Applications of stalling mechanisms in Chinese-English bilinguals’ L1 and L2 spoken discourse

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Abstract
This article reports an empirical research into the correlation between adult speakers’ communication strategic competence and their language proficiency by comparing Chinese-English bilinguals’ application of stalling devices in their L1 and L2 spoken discourse. Dörnyei and Kormos’ (1998) Problem-solving mechanisms in L2 communication. Studies in Second Language Acquisition, 20, 349–385) taxonomy of communicative strategies is employed as the analytical framework for the present investigation. The qualitative observations reveal that the general categorical variations of stalling strategy in our participants’ L1 and L2 discourse are indistinguishable, manifesting the universality of linguistic communicative strategies. Yet, participants are found to be less proficient at utilizing L2 fillers than the L1 equivalents with respect to variation. Such phenomenon should be greatly attributed to language specificity of the lexicalized stalling devices and the paucity of authentic L2 stimuli the participants received. The quantitative results indicate that the frequency of stalling devices increases along with the decrease of the speakers’ automaticity of language processing. Specifically, the frequency of L2 stalling strategies is about two times higher than that of its L1 equivalents. The quantitative results further reinforce that L2 processing is less automatic than L1 processing. In brief, both the qualitative and quantitative findings evidence a tight correlation between the speakers’ communication strategic competence and their linguistic proficiency. Finally, some insights into the teaching of non-native stalling strategies for language learners are provided.

Keywords
Communication strategic competence, linguistic competence, stalling mechanism, Chinese-English bilinguals, spoken discourse

Introduction
Natural speech production is rather different from reading a text (O’Connell & Kowal, 2008). In spontaneous spoken discourse, people pause, hesitate, and even stutter, since speech formulation is
a creative and incremental process and involves multiple tasks, including conceptualization, articulation, and monitoring (Chafe, 1980; Dörnyei & Scott, 1995; Goldman-Eider, 1968; Levelt, 1983, 1989; O’Connell & Kowal, 2008; Temple, 1992a, 1992b, 2000; Werner, 2006). “Strictly speaking, an absolute continuity of speech is impossible” (O’Connell & Kowal, 2008, p. 30). Hesitation markers are, therefore, distinctive and necessary elements of natural discourse. Clark and Clark once postulated the theory of ideal delivery and argued that “all breaks [in the spoken discourse] will be at grammatical junctures between sentences or major clauses” (1977, p. 262). Yet, the concept of ideal delivery was later challenged by Clark himself (1996) who acknowledged that the once neglected pauses are essential for a successful communication. Taylor (1997) also argued against Clark and Clark’s concept of ideal delivery and asserted that there is no evidence showing speakers are constantly planning for an ideal oral production and avoid linguistic hesitancies in the course of articulation. Moreover, there is no proof supporting that utterances violating the concept of ideal delivery can result in an unsatisfactory communication. Therefore, speech hesitation, which had once been long recognized as discontinuity, disruption, and inefficiency by the mainstream psycholinguistics, is now lending great support to Chafe’s viewpoint that “the fundamental reason for hesitating is that speech production is an act of creation” (1980, p. 170). Hesitation does not hinder the aim of message delivery; instead, it facilitates the formulations of successful communications. To accentuate its function as communication facilitator in spontaneous spoken discourse, hesitation, hereafter, is referred to as a *stalling mechanism* in the present article, following the terminology suggested by Dörnyei and Kormos (1998).

In the literature, it has been widely acknowledged that stalling mechanisms are critical communication strategies because they help maintain the speech floor while speakers are suffering from sudden mental deviations or experiencing high cognitive load in the midst of their articulation (Canale, 1983; Amiridze et al., 2010; Haastrup & Phillipson, 1983; Rost, 1994). People’s ability to appropriately exploit stalling strategies is, therefore, an essential criterion for a successful interlocution. Experts in L2 learning also acknowledged the significance of L2 learners’ ability to utilize stalling devices in their L2 communications. It is suggested that learners’ capability of stalling time for idea gathering should be part of their L2 knowledge (Frommer & Ishikawa, 1980; Gilmore, 2004; Myers-Scotton, 1998; Schmidt, 2004). Even though stalling mechanisms are critical in spontaneous speeches, some earlier studies found that people’s ability to utilize communication strategic devices varies, depending on the language they speak. Namely, one’s communicative performance is associated with one’s linguistic competence (Kowal, O’Connell, & Sabin, 1975; O’Connell & Kowal, 1972; Rieger, 2000, 2003a; Temple, 1992b; Wiese, 1984). Earlier studies of L2 communication reported that while people are speaking a non-native language, they display a lower degree of automaticity in language processing and, therefore, require more floor-holding devices in the course of articulation (de Bot, 1992; Kempen & Hoenkamp, 1987; Levelt, 1989; Rehbein, 1987; Sajavaara, 1987). Moreover, it is found that people with higher language proficiency are more skillful at incorporating lexicalized fillers into their oral productions and more able to maintain their speech floor (Kowal et al., 1975; Rieger, 2003a; Temple, 1992b). Due to bilingual speakers’ asymmetrical L1 and L2 metalinguistic awareness and uneven native and non-native linguistic proficiencies, it is reasonable to expect their applications of communication strategies are unparallel in their L1 and L2 speech productions.

Although bilingual speakers’ capability of stalling time for idea transference is argued as part of their linguistic competence, to the researcher’s best knowledge, very few attempts have been made to offer a comprehensive treatment of the mechanisms that bilingual speakers utilize when they confront with communication difficulties related to processing time pressure (Chen, 1990; Ellis, 1982; Frommer & Ishikawa, 1980; Gilmore, 2004; Kormos, 2006; Myers-Scotton, 1998; Rieger, 2003a; Schmidt, 2004; Taylor, 1983; Temple, 1992b, 2000).1 Due to insufficient investigations in
this area, the present research, therefore, reports the differences between Chinese-speaking English learners’ use of stalling strategies in their native and non-native spontaneous spoken discourse, aiming to inspect if bilingual speakers’ asymmetrical L1 and L2 proficiency casts an impact on their application of communication stalling devices. It is hoped that the results will shed light on the differences between people’s L1 and L2 communication stalling strategic competence and further manifest the appropriateness of the current English curriculums in English as a foreign language (EFL) classrooms. The questions addressed here are: (1) what are the stalling strategies used by Chinese-speaking English learners in their L1 and L2 communications? (2) Are the frequencies and distributions of the native and non-native communicative stalling mechanisms analogous in the spontaneous spoken discourse?

Conceptual framework

Classification of the strategies

The significance of communication strategy has been greatly highlighted since Canale and Swain (1980) included it as a major component of people’s communicative competence. Communication strategy refers to the speakers’ use of “verbal and nonverbal strategies that may be called into action to compensate for breakdowns in communication due to performance variables or to insufficient competence” (Canale & Swain, 1980, p. 30). In the literature, it is generally acknowledged that speakers not only employ communication strategies while speaking their L2, they also need to rely on communicative techniques to smooth their speech flow and achieve a mutual understanding with their interlocutors while speaking their mother tongue (cf. Bongaerts & Poulisse, 1989; Dörnyei, 1995).

Based on the conceptualization of Váradi (1980), Tarone (1977), Færch and Kasper (1983), and Bialystok (1990), Dörnyei (1995) has identified a list of communication strategies that are most common and important in the course of speech production. Dörnyei’s taxonomy is composed of three categories, including (1) avoidance or reduction strategies, (2) achievement or compensatory strategies, and (3) stalling or time-gaining strategies. This study particularly focuses on the third category – stalling strategies, which refer to hesitation devices that speakers use to fill pauses in the mid-utterance to gain time for idea transference.

In 1998, Dörnyei and Kormos further suggested a taxonomic organization for stalling mechanisms. As shown in Table 1, stalling devices surface into two major categories, including pauses and repetitions. The first major category of stalling device is pause, which is further divided into two subcategories, including non-lexicalized and lexicalized pauses. Non-lexicalized pauses involve (1) unfilled pauses (e.g. silence), (2) non-lexicalized filled pauses (e.g. um, uh, and its phonological variants), and (3) sound lengthening, which is to prolong the sound of a word and is an elaborate version of unfilled pauses. Sound lengthening enables speakers to prevent others from interruption more effectively. The other subcategory of pause is lexicalized pauses, which involve words or prefabricated phrases and are used by speakers to postpone later articulation rather than to convey information (Levin & Silverman, 1965). The second major category of stalling mechanisms is repetition, including (1) self-repetition, which refers to retrieving a segment of the speaker’s self-utterance from his short-term memory and repeating it immediately right after it is said and (2) other-repetition, which refers to retrieving a segment of the interlocutor’s utterance from the speaker’s speech comprehension system and repeating it while gathering thoughts for the follow-up production. Repetitions help the speakers create a sense of speech continuity but do not consume much of their conscious encoding capacity.
Significant earlier studies of communicative stalling strategies

In the earlier literature, only a few studies have set out to investigate people’s application of stalling mechanisms in their native and non-native communications. O’Connell and Kowal (1972) have noticed the effect of L1 development on the speakers’ use of unfilled pauses. It is found that both German- and English-speaking adolescents employed more unfilled pauses than their adult counterparts in a reading task, manifesting that one’s linguistic competence is correlated to their communication strategic performances. In their study of communication strategy, Kowal et al. (1975) examined the correlation between German native speakers’ speech proficiency and their oral fluency. Results indicated that the number of unfilled pauses and repetitions decreased along with the increase of people’s native language proficiency. Yet, participants with better native language competence were found to be more skillful at incorporating lexicalized fillers into their communications, which successfully helps the speakers avoid interruptions and create a sense of speech continuity when production difficulties occur. Findings of these researches provided a snapshot on the correlation between speakers’ native language maturity and their use of stalling techniques in their L1 spontaneous communications.

In her study of self-repairs in the speech of L1 and L2 language users, Temple (1992b) noticed that because speakers were more skillful at applying fillers in their L1 discourse, their speech rate was about twice as fast as L2 learners. Therefore, native speakers’ mid-utterance hesitations generally went unnoticed. On the contrary, L2 learners’ hesitation pauses often remained unfilled while suffering from production difficulties, which, consequently, led to speech disfluencies. In her study comparing hesitations of native and non-native speakers, Temple (2000) further evidenced that speech disfluency of L1 speakers was different from that of L2 learners and it is the L1 speakers’ fluent discourse distinguishing them from non-native language users. Rieger (2003a), in her study of communication strategy, scrutinized and compared English-speaking German learners’ speech hesitations. Her results also showed that language users hesitated both in their L1 and L2 speeches. Participants, nevertheless, experienced more hesitations in their L2 productions. A similar result has also been inferred in Wiese’s (1984) study of language productions in native and non-native languages.

In the literature, it is reported that people’s speech fluency is determined by their language-processing ability (Kormos, 2006; Levelt, 1983, 1989; Temple, 2000). Because native speech

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<td>Class and type of stalling mechanism</td>
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<td><strong>Pauses</strong></td>
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<td>Non-lexicalized pauses</td>
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formulation and articulation are automatic, longer syntactic units can be easily generated in spontaneous discourse. L1 utterances, thus, encompass fewer interruptions, such as pauses and silences, which are major characteristics of speech disfluencies (Lennon, 1990, 2000). “[Speech] fluency reflects the speaker’s ability to focus the listener’s attention on his or her message by presenting a finished product, rather than inviting the listener to focus on the working of the production mechanisms” (Lennon, 1990, pp. 391–392). On the contrary, non-native speakers produce their L2 utterances with attentional controls in the phase of grammatical and phonological encoding, manifesting that L2 language-processing mechanism is not automatic. Due to L2 speakers’ lack of automaticity while speaking a foreign language, only short syntactic constituents, which sometimes can be single words, are produced at one time, thereby resulting in hesitancies on the surface representation of speech production. Simply put, due to people’s weaker L2 processing ability, the number of stalling strategies in L2 discourse is often found to be larger than that of L1 discourse.

Although English has long been recognized as the most important foreign language in Chinese-speaking areas, such as Taiwan, there has been relatively little research conducted to compare Chinese-speaking English learners’ employment of native and non-native problem-solving mechanisms related to processing time pressure. Thereby, this study will explicate the correlation between Chinese-speaking English learners’ L1 and L2 linguistic proficiency and their native and non-native communication strategic competence.

Research methods

Participants

Forty-five sequential Chinese-English bilinguals (31 girls and 14 boys) from a university in southern Taiwan volunteered in this research. The participants, aged between 19 and 20, are English-major freshmen. The native and non-native linguistic competences of the subjects are rather comparable, if not identical. The participants have been learning EFL for 11 years on average. None of them, however, has ever lived in any English-speaking country longer than three months and has not received any special training for L1 or L2 stalling device application. Subjects of this study all agreed to have their utterances studied but they were not informed of the purpose of the investigation, thereby ensuring natural speech production. This study, however, made no attempt to manipulate the participants’ gender, socioeconomic status, school achievements, and/or age.

Data collection

To collect data for investigating speakers’ use of stalling strategies in their L1 and L2 spoken discourse, two speaking tasks were designed to elicit the participants’ stalling devices, including a non-interactive story-retelling activity and an interactive question-answering activity. To accurately analyze the function of the obtained communications, the researcher took part in the speaking activities and interacted with each participant in person, since the function(s) of people’s utterance can be best identified by the one who actually engages in the interlocution. Before initiating each speaking activity, the researcher not only clarified the recording processes, but also managed to have some polite small talk with each subject so as to lax their tension and have a closer observation of their casual communication styles. In both speaking tasks, no time limit was set; instead, all subjects were encouraged to speak as much as they could possibly do. The collected digital audio data were later transformed into written texts for analysis.
In the first speaking activity, participants were made to retell a Chinese and an English reading passage, both of which were excerpted from news articles. The Chinese passage reports various complaining styles and the English passage compares different language learning strategies. Firstly, each subject was allowed two minutes to read the Chinese article and then retold the story in English without the written text. Subsequently, each participant was offered another two minutes to read the English passage and reinterpreted it in Chinese, based on their understanding of the given text. For the purpose of preventing participants from verbatim repetition of the written languages, they were instructed to retell the messages in the language different from the one used in the written text. Also, to avoid direct translation, the subjects were prohibited from reading the designated texts while retelling the stories.

Concerning the second speaking task, participants first randomly selected one Chinese and one English question from a pool of 18 questions and were made to answer the self-selected questions in the language used for inquiry. All of the questions provided are highly relevant to the participants’ school learning and living experiences, such as school curriculum and public transportation, to avoid any potential bias incurred by the great varying difficulties of the questions. In each interactive communication, the Chinese question was asked before the English one, which was done to minimize the participants’ anxiety incurred by speaking the foreign language. To collect more data for observation, the researcher generated more relevant questions based on the responses given by the participants whenever possible.

Data elicitation and computation

To compare speakers’ L1 and L2 stalling strategic competence, the stalling mechanisms suggested by Dörnyei and Kormos (1998) are analyzed. The criteria used to elicit non-lexicalized unfilled pauses and lexicalized fillers for quantitative analysis should be particularly noted.

Unfilled pause is one of the non-lexical stalling mechanisms frequently utilized to postpone one’s articulation (Boomer & Dittmann, 1962; Chafe, 1980; Dörnyei, 1995; Dörnyei & Kormos, 1998; Gilmore, 2004; Oviatt, 1997; Rieger, 2003a, 2003b; Rochester, 1973; Yang, 1997). To recognize pause for idea transference, two approaches have been devised in the earlier literature, including instrumental measurement and perceptual recognition method. With instrumental measurement, the exact length of pausing is precisely calculated with computer software. Pauses down to one or two milliseconds can be accurately identified. However, what encumbers instrumental measurement of pauses is that in the literature there is no agreement on the length of breaks for different discourse functions, although the issue of pausing has been debated for decades (Goldman-Eider, 1968; Goldman-Eisler, 1958; Hieke, Kowal, & O’Connell, 1983; Lounsbury, 1954; Siegman, 1979; Yakovleva, 2004). Moreover, pauses cannot be abstracted from the speech context and be examined in isolation without overlooking some significant information (Boomer & Dittmann, 1962). Adopting a fixed threshold level to determine if people’s speech productions are stopped or paused does not truthfully discriminate the discourse functions of pauses assigned by different speakers and discards the idiosyncratic features of each participant’s oral communication. Spontaneity of communication (Szawara & O’Connell, 1977), language proficiency and gender of the speaker (Bortfeld, Leon, Bloom, Schober, & Brennan, 2001; Kowal, O’Connell, O’Brien, & Bryant, 1975), and semantic factors (O’Connell & Kowal, 1972) can cast significant impacts on the duration of pausing in people’s communications. Compared with the precise results obtained from machine discrimination, a listener’s perception of the speech is more critical for analyzing the discourse function of pauses in spontaneous deliveries (Güllich, 1970). Even though it is unlikely to determine the precise physical length for breaks of different purposes (Meise, 1996) and is sometimes difficult to assign each pause a single discourse function (O’Connell & Kowal, 2008),
“the transcriptionists’ close and repeated listening to the interaction enables her/him to perceive the relative differences in the spaces (pauses, gaps, silence) that occur” (Psathas & Anderson, 1990, p. 87). After all, listeners never use any stop-watch timer to decide the discourse function of pauses produced by their collocutors while participating in any interpersonal communications (Griffiths, 1991). On these accounts, the perceptual method is, therefore, employed to identify unfilled pauses in this research to better manifest the spontaneity of spontaneous productions and the idiosyncrasy of our participants’ communicative characteristics. Pauses that fall off the grammatical junctures and prolonged juncture pauses both enter into the typewritten transcripts at the precise point where they occur. Although the perceptual method is used to distinguish unfilled pauses incurred by the speaker’s speech continuation problem, the discourse functions of the collected data are not subjectively discriminated by the researcher alone. To control for bias, the researcher with two research assistants corporately took part in the pause identification task so as to ensure the concordance of the analysis.

Pseudo-pause words or phrases are also employed by the speaker as lexicalized pauses in the spoken discourse to signal that there is still more to be said but more time is needed for idea transference. Lexicalized pauses can be derived from parenthetical expressions, such as English okay, yeah, well, you know, I suppose, actually, it is rather difficult to explain (Dörnyei & Scott, 1995; Garman, 1990; Rieger, 2003a), connective words, such as Chinese ranhou, na, jiu and English and, then, also (Huang, 1993; Li & Thompson, 1981; Rieger, 2003a; Schiffrin, 1992), emphatic copular verbs, such as Chinese jiushishuo/jiushuo (Biq, 2001), demonstratives, such as Chinese na(yi)ge, zhe(yi)ge (Huang, 1999), and interrogative words, such as Chinese sheme (Lee, 2008). Following Huang’s insight (1999), only if the pseudo-pause words or phrases are marked with prosodic lengthening or followed by a noticeable hesitation pause, they are coded as lexicalized fillers. Elsewhere they are regarded as lexical items with content interpretations. It should be especially noted that because lexicalized pauses are grammatically derived from lexical expressions, it is likely that they are characterized with dual functions in the actual spoken discourse.

Regarding data computation, types and tokens of the stalling strategies in the present corpus are both calculated. Concerning compound devices, each component of the joint mechanisms is counted independently. With respect to computation of the repetition token, one repeating chunk contributes one token to the total estimates. For example, if a constituent is uttered three times by the speaker to postpone his later articulation, this repetition contributes two tokens to the data pool. Subsequent to the calculation of the device token, the paired-sample t-test is used to examine the statistical differences between the frequency of the stalling strategies in our speakers’ native and non-native communications. Yet, since the speech size of the participants varies from one to another, in order to reflect the frequencies of the stalling strategies in proportion to the speech size, the occurrence rates of the stalling mechanisms are obtained by calculating the numbers of concerned devices in each 100 English or Chinese words uttered.7

Results

Application of stalling strategies in native and non-native spoken discourse

“Stalling mechanisms are not L2-specific but are also used by L1 speakers for both problematic and unproblematic processing” (Dörnyei & Kormos, 1998, p. 371). In the present corpus, all types of stalling strategies identified by Dörnyei & Kormos (1998) are observed in our participants’ L1 and L2 utterances. The following sections exemplify how the stalling devices are utilized to postpone later articulations in speakers’ native and non-native communications.
References


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**Author biography**

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**Appendix: Abbreviations in the interlinear glosses and transcription conventions**

1.SG: First person singular pronoun
2.SG: Second person singular pronoun
3.SG: Third person singular pronoun
3.PL: Third person plural pronoun
    ASP: Aspectual marker
    CL: Classifier
    COMP: Complementizer
    CON: Connective
    DM: Discourse marker
    EMP: Emphatic particle
    LF: Lexicalized filler
    NEG: Negation marker
    NF: Non-lexicalized filler
    NOM: Nominalizer
    PRT: Sentence-final particle
    <2…2>: Codeswitching from L1 to L2
    =: Sound prolongation
    …: Unfilled pause