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**A proposal for research on self-correction:
Opportunities for studying the role of negative evidence
in second language writing**

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【摘要】

本文將提出一個有關兒童書寫發展的方法論：自我糾錯與校訂的策略。對於初學者讀寫能力技巧的研究可以幫助我們更了解後設語言覺知在讀寫能力發展所扮演的角色。在第二語言書寫中，學者們同時有額外的機會檢驗後設語言覺知如何介入第二語言學習者文法知識的發展。相關問題包括：糾錯反饋的效果和語法教學。本研究提及的分析類型有：「試圖校訂的正本水平」和「試圖效益」，在跨語言讀寫能力的研究與對比書寫系統上尤其重要(例如字母順序和音節文字)。

[Abstract]!

This paper will propose a methodological approach for the study of an aspect of writing development in children that is especially important for academic literacy: strategies of self-correction and revision. The study of these literacy skills in beginning writers should also help us better understand the role of metalinguistic awareness in all aspects of literacy development. In second language (L2) writing, researchers are presented with the additional opportunity to examine how metalinguistic awareness intervenes in the development of L2 learners' grammatical knowledge. Related issues are: the effects of corrective feedback (and, more generally, the role of negative evidence) and form-focused instruction. The proposed categories of analysis in the present study, "text-level of correction attempt" and "effectivity of attempt," might be especially useful in studies of literacy cross-linguistically that in addition involve contrasting writing systems (e.g. alphabetic and morpho-syllabic).

[Keywords]

literacy, self-correction, metalinguistic awareness , corrective feedback,
form-focused instruction

* This paper is the complete version of a presentation given at the: Tamkang International Conference on Second Language Writing, December 1-2, 2006. The author expresses his appreciation for the comments and observations that helped to clarify a number of important points.

Introduction

Among the reasons why research on second language writing is important is that historically it has always been one of the primary learning objectives of academic literacy. Today, it might be safe to say that, world-wide, most students, at all levels including primary school, are required to learn how to read and write in a second language (L2), or soon will be. In the country where our research project is located, Mexico, second language writing has a long history and a growing importance today. During the first years of the colonial period in the 16th Century, the greater part of writing for academic purposes was probably not in the first language (L1) of most writers. Religious education, evangelization, and in particular the extensive publishing of Christian texts would typically be in Nahuatl (the widely recognized indigenous lingua franca), the L2 of all newly arriving missionaries from Spain, or in Latin. As alphabetic literacy came to be appropriated by Nahuatl speakers, L1 writing increased for a period of time. For many years following the European conquest, official documents such as land titles were often redacted in Nahuatl. Today, English is a required subject for school children after 6th grade; and learning Spanish in school implies L2 literacy for many indigenous language speaking children.

This paper will report on a descriptive study of second language and bilingual writing development in elementary school-age children, with an eye on the broader discussion in the field of second language learning on the role of metalinguistic awareness and negative evidence. One of the proposals that will be presented for consideration is that metalinguistic awareness in particular is a central component of advanced literacy ability; see Buckwalter & Lo (2002), Francis (2006), Li et al. (2002) and Packard (2002) for discussion. A current proposal in the research on literacy learning is that shifting greater emphasis toward reflection and focus on language form and language use might favor a stronger development of academic language proficiency, especially in the domain of written expression. The examination of self-correction strategies in second language (L2) writing, the subject of the present study, allows for a special opportunity to explore this question.

Participants in the study were bilingual elementary school students from Central Mexico who completed first-draft compositions based on a narrative theme,

and were then asked to re-read typed transcriptions of their stories for the purpose of making corrections and revisions for a finished version of their work. Standard self-correction and revision options were demonstrated (substitution, deletion, insertion, and transposition), after which students were instructed to make all corrections and revisions that in their estimation would be necessary. Among the forty-five participants (15 second graders, 15 fourth graders and 15 sixth graders) were L2 learners of Spanish, Spanish-speaking L2 learners of Nahuatl, and balanced (early-simultaneous) bilinguals for whom both languages were primary mother tongues. The composition-correction task was administered, in parallel fashion, in both languages. Indices of "text level of the correction/revision" and "effectivity of the correction/revision" were calculated for each response:

- at what level of text was the correction/revision attempted (orthographic, grammar at the sentence level, or intersentential discourse level), and
- to what degree was each attempt effective?

A proposed conceptual framework for studying L2 literacy

Among the important questions related to the development of metalinguistic awareness in second language writing that future studies will continue to grapple with are:

- What is the role of corrective feedback in L2 literacy and in L2 learning more broadly?
- Which components of overall L2 literacy development, including metacognitive strategies and metalinguistic abilities, are language-specific and which are "non-linguistic"?
- How should researchers distinguish between "implicit" linguistic knowledge and "explicit" knowledge associated with literacy-related language ability?
- How should the concept of "transfer" be properly understood?

Before examining the procedures and results of our assessment of correction/revision, let us briefly survey these theoretical and practical questions. The debate on the effects of corrective feedback in L2 writing development (Bitchener et al. 2005, Ferris 2004, Lee 2004, Truscott 1996) is familiar to most educators in the field of second

language learning. This is not the place to assess the different claims and counter claims; and the findings from the studies that I will report on do not offer direct support to any of the current hypotheses in contention. But as a way to help shed some new light on the discussion, the following proposals might be useful in helping us design future studies. For the benefit of both points of view, that which generally favors corrective feedback and that which does not, we could clarify, or summarize, the opposing claims. They could perhaps be formulated more clearly, confronting two opposing approaches to the problem:

(1) One approach proposes that some variety of corrective feedback facilitates and hastens the development of mastery of grammatical features and discourse ability in written expression. Learning comes to be more effective and efficient to some degree. That exclusively communicative "rich immersion" and (uncorrected) practice in writing result in some measurable advances in L2 writing development should not be denied. At the same time, it should be uncontroversial among educators who favor corrective feedback that only some types of corrective feedback and focus on form will be found to be facilitative.

(2) The opposing view would claim that there is no measurable effect, no facilitation in the development of any aspect of L2 writing ability as a result of corrective feedback. No variety of corrective feedback favors higher levels of ultimate attainment.

While it appears that hypothesis #1 is formulated more defensively, this way of proceeding, I believe, should help strip away unnecessary disputes on some secondary issues.

Another way to clarify the central questions in contention could be to also consider the broader problem of *negative evidence* in L2 learning, and then apply it to the specific circumstances of L2 writing. Teacher or peer corrective feedback (Rollinson 2005) is one way that negative evidence may be provided, but there are others. For example in the present study, a beginning L2 writer who has developed robust and efficient self-monitoring strategies would receive, and benefit from (hypothetically), negative evidence. In this case, the evidence regarding what aspects of his or her interlanguage knowledge are not part of the target language system is not provided by a teacher or more advanced learner, but rather from reflection and

systematic focus on form that develop as an integral part of the learner's writing ability itself. See Ruan (2004) and Xiang (2004) for a discussion of metacognition and self-monitoring in child and adult bilingual writers.

One thing to keep in mind is that in L2 writing, the general problems of writing development apply in addition to, or "on top of the special circumstances of interlanguage development. For example, in the case of initial literacy learning for non-literate children who are also monolingual speakers of their LI, the circumstances are special in ways that are very different from L2 literacy scenarios involving older, LI literate, intermediate level L2 speakers.

Returning to the question of negative evidence, there are two sets of considerations in the research today that are pertinent to the problem at hand:

(1) The more fundamental question asks whether negative evidence in some shape or form, and some aspect of metalinguistic awareness might facilitate higher levels of ultimate attainment in L2 linguistic knowledge and discourse-level text organizing ability. The claim is that the intervention of these purportedly facilitative factors is necessary to one or another degree. The question is important and interesting because, according to some views of child language development at least, neither negative evidence or metalinguistic awareness play any necessary role in the ultimate attainment of LI core linguistic competence. Discourse-level text organizing ability is an entirely different matter, depending, as it does, on competencies and skills that are non-linguistic, in large part. Readers should consult Doughty's (2003) discussion of the research on implicit and explicit learning that offers an interesting account of the widely observed difference between LI acquisition and L2 learning. How do second language learners overcome, or compensate for, the effects of the "filter of the linguistic organization of their first language" (p. 290)?

(2) A separate, albeit related, question involves the day-to-day application of different types and categories of corrective feedback (a kind of negative evidence) in actual L2 teaching situations. All variety of practical considerations and pedagogical constraints come into play that result in one or another corrective feedback approach to appear effective, workable, ineffective, counterproductive or neutral. Comparative studies that seek to marshal support for one or another contrasting method are invariably plagued by these external factors, often impossible to control. From this point of view,

issues of learner disposition, motivation and other affective variables, limitations of time and resources, etc. are all entirely secondary. If negative evidence, in principle, can be shown to be necessary for higher levels of attainment in one or more domains of L2 learning, then strong versions of communicative, immersion-only, language teaching that relies on positive evidence alone, can be simply discarded. Specific corrective feedback paradigms will always vary widely in effectiveness from one learning context to another: highly motivated child second language learners, adult "high-stakes" L2 learners with advanced LI literacy skills, English for specific purposes learners with limited instrumental motivation, American college foreign language students, etc. It would suffice to demonstrate the effectiveness of corrective feedback for any single subset of any of these learning populations to settle the question, in principle.

Thus, perhaps we should step back from some of the particulars of the ongoing debate, the underlying concepts then helping us to start again with the more basic questions: To what domains of knowledge and processing do different metalinguistic abilities belong? If they are not deployed in any necessary way in the acquisition of core LI grammatical competence, then it's likely that they are independent of linguistic knowledge *per se*. As such, can this type of "explicit" knowledge interface in any way with "implicit" knowledge of language? Would the answer be the same for both LI and L2 development?

The evaluation of writing in Spanish and Nahuatl

Two categories of analysis were of interest in the assessment of children's writing ability. This study focused on a specific writing skill, self-correction/revision and editing: (1) along the dimensions of "text level" and "effectivity," how did beginning writers differ from more advanced writers, and (2) given that in school, literacy skills are normally only practiced in Spanish, the national language of instruction, what differences might be discerned in performance between Spanish and Nahuatl on the same task?

Given the descriptive and exploratory nature of the assessments, we are not able to provide confirming or disconfirming evidence for any of the proposals in the

previous section. Rather, the present study should be taken as a kind of base-line description of tendencies and correlations: for example, what developmental trends should we expect to see across the elementary grades? As such it might serve to help formulate testable hypotheses and experimental designs with the potential of directly addressing the central questions concerning metalinguistic awareness and negative evidence in second language learning.

Assessment procedures

Students composed narratives based on a model that was read aloud to each class followed by a discussion and examination of visual graphics that accompanied each story. This method helps establish uniformity of conditions for what is typically a cognitively demanding literacy exercise for elementary school children. Providing a single discursive and thematic framework in a controlled writing task of this type facilitates comparison as it provides all participants with access to relevant background knowledge and a purpose for writing. Completed first drafts were collected and students were asked during the following week to make corrections and revisions to typewritten transcriptions of their own stories as described earlier.

To review, analysis of the writing samples consisted of two categories of rating: (1) "text level of the correction/revision" and (2) "effectivity of correction/revision." Under the first category, all attempts at correction or revision (regardless of the degree of effectiveness) were coded for "text level" as follows.

- (1) Orthographic correction:
 - (i) general grapheme/phoneme correspondence
 - (ii) word segmentation
 - (iii) accent placement

vus

- (i) Jue a duca r nu venada

The student changes "ducar" to "vugar." The original sequence (with the reversal of

[it] or "El venado" [The deer], but not both. Having eliminated the unnecessary redundancy ("El venado") the writer reiterates "el joven" [the young man] to clarify that it was he, and not the deer, that was tired and hungry, in the process omitting "y" [and].

(3) Discourse-level revisions that involve a potential change of meaning across sentence boundaries or that affect discourse-level coherence in some way:

vengan aqui les volla explicar cuando se echo a correr cuando ya lo
denme
voy a dar deme tortilla.

The singular form "deme" is changed to "denme" (2nd person plural imperative [give me]) to mark the cohesive tie with "vengan" (2nd person plural imperative [come]) and a series of 3rd person plural verb forms in previous text to indicate that the speaker is still addressing a group of ladies, and not just one.

The following examples of substitutions of Spanish loan words and borrowings, could also be categorized as a kind of discourse-level revision. The original versions that included the borrowed Spanish word did not introduce a grammatical error, and their substitution by a Nahuatl word did not affect sentence-level meaning or grammar. As such, we could argue that such cross-linguistic revisions represent an attempt to make the text more "coherent" or more "consistent," from a pragmatic point of view:

coyotli
okalkaya itek trampa guan ok quirtiquen

Revised version: "he was inside a trap and they got him out" (Spanish "trampa" [trap] is changed to Nahuatl "coyotli" [hole]).

uan
guan oktaquien se tekuan guan quistuan pere quienen se tekuien

tatsitsiuan nanatsin

kin noxasquien nochtin y no papan guan ni mamas

Revised version: "and they saw a lion and they said and how can a lion come with two children and they said to call all the fathers and mothers" (Spanish "pero" [but] changed to Nahuatl "uan" [and]; Spanish "papan" [fathers] changed to Nahuatl "tatsitsiuan" [fathers]; Spanish "mamas" [mothers] changed to Nahuatl "nanatsin" [mothers]).

Under category #2, all attempts were coded for the resulting effectiveness of the revision or correction, independently of "text level."

Two types of "effective" attempts:

Correct —> Correct or Correct (+)

An original sequence that contains no errors is revised; the revised version contains no errors, or represents an improvement of some kind over the original.

Error —> Corrected or Improved

An original sequence that contains error(s) is significantly improved in some way, sometimes resulting in a conventional form, or correct grammatical sequence.

Four types of "non-effective" attempts:

No Change

Original sequence is substituted by the exact same sequence of letters or words.

Correct —> Correct (-)

No orthographic or grammatical errors are introduced into the revised version; however, the revised version is now unclear, results in a loss of coherence, etc.

Correct —> Error

An error-free sequence is changed, the revision results in an error.

Error -> Error or Error (-)

An original sequence that contains an error is changed; the resulting sequence is either equally or more difficult to understand, equally ungrammatical or ungrammatical to a greater degree, or results in an orthographic pattern that departs from the conventional form equally or to a greater degree in comparison to the original alphabetic pattern.

Results

1. In regard to the category "text level" of correction/revision (#1), we noted a tendency for 4th and 6th graders to attempt more often, and to be more successful, at the higher levels. For example, while among the 15 second graders only 5 successfully attempted a punctuation/capitalization or discourse correction/revision in Spanish and only 1 in Nahuatl, the number of students who successfully attempted at this level increases in sixth grade to 8 and 5 respectively.
2. Comparing corrections/revisions across the grades (2nd - 6th), while the number of total attempts, per word, does not vary appreciably, older students' attempts are effective at a significantly higher percentage in both languages, advancing, in Spanish from 54.2% in 2nd grade to 82.6% in 6th grade, in Nahuatl, from 32.2% to 70.6%. This finding corresponds to category #2 of the analysis; see Francis (2005) for a full report.
3. Related to this tendency is the number of successful attempts that involve a language switch from Spanish to Nahuatl in the Nahuatl writing task (see examples of the substitution of "Spanish borrowings" above). Only 6th graders were able to (or chose to) make this type of revision. Although few in number (only 11 revisions in all), this result coincides with other indices of metalinguistic awareness that require the respondent to attend to aspects of codeswitching, borrowing, language choice and language identification (e.g. correctly distinguishing between the languages in literacy tasks). See the discussion of the related question of "language-switching" in L2 writing in Wang (2003) and Woodall (2002).
4. Despite the fact that writing skills in school are only practiced in Spanish, performance on the correction/revision task in Nahuatl also shows a statistically significant advance across the grades, indicating that the relevant literacy skills involved are accessible in performance through the medium of either language. As expected, the overall rate of effectivity is higher for Spanish, but clearly the upward tendencies are parallel. That is, advances in this specific literacy skill across the grades were statistically significant in both languages, a result that might help us better understand what is referred to in the literature as L1-L2 "transfer." See Francis (2004) for discussion.
5. Overall, the high level of task acceptance on the part of all participants and the

seemingly consistent response rates suggest that the procedures described above can be useful in future investigations of cross-language and bilingual literacy, research that could go beyond the descriptive and exploratory design of the present study. The proposed categories described above appear to provide for reliable results, and could serve as a viable alternative method for studying L2 learners' writing development in a series of more controlled experiments.

Possible directions for cross-language research

An interesting possibility for future research on monitoring and self-correction could utilize our two categories of "text-level" and "degree of effectivity" to explore the strategies learners deploy in contrasting writing systems. The comparison between Spanish and Nahuatl involved two shallow orthographies. Due to the historical origins of the indigenous language alphabetic script, patterned, as it was, closely on Spanish phoneme-grapheme correspondences, the two systems, in fact, are shallow to the same degree and are highly congruent.

On the other hand, cross-language and cross-writing system comparisons involving sharply contrasting systems should allow us to examine the development of specific literacy skills, such as self-correction, from a broader, more general, perspective. Which aspects are more language/writing system specific? Do morphosyllabic and alphabetic systems each impose highly contrasting error patterns and self-correction strategies in all domains of written expression, or are there common underlying knowledge structures and processing mechanisms that might be revealed below the surface, so to speak, in controlled comparative assessments?

For example, Hu & Catts (1998) make the observation from their review of the research that deficits in phonological processing might affect learning to read in Chinese. To make effective use of word constituents in decoding unfamiliar words in context, the reader needs to maintain a phonological representation in working memory until a word boundary is identified. Since Chinese does not specify word boundaries in print, it might be difficult for the beginning reader to determine whether a character stands for a word or a bound morpheme. Unskilled readers have been shown to have difficulty in segmentation. Which juxtaposed characters form words

and which do not?

Beginning writers in alphabetic scripts usually pass through a stage in which they also segment words inappropriately (by syllable, by separating out bound morphemes, combining words that conventionally do not form compounds, etc.). So, an interesting comparison might be between morphosyllabic Chinese and alphabetic Spanish or English in how children develop orthographic knowledge of segmentation. Which constituents (e.g. within and across alphabetic words and within and across characters) do children perceive as "bound" and which are perceived to be separable or "free"? In a self-correction task, which errors do children notice, and successfully correct, at different stages of development? Hypothetically, we might see writing system-specific and language-specific differences in this domain of orthographic development because of the difference in the way that English and Chinese mark word boundaries. On the other hand, both kinds of segmentation error (within word/character and across word/character) might be shown to be equally prevalent at the early stages and be corrected by beginning writers on comparable developmental timetables. How might this developing ability correlate with indices of phonological processing and phonological and morphological awareness?

Another potentially fruitful avenue of research could involve comparisons of error patterns between native speakers and L2 learners. Hatta et al. (1997) analyzed Kanji error types in writing samples of LI Japanese students and English-speaking L2 learners. Predictably, the predominate type among L2 learners was the "mis-construction of a Kanji segment," one of the least frequent error types among LI writers. An interesting introductory note by the authors was a reference to the perceived difficulty on the part of Japanese college students, overall, in mastering the Kanji system, an observation that appears to have prompted interest in their project. An analogous L1-L2/cross-writing system issue was alluded to between the use of the Kanji and Kana systems, the latter serving, according to the authors, as a kind of alternative that writers can fall back on to compensate for gaps in Kanji orthographic knowledge.

Second language literacy learning in Chinese was investigated by Wang et al. (2004), who were interested as well in an issue related to our study: the relationship between implicit learning and explicit instruction. To what extent would L2 learners

(literate in an alphabetic script) acquire knowledge of the component structure of Chinese characters implicitly by exposure through reading and typical foreign language instruction? Since research has shown that native speakers of Chinese utilize, analytically, both the semantic radical and the phonetic component of characters in literacy learning (Tzeng 2002), the authors asked whether L2 learners would develop a sensitivity to the internal orthographic structure of characters in a similar way. Results suggested that even in the absence of direct instruction and explicit attention to the structural features of characters on the part of the students' teachers, the L2 learners did in fact acquire at least partial knowledge of the structure of their L2 orthography. In the concluding discussion, a review of similar investigations plus findings from their own follow-up study led the authors to propose further work on the question of whether explicit instruction might facilitate the ability to decompose newly encountered complex characters. This approach, hypothetically, would apply to both L1 and L2 Chinese literacy learning.

Perhaps some of the most far-reaching investigations on cross-language and cross-scriptural literacy come from the study of dysgraphia. The different types of impairment to the underlying knowledge structures and information processing modules reveal how the components of a complex ability, such as writing, interact. Reich et al. (2003) compared the results from their assessment of a patient affected by a writing impairment with confirming findings from Law & Or (2001). In the latter case study, the patient showed more skill in writing, in Chinese, to dictation than written picture naming. This finding was taken as evidence that even with non-alphabetic writing systems there is a direct route between orthography and phonology; that in Chinese reading and writing there is no exclusive access to meaning that circumvents the activation of phonology. Reich and associates studied the impaired writing ability of a patient who consistently activated the orthographic form of higher-frequency homophones even when disambiguating semantic information corresponding to a lower-frequency target word was presented. That is, meaning clues compatible only with the lower-frequency target word did not prompt the patient to supplant the higher-frequency character. According to the authors, direct activation of orthographic representations by phonology in Chinese was confirmed by their findings. How might this type of writing error, related to high and low frequency

homophones compare between morphosyllabic and alphabetic systems, among both impaired and non-impaired writers? What would the frequency of this error type be among child literacy learners in each system? To what extent might it be resistant to corrective feedback and how easily would it be noticed in tasks of self-correction?

Here we have an example of how evidence from a non-alphabetic writing system helps shed light on discussions in the field of literacy learning that have primarily revolved around research findings from alphabetic systems. What role does phonological processing play in reading and other aspects of literacy development, and how might this differ from one system to another? The alphabetic/non-alphabetic writing system contrast is often assumed to correlate with processing differences that must be contrasting in fundamental ways (e.g. in word identification, phonologically mediated versus direct semantic access, respectively). Recent research appears to be taking as a starting point a more unbiased approach: which aspects of literacy development and literacy performance are writing system-specific and which aspects are common to all writing systems? From this point of view, the "direct access to meaning/phonology by-pass" hypothesis for Chinese seems to be premature, at best. If it turns out to be incorrect for literacy in Chinese, that might settle the question for literacy in all alphabetic orthographies, "shallow" and "deep," and for writing systems universally.

Cross-language comparisons of the descriptive and naturalistic kind (as in the present study) help us get a better idea about what children attend to most readily and most frequently in situations of spontaneous self-correction. Also, how these categories shift with grade level and overall proficiency can also be gauged across different writing systems, cross-linguistically, and in L1 and L2. Knowing which error patterns are more "resistant" to noticing and self-correction and which tend to be more transparent should be useful for teachers, for example. More controlled studies could go on to evaluate responses to specific task conditions and instructions focused on categories of error that may be important to understand, for instance, error patterns purportedly related to L1-L2 transfer. The bigger questions regarding the precise relationship between the different aspects of metalinguistic awareness and literacy learning will also require more exacting experimental methods. And the comparative study of error patterns, and which errors beginning writers notice, should help us get a

better understanding of which aspects of literacy development are language and writing system-specific and which aspects are universal. In all this we should keep in mind that regardless of one's point of view on the efficacy of corrective feedback and negative evidence in second language learning and on the role of metalinguistic awareness, the development of skill in self-correction and revision in writing is an important literacy learning objective by itself.

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