated among G_2 speakers, with the results that nearly three quarters (73%) of their lone English-origin nouns are bare, and almost all (94%) of their lone English-

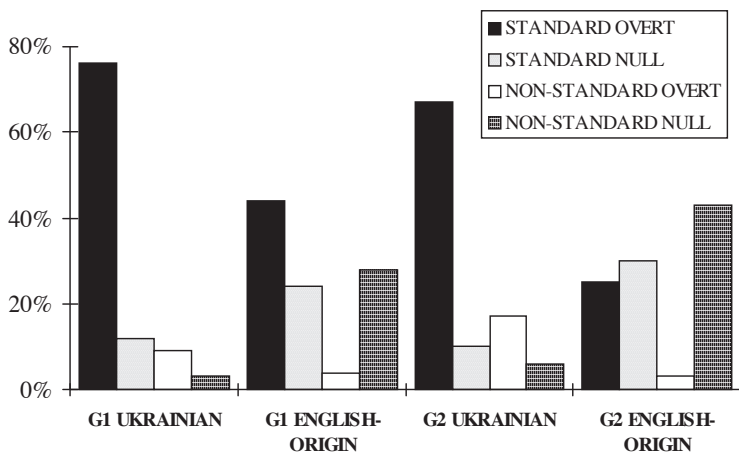


Figure 2: The distribution of overt and null marks across languages and speakers

origin nouns featuring non-standard inflection are non-standard precisely because they surfaced bare. Is the status of these bare nouns the same for G_1 and G_2 speakers? To answer this question we now systematically assess the contribution to non-standard marking of each of the grammatical factors coded, and compare the behavior of G_1 and G_2 speakers.

Gender assignment and agreement

G_1 speakers. Table 3 shows that there is no difference in non-standard marking according to required gender in Ukrainian: it occurs at a rate of 12–13% with both masculine and non-masculine nouns. But the English-origin nouns that (by their phonological shape; see section 4) would require masculine if they were Ukrainian, show three times more non-standard marking than their Ukrainian counterparts. Given the facts that the masculine mark is null, and that most of the G_1 speakers' non-standard marking of lone English-origin nouns involves unmarked nouns (Figure 2), this result appears puzzling. Recall, however, that the inflections involved are portmanteaux; thus what appears as non-standard marking of gender may actually be masking some non-standard marking of case and/or number. In fact, calculations based on Tables 3 and 4 show that in only 23 percent of the masculine English-origin nouns are the non-standard marks due to gender.⁷ We now examine whether Ukrainian modifiers *agree* in gender with associated nouns.

Table 3: Distribution of non-standard marking according to required gender in the data of G_1 speakers

Required gender	Ukrainian nouns		English-origin nouns	
	N	%	N	%
Masculine	13/98	13	63/158	40
Non-masculine	19/163	12	15/81	19

Table 4: Distribution of gender agreement in the data of G_1 speakers

	Ukrainian nouns	English-origin nouns
Agreement	77%	49%
No agreement	5%	22%
No modifier	18%	29%
Total N	261	239

Table 4 shows that a majority of the G_1 speakers' nouns, both Ukrainian and lone English-origin, participate in gender agreement with their modifier(s) (as in 17–19). Non-standard gender agreement constitutes the smallest proportion of the data; however, it occurs four times more often with lone English-origin than with native Ukrainian nouns. This disproportion results largely from the mismatch between the phonological form of bare English-origin nouns and their Ukrainian modifiers overtly inflected for feminine or neuter genders. For example, the final segment of *story* in (20) coincides phonetically with the Ukrainian plural inflection (also reported by Zhluktenko 1964), which does not distinguish gender, while the verb *jshla* 'went' indicates feminine singular.

20. Ja nikoly to ne obmynula, bo to bulo tak jak *story* jshla ON,
 I never it not missed-F.sg because it was-N so as story-Ø went-F.sg
 AND ON, AND ON. (02/A/284)

'I never missed it, because the story went on, and on, and on'.

Note too that there is no modifier in the environment of almost a third of the lone English-origin nouns, and hence nothing to agree or disagree with (as in 21).

21. Ja zhyvu v misti, ale maju *townhouse*. (14/A/011)
 I live-1sg in town-N.sg.Loc but have-1sg townhouse-M.sg.Acc

'I live in the city, but I have a townhouse'.

This explains the relatively low rate of non-standard agreement here, despite the fact that standard agreement only obtains half of the time. Omitting the modifier may be a strategy for incorporating other-language material into Ukrainian grammatical structure, while incurring little risk of violating that grammar.

These differences notwithstanding, we note from Table 4 that the *distribution*, or pattern, of non-standard marking across gender agreement categories is parallel across native Ukrainian and English-origin nouns: the majority participate in agreement. The next largest portion has no modifier to agree with, and the smallest proportion shows non-standard agreement. We take this as a first suggestion that G_1 speakers are treating the two types of nouns in like fashion.

G_2 speakers. We now compare these results with the findings for G_2 speakers. Table 5 displays the distribution of non-standard marking according to required gender in their data. With the exception of non-masculine English-origin nouns, rates of non-standard marking of both Ukrainian and English-origin nouns are much increased in comparison to G_1 speakers.

Table 6 displays the rates of gender agreement among G_2 speakers. As with G_1 speakers (cf Table 4), non-standard agreement is relatively rare in Ukrainian, not accounting for more than 8 percent of the data, and the rate of modifier absence is only 14 percent. In lone English-origin nouns, on the other hand, the

Table 5: Distribution of non-standard marking according to required gender in the data of G₂ speakers

Required gender	Ukrainian nouns		English-origin nouns	
	N	%	N	%
Masculine	19/65	29	64/109	59
Non-masculine	32/155	21	8/51	16

Table 6: Distribution of gender agreement in the data of G₂ speakers

	Ukrainian nouns	English-origin nouns
Gender agreement	78%	31%
No gender agreement	8%	25%
No modifier	14%	44%
Total N	220	160

rate of modifier absence among G₂ speakers is half again what it is among G₁ speakers (44% versus 29%), so that this strategy for obviating the need for agreement (already apparent among G₁ speakers) becomes the predominant choice for G₂ speakers with respect to lone English-origin nouns. Where modifiers are present, the rate of non-standard agreement on English-origin nouns among G₂ speakers is similarly half again what it was among G₁ speakers ($40/90 = 44\%$ versus $53/170 = 31\%$).

The treatment accorded lone English-origin nouns by G₂ speakers is thus quite different from their treatment of Ukrainian nouns. The latter tend to participate in standard gender agreement in the same way as for G₁ speakers; the English-origin ones do not. It is thus only with the lone English-origin nouns that we find a contrast in the behavior of G₁ and G₂ speakers. The G₁ speakers may have many fewer modifiers and a considerable rate of non-standard agreement, but their overall distribution of agreement with English-origin nouns is still recognizably parallel to that of their Ukrainian nouns. G₂ speakers' patterns for the two classes of nouns are completely different from each other. Thus G₂ speakers differ from G₁ speakers in their treatment of lone English-origin nouns, at least with respect to gender.

Case assignment and agreement

G₁ speakers. We now turn to an examination of case. We noted in section 4 that more non-standard marking could be expected in non-nominative cases, as

these frequently require an overt mark. Nominative case, on the other hand, admits null inflections, and this should inhibit non-standard marking. Indeed, we observe this in Table 7, most clearly with the lone English-origin nouns of G_1 speakers.

Table 8 displays the distribution of case agreement in the data of G_1 speakers. The treatment of Ukrainian and lone English-origin nouns is again very similar. Non-standard case agreement (as in 22 and 13) is very sparse, and occurs at approximately the same rate for both Ukrainian and lone English-origin nouns, although standard agreement (as in 23, as well as in 17–19) is much higher for the former (70%). As with gender, the discrepancy is due to absence of a modifier (see 16 and 21), without which there is no possibility of (case or gender) non-agreement.⁸

22. A tam ta, vona vse xodyt' v takyx *T-shirts*. (10/A/228)
And there that-F.Nom she always goes in such-pl.Loc T-shirts-Ø

'And the other one, she always wears those T-shirts'.

23. I my znova poixaly duzhe cikavoju *routoju*. (07/B/076)
And we again went-pl very interesting-F.sg.Ins route-F.sg.Ins

'And again we took a very interesting route'.

G_2 speakers. Table 9 shows that G_2 speakers feature considerably increased rates of non-standard marking on Ukrainian nouns in comparison to G_1 speakers (Table 7). Although the distribution is parallel across Ukrainian and

Table 7: Distribution of non-standard marking according to required case in the data of G_1 speakers

Required case	Ukrainian nouns		English-origin nouns	
	N	%	N	%
Nominative	10/103	10	36/132	27
Non-nominative	22/158	14	42/107	39

Table 8: Distribution of case agreement in the data of G_1 speakers

	Ukrainian nouns	English-origin nouns
Case agreement	70%	48%
No case agreement	4%	5%
No modifier	26%	48%
Total N	261	239

Table 9: Distribution of non-standard marking according to required case in the data of G₂ speakers

Required case	Ukrainian nouns		English-origin nouns	
	N	%	N	%
Nominative	18/115	16	32/97	33
Non-nominative	33/105	31	40/63	63

Table 10: Distribution of case agreement in the data of G₂ speakers

	Ukrainian nouns	English-origin nouns
Case agreement	70%	38%
No case agreement	7%	4%
No modifier	23%	58%
Total N	220	160

lone English-origin nouns, the distinction between non-standard marking of nominative and non-nominative cases is much more pronounced. This is in line with our earlier finding that non-nominative cases give rise to more non-standard marking since they do not allow zero case inflections.

Table 10 displays the distribution of case agreement in the data of G₂ speakers. As with G₁ speakers (Table 8), lack of agreement is relatively rare in both Ukrainian and lone English-origin nouns. Nonetheless, standard agreement is again much higher for Ukrainian nouns (70%). As already noted with respect to gender in the context of lone English-origin nouns, the predominant strategy (58%) for G₂ speakers (already much increased in the case of G₁ speakers – 48% versus 26% for Ukrainian nouns) is to eschew a modifier altogether, thereby obviating the need for agreement.

Discourse flagging

Finally, Table 11 displays the distribution of non-standard marking in the presence of a flag. The previously observed differences across language corpora and, above all, speaker cohorts, are again apparent. Although Ukrainian nouns with non-standard inflection are only flagged about one third of the time for both G₁ and G₂ speakers, the former tend to effect this by means of production flagging, while the latter employ a wider variety of flagging devices. English-origin nouns with non-standard inflection are flagged more often, particularly by G₂ speakers, whose rates exceed 70 percent. Here again, speaker cohorts differ according to preferred flagging device. G₁ speakers employ a language-

Table 11: Distribution of non-standard marking in the presence of a flag across languages and speakers

	G ₁ speakers		G ₂ speakers	
	Ukrainian nouns	English-origin nouns	Ukrainian nouns	English-origin nouns
Metalinguistic commentary	–	18%	6%	31%
Pause/false start	25%	9%	18%	22%
Demonstrative pronoun	9%	27%	12%	18%
No flag	66%	46%	65%	29%
Total N	32	78	51	72

internal flag, i.e. the demonstrative pronoun, which implicitly calls attention to the noun. This is the least favored strategy for G₂ speakers, who prefer a more explicit flag: metalinguistic commentary.

We may now summarize the patterns of treatment of Ukrainian and lone English-origin nouns in the speech of G₁ and G₂ speakers, as evidenced by the findings of Tables 3 – 10. A first important finding is that, despite generally increased rates of non-standard marking on lone English-origin nouns, G₁ speakers' patterns of gender and case inflection on such English-origin nouns parallel those of their Ukrainian nouns. This suggests that these speakers are treating the nouns – with or without standard inflection – as if they were Ukrainian.

G₂ speakers of Ukrainian show more vacillation in initial gender and case assignment to Ukrainian nouns, as evidenced in Tables 3, 5, 7, and 9 by rates of non-standard marking almost double (a total of 23% versus 12% in both cases) those of their G₁ counterparts. Differences in factor effects are also accentuated in the G₂ speakers' data. However, the hierarchy of effects is generally parallel across speaker cohorts. The same cannot be said of lone English-origin items, which G₂ speakers treat differently from their own Ukrainian nouns as well as from the Ukrainian *and* English-origin nouns of their G₁ counterparts.

Another important distinction, between speakers and languages, resides in the factor of agreement (Tables 4 and 6, 8 and 10). Lack of gender and case agreement is less frequent among G₁ speakers, in both the Ukrainian (6% and 5% for modifier nouns versus 9% and 9% for G₂ speakers) and the lone English-origin data (31% and 9% versus 44% and 10%, taking into account modified nouns only). G₂ speakers, despite evidencing a strong tendency in Ukrainian toward agreement of modifier and noun in both gender (78%) and case (70%),

tend to eschew a modifier altogether in the context of lone English-origin nouns. A reasonable explanation for this trend is that G_2 speakers are seeking to minimize their chances of non-standard marking by reducing the grammatical requirements (here, of gender, number and case agreement) imposed by the modifier. We return to this suggestion below. The heightened non-agreement rates and the avoidance of modifiers conspire to make the G_2 agreement patterns for English-origin nouns completely different from those for Ukrainian nouns, while G_1 speakers feature patterns for the two classes of nouns that are much more similar.

Multivariate analysis

While comparisons of overall rates of inflection, such as those in Tables 3 – 11, are interesting and informative, they cannot reveal the importance of factor effects relative to each other, nor even whether all are significant when considered simultaneously. Table 12 displays the results of four independent variable rule analyses of the contribution of the factors described above to the probability of non-standard inflection in each of the monolingual Ukrainian and lone English-origin noun corpora in the speech of Ukrainian G_1 and G_2 speakers.⁹

G_1 speakers: Ukrainian nouns. We first examine the treatment accorded Ukrainian nouns by Ukrainian G_1 speakers. The results of the stepwise selection procedure incorporated in GoldVarb allow us to confirm and refine our previous observations. They reveal that variability in inflectional marking is conditioned by three factors: Case, Gender and Flagging, in descending order of importance (as assessed by the 'range' – the difference between the highest and lowest factor weights within a factor group). The hierarchy of constraints is as follows: Non-standard case assignment accounts for the largest part of the non-standard marks, with non-nominative cases contributing the greatest effect, as expected. Once the appropriate initial case marker is selected, case agreement poses no problem, since inflections on modifiers generally coincide with those on the noun. This is evidenced by the low probabilities of non-standard marking in the presence of a modifier, regardless of its case. For gender on the other hand, even if the noun surfaces bare (as in the case of masculine), its modifiers must still be overtly marked. This explains the reversal in the contribution of modifier presence (i.e. agreement), which clearly promotes non-standard marking of gender, but inhibits non-standard marking of case.

G_1 speakers: Lone English-origin nouns. We now compare the relationship of these patterns to the treatment by these same individuals of lone English-origin nouns in otherwise Ukrainian discourse. We noted earlier (with respect to gender and case) that the rates of non-standard marking increased regularly from native Ukrainian to lone English-origin nouns. Table 12 shows that despite these differences in overall *rate*, the *patterns* of variability, as revealed by the

Table 12: Four variable rule analyses of the factors selected as significant to the probability of non-standard marking of monolingual Ukrainian and English-origin nouns among G₁ and G₂ speakers (factor groups showing similar constraint hierarchies are outlined)

	G ₁ SPEAKERS		G ₂ SPEAKERS	
	Ukrainian nouns	English-origin nouns	Ukrainian nouns	English-origin nouns
Corrected mean	.075	.186	.094	.300
Total N	261	239	220	160
FACTOR-GROUP:				
Number				
Plural				.94
Singular				.24
<i>Range</i>				70
Gender				
[Masculine (M) required, M modifier]	.60	.64	.53	.91
[Non-M required, non-M modifier]	.57	.60	.51	.05
[M required, no modifier]	.32	.37	.33	.75
[Non-M required, no modifier]	.14	.17	.50	.07
<i>Range</i>	46	47	20	86
Case				
[Non-nominative (N) required, no modifier]	.88	.77	.88	.95
[N required, no modifier]	.64	.60	.97	.12
[Non-N required, non-N modifier]	.37	.35	.19	.93
[N required, N modifier]	.33	.28	.34	.17
<i>Range</i>	55	49	76	83
Flagging				
Metaling speech	–	.79	.66	.68
Pause/False start	.72	.70	.92	.73
Demonstrative pro	.50	.72	.53	.50
No flag	.48	.36	.40	.31
<i>Range</i>	24	43	52	42
Factor-groups not selected:				
Number	X	X	X	

constraint hierarchies, in native Ukrainian and lone English-origin nouns are the same. Not only are exactly the same linguistic factor groups selected as significant, but more tellingly, their constraint hierarchies are identical, even mirroring the regular relationship within the factor groups between masculine and non-masculine, nominative and non-nominative respectively. This confirms that Ukrainian G_1 speakers are treating their lone English-origin nouns, not only inflected but also bare, as if they were Ukrainian.

G₂ speakers versus G₁ speakers: Monolingual Ukrainian nouns. We next examine the G_2 speakers' treatment of monolingual Ukrainian nouns. From examination of the marginals we had observed that despite these speakers' comparatively elevated rates of non-standard marking and accentuated differences in factor weights, the ranking of effects basically paralleled that of G_1 speakers. Variable rule analysis of the same factors now recoded to minimize interaction amongst them reveals that this similarity is only apparent. Indeed, although the same factor groups were selected as significant to the probability of non-standard marking for G_1 and G_2 speakers, the constraint hierarchies differ considerably across the cohorts.

With regard to gender, we observe, in contrast to what we saw for G_1 speakers, that there is basically no difference between the different categories distinguished: all favor non-standard marking equally. The only exception resides in the factor of [masculine required, no modifier], which disfavors non-standard marking, likely because it constitutes the most hospitable context for null inflection.

Turning next to the category of case, we again observe a considerable difference in the hierarchy of constraints when compared to G_1 speakers. Although G_2 speakers are also sensitive to the presence of a modifier, showing least non-standard marking where agreement is required, the direction of effect of nominative versus non-nominative is reversed. Here, nominatives favor most non-standard marking, due to initial selection of a non-standard case marker for Ukrainian nouns.

These discrepancies between G_1 and G_2 speakers in inflection of Ukrainian nouns for gender and case suggest that Ukrainian G_2 speakers have not fully acquired either the prescriptive details or the variable conditioning of Ukrainian inflection.

G₂ speakers: Monolingual Ukrainian versus lone English-origin nouns. We now compare G_2 speakers' treatment of lone English-origin and monolingual Ukrainian nouns. The same factor groups are selected as significant for Ukrainian and lone English-origin nouns. But, in further contrast to the behavior of G_1 speakers, the hierarchies again differ substantially, not only in comparison to their own Ukrainian, but to all the other noun corpora as well. Irrespective of any agreement requirement, masculine gender and non-nominative cases favor non-standard marking the most.

The results for case are as expected (cf Table 2). With regard to gender,

however, the results of Table 12, in conjunction with the observation that most of these speakers' lone English-origin nouns are *bare* (and thus construable as masculine), support our earlier suggestion (with respect to gender): the non-standard marking in masculine contexts in these nouns is largely due to lack of an overt inflection for case and/or number where this would (simultaneously) be required by standard rules of Ukrainian. In other words, most non-standard marking of G_2 speakers results from the tendency of English-origin nouns to surface *bare*.¹⁰ The contribution of the factor group of number lends further support. It is both significant and important for lone English-origin nouns, although it does not play a role in any of the other corpora examined. Non-standard marking is highly favored precisely by plural nouns (.94), which require an overt inflection. It is disfavored by singular nouns (.24) which admit null inflections.

G_1 versus G_2 speakers: Lone English-origin nouns. Finally, we compare the treatment of English-origin nouns across speaker cohorts. Although four factor groups were selected as significant for Ukrainian G_2 speakers as compared to only three for G_1 speakers, the most important difference is that the hierarchy of constraints differs within each of the factors. As previously, the main distinction revolves around the behavior of agreement. G_1 speakers are as sensitive to the presence of a modifier in their lone English-origin nouns as they are in their native Ukrainian, whereas for G_2 speakers, modifier presence has little effect on non-standard marking of lone English-origin nouns. This is despite the large effect that presence or absence of a modifier contributes to non-standard marking in their Ukrainian. Though the Ukrainian of G_2 speakers differs in many respects from that of G_1 speakers, this should not impinge on their capacity to incorporate lone English-origin nouns into their Ukrainian, whatever its form. The results we have shown, however, indicate that many of their lone English-origin nouns are *not* being treated as if they were Ukrainian.

Summarizing the results of Table 12, G_1 speakers show noticeably parallel treatment of inflectional variability in their native and lone English-origin nouns. Considering the differences in Ukrainian and English between the grammatical categories investigated here, this result could not be due to chance. Rather it demonstrates that the G_1 speakers are incorporating the lone English-origin nouns into Ukrainian discourse by applying to them Ukrainian rules, not only of standard, but also of non-standard marking, complete with the variable conditioning associated with each. In other words, they are *borrowing* them. G_2 speakers, on the other hand, employ strategies in their treatment of lone English-origin nouns which differ not only from their own treatment of Ukrainian nouns, but also from the G_1 speakers' treatment of both Ukrainian and lone English-origin nouns.

The factor of flagging differs somewhat from the linguistic factors examined (it does not *promote* non-standard marking in the sense that the linguistic configurations examined do; if anything, it *results* from non-standard marking).

Its behavior nonetheless lends further support to the distinctions we have reported between the two generations. G_1 speakers employ different strategies in flagging Ukrainian and English-origin nouns with non-standard inflection. G_2 speakers employ yet another, for both Ukrainian and English-origin nouns.

Bare nouns

It is now clear that the lone English-origin nouns with *overt* inflections for Ukrainian number, gender and/or case, whether standard or not, have been integrated into the grammar of Ukrainian. This means that they are borrowings, if only for the nonce.¹¹ But the majority of the lone English-origin nouns (52% for G_1 speakers and 73% for G_2 speakers: cf Figure 2) are bare. These are the forms, as we noted earlier, that are most contentious with regard to status, since there is little in their surface configuration to reveal if they are functioning as code-switches or borrowings.

We have appealed to the quantitative apparatus of the variationist paradigm to solve the problem of bare forms. By examining the variable conditioning of non-standard marking, which in lone English-origin nouns basically amounts to *null* marking, we essentially compare constraints on the probabilities that Ukrainian nouns will feature a non-standard *overt* inflection, and that lone English-origin nouns will remain unmarked for Ukrainian number, gender and case. For G_1 speakers, we have proved that English-origin nouns surface bare subject to the same variable constraints governing inflection of Ukrainian nouns. This emerges from thorough variable rule analysis (Table 12) showing that the linguistic factors conditioning non-standard *null* marking of lone English-origin nouns are the same, not only in kind, but in magnitude of effect, to those conditioning non-standard *overt* marking in Ukrainian.

For G_2 speakers, the same method revealed the bare English-origin nouns to behave differently from their Ukrainian nouns. In contrast to what we have observed for their G_1 counterparts, their zero marks are neither generated nor conditioned by their grammar of Ukrainian. On the contrary, their elevated rates of non-standard marking of Ukrainian nouns, along with their propensity toward flagging, together suggest full awareness of non-standard inflection in Ukrainian, if not necessarily the capacity to correct for it. In this context, it is entirely possible that their preferred strategies of zero-marking and modifier avoidance with English-origin nouns function as a means to avoid non-standard inflection.

To simply infer, as many have done, that these bare nouns are (single-word) code-switches to English is circular, although some may well be. The spectre of single-word code-switches is frequently invoked, but seldom (empirically) attested. The virtual absence of any multi-word (i.e. unambiguous) switches in the data (see section 3) would militate against characterizing these lone English-origin nouns as code-switches. But in order to confirm that any of the nouns with non-standard null marks have retained the grammar of English, we

require independent confirmation that they display some feature of English grammar which is at the same time not Ukrainian (cf. Poplack and Meechan 1995 and Meechan and Poplack 1995 for such confirmation with regard to lone French-origin items in Wolof and Fongbe discourse). We have already noted that definitive evidence would necessarily involve detailed comparison with the behavior of English nouns in the monolingual English discourse of these same individuals. But in these data there is virtually none, even among the G_2 speakers for whom English is the primary language.

7. CONCLUSIONS

Widespread variability in the treatment of other-language items in bilingual discourse has led many to despair of the possibility of ever classing them into neatly defined sets. In this paper we take the opposite tack. We *focus* on the existence of inherent variability and make use of the tools now available to study it to address the problem of distinguishing among the linguistic results of language contact. This has involved, first, identifying and analyzing a variable phenomenon, here nominal inflection, in a recipient language. Against this backdrop, we have provided a synchronic portrait of the variable integration of other-language items into that recipient language. In so doing we construct a detailed model of what an integrated loanword must look like, even when it bears no surface indication of that integration, and has no seniority or other status in the language. This is perhaps the most surprising and instructive result of this research. This synchronic window on loanword integration reveals the widespread assumption that bare other-language items are necessarily code-switches to that language to be unfounded. So is the assumption that such items show incomplete morphological integration (Myers-Scotton 1993). On the contrary, we have demonstrated that apparently identical bare English-origin items may be handled completely differently, depending on the grammar that gives rise to them. Thus although both G_1 and G_2 speakers null-mark English-origin forms more than their Ukrainian counterparts, only the native speakers employ the variable constraints operative in Ukrainian.

In this context we may conclude that for native speakers, items which are borrowed, even if only for the nonce, are fully integrated into recipient language discourse. Since popularized by Mackey (1970), the notion of integration has remained vague in the literature, now referring to frequency of occurrence, now referring to ill-defined linguistic characteristics. In practical terms, the size of the corpora (if any) typically used in bilingual studies severely limits the likelihood that any lexical type will recur, thereby rendering the frequency criterion otiose for all but the most arbitrary distinctions (e.g. the three-occurrence metric, or the 5% recurrence value, Myers-Scotton 1993).¹² The labile nature of both borrowed (and monolingual) items attested by empirical studies means that linguistic integration can only be meaningfully assessed through corpus-based research within a framework equipped to handle linguistic variability. The

approach taken here has enabled us to determine the status of these contentious items, despite the fact that they are neither recurrent nor widespread.

Loanword integration has been shown to entail application to other-language material of even the fine details of quantitative conditioning of linguistic variability in inflectional marking. Its operation was clearly demonstrated in the data of the G_1 speakers. The G_2 speakers in our sample, on the other hand, have not fully mastered the native-language details of Ukrainian number, gender and case inflection, standard or otherwise. There is no reason to expect them to apply patterns absent from their Ukrainian repertoire to English-origin nouns, even when attempting to integrate them into Ukrainian, and indeed, they do not. In fact, G_2 speakers' treatment of English-origin nouns was shown to coincide neither with their own treatment of Ukrainian nouns nor with the G_1 speakers' treatment of Ukrainian, and by extension, English-origin nouns. This finding emphasizes the necessity of distinguishing native from non-native speakers in any study purporting to examine the treatment of other-language material in bilingual discourse. We have shown that not all bilingual speakers are 'created equal'; evidence from one is not necessarily interchangeable with that from another. The status of a language as native or non-native and the status of a datum as code-switch or borrowing are crucial determinants of the outcome when languages are combined in bilingual discourse. Failure to account for this fact will surely confound the results.

NOTES

1. The research on which this paper is based forms part of a larger project investigating the results of language contact in typologically distinct language pairs. The support of the Social Science and Humanities Research Council of Canada for this project in the form of grant # 410-93-0464 to Poplack is gratefully acknowledged. We thank Marjory Meechan for thoughtful comments and discussion of an earlier version of this paper, as well as audiences at the 1995 meetings of the Canadian Linguistics Association and the European Symposium on Second Language Acquisition. We are grateful to members of the Ukrainian community in Ottawa for their interest and participation in our work.
2. Each example is identified by cassette number, cassette side, and counter number in that order. The data show phonological variability which is not necessarily represented in the orthography. Ukrainian grammatical markers are glossed as follows: F = feminine, M = masculine, N = neuter; sg = singular, pl = plural; Nom = Nominative, Acc = Accusative, Gen = Genitive, Dat = Dative, Ins = Instrumental, Loc = Locative; Refl = Reflexive; Imp = Imperative; 1,2,3 = person; NEG = negation; \emptyset = non-standard null mark. English-origin nouns are italicised, bolded and transcribed, as far as possible, with English orthography.
3. Although inflections on agreeing elements need not feature the same surface form as the head noun (see 4), they often coincide (as in 5).
4. The interviewer's status as a (relatively) recent arrival from Ukraine undoubtedly minimized the overall use of English-origin forms. However, there is no reason to

- expect this factor to affect the *pattern* according to which they are inflected with Ukrainian morphology.
5. Because gender is not distinguished in the plural, number agreement could not be examined separately, and was thus included under gender.
 6. The fact of inherent variability is usually greeted with disbelief in languages with a strong prescriptivist bias and little or no tradition of variation studies. Ukrainian is no exception. Analyses along the lines of those presented in section 6, this time of Ukrainian *not* in contact with English, would of course be necessary to confirm whether the ultimate source of the variability is internal or itself due to prior contact. The diachronic events resulting in the synchronic state of the Ukrainian language are in any case irrelevant to the present demonstration of how lone English-origin items are borrowed into that language.
 7. In the 52 cases of non-agreement in Table 4, gender is necessarily implicated. Abstracting away the 15 tokens with non-standard marks requiring non-masculine gender in Table 3 leaves 37 English-origin tokens (construed as masculine) with non-standard marks. This effectively reduces the disproportion between Ukrainian and English-origin nouns.
 8. Modifier absence is more prevalent with case than with gender because some gender modifiers (e.g. verbs and subjects) are obligatory, while elements eligible for case agreement are optional. This explains the larger proportion of nouns unmodified for case in Tables 8 and 10.
 9. The reader will note a slight difference in factor configurations for gender and case from those described in section 6 in connection with the marginal percentages. This is because those calculations revealed the factors of *required gender* and *gender of modifier* and *required case* and *case of modifier* to be highly interactive, since most nouns requiring a given gender or case in fact co-occur with a modifier inflected for that gender or case. This resulted in very uneven distribution of the data, rendering them unsuitable (in this format) for variable rule analysis. We therefore collapsed the factors of required gender/case and gender/case agreement as in Table 12. Four of the resulting combinations – [masculine required + non-masculine modifier], [non-masculine required + masculine modifier], [nominative required + non-nominative modifier], and [non-nominative + nominative modifier] – by definition result in non-standard marking, since, as we have noted above, modifiers must agree with their heads in gender and case. Therefore, each of these combined factors resulted in a 'knockout' – 100% non-standard marking. These combinations are not shown in Table 12, which displays the factors conditioning *variable* non-standard marking.
 10. The same is true of much of their standard marking. For example, the very low probabilities of non-standard marking of [non-masculine required, non-masculine modifier] and [non-masculine required, no modifier] are the result of the phonological form of the English-origin nouns coinciding with a Ukrainian non-masculine form.
 11. In this paper we make no attempt to distinguish between nonce and established borrowings, since it has by now been amply demonstrated that they differ only in the extralinguistic characteristics of recurrence and diffusion (e.g. Eze 1995b, Meechan & Poplack 1995, Poplack et al. 1988, Sankoff et al. 1990, Turpin 1995).
 12. See however, Poplack et al. (1988) for a study of a data set large enough to permit distinction of several frequency categories for borrowed items.

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Address for correspondence:

Shana Poplack
 Department of Linguistics
 University of Ottawa
 70 Laurier Ave, East
 Ottawa, Ontario
 K1N 6N5
 Canada
 spoplack@aix1.uottawa.ca