

FORM-FUNCTION MAPPING IN THE ACQUISITION OF IF-CONDITIONALS: A CORPUS-BASED STUDY

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ABSTRACT

The determinate features of tense, mood and modality, which are interwoven in the conditional construction form a well-known problem for L2 learners; however, the factors impede acquisition have never been satisfactorily treated. This paper attempts to explore the L2 acquisition of if-conditionals, by employing error analysis based on a form-function mapping framework. Disengaging the expression of conditionality into two dimensions: temporality and hypotheticality, we identified the features of the forms and functions of different conditional types, and created a new scheme to account for their mapping, on which the acquisition stages were inferred. It was argued that the heavy load of content is less amenable to adequate production than the complexity of lexical shape. The data was obtained from CLEC (Chinese Learner English Corpus), a big-scale corpus consisting of roughly 1,000,000 words with error tags. The results showed: (1) the acquisition sequence was parallel to our prediction on the form-function mapping underpinnings (2) the misuses could be ascribed to mapping failure. Additionally, this present work serves to provide some explanatory accounts, in the hope of unveiling the mystery of the arduousness of acquiring conditionals, and contribute to the tightening of acquisition theorizing.

1. Introduction

1.1 Motivation

Conditionals have been widely noted as a weighty topic in language acquisition; however, there is a small body of research, which has addressed the question of why the conditionals make L2 learners confused so much. A pronounced paradox is raised when expressing conditionals. The numbers of formal patterns of conditionals are limited but their applications involving interaction with speakers' intention become multitudinous. On one hand, learning conditionals is supposed to be an easy job, but the subtle distinctions with regard to semantics and pragmatics bring in great difficulties, on the other hand. Though there is a call for drawing attention to these complicatedly structured sentences, research into studying conditionals recently has been mainly concentrated on logic semantics or philosophy (Crouch, 1993; among many others) but scarcely conducted in terms of linguistics.

Since expressing conditioning is commonplace in human languages¹, the acquisition of conditionals turns out to be quite interesting. Why are these constructions more difficult

¹ For example: English, Chinese, German, Hua...etc., please refer to Comrie (1986) and Haiman (1978).

than others? What are the reasons that result in the differences? In next section, we will review some related literature and summarize three problems, which arise from the previous studies. These three problems will be resolved in tandem in this present thesis.

1.2 Research questions

This thesis is essentially an attempt to answer one central question and some related sub-questions:

The main question is:

- ◆ How are the if-conditionals acquired?

This question leads to several sub-questions presented as below, which will be addressed using the data from CLEC (Chinese Learner English Corpus).

- ◇ What are the characteristics of the errors?
- ◇ What are the acquisition sequences of English conditionals?
- ◇ What is the primary problem of acquiring English conditionals?

The literature review will unfold over the course of this report by critically examining the research in language acquisition and corpus-based studies.

2. Conditionals

2.1 Background Knowledge

Conditionals are used to express the cause-and-effect or temporal sequences of two events. The typical surface structure of conditionals is a bi-clause consisted of an antecedent clause and a consequent clause, that is, the protasis and apodosis, as they were termed technically. They often undertake the logical meaning -- “if p, then q” and perform various functions such as reasoning, making inferences and imaging correlations...etc. (Traugott et al., 1986).

The expressions of conditionals can be manifested in different ways for different intentions. For this reason, the classification of conditionals can be described in various ways. Below a brief introduction to the formal and semantic classification approaches of conditionals will be shown.

2.2 Classification of Conditional Types

English conditionals have been analyzed by the semantic relationships and syntactic structures into categories, but no consistent pattern was obtained (Hwang, 1979; Fulcher, 1991; Partington, 1998; Schachter's, 1971; Katis's, 1997; Podlesskaya, 1997; Athanasiadou & Dirven, 1997; Celce-Murcia and Larsen-Freeman, 1999)

Owing to the fact that the form and function mapping is not strictly one-to-one, we found there is extended overlapping area in these classification approaches. Moreover, the classifications in these categorization schemes did not explain the subtle distinctions between the tense, mood and their meanings.

Due to these deficiencies, a new account of explaining the phenomena was formulated in this study. Table1 illustrates the relationships of the conditional types and their content, thus forms a thorough description of a new mapping scheme.

Table 1 Mapping of forms and functions

| No. | Term | Form | | | | Semantic Function | |
|-----|---|-------------------------|----------------------|--|----------------------|---|---|
| | | IF-C | TR of If-C | MC | TR of MC | Hypotheticality | Temporality |
| 1 | Type 1 Zero conditional (Parallel conditional) | If + [pre] | Now or always | [pre] | Now or always | Real, possible | time-less: generic |
| | | If+ [pre] If +[past] | Present Past | [present continuous] [past] | Present Past | | |
| 2 | Type 2 conditional (Future predictive) | If + [pre] | Present or future | [present modal] <i>will/must/can/may/should</i> | Present or future | Real, possible condition and probable result | Present or future time-bound: explicit |
| | Subtype of type 2 | If + [pre] | Present or future | [future] <i>be going to</i> | Present or future | | |

| | | | | | | | |
|---|--|-----------------------------|-------------------|--|-------------------|---|-------------------|
| | Subtype of type 2 (Future with weaken result) | If + [pre] | Present or future | [past modal] <i>would/should/could/might</i> | Present or future | weaken result | Present or future |
| 3 | Type 3 conditional (Non-past unreal or Past real) | If + [past] | Now or anytime | [past ,modal] <i>would/should/could/might</i> | Now or anytime | Unreal, hypothetical condition with probable [past ,modal] <i>would/should/could/might</i> | Present |
| | | If + [past] | past | [past ,modal] <i>would/should/could/might</i> | past | result real | past |
| | Non-past hypothetical or counterfactual | If + <i>were/were to</i> | nonpast | [past modal] <i>would/should/could/might</i> | nonpast | unreal (counterfactual, hypothetical) | Present future |

| | | | | | | | |
|----------|---|----------------------|------|--|---------|---|-------|
| 4 | Type4 conditional (Past counterfactual with past result) | If + [past, perfect] | past | [past, modal, perfect] <i>would/should/could/might have + -en</i> | past | Counterfactual, unreal past condition & unreal probable past result | past |
| | Past counterfactual | If + [past] | | [past, modal, perfect] <i>would/should/could/might have + -en</i> | | Unreal (counterfactual) | past |
| | Mixed (Past counterfactual with present result) | If + [past perfect] | past | [past, modal] | present | Unreal past condition with probable result in the present | mixed |

3. Learning Difficulties: Problems of conditionals

3.1 Preliminaries: Tackling the Problems

Covitt's (1976, cited in Norries, 2003) study showed that the serious problems pertaining conditionals included four aspects: oversimplified explanations, form, meaning, and time-tense relationship. The traditional grammar oversimplified conditionals into merely three types, but a survey conducted by Hill (1960, cited in Norris, 2003) revealing that there are nearly 324 distinct tense-modal sequences of conditionals. It shows the considerable varieties of conditional expressions. Nonetheless, focusing on the trivial phenomena will blur our targets, this present study centers on the four basic patterns as in Table1, which catch the majority of conditionals.

On the other hand, based on a markedness framework, Berent (1985) imputed the increases of difficulty to the cognitive and structural complexity of conditionals, including the coordination of the verb forms in each clause, and their instability to retain the normal time reference. He concluded that markedness came from different dimensions: time reference, unreality, uncertainty and the incorporation of "were".

Likewise, Nayef & Hajjaj (1997) summarized three points in teaching conditionals: "forms of the verbs, the time reference of the verbs, and the meaning of the condition in each of the patterns"(p.140). They also suggested that the difficulty of conditionals is due to that "the forms of the two verbs in the two clauses depend on each other"(p.137) ,and both verbs contribute to the semantic meaning of the sentence. On the other hand, Celce-Murcia and Larsen-Freeman (1999) also claimed that "tense-aspect system", the "modal auxiliaries" and "negation" are the prerequisites to acquire conditionals.

In sum, the key point of form lies mainly in the main verbs in the bi-clausal structures of conditionals. In English conditionals, the verb form is changeable by adding one or double [+past] markers, whereby forming the past and past perfect. The problem of meaning, which is close to the term "semantic function" defined in this study, contains two concepts—temporality and hypotheticality. Temporality is in relation to time reference, while hypotheticality is related to the degrees of unreality (i.e. a kind of modality). Covitt (1976) noticed that time-tense relationship may beset learners, because of their deviated mapping, however, we suppose the relationship of mood and modality be of equal importance in expressing conditionality.

Since the difficulty of conditionals lies in the interaction of forms (verb form changes) and meanings (temporality and hypotheticality) as have been discussed, it is necessary to investigate their relations. Schwenter (1998) summarized results of past studies and commented that not only the conditional markers but also verbal

tense and mood alternation all contribute to the interpretations. Those points embraced will be dealt with respectively.

3.2 Temporality and Tense

Here we define “temporality” as an abstract notion as “the indication of time”, which is realized by the concrete term-- time reference. Time reference tells us when in relation to the moment of speaking things happen. However, time reference must be presented via verb tense. Tense is a grammatical category which affects the shape of verbs to signify time.

As the inter-relation of tense and time reference stands as a major barrier for Chinese English learners, this issue is worthy of exploiting first. Bull’s (1960) model revealed that the forms of tense are highly related to the temporal reference either explicitly or implicitly. Although this model accounted for the tense change well, there is something more to add. Norris (2003) revised Bull’s model by incorporating the concepts of hope and wish, which rendered the model more complete. The mapping of tense and time reference is not reconciliatory in Bull’s model. A high priority should be assigned to paying attention to the time course and speaker’s intention. In the sense of Bull, it is notably that tense interact extensively with time reference.

Some researchers have proposed that the inconsistent time-tense relationship be the primary reason for learning difficulty. However, precisely speaking, the inconsistency is resulted from the subjunctive expression of hypotheticality, which will be sketched in the next section.

3.3 Hypotheticality and Mood

If tense is used to refer to when the events occur, why is there an asymmetric time-tense relationship? Since it is a notorious fact that past tense does not behave like past tense in counterfactuals, the tense can’t simply be a primitive element that refers to the past. There must be something more, that is, the concept of “hypotheticality”.

With respect to degrees of hypotheticality, Comrie (1986) took it as a continuum, which implies the speaker’s scalar certainty of the probability in the protasis. It starts from uncertainty, tentativeness, and extends to hypotheticality or even counter-factuality. This concept also suggests that conditionals are the devices which speakers use to express their intention, or more specifically, their subjective-ness. In Comrie’s words, he claimed that “the choice of form often being determined by subjective evaluation rather than by truth-conditional semantics” (p.88). As a result, the form of the verbs (or modals) in the bi-clauses in conditionals displays the speakers’ degrees of doubt about the events, that is, “modality”, in other words (for more details, see section 3.4).

For traditional grammar, the device used to express hypotheticality is the so-called “subjunctive mood”. According to the American Heritage (1996), subjunctive mood “is used chiefly to express the speaker’s attitude about the likelihood or factuality of a given situation”. The present subjunctive is performed by changing the verb into a base form, while for past subjunctive, the verb is replaced by a past form. However, the ways to express the subjunctive in conditionals are quite different. As for the subjunctive mood in conditionals, hypotheticality is transmitted by adding a [+past] marker to the verbs, either with a present or past time reference. This procedure is termed as “back-shifting”, which only takes place in unreal conditionals.

Comrie (1986, p.94) defined “back-shifting of tense” as “the use of a morphologically past tense with present (or future) time reference and of pluperfect with past time reference”. “Back-shifting” is sometimes called “modal distancing”, “expression of unreality”, and “distance from present reality” by other scholars (Salsbury, 2000). Comrie (1986) proposed that only greater hypotheticality involves back-shifting of tense while less hypotheticality does not, so back-shifting is used particularly when denoting unreality (James, 1982). Palmer (1986, p.189, cited in Salsbury, 2000, p.23) indicated that modality is uniquely reflected in conditionals with double marking. So he termed back-shifting with a past time reference as “past-past” with a claim that “There is both past time and unreality, and the past tense, therefore, needs to be marked twice” (1990, p170). It explains why the past perfect tense is used in the past unreal conditionals (Type4).

3.4 Modals and verbs

Modality reflects the opinion and attitude of the speaker (Lyon,1977, p.452),conveying possibility, necessity, desirability or reality...etc. Modals are a set of distinct forms used to signify modality. Although some scholars use these two terms in the same sense, we contrast them by referring modality as meaning expressed, and modals as the grammatical devices expressing it.

As known, the interpretation of a conditional is determined by the forms of the verbs, including modal auxiliary verbs. The form-change with the common verbs is less indirect; however, though the forms of modals are simpler, they also cause problems in conditionals. Since modality is performed by modals, and moreover, modals also make significant contribution to the interpretation of conditionals besides the tense and mood change of verbs, it is necessary to give an introduction of modals here.

In general, modals are deemed as devices used to express non-factivity (Lyon, 1977, cited in Salsbury, 2000, p.18). Quirk et al. (1985) defined some central modals, including *can (could)*, *may (might)*, *shall (should)*, *will (would)* and *must*. Perkins

(1983, cited in Salsbury, 2000, p.22) distinguished those modals into the primary modals and the secondary modals. The primary modals including *can*, *may*, *must*, *will* are less conditional, hypothetical and tentative than the secondary ones, which comprise *could*, *might*, and *would*. Other researchers held different perspectives. Some even made a stronger claim that the distinction between these two groups of modals is purely formal and by no means involved with present or past time (Leech, 1987). Roughly speaking, modals weight more on the central meanings, for example: possibility and responsibility...etc., than the peripheral meanings of tense.

4. Acquisition Theories

4.1 Acquisition of Conditionals

Although *if* is the most explicit conditional marker in English, children do not acquire it with ease. Bloom et al. (1980) and O'Grady (1997) have shown the lateness of the "if" morpheme, but the record of first emergence may not equal to having the full control of the various conditional functions. And also, the occurrence of "if" and other connectives are found in variable order (Bowerman, 1979). More surprisingly, only later than 5 years of age can children understand "if" sentences, according to Amidon (1976). In fact, children cannot acquire the entire adult conditional system until age eight, as reported by Reilly (1982). What mentioned above implies that conditionals are manipulated by an intricate internal mechanism of cognition, and manifested with the complexity of the grammatical structures. The acquisition of one single form, however, does not mean the acquisition of the whole system. Children may acquire the forms without ability to comprehend or apply them as well as adults.

Since we can not explicate the lateness of acquiring conditionals, however, the difficulty order of the types of conditionals may help to tell us something more about second language acquisition, which we will go on to focus on subsequently.

Based on the "Marked-ness Differential Hypothesis" (MDH) proposed by Eckman (1977; 1996), Berent (1985) made experiments on the production and comprehension of conditionals by ESL learners. This hypothesis provided the comparability of two linguistic structures so that different conditional types could be examined, but Berent's results still showed an inconsistent pattern that the difficulty sequence in the production task was opposite to that in the comprehension task. Therefore, he concluded that form and function can be acquired at different times. The advanced learner may not have fully acquired all the functions represented by one particular form.

Since MDH did not offer satisfying accounts, Chou (2000) attempted to improve the flaws in Berent's research and revived the idea of exploring L2 acquisition of conditionals, on the basis of Brown's (1973) "Cumulative Complexity Principle" and O'Grady's (1997) "Developmental Law" (DL). O'Grady (1997, p.349) elaborated Brown's (1973) "Cumulative Complexity Principle" (CCP): "X is cumulatively more complex than Y if X involves everything that Y does plus something else." And then he further addressed a "Developmental Law" (DL) that "if X is cumulatively more complex than Y, X cannot emerge before Y" (p.353). Chou utilized these two concepts to predict the acquisition order according to the syntactic complexity. Additionally, she also studied L1 transfer and systematic variations.

The CCP and DL were more concrete and powerful in accounting for the difficulty levels of the linguistic structures, and seemed to serve well to make predictions about the acquisition order, but Chou's results have falsified her hypothesis. This revealed that there might be something missing. These previous studies merely attached importance to the syntactic forms, which were unable to round out the picture, unless a high priority is assigned to the semantic functions.

Besides assigned grammatical features to each conditional structure, Chou discriminated the conditional types by "time reference" and "truth value", which were renamed "temporality" and "hypotheticality" in this research. However, she did not include these two notions in her research design, nor did she give further explanation on their influence on acquiring conditionals.

To sum up, the traditional appeal based on the frameworks mentioned above needs a new twist. Accordingly, this paper includes the consideration of meanings and emphasizes the form-function association to predict the difficulty sequences of conditionals.

4.2 An Alternative Account: The implication of CPAO

To give an outline of theory background, we will draw on a Compositionist framework, which will be introduced as below:

Gorden (1985) proposed that the difficulty of acquiring conditionals be not from structural or cognitive complexity, but from the transparency of form-function correspondence. His idea shed new insight on incorporating forms and functions at the same time when considering the acquisition difficulty of conditionals. Therefore, a theoretical framework of form-function mapping seems to be more appropriate and adequate to shed light on this situation.

In order to depict the developmental sequence and illustrate the difficulty order, Mellow et al. (2001) addressed the "Compositionist Principle of Acquisition Orders" (CPAO) in a Compositionist and Connectionist view:

Form-function mappings will develop in a specific order according to the properties of which they are composed, including: (i) the aggregate processability of their formal and functional properties; and (ii) the cumulative ordering that results from the developmental interrelations of the forms and functions within each mapping. (p.55)

This principle stresses one crucial phenomenon that a construct with more features of forms and functions occur late due to the complex structural properties and functional loads. Mellow et al. (2001: 56) further attributed the reasons of the formal and functional complexities to “a greater quantity of required morphological or syntactic forms” and “complex semantic content that is a combination of semantic features or polyfunctionality of meaning”. Following these postulations, it is plausible to reason that a linguistic item, which bears more formal or functional features, is supposed to go with more perplexity. Hence, a syntactic and semantic feature analysis of conditionals is indispensable in successfully accounting for the inter-relations.

Table 2 lists the syntactic and semantic features each conditional type is consisted of and their mapping relationships. Those features are represented as the plus or minus of the two markers: [past] and [unreal].

Table 2 Syntactic and semantic features of conditionals

| Type | Mapping | Syntactic features | Semantic features |
|------|-----------------------------|--|--------------------------------|
| 1 | Parallel | -past# ² -past +past#+past | -past,-unreal +past,-unreal |
| 2 | Nonpast-real | -past#(+past)+modal | -past,-unreal |
| 3 | Nonpast-unreal Past-real | +past#+past+modal +past#+past+modal | -past,+unreal +past,-unreal |
| 4 | Past-unreal | +past+past#+past+past+modal | +past,+unreal |

5. Method

5.1 Material

Our material has been taken from the CLEC, Chinese Learner English Corpus (CLEC), which consists of over 1000,000 words, was compiled and computerized by Professors Gui Shichun and Yang Huizhong in Mainland China. 50,000 words were collected from the writings for the test, guided writings and free writings. It is divided into five sections from ST2 to ST6, which represent t proficiency levels from

² The number symbol # separates the if-C and the MC in a conditional structure.

novice to advanced. The sizes of each CLEC component are roughly equal.

5.2 Procedure

5.2.1 Identifying if-conditionals

Wordsmith program (version 3.0) designed by Mike Scott (1998) is adopted. We used the CONCORD tool to extract the data needed. First of all, because this study focuses mainly on “if”-conditionals, the initial step is to screen out the entire “if” sentences. A method for focusing the extraction on just these phrases is, first, to generate concordances for *if* in each sub-corpus, and, second, to have Wordsmith extract the recurring strings from that output and tally the frequency of each throughout the corpus. Then we began to survey the occurrence of if-sentences and some disqualified materials were eliminated from the corpora.

5.2.2 Error identification and coding

The entire CLEC was error-tagged on the basis of an error-coding scheme (see Table 3 below). The error-tagging scheme was devised by Gui et al. (2003) to depict the errors produced by the Chinese English learners. The error codes are consisted of 11 categories, each includes several sub-categories. Because we only concerned with the structure of conditionals, other categories were excluded except Verb Phrase. Among the subcategories of VP errors, only Vp6 (tense), Vp8 (mood) and Vp9 (modal and auxiliary) concern primarily the verb change in the if-C and MC in conditionals³, they are listed in the following Table.

Table 3 Error Tagging Taxonomy (Adapted from Gui et al. 2003, p5-6)

| Type No. | Error code | Category | Description |
|----------|------------|-----------------|--|
| 6 | Vp6 | Tense | Error in tense use within a sentence; the sequence of tenses between sentences |
| 8 | Vp8 | Mood | Error in the use of mood: imperative, subjunctive; improper structure of conditional sentences |
| 9 | Vp9 | Modal/auxiliary | Misuse of modal/auxiliary verbs; wrong form of modal verb (or auxiliary verb) and verb combination (e.g. tense form, voice form, etc.) |

However, those tags were not specifically designed for conditionals; they were less amenable to data capture for the purpose of this thesis. It is essential of note that the original tagging codes designed by Gui et al. (2003) are not suitable for our research.

³ Vp7 was excluded because it describes voice errors, that is, error in the use of voice: active for passive or vice versa.

To make the definitions clear and precise, we have defined tense errors as the misuses of wrong verb (or modal) forms to indicate a particular time frame, while mood errors as the misuses of wrong verb (or modal) forms to denote the degrees of unreality. However, the distinction is not a clear-cut area. Although Gui *et al.* distinguished tense and mood errors, but in fact, some errors are unable to be categorized easily in the conditionals due to their ambiguity. Therefore, when analyzing the data, we decided to combine the VP6 and VP8 errors together to represent the deviated uses of verb and modal forms, instead of dividing the two types of errors by inferring the author's intention.

Following Moffie's (2000) suggestion to focus on verb forms, we will investigate the deviations in both the if-Cs and the MCs. Accordingly, the errors have to be searched and listed by its error code. By doing so, it is possible to count the frequency of each error type. After all the target if-sentences and the errors were found out, the next step was to determine the conditional type of each sentence. Since the conditional type has not been identified yet in CLEC, we needed to annotate this particular information according to the classification in Table 2.

The tagging system partially developed for this study is best explained with reference to an example, in which the coding was enclosed within square brackets: [vp6, 1-2, t3]. The symbols "Vpx" stands for error type, the numbers represent word sequences, and "tx" means conditional type.

6. Analysis of the Data

6.1 Error Analysis of the conditionals

In lieu of dwelling upon the subtle distinctions of each error, we merely classified the errors roughly in groups (see the first column of Table4). The error rate of each error subcategory is shown in the four conditional types.

Table 4 Error analysis of if-conditionals⁴ in terms of error rate

| conditional types errors | Type1 <i>n=220</i> | Type2 <i>n=1410</i> | Type3 <i>n=460</i> | Type4 <i>n=50</i> |
|-----------------------------------|-----------------------|------------------------|-----------------------|----------------------|
| (a) present...past | *0% | - | 4.8% | *10% |
| (b) present...past perfect | - | - | - | *10% |
| (c) past...present | *1.8% | 5.2% | - | - |
| (d) past...past perfect | - | - | - | 30% |
| (e) past perfect...past | *0% | - | *0.4% | *0% |
| (f) were-structure | - | - | 3% | - |
| (g) others | *1.8% | 1% | 1.3% | *0% |
| Total | 3.6% | 6.2% | 9.5% | 50% |

The errors collected were consisted of the main verb errors and modal errors, which delimited in “form-change errors” in respect to conditionals, either in temporality or hypotheticality. That is to say, they were the misuses of verb or modal form to indicate wrong time or inappropriate degrees of unreality. The error labels in the first column stand for the misuses of verb or modal forms. For instance: “past...present” means that the “present” was replaced with a “past”. In other words, the learner inserted a past form in the position where a present form should be used.

Overall, the error rates are not high in general. Totally, 165 errors were found in the 2140 sentences of the four types of conditionals, the percentage is about 8%. That is to say, although conditional is one of the most difficult structures for L2 learners to acquire, the Chinese learners do not misuse them all the time.

⁴ We have known that the distinction of a mistake and an error needs to be identified. An error is systematic and stable whereas a mistake is accidental. As a result, we decided that the error frequency smaller than or equal to five, which are starred, would not be considered and discussed.

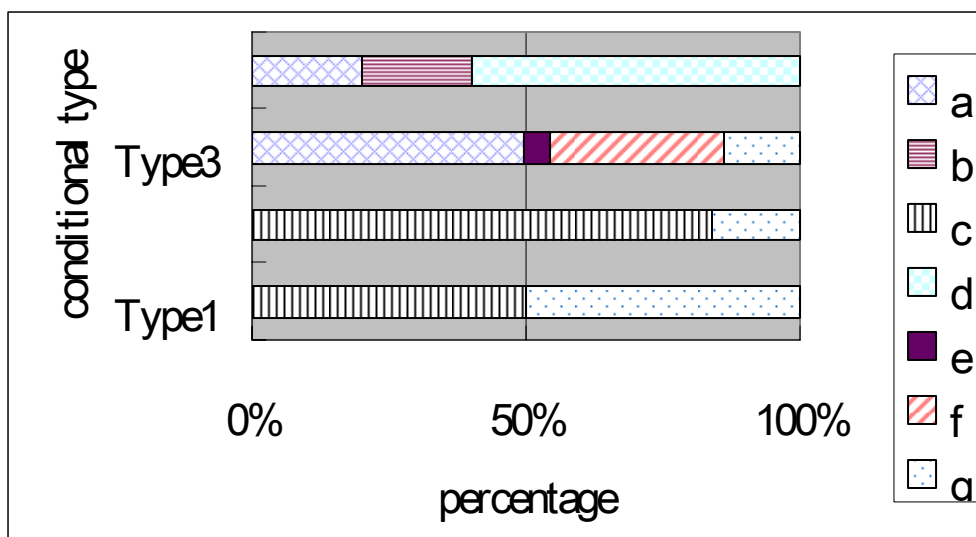


Figure 1 The proportion of errors in different conditional types

Put in terms of error proportion in each conditional type (Figure1), the Chinese learners show a persistent pattern (84%), using a past verbal form in the present real conditionals (Type2). However, in these cases, the time references of the conditionals were not located in past, nor did their truth-value suggest unreal meanings. These (c) errors can be illustrated by the examples [1] below:

[1] Maybe you will say it is possible to finish some tasks in very short time. Of course it is possible, but it always ends in failure if we did [vp6,-s] something too haste [wd2,-].

The conditional in example [1] is apparently a description of a regular event. So the author misapplied a past form, and the verb in the if-C should be changed to a present *do*. Obviously, this was an “error of unreality”, where the past form was used to denote hypotheticality, rather than a “temporality” error, because there was no reason for the writer to shift to past time since the tense sequence was consistent in present tense.

For Type3 conditionals, learners used the present form to replace the past form (50%), either in verbs or modals, in most cases. Examples [2] shows a non-past unreal conditional, in which the verb *use* in the if-C should be replaced by its past form—*used*, or better a verb phrase—*were able to use*, and the modal *will* in the MC should ensue to change to *would*. The writer expressed his admiration to his uncle’s daughter, for her possession of ability to learn English quickly and easily. Evidently, it was no doubt a present unreal conditional, which represented a counterfactual situation.

[2] Xiao qing, Uncle Wang's daughter, was [vp6,0-4] one year old now, [sn9,-] and she began to learn the [np7,2-1] language. She listened to what people say [vp6, 4-s] and she tries [vp6,7-0] to imitate what she heard. When she want [vp6,2-1] something, she had to ask for it. in [fm3,-] fact, she was using the language. She was talking in [vp2,2-4] it all the time. I thought if I use [vp6,4-1] English like this, I will [vp6,s-s] learn it more quickly [fm1,-] than before and use it widely. ~(ST2)

In this example, the learner used past tense in the sentences preceding the if-conditional, but he used the present form in the conditional. This might suggest that he was able to use past tense, but the emphasis of denotation of “unreality” was easily overlooked when performing a hypothetical or counterfactual conditional for the Chinese learners.

In the next place, learners seemed to be unfamiliar with the “were-structure”, so they often inserted other “be verbs”, such as *is, are...*etc, instead of “were” (see example [3]).

[3] Someone will [vp9,-1] said: “you’re stuput [fm1,-], [sn9, s] if I am [vp8, 1-] you, I will [vp8, 1-] sleep to eleven or twlve [fm1, -]”~(ST2)

For Type4 conditionals, we came up with some interesting results that learners tended to adopt simple past form when indicating past unreality, which was meant to be performed by double [+past] markers (60%). This may reveal that their ability to use “backing-shifting” is weak. For example, the sentence below [4] expresses a past counterfactual condition, thus the verb phrase in the if-C should be revised as “had not spent”.

[4] For example, a famous singer in Taiwan performed military service for three years. During this period, he had not sung for his fans and lost nearly half of his audience. This made him depressed. Maybe he would have been successful if he didn't spend [vp8,s-] three years in the army. ~(ST6)

Likewise, the simple past form in the if-C revealed that the writer has acquired “past tense”, because he described a past event in the whole paragraph. Therefore, we believed the [+past] marker in the if-C was a signal of past tense instead of

unreality. On the other hand, if the verb phrase in the if-C were supposed to denote unreality, then this example should be a present unreal conditional, which apparently did not conform to the logic of tense sequence.

6.2 Developmental sequence of form-function mapping

We will look into the relationships of FFM on conditionals across the acquisition stages and test whether the account of CPAO has explanatory adequacy. Mellow *et al.* (2001) utilized the concepts of MDH (Eckman, 1996) and CCP (Brown, 1973) together to examine the past time form-function mappings, and thus created a new Functional-Cognitive (FC) model, upon which a developmental pattern of second language acquisition was built. CPAO is one of the essential theoretical principles which construct the FC model.

As CLEC contains five sub-corpora of different proficiency levels, it is possible to make a cross-sectional comparison between the variations of conditionals. The percentage of errors of the four target conditional types are calculated and presented in Table 5.

Table 5 Error rate of conditional types in sub-corpora

| | <u>ST2</u> | <u>ST3</u> | <u>ST4</u> | <u>ST5</u> | <u>ST6</u> |
|------------------------|------------|------------|------------|------------|------------|
| 1.(a) present parallel | 1% | 0% | 0% | 0% | 0% |
| (b) past parallel | 12% | 5% | 6% | 5% | 7% |
| 2. Nonpast real | 7% | 6% | 6% | 7% | 5% |
| 3. (a) Nonpast unreal | 10% | 11% | 50%* | 8% | 8% |
| (b) Past real | N.A. | 6% | 3% | 0% | 0% |
| 4. Past unreal | 55%* | 53%* | 51%* | 50%* | 41% |

To determine the development sequence is by no means easy, since the interlanguages are dynamic rather than static systems (Braid, 1999). Several approaches of describing the acquisition stages have been proposed (Cancino *et al.*, 1978; Wode, 1981), but they have flaws in certain ways, so we drew on the more comprehensive one suggested by Meisel *et al.* (1981), who took the developmental rules as an implicational order. In this vein, the acquisition of one rule implies the acquisition of an earlier rule. This method offers a solution to deal with the inconsistency in the interlanguage.

One of the most important tenets it assumes is that a learner may enter a subsequent stage without having mastered all the previous rules in all contexts; therefore, the particular stage of development is determined by the predominant use of a target linguistic item. In our case, it is not the proportion of occurrence but errors calculated. So the relatively smaller number in each column in Table 5

indicates the acquisition of another feature or rule. After analyzing the mapping relationships as shown in Table2, we discern that acquisition of conditionals demands two rules, which were identified as:

Rule1: mapping of temporality

Rule2: mapping of hypotheticality

Seen in the light of Meisel *et al.* (1981), the development stages are determined by the order of rules, in which the acquisition of one rule implies the acquisition of an earlier rule (cited in Braidì, 1999, p.23). So the acquisition procedure starts with zero acquisition and develops into the acquisition of either of the rules, and to the end both the rules are acquired. As a result, three stages can be recognized as below:

I *None of the mapping rules has been acquired.*

Phase(I): ST2: Type1a [-past, -unreal]

Subphase(I): ST2: Type2 [-past, -unreal]

II *The mapping rule of temporality (past) has been acquired.*

Phase(II): ST3 & ST4: Type1b [+past, -unreal]

Subphase(II): ST3 & ST4: Type3b [+past, -unreal]

Acquired: Type1a, Type2

III *The mapping rule of hypotheticality (unreal) and the mapping rule of temporality (past) have been acquired.*

Phase(IIIa): ST5: Type3a [-past, +unreal]

Acquired: Type1a, Type2, Type1b, Type3b

Phase(IIIb): ST6: Type4 [+past, +unreal]

Acquired: Type1a, Type2, Type1b, Type3b, Type3a

After identifying the stages, the question worth pursuing is the detailed mappings in the developmental sequence. The framework of the Functional-Cognitive Model (Mellow et al. 2001) is believed to be advantageous to

account for these phenomena. In the FC model, Mellow *et al.* (2001) distinguished two types of groupings of mappings—phase and subphase. A phase is established when a set of interrelated mappings achieve a high level of accuracy, while a subphase is a set of interrelated mappings which have emerged but have not reached the criterion of being qualified as a phase (p.54). According to Morgan *et al.* (1995) and Saxton (2000)⁵, the acquisition was hypothesized to take place at a threshold level of 70% accuracy. In our case, it means that the error rate which is higher than 30% should be regarded as having not been acquired yet⁶.

In Table5, the conditional type with the lowest error rate in each subcorpus is labeled in a square, which indicates a phase of development is formed. The next lower rate is underlined, indicating the most typical conditional type in the subphase. The conditionals which are not judged as the representation of a phase, except those which do not reach 50% accuracy, are grouped under the category of a subphase. In addition, the shadow-marked portion illustrates the possibility of having been acquired.

These four consecutive stages are described with the features analyzed in Table2. Recall the CPAO, the acquisition difficulties are imputed to formal and functional properties, including complex structure features and functional load. It predicts a sequential order of the four conditional types as illustrated in the four stages identified above.

In the literature, the MDH and CCP have been widely employed to compare the sequence, but two oppositional perspectives have been observed. Some researchers conducted the examination with a syntactic feature analysis (Chou, 2000), whereas others with a semantic feature analysis (Bardovi-Harlig, 1997). In this work, we stand toward the latter, *viz.* to put emphasis on a functional feature analysis. Three reasons are justified: (i) the result examined exclusively on a formal analysis was proved to be infeasible (Chou, 2000) (ii) the qualitative analysis of the errors (Example [1]-[4]) also shows that the learners have acquired the forms (*eg.* simple present, past or pluperfect), but still been unable to control the abstract functions, which result in the mapping failure, and (iii) comparing two pairs, Type1a and Type2, Type1b and Type3b, we found their acquisition sequence was determined by the addition of formal features on the premise that their semantic features are the same. This does not mean that the formal features are not important, because CPAO also considers the value of formal complexity. What we posit is that the functional load should be put prior to formal complexity. In other words, the complexity of forms only operates when the functional features of two linguistic items are

⁵ They are cited in Mellow *et al.* (2001).

⁶ Those items which have not been acquired are starred.

overlapped.

The results appear to be congruent with the explanatory accounts given by CPAO, upon which two points are raised. First, the developmental stages summarized show that the mappings with less features involved are acquired earlier, as expressed in the first part of CPAO that “acquisition orders across mappings occur because the aggregation of specific formal and functional properties makes a mapping more or less difficult” (Mellow *et al.* 2001, p.56). Secondly, the sequence is also evidenced to be “coherent and meaningful”, for the overlap of linguistic relationship between the mappings, which supports the claim of the second part of CPAO: “mappings that are sequentially related to each other within the order are interrelated and dependent upon each other (*ibid.*).

6.3 Problems of conditionals to CELs

Example [1] and [2] show the overuse of past tense in place of present tense by the CLEC learners. They made such errors because they assumed over degrees of hypotheticality led by the “if” subordinator. It is the supposition of a surplus [+unreal] meaning that drives the learners to use the wrong forms. Example [3] to [4] illustrate that the Chinese learners were apt to overlook the “unreality” function, or specifically, forget the back-shifting procedure, in expressing unreal conditionals. This has also given credence to our hypothesis that the complexity of semantic functions takes precedence over that of syntactic forms.

This result is keeping with Chou’s (2000) research, in which she found there was an inclination for many learners using the past form to substitute the past perfect. Chou suggested that this may be attributable to their wishes to simplify difficult grammatical rules. By virtue of the layers of semantic and syntactic features in the past unreal conditionals, this inference seems reasonable.

The qualitative analysis demonstrates that the Chinese learners are not unable to use cumbersome forms but are confused with abstract functions the forms denote, for example: expressing irrealis. The confusion stems from the learners’ lack of ability to discern the associations of mapping.

Taken as a whole, with a more complete theory framework on form-function mapping, our findings were congruent with our assumption. The results suggest that the problem lies not in the surface forms of verbs or modals, nor in their wide range of meanings, but in associating the right form with the right meaning.

7.1 Final Remarks

With those evidences offered from the four research questions, we are able to describe, or profile, the overall errors which reflect learners’ difficulty, in their

acquisition process.

The survey of the large learner corpus-CLEC yielded some important findings. Firstly, the error rate ranks concur with the prediction of the form-function mapping theory. The accumulating evidence favors that the difficulty levels indeed increase with the syntactic and semantic loads of a conditional. Secondly, the mapping theory can account for the difficulty of the conditional types with confound forms and functions, whereas it provides less help in dealing with the conditionals with simple forms and functions. Learners display a tendency to complicate these simple conditionals but, conversely, simplify the complex ones.

The reason why Chinese learners cannot get over the elusiveness of conditionals can be appealed to the sophisticated form-function mappings. The conditional type, which uses more [+past] markers to indicate more degrees of hypotheticality or refer to the more backward time, brings about more perplexities and difficulties.

7.2 Limitations and implications

In this body of research, some inevitable limitations are worth noting. When judging the conditional types, some sentences are very ambiguous, which could result in different interpretation. Therefore, the chief flaw is that inferring from the verbal shapes left open a wealth of interpretations, thus resulting in the exclusion of many unascertainable sentences.

Additionally, we did not further analyze the different performance of if-C and MC, but this may benefit our understanding of each grammatical feature concerning the verb phrases in both clauses in the conditional.

Indubitably, the solution that helps Chinese learners to acquire conditionals lies in recourse to establishing a lucid form-function mapping, with a clear elucidation of tense and mood, temporality and hypotheticality. Therefore, the links of form and functions should be reinforced.

This paper merely discussed the four basic patterns (see Table1); however, the Type5 conditionals consisted of other patterns, are also worthy of attention. To round out the picture, it is necessary to take consideration of all kinds of conditional types. Besides the four basic patterns we studied in this thesis, others are of equal significance. The investigation of the miscellaneous conditionals, which were classified as Type5 ones in this paper, is totally uncharted territory. Nevertheless, the irregularity does not downgrade their importance, but contrarily raises the research value. This area has heretofore remained largely unexplored; however, it can shed light on the difficulty of acquiring conditionals, thus demanding the attention of

researchers.

Though our argument does not hold water, it is a first attempt to explore the elusiveness derived from acquiring conditionals by applying a form-function mapping framework, whereby serving to assist the L2 learners in overcoming their problems. Hopefully, this thesis may provide some help to researchers or even practitioners, who are interested in studying conditionals, to contribute to theoretical growth or pedagogical development.

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