

On morphological transfer: L1, L2 and intermorphology¹

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Whereas previous studies of intermorphology have sought to explain the facts of L2 morphology on the basis of the transfer of processes of word formation from L1 to L2, or at the very least on the basis of interference between the morphological structures of L1 and L2, this study takes as its *point de départ* the hypothesis that all of intermorphology, including what some have labelled errors, must be licensed by and only by existing L2 processes of word formation. It is demonstrated that almost all of intermorphology can, in fact, be explained on the basis of the L2, either by particular word formation rules or by processes ultimately dependent only on L2. The residual problematic cases are isolated and an outline is provided of those aspects of the L2 acquisition process which are susceptible of promoting the use of L1 morphology in an L2 learning situation. Some of the general, theoretical implications of our findings, implications that go beyond the study of interlanguage, are sketched out at the end of the paper.

0. Prologue

Detailed examination of intermorphological errors often resort to explanations based on transfer (= L1 influence) (cf. LoCoco 1975 and 1976, James 1977, Vaverková 1980, Warren 1982, Hatch 1983), despite the fact that reservations about morphological transfer have sometimes been expressed in the literature (Wilkins 1972, Kellerman 1977, Dušková 1984). Morphological transfer continues to enjoy this "applied" success perhaps because these reservations have generally been expressed only as unsubstantiated *obiter dicta*. To the best of our knowledge, the only published studies to have investigated the transferability of morphology with any degree of thoroughness are Olshtain (1987), Singh & Martohardjono (1988), Singh (1991), and even these deal with only limited data. They do, however, show that often what passes for morphological transfer turns out, upon closer inspection, to be either lexical transfer or the use of morphologically well-formed structures in syntactically inappropriate ways. The precise hypothesis we shall investigate in this paper is the one formulated in

Singh & Martohardjono (1988:373), according to which interlingual morphological "errors" are only "extensions of word formation strategies of L2." The investigation will take into account the full range of facts available in the literature.

This paper is organized as follows: brief discussions of the notions of "morphology" and "error" (section 1) and of the presentation of the data (section 2) are followed by section 3, in which the data are examined and classified according to their status vis-à-vis L2 morphology. The summary (section 4) functions both as a summary and, we hope, as a signpost toward future investigations of interlanguage, intermorphology in particular. The epilogue (section 5) attempts to relate our conclusions to general theoretical issues that go beyond the study of intermorphology.

1. Theoretical preliminaries

1.1. As the focus of previous studies in second language acquisition of morphological rules has been "inflectional morphology" (cf. Dulay & Burt 1972, Ervin-Tripp 1974, Hakuta 1974 and 1976, LoCoco 1975 and 1976, Gray & Cameron 1980, among others), the claim that morphology does not transfer has generally been taken to mean that "inflectional morphology" does not, leaving researchers free to take morphological transfer as an entirely valid explanation for "non-inflectional" aspects of intermorphologies. This characterization of morphology has, unfortunately, done a great deal to skew the current perception of what is involved in Second Language Acquisition (SLA) morphology. In addition, it has not only allowed but also encouraged the use of transfer outside of "inflection". Morphology is, obviously, bigger than "inflection", even if the latter can be accorded some theoretical status. Any aspect of word formation is morphological, whether or not it falls under the traditional category "inflection" or "derivation".

1.2. As to what qualifies as an "error" in L2 morphology, this also is quite simple: a given form is morphologically deviant if and only if it does not conform to some L1 form, whether or not it obeys syntactic rules of agreement, case marking, etc. Thus, a form such as the italicized one in (1a) below, while it might be considered by some to fall within the domain of morphology, is considered under our view of morphological error to be morphologically well-formed. The problem in a sentence of this type is not a morphological one so much as it is morphosyntactic. However, if the form were *haves*, as in (1b), this would be of interest to the present study,

since this form is not one that is found in the stable speech of competent speakers of English, although the existence of pairs such as *sing/sings* provides the analogical impetus for forms such as *haves*.²

- (1) a. She *have* a book.
b. She *haves* a book.

1.3. The view of morphology we adopt in this paper is sketched out and motivated in Ford & Singh (1984, 1985, 1991).³ According to this view, the morphological relationship between a non-unique pair of words can be described by means of a word-formation strategy (WFS) having the general form of (2):⁴

- (2) $[X]_{\alpha} \leftrightarrow [X]_{\beta}$

where X and X' are words, α and β are categories, ' expresses the formal difference between the two words (and can be null iff $\alpha \neq \beta$), \leftrightarrow expresses a bidirectional relation of equivalence, and X and X' are semantically related.⁵

A WFS is a projection from the lexicon, a generalization that expresses the morphological relationship between words and presupposes that the speaker having a given WFS has (in most cases) at least two word-pairs in his/her lexicon licensing it. It will be noted that the bidirectionality of WFSs rules out any notion of a privileged direction of morphological derivation (cf. Ford & Singh 1984).

1.4. As morphological representations must exclude predictable phonological information, we also exclude it from the morphological representations we provide. The reader should, however, have no difficulty in interpreting them. Non-predictable, local and morphologically dependent information involving sounds has, as required by the theory of morphology used here, been treated as an integral part of the relevant morphology and has consequently been left in the morphological representations. A couple of examples from English will help clarify matters. The morphological representation of the English word *redden* (pronounced [redn]) will thus be [redn]. The syllabification of the /n/ is taken care of by English phonology. We assume, following Ford and Singh (1991), that English phonology will not take care of the alternation between /i/ and /u/ in the pair *tooth-teeth*, leaving us with [tiə] as the morphological representation for the former, and [tuə] for the latter. As no phonetic transcriptions are provided, except in the case of [redn] above, the square brackets are to be taken as enclosing not phonetic but morphologically relevant representations.⁶

2. The data and its presentation

The natural trichotomy of possibilities that suggests itself when one is investigating a hypothesis having to do with the L2 morphological licensing of an interlanguage form (IL) form is:⁷

- (i) the form is directly licensed by one, and only one, L2 WFS (including cases in which more than one L2 WFS can be said to be supplying the model on which a given IL form has been created);⁸
- (ii) the morphological structure of the form evidently bears some relationship to L2 morphology, although there is no direct relationship via any one particular WFS between the form and any other licensed L2 form;
- (iii) the form is not licensed by L2 morphology.

The data to be discussed in this paper will be presented under the three rubrics that follow from the trichotomy above: directly licensed, indirectly licensed, and arguably problematic.⁹ It will be seen that the cases that fall into the first category are far and away the most common, those that fall into the second are somewhat less common, and that only a relatively small number of cases of IL morphological errors can even be said to involve transfer from L1 morphology. The last set consists of cases in which there appears to be no L2 licensing whatsoever, and presumably only L1 morphological licensing, but, as we shall see later, they do not present as clear a challenge to the hypothesis under investigation as one might on first blush think.

3. Discussion of the data

3.1. Fully licensed cases

In this section, a selection of data from L2 English, German and French will be presented and discussed in order to serve as an illustration of the full licensing of IL morphological forms. We shall illustrate the category of licensed errors by means of examples from three interlanguages, Inter-English, Inter-German and Inter-French. The problematic cases are restricted to Inter-Russian, an interesting fact. The data are presented and discussed as follows: each morphological error is followed by the L2 WFS which licenses the error and two examples illustrating its L2-internal application,¹⁰ this is followed by a brief discussion. The sources for the data examined are identified immediately after their first appearance.

3.1.1. Inter-English

- (3) a. *destruction* (Nemser 1979:296; L1 = Hungarian)
cf. English WFS: [X]_v ⇔ [Xɛi]n
(cf. *confirm~confirmation, expect~expectation*)¹¹
- b. *vigorousness* (Nemser 1979:296; L1 = German)
cf. English WFS: [X]_{Adj} ⇔ [Xɛti]n
(cf. *curious~curiosity, viscous~viscosity*)
- c. *compense* (Kellerman 1977:84; L1=Dutch)
cf. English WFS: [Xɛi]n ⇔ [X]_v
(cf. *condensation~condense, expectation~expect*)¹²
- d. *farer* (Arabski 1968:88; L1 = Polish)¹²
cf. English WFS: [X]_{Adj} ⇔ [Xɛi]Adj comparative
(cf. *near~nearer, loud~louder*)

It will be seen that these forms are easily explicable on the basis of pre-existing English WFSs, and represent the efforts of the speakers to produce forms which are lacking from their lexica. In the cases of Hungarian Inter-English *destruction* and Dutch Inter-English *compense*, for example, we suggest that the existence of English word-pairs such as *confirmation* and *confirm* provides the Hungarian speaker with the necessary license to create *destruction*, given *destry*, as well as providing the Dutch speaker with the license to create *compense*, given *compensation*. In the case of *compense*, the speaker has chosen to make use of one of the well-attested English WFSs relating nouns in *-ation* to their corresponding verbs (instead of the WFS [Xɛi]n ⇔ [Xɛi]v); the use of this WFS is less surprising in the Hungarian case for the reason that the formal relationship between *destry* and *destruction* is unique to this word-pair, thus presumably more difficult for the speaker to access. This remark applies equally to the Polish Inter-English *farer*, whose correct form is related by a unique formal relationship *far* (i.e. [X]_{Adj} ⇔ [Xɔr]Adj comparative). In cases of unique formal relationships of these kinds, it is far less surprising to find forms such as (3a, d) than it would be to find, for example, *depluction* (<*deploy*) or *purether* (<*pure*).

The approach which takes L2 licensing of intermorphological errors as the *point de départ* also eliminates the need for analyses of superficially similar forms as originating from different processes, depending on the L1. For example, Nemser (1979) analyzes *nervosity* as arising from the interplay between L1 and L2 (*Nervosität*), but explains *vigorousness* as resulting from the "over-extension of morphophonemic rules" (ibid.:296), as there is no L1 cognate. We would suggest that, although the existence of an L1 cognate may increase the likelihood of use of a particular L2 WFS in a particular situation, it is neither a necessary nor sufficient condition for the use of any L2 WFS, as is clearly indicated by the

possibility of morphological creativity in speakers whose L1 and L2 are entirely unrelated.

3.1.2. Inter-German

- (4) a. *Diktatorismus* 'dictatorship' (for *Diktatur*)
(Jordens 1977:31; L1 = Dutch)
- cf. German WFS: [X₁]Adj ⇔ [X₁ismus]_N
(cf. *vegetarisch-vegetarismus* 'vegetarian' ~ 'vegetarianism',
bürokratisch-Bürokratismus 'bureaucratic' ~ 'bureaucracy')
b. *festhult* 'grasped (1st/3rd sing.)' (for *festhielt*)
(James 1977:11; L1 = Dutch)
- cf. German WFS: [XaC₁n]_{V inf} ⇔ [XuC₁]_{V 1st/3rd sing pret.}
(cf. *waschen-wusch* 'wash (inf.)' ~ 'washed (1st/3rd sing.)',
graben-grub 'dig (inf.)' ~ 'dug (1st/3rd sing.)',
c. *entlastet* 'discharged (past part.)' (for *entlassen*)
(Bahns 1989:17)
- cf. German WFS: [Xn]_{V inf} ⇔ [Xt]_{V past part.}
(cf. *entmutigen-entmutigt* 'discourage (inf.)' ~ 'discouraged (past part.)',
missachten-misachtet 'disregard (inf.)' ~ 'disregarded (past part.)')
- d. *leichttreu* 'gullible' (Vaverková 1980:109; L1 = Slovak)
- cf. German WFS: [X]_{Adj} ⇔ [X_Y]_{Adj Adj}
(cf. *kleingläubig* 'dubious' < *klein* 'small' + *gläubig* 'trustful',
kleinmütig 'faint-hearted' < *klein* 'small' + *mütig* 'courageous')

The sanctioned form for the noun related to the adjective *diktatorisch* is *Diktatur*; Jordens' analysis of the production of *Diktatorismus* is that "a rule was applied which, because of the greater range of application attributed to it, is seen as increasing the chances of success." (ibid.:32). The reason Jordens cites as providing the basis for the attribution of greater success to this rule is the speaker's intuition regarding the language-neutrality of words in *-ismus* with regard both to the L1 and to other (presumably European) languages.

In the cases of the two verbal forms, the speakers in question have produced entirely plausible licensed L2 forms: in the case of (4b), the particular vocalic alternation between infinitive and preterite exemplified by the WFS applied by the speaker is not uncommon (i.e. *fahren* ⇔ *fuhr* 'drive (inf.)' ~ 'drove (1st/3rd sing.)', *schaffen* ⇔ *schuf* 'create (inf.)' ~ 'created (1st/3rd sing.)', etc.); neither is the alternation [XaC₁n]_{V inf} ⇔ [XiC₁]_{V 1st/3rd sing pret.} (i.e. *blasen* ⇔ *blies* 'blow (inf.)' ~ 'blew (1st/3rd sing.)', *schlafen* ⇔ *schlieft* 'sleep (inf.)' ~ 'slept (1st/3rd sing.)', etc.). It seems possible that the speaker, knowing this verb already to be somewhat irregular (and thus that the preterite is not *festhalten* by the regular WFS [Xn]_{V inf} ⇔ [X_t]_{V 1st/3rd sing pret.}), has opted for a plausible WFS of preterite formation. As for

(4c), a verb is related to its past participle by means of the WFS when the following conditions are true: (a) the verb is related to a phonologically simpler verb by means of the WFS [αX]_{V inf} ⇔ [X]_{V inf}, where α represents one of the so-called 'inseparable prefixes' *be-*, *emp-*, *ent-*, *er-*, etc.; and (b) the simpler verb is related to its past participle by means of the WFS [X]_{V inf} ⇔ [gəXt]_{V past part.}. In the case of *entlastet*, the speaker seems to be aware of condition (a) but not (b); presumably, this speaker would produce *gelaßt* as the past participle of *lassen*.

The case of *leichttreu* is straightforward: a well-attested WFS of compounding relates adjectives to their two component adjectives; the degree of both formal and semantic transparency of this WFS is such as to permit speakers to extrapolate from attested forms to new ones when a need arises.

3.1.3. Inter-French

- (5) a. *examination* 'examination, exam' (for *examen*)
(Parkinson 1992:84; L1 = English)
- cf. French WFS: [Xe]_{V inf} ⇔ [Xasj]_N¹³
(cf. *créer-crétation* 'create (inf.)' ~ 'creation', *évacuer-évacuation* 'evacuate (inf.)' ~ 'evacuation')
- b. *finent* 'finish (3rd pl. pres.)' (for *finissent*) (Buteau 1970:142)
- cf. French WFS: [Xir]_{V inf} ⇔ [X]_{V 3rd plur ind. pres.}
(cf. *ouvrir-ouvrent* 'finish (inf.)' ~ 'finish (3rd plur. ind. pres.)',
partir-partent 'leave (inf.)' ~ 'leave (3rd plur. ind. pres.)',
c. *extincter* 'extinguish' (for *éteindre*)
(Parkinson 1992:91; L1 = English)
- cf. French WFS: [Xce]_N ⇔ [Xc]_V
(cf. *chanteur-chanter* 'singer' ~ 'sing (inf.)', *connecteur-connecter* 'connector' ~ 'connect (inf.)')
- d. *embryonique* 'embryonic' (for *embryonnaire*)
(Parkinson 1992:92; L1 = English)
- cf. French WFS: [X5]_N ⇔ [X5nik]_{Adj}
(cf. *son-sonique* 'sound' ~ 'sonic', *canon-canonique* 'canon' ~ 'canonic')

The cases of *examination* and *embryonique* are what might be called pseudo-lexical imports, in that they appear on one hand to be "projections" of lexical items from L1 into L2, but they are on the other hand forms whose morphology is entirely compatible with what the L2 WFSs make available. In the case of *examination*, the speaker's L1, English, provides a verb *examine* and the WFS [X]_V ⇔ [Xe'_N] which allows the formation of deverbal nouns of this type. French, on the other hand, has a cognate verb as well as a cognate WFS [Xe]_V ⇔ [Xasj]_N, but in this case the actual WFS relating the verb to its corresponding noun is the WFS [Xine]_V ⇔

[X̄]_N attested by the unique pair *examiner-examen*. Similarly, in the case of *embryonique*, both the form which serves as the base form (i.e. *embryon* 'embryo') as well as the WFS have cognates in the L1 (English); however, like *examination*, it is perfectly well-formed with respect to the morphology of French. Thus, as was the case with (3a, d), we would far sooner expect a speaker of L2 French, regardless of his or her L1, to produce *examination* than a form such as [elim̄] (for *élimination*) given the WFS [Xine]_V ⇔ [X̄]_N and the verb *éliminer* [elimine].

The case of *finent* is of particular interest, since the WFS utilized by the speaker holds true for a considerable number of verbs in [-ir], though the WFS [X5]_{V 1st plur pres.} ⇔ [X̄]_{V 3rd plur pres.} relates a greater variety of verbs. The speaker who produced this form, in other words, is using a more constrained WFS, something of a challenge to productivity enthusiasts.

A form such as *extincter* is indicative of the application of a widespread, phonologically simple WFS in cases where the sanctioned WFSs are unique to their particular verb/agent noun pairs. Thus, for example, *acteur* is related to *agir* by [Xktoer]_N ⇔ [X3ir]_{V inf.}, a morphological relationship that is seen in this pair of words and in the pair *réacteur/réagir*. The relationship between *extincter* and *éteindre* is of such complexity as almost entirely to defy formulation. The point here, as in many other examples of this sort, is that these do not constitute examples of morphological relatedness but only of suppletion; whereas the former depends on both semantic and formal relatability, the latter depends only on semantic relatability (cf. f.n. 4).

3.2. Indirect licensing

Following is a list of all the forms that we have been able to find in the literature consulted that are not licensed by one and only one distinct word-formation strategy of L2 morphology.¹⁴

- (6) a. Inter-English:
- | | | |
|-------|----------------------|-------------------------------|
| i. | <i>killness</i> | Arabski (1968:86) |
| ii. | <i>difficultiest</i> | (ibid.:87) |
| iii. | <i>trickly</i> | (ibid.:88) |
| iv. | <i>teeths</i> | Dulay & Burt (1972:245) |
| v. | <i>tooked</i> | Dulay & Burt (1974:42) |
| vi. | <i>spoked</i> | Duškova (1969:12) |
| vii. | <i>evolvate</i> | (ibid.:25) |
| viii. | <i>enviness</i> | Hatch (1983:42) ¹⁵ |
| ix. | <i>stoled</i> | Nemser (1979:296) |
| x. | <i>woked</i> | (ibid.:299) |
| xi. | <i>wents</i> | (ibid.:299) |
| xii. | <i>comparisment</i> | Nemser (1981:75) |

- | | | |
|-------|-----------------------|---------------------------------|
| xiv. | <i>verbacious</i> | (ibid.:75) |
| xiii. | <i>dissatisfieded</i> | (ibid.:81) |
| xv. | <i>calated</i> | Politzer & Ramirez (1973):42-43 |
| b. | Inter-German: | |
| i. | <i>gemolkt</i> | Bahns (1989:17) |
| ii. | <i>festhältete</i> | James (1977:13) |
| iii. | <i>riefte</i> | (ibid.:13) |
| iv. | <i>zeichneste</i> | Jordens (1977:23) |
| v. | <i>redeste</i> | (ibid.:23) |
| vi. | <i>antworteste</i> | (ibid.:23) |
| vii. | <i>bezweifelte</i> | (ibid.:23) |
| c. | Inter-French: | |
| i. | <i>allongissement</i> | Parkinson (1992:83) |
| ii. | <i>finissent</i> | Buteau (1970:139) |
| iii. | <i>venont</i> | (ibid.:142) |
| iv. | <i>finirent</i> | (ibid.:142) |

The data above fall into four categories, according to the nature of the process that has apparently guided their formation: simple reanalysis, double marking, blending, and analogical creation of a WFS. We take these categories up in the next four sub-sections (§§ 3.2.1-3.2.4).

3.2.1. Simple reanalysis

By simple reanalysis we mean the reanalysis of a form such that it can function as the input to a particular WFS. It will be noticed that in all cases of simple reanalysis in the data under consideration here (see 7a-g), a simple strategy of identity is all that is required to mediate between the actual (sanctioned) syntactic/semantic specification of the input form and the necessary specification for conformity to the WFS. As an example, consider the Inter-English form *killness*, given below as (7a): in order for the form *kill*, which bears the specification [N, V], to function as input to the WFS [X]_{Adj} ⇔ [Xnɔs]_N, the intervention of either [X]_N ⇔ [X]_{Adj} or [X]_V ⇔ [X]_{Adj} can be invoked, both of which are amply attested in English (i.e. *golf* *green_N* and *green_{Adj}* (*grass*) for the first case, and *clean_V* and *clean_{Adj}* for the second). The cases of simple reanalysis in the data, all from Inter-English, are as follows, with the necessary identity relationship indicated in parentheses:

- (7)
- | | | |
|----|-----------------------|---------------|
| a. | <i>killness</i> | (N, V > Adj) |
| b. | <i>enviness</i> | (N, V > Adj) |
| c. | <i>difficultiest</i> | (N > Adj) |
| d. | <i>wents</i> | (past > pres) |
| e. | <i>trickly</i> | (N, V > Adj) |
| f. | <i>dissatisfieded</i> | (Adj > V) |
| g. | <i>evolvate</i> | (V > N) |

The case of (7d) *wents* is explicable on the basis of a reanalysis of the past tense form as a present tense, on the model of verbs such as *put* and *spread*; (7f) *dissatisfieded* can be explained on the basis of verb/adjective pairs in English related by identity, such as *dirty* and *clean*.

3.2.2. Double marking

Double marking is the process through which a form x , bearing the syntactic/semantic specification α , is reanalyzed as input to a WFS p whose output y also bears the specification α . The plausible assumption is that what is at stake is a reanalysis on the part of the speaker such that x 's specification α is treated as though it bore whatever value β is pertinent to the input of p . Take, for example, the form *teeths*, given as (8a) below. The form *teeth* normally bears the specification [N plur], but in order to function as the input to the WFS [X]_{N sing} ⇔ [Xz]_{N plur}, it must be reanalyzed as [N sing]. All the forms which are doubly marked in this sense are listed in (8a-f), along with the two WFSs which have been applied:

- (8)
- a. *teeths*
 [XuC]_{N sing} ⇔ [XiC]_{N plur}; cf. *tooth-teeth, goose-geese*
 [X]_{N sing} ⇔ [Xz]_{N plur}; cf. *cat-cats, dog-dogs*
- b. *tooked*
 [Xεik]_{V inf} ⇔ [Xok]_{V past}; cf. *shake-shook, take-took*
 [X]_{V inf} ⇔ [Xd]_{V past}; cf. *walk-walked, breathe-breathed*
- c. *spoked, stoled*
 [XiC]_{V inf} ⇔ [XouC]_{V past}; cf. *freeze-froze, speak-spoke*
 [X]_{V inf} ⇔ [Xd]_{V past}; cf. *walk-walked, breathe-breathed*
- d. *woked*
 [Xεik]_{V inf} ⇔ [Xouk]_{V past}; cf. *break-broke, wake-woke*
 [X]_{V inf} ⇔ [Xd]_{V past}; cf. *walk-walked, breathe-breathed*
- e. *calleded*
 [X]_{V inf} ⇔ [Xd]_{V past}; cf. *walk-walked, breathe-breathed*
 [X]_{V inf} ⇔ [Xd]_{V past}; cf. *walk-walked, breathe-breathed*
- f. *riefte*
 [Xn]_{V inf} ⇔ [Xiε]_{V 1st/3rd sing pret.}; cf. *machen-machte* 'make (inf.)' ~ 'made (1st/3rd sing pret.)', *putzen-putzte* 'wash (inf.)' ~ 'washed (1st/3rd sing pret.)'
 [XuC]_{N inf} ⇔ [XiC]_{V 1st/3rd sing pret.}; cf. *rufen-riefte* 'call (inf.)' ~ 'called (1st/3rd sing pret.)', *anrufen-anrufte* 'phone (inf.)' ~ 'phoned (1st/3rd sing pret.)'

There are a variety of ways in which this process can manifest itself: by the re-application of the same WFS twice (as in *calleded*), or by the subsequent application of two different WFS (as in *teeths, tooked, stoled*,

woked, and *spoked*). As with all cases of simple reanalysis, a licensed relation of identity holds between α and β .

What is interesting in regard to these examples is the fact that, with the exception of *calleded*, one of the WFSs applied to all of these forms in each case is one that relates a very small number of words in the given languages. The WFS relating *tooth* and *teeth* presumably holds between only two pairs of words for a majority of speakers of English, and of the English cases of verbal morphology involving ablaut, the WFS relating the greatest number of word-pairs for most speakers of English is [XiC]_{V inf} ⇔ [XouC]_{V past}, which relates, if standard dictionary information is taken as an index, at most six pairs (but only if the somewhat rare forms *heave-hove* and *cleave-clove* are taken into account). In the German case (8f), this is a WFS that applies uniquely to this verb and its related forms (i.e. *anrufen* 'phone', *ausrufen* 'exclaim'). These remarks suggest strongly that what is at stake here is a subcase of reanalysis, in which the absence of the more common markers of past tense or plural on such forms as *teeth* or *stole* has led the subjects to analyze these as unmarked for these categories, thus in need of marking by means of these common markers. The fact that doubly marked forms, whether of the *calleded* or the *stoled* kind, are often produced in early stages of L1 acquisition strengthens an analysis of this kind of intermorphological form as deriving only from L2 (*pace*, for example, Nemser's 1979 comments regarding *woked*).

3.2.3. Blending

Blending consists of the (seemingly) simultaneous application of more than one WFS. The forms in this category, with the WFSs that have been blended, are:

- (9)
- a. *comparisonist*:
 [X]_V ⇔ [Xsɔn]_N; cf. *compare-comparison*
 [X]_V ⇔ [Xmɔnt]_N; cf. *contain-containment, employ-employment*
- b. *verbacious*:
 [Xasɔt]_N ⇔ [Xoufs]_{Aadj}; cf. *atrocity-atrocious, ferocity-ferocious*
 [Xæsɔt]_N ⇔ [Xɛt]_s_{Aadj}; cf. *audacity-audacious, mendacity-mendacious*
- c. *gemolkt* (for *gemolken* or *gemelkt* 'milked (past part.)'):
 [Xn]_{V inf} ⇔ [gɛXt]_{V past part.}; cf. *machen-gemacht* 'make (inf.)' ~ 'made (past part.)', *putzen-geputzt* 'wash (inf.)' ~ 'washed (past part.)'
 [XsC]_{N inf} ⇔ [gɛXɔC]_{N inf}_{V past part.}; cf. *sprechen-gesprochen* 'speak (inf.)' ~ 'spoken (past part.)', *stechen-gestochen* 'sting (inf.)' ~ 'stung (past part.)'
festhältete (for *festhielt* 'grasped (1st/3rd sing. pret.)'):
 [Xn]_{V inf} ⇔ [Xɛtɛ]_{V 1st/3rd sing pret.}; cf. *arbeiten-arbeitete* 'work (inf.)' ~

- 'worked (1st/3rd sing. pret.), *warten-wartete* 'wait (inf.)' ~ 'waited (1st/3rd sing. pret.)'
 [XaC_n]V_{inf.} ⇔ [XeC_{1V} 3rd sing. pres.]; cf. *festhalten-festhält* 'grasp (inf.)' ~ 'grasps (3rd sing. pres.)', *fallen-fällt* 'fall (inf.)' ~ 'falls (3rd sing. pres.)'
 e. *allongissement* (for *allongement* 'elongation'):
 [Xe]_{Vinf.} ⇔ [Xmā]_{ns}; cf. *siffler-sifflement* 'whistle (inf.)' ~ 'whistling', *croiser-croisement* 'cross (inf.)' ~ 'crossing'
 [Xir]_V inf. ⇔ [Xismā]_{ns}; cf. *élargir-élargissement* 'expand (inf.)' ~ 'expansion', *blanchir-blanchissement* 'bleach (inf.)' ~ 'bleaching'

If at least two word-pairs exhibiting a certain morphological relatedness are indeed taken as necessary for the postulation of a WFS expressing that relation (cf. fn. 3), then the case of (9a) *comparison* is possibly not a case of morphological blending, but instead an example either of a performance error or of lexical interference. In the case of (9b) *verbacious*, we suggest that the speaker has created this form on the basis of *verbosity* and a confusion between the vocalic alternations /a-ou/ and /æ-ε1/.

As for the remaining examples (9c-e), the explanations are straightforward: according to Esterle (1987), the past participle of *melken* 'to milk' is either *gemolken* or *gemelkt*; the subject who produced (9c) has thus melded these two German WFSs relating infinitives to past participles into a single WFS. The case of (9d) *festhältete* is similar, in that the correct verbal form has been produced along with a superfluous change in vowel quality. As for (9e) *allongissement*, we suggest that the decisive factor in the particular choice of suffixation process (-*issement*) is due to the large number of verbs referring to changes in appearance or dimension (i.e. *rétrécir-rétrécissement* 'shrink' ~ 'shrinkage', *aplatis-raplatissement* 'flatten' ~ 'flat-tening', etc.) which happen to be related to nouns by means of this WFS.

3.2.4. Analogical creation of a WFS

Analogical creation of a WFS is the creation of a WFS on the basis of an already existing WFS by the simultaneous and parallel reanalysis of part of the syntactic/semantic specifications of both sides of the WFS.¹⁶ As an example, consider the Dutch Inter-German forms *zeichneste*, *redeste*, *antworteste*, and *bezuwefelste* (see (11a)). A plausible explanation for these forms is the creation of a WFS [X]_V 2nd sing. pres. ⇔ [Xə]_V 2nd sing. pret. on the basis of the WFS [X]_V 3rd sing. pres. ⇔ [Xə]_V 3rd sing. pret.; thus, where a relationship holds between the 3rd person forms of the present and preterite tense (*zeichnet* and *zeichnete*), the speaker may hypothesize

that a parallel relationship holds between the 2nd person forms of the same paradigms (*zeichnest* and *zeichneste*). The cases of analogical WFS creation are:

- (10) a. *zeichneste*, *redeste*, *antworteste*, *bezuwefelste*
 [X]_V 3rd sing. pres. ⇔ [Xə]_V 3rd sing. pret. → 2nd person
 i.e. *zeichnet* : *zeichneste* :: *zeichnest* : *zeichneste*
 b. *finissont*, *venont*
 [X]_V 1st plur. fut. ⇔ [X]_V 3rd plur. fut. → present
 i.e. *finiront* : *finiront* :: *finissons* : *finissent*
 c. *finirent*
 [X]_V 2nd plur. pres. ⇔ [X]_V 3rd plur. pres. → future
 i.e. *finissez* : *finissent* :: *finirez* : *finirent*

3.2.5. Indirect licensing: Conclusion

In reference to the four preceding categories of possible analyses of deviant forms, it is undoubtedly no accident that these processes of reanalysis and blending resemble strongly those examined in Martohardjono (1986) and Martohardjono and Singh (1992). These are essentially processes of overgeneralization of morphological knowledge; the cases of blending, however, seem to involve an interplay of competence and performance, and indicate the intrusion of phonological and/or semantic information into morphological processes.

3.3. Arguably problematic cases

Dušková (1984:105) cites the following examples from Czech Inter-Russian as examples of morphological transfer:

- (11) a. *učitele* (cf. Russian *učitelja*, Czech *učitelé* 'teachers (nom. plur.)')
 b. *umřel* (cf. Russian *on умер*, Czech *umřel* 'he died')
 c. *vozniknul* (cf. Russian *voznik*, Czech *vznikl*, *vníknul* 'arose')
 d. *robotnice* (cf. Russian *robotnicy*, Czech *dělnice*, *pracovnice* 'workwomen (nom. plur.)')
 e. *tyjsjače* (cf. Russian *тысячи*, Czech *tisíce* 'thousands (nom. plur.)')

"In Russian", she observes, "there are three sources [of morphological errors]: the interference from Czech, combined interference from Czech and Russian, and intralingual interference from Russian. The first two sources appear to be specific to a closely related target language. Czech learners do not transfer Czech declensional or conjugational endings into English." (ibid.:105).

We would like to suggest that the data adduced by Dušková (1984)

as cases of transfer of L1 morphology into the Inter-Russian of native Czech speakers actually fall into two distinct categories: those which have a plausible explanation on the basis of phonological interference, and those which seem to be clear cases of the use of L1 morphology in the context of L2. The cases of phonological interference are given in (12):

- (12) Inter-Russian
 a. *učitele* (cf. Russian *učitelja*, Czech *učitelé* 'teachers (nom. plur.)')
 b. *umrel* (cf. Russian *on umer*, Czech *umřel* 'he died')
 c. *vozniknul* (cf. Russian *voznik*, Czech *vznikl*, *vzniknul* 'arose')

We suggest that a possible explanation for (12a, b) lies in the difference between the phonotactics of Czech and Russian, differences of this kind having been shown conclusively to create problems of interference. In the case of (12a), it would appear that the sequence [lja] creates a difficulty for the Czech native, whose L1 phonotactics do not permit such a sequence. Thus the speaker resolves the problem of unpronounceability according to the requirements of his/her L1 phonology, creating a form *učitele* which is, in a certain sense, neither Russian nor Czech, yet is in conformity with the phonotactics of Czech. It is, in any event, not a clear case of morphological transfer.

The case of (12b) appears to be a case of conflict between the processes determining syllabification in Russian vs. Czech. Assuming that both Russian *umer* and Czech *umřel* have, as Mel'čuk (personal communication) suggests, the underlying form /umr/, and that in Russian the /r/ is deleted for entirely plausible phonological reasons, the difference between the phonotactics of Russian and Czech automatically takes care of the insertion of the epenthetic vowel in both cases. In the case of Russian, the residual coda cluster /mr/ is broken up with an epenthetic vowel, and in the case of Czech, the way to render the underlying (unpronounceable) string pronounceable is by means of the introduction of an epenthetic vowel between the /r/ and the /l/, resulting in *umřel*. Note that in this example, as in (12a), the actual form is neither the Russian nor the Czech form, but an interlanguage form conforming to the morphology of L2 as refracted through the phonology of L1.

The case of *vozniknul* is explained, as suggested to us by Mel'čuk (personal communication), as arising from the use of a marginal, non-metropolitan dialectal form *-nul*, whose status in relation to standard Russian would appear to be the same as that of the cognate Czech form (which Dušková herself notes is a colloquial form) to standard Czech.

The remaining two cases, which appear to defy explanation on the basis of phonological interference, are given in (13) below.

- (13) a. *rabotnice* (cf. Russian *rabotnicy*, Czech *dělnice*, *pracovnice* 'workwomen (nom. plur.)')
 b. *tisjačé* (cf. Russian *tyšjači*, Czech *tisíce* 'thousands (nom. plur.)')

Dušková herself provides part of the answer to the problem posed by these cases. She notes (ibid.:105):

"Errors of this kind are especially common with cognate words and with endings found in both languages but with different distribution. Transfer of specifically Czech endings is on the whole rare and occurs mainly in the initial stages of learning".

Her comments point towards an explanation for these cases (13a, b) which highlights the necessity of L2 lexical evidence in the construction of L2 morphology. We suggest that the reason that cognate words promote the use of L1 morphology in L2 is a result of the fact that morphological processes do not exist in isolation from the lexical items with which they are associated, and the existence of an L2 form similar in form and meaning to an L1 form may lead the language learner to, in a sense, 'carry over' the morphology associated with the L1 form into the L2. Naturally, this process of 'carrying over' will be facilitated by the existence of any piece of actual L2 morphology identical in form, if not necessarily in meaning or structural function. As for the relative rarity of outright transfer of L1 forms unlicensed by L2 morphology, except in early stages of acquisition of L2, this also falls out from the fact that the language learner has, in early stages of learning, an insufficient exposure to the relevant lexical information from which the morphology can be projected; thus it is exactly such a situation that creates the greatest likelihood for the use of L1 morphology.

Dušková's remark about the rarity of transfer of endings specific to a given L1 can presumably be broadened to include not merely endings, but any kind of morphological operation; what is important is her underlining the relatedness of the two languages as being a crucial factor in the possibility of transfer taking place. This is very much in the spirit of Jordens' (1977) and Kellerman's (1978) research into notions of language neutrality/specificity in transfer. We would like to propose that what must be more closely examined in future work on transfer in morphology is the relatedness of two languages, not on the macro- or genetic level, but on the micro-level that is the actual locus of the WFSs in question. It is not enough for the linguist to state that language X is related to language Y in terms of facts of diachrony, in terms of typological notions such as "agglutinating", or of vague characterizations of "productivity of affixes" (cf. Hatch 1983:42).

4. Summary

We hope to have demonstrated that recourse to explanations based on transfer of native language morphology into L2 is, despite its seductive appeal, a last resort; that the great majority of L2 morphological "errors" are not errors but mere possible words that happen not to belong to the official dictionary of the language. As Singh (1993) points out, the standard, automatic assignment of language learners' morphological errors to transfer is altogether unjustified in the face of forms produced with great facility by native speakers all the time, "errors" which pass unnoticed because they are licensed by already existing strategies of word formation, thus guaranteeing their interpretability. We hope to have shown also: (i) that what appears and is generally taken to be the obvious explanation for intermorphological 'errors' is neither obvious nor necessarily correct; and (ii) that we are likely to get somewhere if we go about the matter in exactly the non-obvious way. The upside-down approach we advocate helps us, minimally, to distinguish between dubious and possibly genuine cases of morphological interference. The fact that the unarguably genuine cases of it, except from the quite possibly irrelevant very early stages of L2 acquisition, do not seem to exist is, of course, icing on the cake.

5. Epilogue

The first important theoretical ramification of phono-morphological interference concerns the "division of labour" between phonology and morphology (cf. Singh 1991). In as much as "morphophonological" and morphological rules do not cause interference, their behaviour provides an argument in favour of the view that they should both be negotiated in the morphological component of the grammar.¹⁷

The second important theoretical ramification has something to do with the nature of morphology itself. The extent to which morphology is not subject to transfer seems to us to be the extent to which morphology is not only intimately tied to the lexicon (cf. Singh and Ford 1992) but is also, in a manner of speaking, quintessentially non-generative, because it does not seem to require an appeal to principles that are specific to what is sometimes referred to as the "language faculty". Its non-transferability, in other words, could plausibly be a consequence of the fact that general cognitive principles are sufficient to account for it. Given a certain lexicon, these principles will deduce or project the same morphology, available to any learner, of L1, L2, or L_n. There is certainly a qualitative difference between the havoc that L1 phonology or syntax

can and do cause and the benign neglect L1 morphology seems content with, and the difference may well follow from the fact that whereas the former two modules of grammar are arguably subject to faculty-specific principles, morphology does not, as Chomsky himself (1982) acknowledges, lend much support to the Chomskian view of language as an organ (cf. Singh 1990).

The third, and for the purposes of this paper, final, conclusion seems to us to be that perhaps all questions concerning the division of "labour" in grammar need to appeal to what is generally referred to as "external evidence" (cf. Bertinetto 1992 and Singh 1988).

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Notes

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² While not denying the possible role that lexical and other matters may play in the acquisition of a second language, we shall concentrate on what can be called morphology proper, and argue that in that domain, L1 has virtually no role to play.

³ We present the facts of the matter within this particular theoretical framework for obvious reasons – we are familiar with and more convinced of it than of other views of the matter. We shall, however, refrain from demonstrating its validity here. The facts in question can, however, be easily interpreted according to any other theory of morphology. We should also point out that one of the problems we have encountered in making sense of the facts is that most of them are presented in the literature without the benefit of any theory of morphology. It is an unfortunate fact that most of the researchers working on interlanguage do not seem to make any distinction between morphological and lexical facts. The "needle of morphology", as Singh (1993) puts it, is hard to find in the huge lexical haystack that researchers have piled up. We have, as will be seen below, done what we could to find it.

⁴ The idea behind the "non-unique" is that unless there is some paradigmatic warrant, there would be no reason to postulate a strategy: a minimum of two pairs showing the same phonological and semantic correspondences would seem to be a *sine qua non* for such a warrant. Notice that this requirement automatically rules out what some have called suppletive morphology, about which Singh (1992:188) argues as follows: "Morphology is that sub-type of lexical relatedness which

requires both semantic and formal relationship. The lack of former rules out morphological relatedness in the case of English adjective /red/ and past tense verbal /red/ and the lack of latter rules it out in the case of *go* and *went*. Examples like *kill* and *murder*, and *good* and *well* show that, contrary to text-book assumptions, suppletion, even in its strong form, is not unknown outside "inflection". The definition of morphology that includes the former but excludes the latter remains incomprehensible to me despite its very respectable ancestry.⁷

The formalism above has obvious similarities with the one used by Jackendoff (1975). The differences between the approach adopted here and that of Jackendoff should be obvious too. They are discussed in some detail in Martohardjono (1986).

In cases involving languages whose phonological systems we have not worked out or are not familiar with, we provided what appear to be plausible morphological representations. They are subject to revision, should the phonologies involved turn out to be different from what we take them to be. Revisions of this sort will, fortunately, not affect the morphological points we make in each case.

We use the word 'interlanguage' in its standard sense (cf. Selinker 1972). It refers to the intermediate linguistic system a speaker of L1 creates or constructs *en route* to becoming a speaker of an L2. If she transcends such intermediate systems, she becomes a speaker of L2; if she cannot transcend the last such system, she may continue to use it.

A good example of this type of indeterminacy is illustrated by a word such as *respectless* (from Nensner 1979: 298), which can be explained on the basis of either the WFS [Xfəll]_{adj} ⇔ [Xlæs]_{adj} and the prior existence in the speaker's lexicon of *respectful* (i.e. on the model of *hopeful-hopeless*, etc.), or the WFS [X]_{adj} ⇔ [Xlæs]_{adj} and the existence of *respect* (i.e. on the model of *tact-tactless*, etc.).

A caveat regarding the variety of data under examination is necessary. Due to the somewhat far-flung and eclectic nature of the source material from which our examples are drawn, we have not been able to control such undoubtedly important factors as proficiency, age, and stage of the subjects, and the conditions under which the data were elicited. Nonetheless, we feel that these data are representative of what is to be expected of intermorphology.

Any mention in this text of "input" or "output" of a given WFS will be taken to hold for the examples given, and not for the WFS in general. The fact that, for example, a speaker of L₂ English can create or interpret a licensed but non-existent word *non-successful*, presumably on the basis of the existence of *successful* and the WFS [X]_{adj} ⇔ [nonX]_{adj}, implies that the same speaker is able to create or interpret, say, *chaldant* by applying the rule in the other direction with *nonchaldant* as "input".

Examples used here and below to motivate L2 WFSs cannot, unfortunately, be proven to have been known to the speakers/writers whose intermorphology we are attempting to explicate, but it is not, fortunately, necessary to demonstrate that, as long as the subjects in question can be assumed to be familiar with any two pairs of words that can be related by means of a given WFS. Except perhaps in the case of data obtained from learners at the very early stages of their L2 acquisition, that assumption seems to us to be entirely justified. Perhaps a more refined procedure would be to give examples of the highest frequency words associated with a given WFS. We do not think that it is crucial, but mention it in the interests of research.

An anonymous reviewer points out that "it is difficult to exclude some influence of L1 on *farer*, considering that Slavic languages have the comparative degree of the most typical adverbs."

An anonymous reviewer suggests that "a good morphological theory should put us in a state to define correctly the 'base' of a particular suffix." We regret not being able to meet the requirement in question, essentially because the theory of morphology used in this paper explicitly denies any status to Pāṇinian constructs such as root, stem, or base (cf. Ford and Singh 1991). The fact that the variable X generally corresponds to what other theories of morphology refer to as 'root', 'stem', or 'base' is, according to the architects of the theory used here, less important than the fact that sometimes it corresponds to 'things' for which Pāṇinians have no names.

- 14 Of the 199 cases of intermorphological errors examined by Parkinson (1992), 26 fall into the category of indirect licensing, and only 2 resist any explanation on the basis of L2 morphology.
- 15 Hatch mistakenly attributes this form to Nensner (1971). We have unfortunately not been able to find the correct source of this form, as it is to be found neither in Nensner (1979) nor Nensner (1981).
- 16 It is important to point out that in this section we are dealing with the analogical creation of "new" WFSs, WFSs based on already existing WFSs. A WFS itself is, according to Ford and Singh (in press), more properly construed as a context-sensitive commutation.
- 17 Putative cases of "morphophonological" interference are, as Hurch and Nathan (in press) point out in reference to Russian Inter-Polish, "probably rather due to the strong parallelism of the corresponding forms."

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