1. Introduction

It is generally assumed that certain aspects of a second language learner’s native language transfer to the interlanguage grammar of the learner. However, the questions of which characteristics of the native language transfer, which transferred properties play a more fundamental role in defining the interlanguage grammar, and what their precise effect is on second language learning, are far from resolved. As an example, within the domain of inflectional morphology, it is highly debated as to whether second language acquisition is constrained more by the phonological or morphosyntactic attributes of the L1. On the one hand, the affixal nature of inflection may produce phonological structures that are illicit in an L1 grammar. However, on the other hand, the morphosyntactic features represented by such phonological structures may not be present in the L1. In short, L2 learners’ failure to correctly supply inflectional morphemes may be due to transfer of either phonological or morphosyntactic constraints from the L1.

The goal of this paper is to assess the various proposals regarding transfer effects in L2 inflectional morphology by investigating the role of transfer in the second language production of English plural morphology by native Chinese speakers. The data presented here are from Jia’s (2003) longitudinal study of Mandarin Chinese speakers’ acquisition of English plural morphology. In her study, Jia details a variety of production errors, ranging from failure to supply both regular and irregular plural morphemes to overgeneralization errors of all types. These varied production patterns are important because although irregular forms presumably rely on the same morphosyntactic features for their representation, they will in some cases differ in terms of their prosodic and syllabic structure from the regular forms. Conversely, overgeneralized forms may have a similar phonological structure to regular forms, but may be analysed differently at the morphosyntactic level. It is in these areas, where differences between phonological and morphosyntactic representations are observed, that we can test the validity of phonological and morphosyntactic transfer hypotheses.

This paper will proceed as follows. In §2, I outline three different theoretical models that have been proposed to account for second language acquisition of inflectional morphology, and in §3, I detail the results of Jia’s (2003) study. In §4, I assess the validity of each of the proposals outlined in §2 with respect to the study detailed in §3. This section demonstrates my main claim that a morphosyntactic featural deficit in the L1 provides the best explanation for the data presented in §3. In other words, I will argue that, because the feature [Plural] is not activated in Chinese, this feature is not available in the interlanguage grammars of L2 Chinese speakers of English.

2. Previous Approaches to L2 Acquisition of Inflectional Morphology

In this section, I look in more detail at the various proposals that have been put forth regarding transfer effects in L2 acquisition of English inflection. In particular, I outline three different proposals, each which address L2 acquisition not of plural but of past tense morphology in English.
2.1 Consonant Cluster Reduction Hypothesis

In her (2003) paper, Lardiere reports on the speech of “Patty,” a native Chinese speaker who has been immersed in an English speaking environment for many years. Patty’s speech is characterized by low rate of suppliance of past tense morphemes (under 35%). What Lardiere draws attention to, however, is not the overall low rate of suppliance, but rather the types of verbs that are marked and/or not marked for past tense. She points to the fact that irregular verbs are nearly always past marked in past contexts, and that when the past tense morpheme creates a word final consonant cluster, it is nearly always omitted. Looking specifically at the regular past tense morpheme /-ed/, Lardiere notes that its rate of suppliance is much lower than the average rate across all verb types (approximately 6%). In stark contrast, however, the rate of suppliance of past tense marking in Patty’s written correspondence is much higher—approximately 78%. Lardiere further notes that Patty systematically deletes -t/-d in word final clusters in both inflected and monomorphemic forms. Based on these observations, Lardiere concludes that Patty’s failure to supply past tense marking cannot be attributed to a failed feature [±past] in her L1, but rather is the result of an L1 constraint against final consonant clusters. In §4.1 I will demonstrate that the same conclusion cannot be drawn for Chinese speakers’ failure to supply English plural morphology.

2.2 Prosodic Transfer Hypothesis

Taking a different phonological approach, Goad, White, and Steele (2003) propose that different prosodic structures in English and Chinese can account for native Chinese speakers’ failure to supply English inflectional morphemes.

Goad et al. (2003) motivate a prosodic structure for English inflection in which suffixes such as the past tense /-ed/, and the third person singular agreement /-s/ are adjoined to the Prosodic Word (PWd). In particular, the prosodic structure that they argue is employed in English is as follows (Goad et al., 2003, p. 246, ex. 5a):

(1)

In (1), the perfective aspect suffix -l is incorporated into the PWd of the base to which it attaches. Importantly, Goad et al. (2003) claim that native Chinese speakers’ suppliance of regular past tense morphology is constrained based on their ability to adjoin inflectional suffixes to the Prosodic Word. This general claim allows them to make two predictions. The first prediction is that, for some speakers,
inflectional material will be deleted across the board. This prediction assumes that these speakers will have come to realize that the stem internal analysis of inflection that is permitted in Chinese is not available for English. The second prediction is that, for other speakers, inflectional material will be deleted in a predictably variable pattern. In particular, those inflections that can be analysed as stem internal will be prosodified as part of the PWd, and will thus be supplied.

2.3 Failed Functional Features Hypothesis

The final type of proposal considered here is that which claims that learners’ failure to supply inflectional morphology in their L2 is due not to a phonological constraint in their L1, but rather a morphosyntactic one. Beginning with Hawkins and Chan’s (1997) Failed Functional Features Hypothesis (FFH), various researchers have argued that morphosyntactic categories that are not activated in an L1 grammar will be inaccessible to the learner in their L2 (cf. Franceschina, 2001; Hawkins & Liszka, 2003). The foundation for the FFH type of proposals is that the inventory of morphosyntactic features activated in any given language is not universal, but is subject to parametric variation. Advocates of the FFH believe that learners whose L1 grammars do not activate a particular feature will be unable to acquire it in their L2. For example, Hawkins and Liszka (2003) analyse Chinese speakers’ low rates of suppliance of English past tense marking as their inability to represent the feature [+past]. In §4.3, I look at the feature [Plural] from the perspective of the FFH, and as will be demonstrated, this model is in fact able to account for Jia’s data on Chinese speakers’ acquisition of the English plural.

3. L2 Acquisition of English Plural Morphology by Native Chinese Speakers

In this section, I detail a study outlined in Jia (2003) in which native Mandarin Chinese speakers’ production of English plural morphology was documented over a five year period. The results in Jia (2003) will be the main source of data analysed in this paper.

Jia (2003) chronicles the acquisition of the English plural by ten native Mandarin Chinese children and adolescents over a period of five years. Her participants consist of five girls and five boys, who ranged in age from five to sixteen years at the beginning of her study. Each participant had immigrated to the United States within four months of the study’s commencement. The participants’ production of English plural morphology was measured via elicitation tasks and samples of spontaneous speech, all of which was collected during testing sessions in the participants’ homes that took place in regular intervals over the five year period.

The results of Jia’s study point to similar developmental paths for both L1 and L2 acquisition of the English plural. Although only seven of Jia’s ten participants achieved ‘plural mastery’\(^1\), all passed through the same developmental stages as do native English children in their acquisition of plural morphology (cf. Mervis & Johnson, 1991). Specifically, early in the study, learners only occasionally and erratically supplied the regular plural morpheme, but used irregular plurals correctly. As the study progressed, regular plural production increased, but overgeneralization errors (including those with irregular nouns) also increased. Finally, for those participants who reached the plural mastery stage, the later stages were characterized by an increase in correct use of the regular and irregular plural forms, and a decrease in overgeneralization errors. What these stages point to is a general “pre-rule to post-rule” development, similar to that observed in children acquiring the inflectional morphology of their first language.

Although there are similarities between L1 and L2 acquisition in Jia’s study, there are also a number of differences. The most salient of these differences is the fact that whereas most English speaking children typically master plural morphology quite early in their morphological development (cf. Brown, 1973; de Villiers & de Villiers, 1973) only seven of Jia’s ten participants reached the plural mastery stage after five years of English immersion. Other studies have similarly documented

\(^1\) Plural mastery was measured in terms of a composite score of 80% or more, calculated on the basis of the proportion of the number of correctly supplied plural tokens to the number of obligatory plural contexts.
that English plural morphology proves difficult for Chinese second language learners to master (cf. Bialystok & Miller, 1999; Young, 1991).

A second difference between L1 and L2 acquisition of the English plural has to do with the types of errors documented in Jia (2003). Jia notes that, as in studies of L1 acquisition of English plural morphology, two main types of errors occurred in her study. The first type (labelled RO errors, for Required but Omitted) involves a context in which a regular plural morpheme is required to be marked, but it is not supplied. Examples of RO errors include utterances such as *three box* or *a dozen book*. The second error type is overgeneralization, of both contextually plural nouns (OGplu errors) and non-plural nouns (OGnon-plu). OGplu errors are utterances such as *foots, mens, or sheeps*, whereas OGnon-plu errors include utterances like *a goats, milks, or people* (when singular *person* is contextually required).

RO errors significantly outnumbered OG errors in Jia’s study. However, there are two areas in which the errors of the L2 learners differed from those of the L1 learners. First, the RO errors of the L2 learners showed considerable inconsistency. Jia notes that the same nouns were sometimes marked as plural and other times not, for the same participants within the same sessions. Furthermore, such inconsistency was not an unusual occurrence, but in fact occurred for all participants throughout all testing sessions. Although inconsistent marking of the plural is also attested in L1 acquisition, it is not found to be as persistent or pervasive as in Jia’s study (cf. Mervis & Johnson, 1991). The second major difference involves the relative frequency of the different types of OG errors. Jia’s study found that OGnon-plu errors constitute the majority of OG errors for her Chinese L2 learners, both on average and individually for most participants. Comparatively speaking, this pattern is quite surprising, given that OGnon-plu errors are quite rare in L1 acquisition (cf. Mervis & Johnson, 1991). As will be demonstrated in §4, these differences between L1 and L2 acquisition of the English plural can be attributed to a morphosyntactic feature deficit in the L1.

4. Transfer Effects in L2 Acquisition of English Plural

The goal of this section is to apply the hypotheses outlined in §2 to the data detailed in §3. What this section demonstrates is that although L1 constraints on word final codas and PWd adjunction cannot adequately account for the acquisition patterns observed in Jia’s (2003) study of Chinese speakers acquiring the English plural, the absence of the feature [Plural] can be recognized as a key factor in determining the constraints on L2 production of English plural morphology.

4.1 Assessing the Consonant Cluster Reduction Hypothesis

In §2.1, I outlined Lardiere’s (2003) claim that omission of English past tense inflections in the speech of native Chinese speakers can be, at least in part, attributed to an L1 constraint against word final consonant clusters. In this section, I address the issue of whether or not Lardiere’s claims can be extended to native Chinese speakers’ failure to supply English plural morphology as well.

Although not specifically targeting plural forms, Eckman (1987) looked at Cantonese speakers’ production of English word final consonant clusters. In nearly all instances of consonant cluster reduction, the segment /s/, which in some cases represented the plural marker, was retained. This is not to say that consonant cluster reduction did not occur, however. Coda clusters were often simplified, but while the segment /s/ was almost always retained, other consonants were more subject to deletion.

Turning now to the more specific issue of plural /-s/, the prediction that the cluster reduction model makes is that, if plural /-/s/ is deleted as a result of consonant cluster reduction, then plural marking should be omitted with greater frequency when it appears in a consonant cluster than in other phonological environments. In fact, this prediction is not borne out. In Young’s (1991) study of Chinese speakers’ acquisition of English plural morphology, it was found that the plural /-/s/ was most likely to be supplied following a non-sibilant fricative, a stop, or a vowel. Contrary to the cluster

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2 Young’s study targeted phonological and syntactic variables affecting Chinese speakers’ suppliance of English plural /-/s/. His data was collected in two informal interviews with twelve native Chinese adult speakers of varying English proficiency.
reduction hypothesis, the first two of these contexts requires the creation of a final consonant cluster, and these phonological contexts proved less problematic than other contexts. Phonological contexts in which suppliance of plural /-s/ had lower success rates included those in which the preceding segment was a sibilant or a lateral. Thus, the relative rates of suppliance of plural /-s/ by Young’s Chinese speakers could not be predicted on the basis of an L1 constraint against consonant clusters.

Similarly, with regards to the patterns of errors observed in Jia’s (2003) data, although RO (required but omitted) errors constituted the majority of her errors, a significant number of overgeneralization errors, in which the plural morpheme was erroneously supplied, were also documented, particularly in the transitional, or intermediate, stages of acquisition. Such errors cannot be explained in terms of the cluster reduction hypothesis.

In summary, although the cluster reduction hypothesis appears to be a promising explanation for Lardiere’s (2003) observation that her subject reduced final clusters both within inflected forms and within monomorphemic words, it cannot adequately account for the patterns of errors observed with Chinese speakers’ acquisition of English plural morphology.

4.2 Assessing the Prosodic Transfer Hypothesis

In §2.2, I outlined the proposal put forth in Goad, White, and Steele (2003), which suggested that Chinese speakers’ failure to supply English past tense and third person singular agreement morphology could be attributed to a difference in prosodification strategies for English and Chinese inflection. Although not stated in explicitly in Goad et al. (2003), I assume that their analysis should be equally applicable to English plural /-s/, given its similar phonological shape and allomorphic distribution to the third person singular agreement morpheme /-s/. However, as demonstrated in this section, the predictions of their account are not borne out in the L2 plural data.

One major prediction of the Prosodic Transfer Hypothesis is that irregular forms should be used correctly in advance of regular forms, because these do not involve adjunction to the PWd. Jia’s (2003) data may appear to support this type of analysis, given that she found irregular forms to be correctly pluralized in the initial stages of her study. However, her speakers’ intermediate stages were characterized by both omission and overgeneralization errors. Because these speakers overgeneralized the regular plural marker to both irregular and non-plural forms, they had clearly developed the ability to prosodify the inflectional suffix in some way at this intermediate stage. However, given this ability, the Prosodic Transfer Hypothesis can therefore not account for the fact that the plural /-s/ continued to be omitted in required contexts throughout this same period.

Recall from §3.2 that Goad et al. (2003) predict that in morphophonological environments in which English inflectional morphology can be prosodified stem internally, Chinese speakers may analyse it as such, thus supplying the correct inflectional form. The data in Young (1991) suggest that these types of prosodification strategies do not play a primary role in determining in which environments the plural /-s/ will be supplied. As noted, in Young’s study, the plural /-s/ had the lowest rates of suppliance following a sibilant or lateral segment. Interestingly, these are two of the environments that Goad, White, and Steele (2003) argue allow for resyllabification, the first as a new syllable due to epenthesis insertion (as in [rejs- z] ‘races’) and the second as an onset in an empty headed syllable (as in [f l-z] ‘fills’). Thus, the morphophonological contexts in which the Chinese speakers in Young’s (1991) study are most often supplying the plural morpheme do not correlate with the contexts in which the suffix could be analysed stem internally. As such, Goad, White, and Steele’s (2003) predictions, if extended to the acquisition of English plural morphology, are not borne out.

In summary, this section has demonstrated that neither the overgeneralization errors observed in Jia (2003) nor the relative rates of plural /-s/ suppliance in Young (1991) support the Prosodic Transfer Hypothesis proposed in Goad et al (2003).

4.3 Assessing the Failed Functional Features Hypothesis

As has been demonstrated in the preceding two subsections, phonological analyses of L2 acquisition of inflectional morphology do not seem to be capable of accounting for the patterns of suppliance and errors observed in Chinese speakers’ acquisition of the English plural. In this section, I
turn to the morphosyntactic account, and in particular I will demonstrate that Hawkins and Chan’s (1997) Failed Functional Features Hypothesis (FFH) offers the most comprehensive account of L2 plural acquisition, based on the data detailed in §3. Before turning to an assessment of the FFH in this context, however, I first motivate the claim that the feature [Plural] is not activated in Chinese grammar. It is this featural deficit that constrains Chinese learners’ suppliance of English plural morphology.

4.3.1 Absence of [Plural] in Chinese

Chinese is a classifier language, which entails that nouns require a numeral classifier in order to be made countable. An example is given in (3):

(3) săn ge péngyou
    three CL friend
    ‘three friends’
    (Iljic, 1994, p.93)

In (3), the noun péngyou ‘friend’, which would considered a count noun in English, may only be counted if used in conjunction with the classifier ge. This is not unlike a similar restriction on mass nouns in English, which require a measure word (analogous to a classifier) in order to be made countable:

(4) three bowls/scoops/drops of ice cream / *three ice creams

In (4), the mass noun ice cream may only appear with the numeral three if a measure word (i.e., bowls) intervenes. All Chinese nouns require an intervening classifier in order to be made countable. As such, there is no count/mass distinction in Chinese, and all nouns in Chinese can be viewed as mass nouns (Chierchia, 1998).

In spite of this, two alleged ‘plural’ morphemes may modify Chinese nouns. The first of these, the suffix –men, only appears on pronouns and human nouns. The second is the quantifier xie, which can be roughly translated as ‘some,’ and is not restricted to human referents. Importantly, however, both of these have been shown to mark collectivity rather than true plurality (cf. Corbett, 2000; Iljic, 1994, 2001). As such, although entities quantified via –men or xie may be semantically non-singular, they refer to a group conceived of as a whole, rather than a plurality of individuals.

An analogical comparison may be made in English between corporate nouns like family versus plural nouns like sisters. In the first case, the corporate noun refers to a single unit, composed of multiple referents. In the second, the plural noun refers to multiple individuals, who are not necessarily seen as a cohesive whole. This distinction is subtle, but it has important consequences for the morphosyntactic representation of such items. Note that in English, corporate nouns like family trigger singular agreement, whereas plural nouns like sisters trigger plural agreement. Based on this, and their respective semantic differences, the former can be represented with the feature [Singular] and the latter with the feature [Plural].

Returning now to nouns in Chinese, it has been shown that they may optionally appear with numeral classifiers, as in (3), or with the collective markers –men and xie. In the first case, they may be seen as mass nouns, which are inherently non-countable. In the second case, they are collective nouns, which are subtly distinguished from plural nouns. Finally, without any of these quantificational modifiers, nouns in Chinese are not countable, but rather encode ‘general number’ (Corbett, 2000):

(5) Zuotian wo mai le shu
    yesterday I buy PERF book
    ‘Yesterday I bought one or more books’
    (Rullmann & You, 2003, p.1)

In (5), the noun shu ‘book’ may be interpreted as either singular or plural; it is unmarked for number. Similarly, although considered singular in English, collective nouns in a language like Chinese, which is devoid of number distinctions in all other contexts, can be construed as also encoding ‘general
number’ (or an absence of number). Thus, in all morphosyntactic contexts, nouns in Chinese are not countable. As such, neither the feature [Singular] nor [Plural] is activated in Chinese.

4.3.2 Assessing the Failed Functional Features Hypothesis

The FFH assumes that features that are not acquired during a critical period in L1 acquisition are unavailable to the second language learner. In advanced stages of L2 acquisition, learners will reach higher stages of accuracy with inflectional morphemes, not due to an emergence of morphosyntactic features absent from the L1, but rather due to an improving probabilistic knowledge of the distribution of morphemes. Put simply, L2 learners do not acquire features that are not present in their L1 grammars, but rather they learn to recognize and commit to memory the patterns of distribution of the morphemes associated with such features. The FFH can predict the types and distribution of errors observed in Jia’s (2003) study of Chinese speakers’ acquisition of English plural morphology.

Three main patterns in Jia’s (2003) data can be explained in terms of the FFH: (1) the existence of overgeneralization errors; (2) the relatively high rate of OGNon-plu errors over OGPLu errors; and (3) the continued inconsistency in regular plural marking. Each of these will be considered in turn.

Although RO (Required but Omitted) errors constitute the majority of errors in Jia’s study, she also found a striking number of overgeneralization errors, in which the regular plural morpheme /-s/ was applied in contexts where it was not required, particularly during the intermediate stages of acquisition. As has been clearly demonstrated, these types of errors cannot be accounted for in terms of a phonological model. However, the FFH predicts the occurrence of overgeneralization errors, by assuming that learners come to recognize that a regular rule of pluralization affects nouns referring to multiplicities. As a result, they over-apply this rule, suffixing /-s/ to irregular plural and mass nouns.

The second important point to consider is that overregularization of irregular plural forms was not the only type, nor the most frequent type, of overgeneralization error to be documented in Jia’s study. In fact, unlike the distribution of errors seen in L1 acquisition, overgeneralization of the plural /-s/ in non-plural contexts (OGNon-plu errors) constituted the majority of overgeneralizations in Jia’s study of L2 acquisition. Thus, contextually singular nouns (i.e. a goats) and mass nouns (milks) were relatively frequently marked with the regular plural morpheme. Recall from §4.3.1 that Chinese not only lacks a singular/plural distinction, but also a count/mass distinction (cf. Iljic, 1994; Chierchia, 1998). The fact that both singular and mass nouns are overgeneralized is suggestive of an absence of these distinctions at the stages in which such errors occur in the acquisition process. This is consistent with the prediction of the FFH that featural distinctions not activated in the L1 are not available in the L2.

The third pattern observed in Jia’s data is that her L2 learners persistently and pervasively used the regular plural morpheme inconsistently. The same nouns were both marked and not marked as plural by the same speakers during the same testing sessions throughout the entire duration of the five year study. Although a certain degree of inconsistency is expected in both L1 and L2 acquisition, what is surprising about this piece of Jia’s data is that it occurred with such frequency, and did not level out at later stages of acquisition. Such inconsistency cannot be adequately accounted for in models which attribute the suppliance of inflectional morphology to reaching some sort of developmental milestone (i.e., acquiring coda clusters, PWd adjunction, or [Plural]). However, the probabilistic model of the FFH does not assume that acquisition proceeds on the basis of such milestones, but rather that speakers will come to recognize patterns of suppliance over time. As such, inconsistency is predicted in such a model, as speakers essentially “try out” different contexts for suppliance and omission of inflection.

In summary, this section demonstrated that the FFH can account for three different patterns observed in Jia’s (2003) data on Chinese speakers’ acquisition of English plural morphology.

5. Conclusion

This paper has looked at various aspects of an L1 grammar, ranging from prosodic phonology to morphosyntactic features, which could show transfer effects in the L2 acquisition of inflectional morphology. Three different proposals regarding the role of these constraints in English past tense marking were outlined, and the applicability of these proposals was assessed for English plural morphology. I argued that phonological models of L2 acquisition of inflectional morphology cannot
adequately account for the data observed for the English plural, but that a morphosyntactic account, namely the FFH, offers the most comprehensive account of the English plural data.

This is not to say, however, that phonology does not play any role in the acquisition of inflectional morphology. Bayley (1996) points to the additive effect that phonological and morphosyntactic constraints together may have on second language learners’ success rates with inflectional morphology. In this view, it is not the case that the absence of a [Plural] feature in the L1 is the only contributing factor to Chinese speakers’ errors with English plural morphology, but rather just the dominant one of many L1 transfer effects. On the other hand, Abrahamsson (2003) points to a phenomenon known as the “recoverability principle,” by which coda clusters are less likely to be omitted if they fulfill a functional role, such as marking an inflectional category. In this view, the absent [Plural] feature in the L1 is wholly responsible for pluralization errors, but also has a systematic effect on phonological outputs. Either way, the interaction of phonology and inflectional morphology in L2 acquisition is a rich area for future exploration.

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