THE THEMATIC VERB MOVEMENT IN INITIAL L3 FRENCH ACQUISITION[*]

Stano Kong
Tung Hai University

ABSTRACT

This study examines the acquisition of thematic verbs in relation to adverbs and negation by adult third language French beginners who were advanced L2 English learners of L1 Chinese. Results from a grammaticality judgment test indicate that the L2 Status Factor Hypothesis of Bardel and Falk (2007), which views acquired L2 morphosyntax as the primary factor affecting syntactic development in initial L3 acquisition, provides a partial explanation of the observed behavior in which traces of L1 influence are apparent. We propose that, following Schwartz and Sprouse (1994), previously acquired linguistic knowledge constitutes transfer in early L3 development and that early L3 interlanguage grammars involve the use of alternative resources made available by Universal Grammar (UG) instead.

Key words: L3 initial state, adverb placement, negation, L1, and L2 transfer

Stano Kong

1. INTRODUCTION

It is generally accepted that adult second language (L2) acquisition is different from first language (L1) acquisition in at least two ways. One of the differences is the ultimate attainment between L1 and adult L2 speakers; it is rare that adult L2 learners reach the same proficiency as natives, no matter how much exposure they have had to the L2. A second observed behavior in L2 acquisition is the effect of L1 on the learning of the L2 grammar. Some researchers working within the generative approach of L2 acquisition (see, for example, White 1985; Hawkins and Chan 1997; Kong 2011a) hold the view that some effects of L1 are to be found at least in the initial state of L2 acquisition.

The focus of the current study is on the second observation, where the effects of acquired linguistic knowledge on the subsequent language acquisition are investigated. There has been a lot of research on the thematic-verb raising in L2 acquisition (see White 1990/91, 1991a, 1992a; Hawkins et al. 1993; Eubank and Grace 1996; Eubank et al. 1997; Yuan 2001; Chu and Schwartz 2005, among others). These studies investigate the status of thematic verbs in L2 acquisition by adult learners whose L1 either allows or disallows thematic verbs to raise. As far as we know, no studies have been done to address the status of thematic verbs in adult Chinese speakers' third language (L3) acquisition. The current study is an attempt to bridge the gap. In particular, we explore the nature of thematic verbs and adverb/negation placements in the third language (L3) initial state[1] in French. Since Leung (2001), an increasing number of researchers have argued that adult L3 acquisition

[1] Following White (1985, 2003) and Schwartz and Eubank (1996), we take the standard approach in regarding initial states in L2 and L3 acquisition as the kind of unconscious linguistic knowledge that the L2 and L3 learners start out with, i.e. L1 or L2 parameter settings. While it is clear that UG constitutes the initial state in L1 acquisition (Chomsky 1981b), it is not entirely clear what happens subsequently. Whether UG forms a steady-state grammar or becomes distinct from specific instantiations in subsequent language acquisition is still a matter of controversy; what most generative acquisition researchers agree on is that at least part of the previously acquired grammars determines how the learners initially approach the L2 and L3 data.

should not be viewed as another case of adult L2 acquisition (e.g., Bardel and Falk 2007; Jaensch 2008; Rothman and Cabrelli 2010). According to these researchers, L3 acquisition differs from L2 acquisition in the sense that the basis of transfer in L2 acquisition is solely the L1 system, whereas two acquired linguistic systems (L1 and L2) are in theory transferable in L3 acquisition. It is only by studying L3 acquisition in its own right that one can decide what constitutes (L1 or L2) transfer in L3 acquisition. An empirical study investigating transfer in multilingual acquisition is the research by Bardel and Falk (2007). Bardel and Falk (see a review of the study in Section 3.1 below) claim that not only is the acquired L2 morphosyntactic knowledge privileged in the L3 initial state, but it also blocks access to the L1 syntactic system. In other words, Bardel and Falk maintain that although both acquired L1 and L2 linguistic systems are transferable in the L3 initial state, L2 transfer is a stronger factor in adult multilingual acquisition. However, it will be argued that results from the current study cast doubt on the position held by Bardel and Falk.

The discussion in this paper will proceed as follows. First, the syntactic differences between English, French, and Chinese in relation to thematic verbs and adverb/negation placements are described in Section 2. Then, two proposals in adult L2 and L3 acquisition are outlined in Section 3. The two proposals are concerned with establishing the extent to which previously acquired syntactic knowledge might be involved in the establishment of mental grammars for third language acquisition in the initial state. Next, the design, methodology, and results of the study are presented in Sections 4 and 5, respectively. Finally, implications of the results of the study are discussed in Section 6.

2. THEMATIC VERBS IN ENGLISH, FRENCH, AND CHINESE

2.1 Adverbs and Negation in Finite Clauses in English and French

Pollock (1989, 1997) compares various syntactic properties (*sentence negation, inverted questions, adverb placement, floating quantifiers and quantification at a distance*) between French and Modern English and

suggests that the [+/-strong] feature of AGR(eement) determines whether or not overt verb movement is allowed. For our purposes, we focus on *sentence negation* and *adverb (e.g., manner and frequency) placement* only.

Following Pollock (1989, 1997), we assume English and French differ regarding negation and adverbs in relation to thematic verbs as illustrated in the following examples:

(1a) *Rachel listens not to Laurene.
(1b) Rachel n'ecoute pas Laurene.
   Rachel neg listen not Laurene
   Rachel doesn't listen to Laurene.

(2a) *Rachel reads often novels.
(2b) Rachel lit souvent des romans.
   Rachel read often the novels
   Rachel often reads novels.

Pollock (1989) proposes to split IP into two separate projections: an Agreement category which projects to AgrP and a Tense category which projects to TP. In English the inflection in Agr is weak and this prevents thematic verbs from moving to Neg or to T to pick up the inflections, hence the ungrammaticality of 1a and 2a. In French, thematic verbs move to Agr to Neg to T (or to the left of the negation and the adverb as in 1b and 2b) to pick up the inflections because inflections are strong and their features must be checked and erased[2]. In other words, thematic verb movement is excluded in English but not in French because the verbal paradigm is morphologically poor and lacking features of person and number in the former but not in the latter.

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[2] French has two negative particles, *ne* which precedes all verbs, and *pas*, which is crossed by the finite verb. In communication with two French language teachers who were native speakers of French, they indicated that *ne* is typical of formal registers, and that although it is omitted in native French speakers' colloquial speech, it is typical for learners to pick up this particle, as it is present in teaching materials, and French teachers tend not to omit *ne*.

It should be noted that although thematic verbs remain *in situ* in English, an adverb can appear initially and finally in a sentence in English as well as in French, as in 3.

(3a) Slowly, he approaches the house.
(3b) He approaches the house slowly.
(3c) Lentement, il approche la maison.
(3d) Il approche la maison lentement.

Although the possibility of positioning adverbs in sentence initial or sentence final position is independent of the [+/- strong] Agreement parameter, at issue is whether input and language transfer can trigger the appropriate value of the parameter.

2.2 Adverbs and Negation in Finite Clauses in Chinese

Thematic verbs in Chinese are adjacent to their direct objects and adverbs precede thematic verbs like those in English. Adverbs intervening between thematic verbs and their direct objects are deemed ungrammatical in both English and Chinese, as in 4.

(4a) *He drank quickly the coke.
(4b) *Ta he henkuai de kele.
      *He drinks quickly the coke.

The fact that thematic verbs cannot cross adverbials in Chinese suggests that thematic verbs do not raise in Chinese, possibly due to the [-strong] feature of Agr as in Pollock (1989). In other words, a common ground shared by English and Chinese in relation to thematic verbs and adverbs is that a poor morphological paradigm makes thematic verb raising unnecessary, contrary to French. In the case of adverbial positions, English, French, and Chinese all allow adverbs to occur sentence-initially, but adverbs can occur sentence-finally only in English and French but not in Chinese, as in 3 and 6.

(6a) Henkuai de ta he kele.
　　 Quickly he drink the coke.
(6b) *Ta he kele henkuai de[3].
　　　He drinks the coke quickly.

In line with Pollock (1989), weak Agr in Chinese also prevents thematic verbs from raising to Neg; the negative markers *bu*/*mei* precede rather than follow thematic verbs in Chinese, as in 7.

(7a) Ta bu/mei he kele.
　　 He no drink coke
　　 He doesn't drink coke.
(7b) *Ta he bu/mei kele.
　　　He drink no coke
　　　He doesn't drink coke.

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[3] Adverbs can be placed in the sentence final position in Chinese:

　　 i) Zhangsan pao de hen man.
　　　Zhangsan run Particle very slow
　　　Zhangsan runs slowly.
　　 ii) Zhangsan pao le yi-ge xiaoshi.
　　　 Zhangsan run Asp. one-CL hour
　　　Zhangsan has run for an hour.

　　Man (slowly) and *yi-ge xiaoshi* (an hour) in i) and ii) are in the sentence final position and the two sentences yield a grammatical reading. However, there are reasons to believe that i) and ii) are structurally different from 6b and they should be treated differently. Sentences like i) and ii) are characterized by morphemes *de* and *le* suffixed to the verb or V-de construction (Huang et al 2009). They can be paraphrased as:

　　 iii) Zhangsan pao bu pao-de hen man.
　　　 Zhangsan runs in a very slow manner.
　　 iv) Zhangsan pao bu pao-le yi-ge xiaoshi.
　　　Zhangsan has kept running for an hour.

　　pao-de hen man and *pao-le yi-ge xiaoshi*are are adjuncts modifying the respective clauses like they do in i) and ii). For discussion of V-de construction, see Huang et al. (2009).

To summarize: from the examples illustrated in this section, one parameter distinguishes French from English and Chinese. Agr and T are strong features in French which trigger finite thematic verbs to move out of their initial position for overt feature checking at Phonetic Form, leading to surface SVNegO and SVAO sequences. By contrast, Agr and T features are assumed to be weak in both English and Chinese. As a result, all finite verbs in English and Chinese stay *in situ* within VP, and feature checking is carried out covertly at Logical Form, resulting in thematic verbs following adverbs and negation sequences in both languages. An additional difference among the three languages with respect to the properties of thematic verbs concerns the position of adverbs. Adverbs can occur in sentence-initial position (ASVO) in the three languages and in sentence-final position only in English and French (SVOA) but not in Chinese (*SVOA). If the account is along the right lines, speakers of English and Chinese acquiring French have to reset a parametric difference relating to features of Agr and T. We return to this in Section 6.

3. THEORIES IN L3 ACQUISITION[4]

3.1 The L2 Status Factor Hypothesis

Studies since Williams and Hammarberg (1998) have suggested that not only is L2 acquisition different from native language acquisition, they have also indicated that L2 acquisition is qualitatively different from L3 acquisition (Flynn et al. 2004; Leung 2005, 2006, 2007; Bardel and Falk 2007; Falk and Bardel 2010; Jaensch 2008; Rothman and Cabrelli 2010). In this section we review two theories most relevant to the present empirical study.

Bardel and Falk (2007) set out to investigate the initial state of L3 Swedish and Dutch negation in learners with different L1s and L2s, with an aim to argue against the *Developmentally Moderated Transfer*

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[4] There are many competing acquisition theories. However, as always in acquisition research, a decision has to be made about which theories to test. In this research we pursue the consequences of adopting the two theories in question.

Hypothesis (*DMTH*) of Hakansson et al. (2002) which suggests that L2 lexicon but not syntax continue to influence L3 acquisition. Both Swedish and Dutch are verb-second (V2) languages in which thematic verbs rise to become a complementizer head and negation follows thematic verbs.

Nine university students took part in the experiment and were divided into two groups. The first group consisted of five L3 Swedish (verb second or V2) beginners: three with Dutch (V2) as their L1 and advanced English (non V2) as their L2, one with English (non V2) as her L1 and advanced German/Dutch (V2) as her L2, and one with Hungarian (non V2) as her L1 and advanced Dutch (V2) as her L2. The second group included four L3 Dutch (V2) beginners: two with Swedish (V2) as their L1 and advanced English (non V2) as their L2, one with Italian (non V2) as his L1 and advanced German (V2) as his L2, and one with Albanian (non V2) as his L1 and advanced German (V2) as his L2.

Bardel and Falk found that the L2 Dutch/German learners of L3 Swedish whose L1 does not allow V2 performed significantly better than the L2 English learners of L3 Swedish/Dutch whose L1 allows V2 in producing the target postverbal negation form. This suggests, according to Bardel and Falk, that at the L3 initial state, particularly noticeable is L2 morphosyntactic transfer into the L3 because of the *L2 Status Factor*, a term borrowed from Williams and Hammarberg (1998) and Hammarberg (2001). Essentially, the *L2 Status Factor* favors L2 transfer over L1 transfer in L3 acquisition for the reason that acquired L2 morphosyntax blocks access to the L1. While an interesting explanation to the L3 learner behavior in their study, this account does not, unfortunately, explain why transfer comes from L2 and not L1 given the fact that two acquired morphosyntactic systems are at play. Several studies (Flynn et al. 2004; Leung 2005, 2007; Jaensch 2008; Rothman and Cabrelli 2010) on the L3 initial state have found that both L1 and L2 grammatical properties are transferred.

3.2 The Full Transfer/Full Access (FTFA) Account[5]

The *Full Transfer/Full Access* (*FTFA*) account of second language development (Schwartz and Sprouse 1994, 1996; Epstein et al. 1996; Grondin and White 1996; Slabakova 2000) predicts transfer of syntactic properties from the L1 in the L2 initial state. *FTFA* researchers hold the view that from their first encounter with an L2, second language learners already have full access to all the lexical and functional categories relevant to the construction of a mental grammar for the L2. The transfer of syntactic properties from the L1 occurs when L2 learners have insufficient time to experience enough samples of L2 data to establish the relevant categories. The account also allows L2 learners to draw on all the options made available by Universal Grammar (UG) for the restructuring of L2 syntactic representations. That is to say, in the absence of relevant experience of the L2, learners rely on the syntax of the L1 or the language faculty of UG to construct sentences.

An empirical study in support of the *FTFA* account is Yuan (1998). Yuan tested 57 native speakers of English and 24 native speakers of Japanese on the use of domain (long-distance versus local antecedents) and orientation (subject versus object antecedents) of the long-distance *ziji* in L2 Chinese. The English speakers were divided into intermediate and advanced L2 Chinese groups, whereas the Japanese speakers were categorized as the intermediate group based on a Chinese proficiency test. Yuan, following Huang and Tang (1991), noted that antecedents can only be locally bound in English, whereas in Chinese and Japanese they can be locally and long-distantly bound. Results from the study seem to point to L1 influence on the development of *ziji* in L2 Chinese. The Japanese speakers investigated all appeared to have no problem

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[5] The *FTFA* was originally proposed to account for some observed behavior in adult second language acquisition. One anonymous *TJL* reviewer therefore questions the relevance of adopting the theory in the current study, which deals with L3 acquisition. There are two reasons why the *FTFA* was included in the study. First, the theory maintains that adult non-primary language learners have full access to a UG inventory as well as the ability to reset L1 parameters. A logical extension of the theory, and hence for theoretical simplicity, is that two previously acquired grammar systems should be available for transfer in the L3 initial state. Secondly, the *FTFA* has been adopted in other generative L3 studies (e.g., Leung 2005, 2006; Cabrelli et al. 2009).

accepting local and long-distance binding of *ziji*. The English speakers of intermediate L2 Chinese, however, accepted local bound antecedents of *ziji* but rejected their long distance counterparts, reflecting properties of these antecedents in their L1. With increasing exposure to Chinese, Yuan found English speakers of advanced L2 Chinese were approximating target-like use of long-distance properties of *ziji*, suggesting subsequent grammar restructuring and supporting the *FTFA* account.

It should be noted that although the original proposal of the *FTFA* account deals with adult L2 syntactic development only, an empirical question that the current study seeks to answer is if the *FTFA* account could be applied to adult L3 acquisition for the reason that L2 and L3 learners are alike in the sense that they both have full access to the language faculty just as the L1 learners do. L1, L2, and L3 learners differ, however, in syntactic development because of their different starting points. According to the *FTFA* account, the open parameter values made available by UG constitute L1 learners' mental grammar. In the case of L2 learners the starting point is their L1 syntax and all options of UG; and in the case of L3 learners their L1 and L2, in addition to UG options, constitute their mental grammar.

The two theories reviewed above make different claims about the L3 initial state and have profound implications when applied to the current study. The *L2 Status Factor Hypothesis* of Bardel and Falk (2007) not only assumes that L2 morphosyntax is available in the L3 initial state, but also proposes that the presence of the L2 morphosyntax blocks access to the L1. In other words, L3 initial state involves transfer from L2 and not L1 in the view of the *L2 Status Factor Hypothesis*. If we follow this line of reasoning, we would expect to see thematic verbs to remain *in-situ* in the L3 French initial state. Thematic-verb raising is impossible because weak Agr and T features in L2 English prevent thematic verbs to raise from inside VP. Furthermore, the effect of adverb final should be obvious as it is a setting allowed in L2 English but not in L1 Chinese. The *FTFA* account of Schwartz and Sprouse (1994), on the other hand, would predict that all lexical and functional categories of L1 and possibly L2 are available and transferred to the L3 initial state. Thematic-verb raising would not occur because their initial L3 French is

defined by their L1 Chinese and L2 English in which thematic-verb raising is not possible. But the account also predicts thematic-verb raising during the course of development given sufficient input or when morphological paradigms of L3 are acquired. The account would also allow adverbs to be optionally placed in sentence initial and final position as an effect of L1 and L2 transfer; adverb initial is possible both in Chinese and in English but adverb final is allowed in the former not in the latter. The question that the current study seeks to answer is the predictability of the two theories. We consider results of the study in relation to the two theories in Section 6[6].

4. THE STUDY

4.1 Participants

Sixty university students took part in the study. All subjects were over 21 years of age and were all native speakers of Chinese residing in Taiwan. They were classified as ranging in proficiency from lower-intermediate to advanced L2 English based on the Oxford Placement Test (Allan 1992). The lower-intermediate L2 English group (G1) consisted of 28 native speakers of Chinese majoring in engineering at a university in Taiwan. Thirty-two subjects representing the advanced L2 English group (G2) were also native speakers of Chinese but majoring in

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[6] One may question if the language combination is ideal for the scope of this paper. In other words, Chinese (the L1) is not a verb raising language and neither is English (the L2). On the other hand, French (the L3) is a verb raising language with strong features instead of weak. This makes the choice of languages unsuitable as a means to test the two chosen theories with respect to the parameter values adopted in L3. Both L1 and L2 lack verb raising, so if failure to raise is found to occur in L3, it is impossible to tell which language was the source of the problem. However, there is good reason to believe the language combination is suitable to test the two competing theories. Simply put, the two opposing theories make different predictions with respect to transfer: the *L2 Status Factor Hypothesis* permits the acquired L2 English morphosynatx to be transferred into the L3 French and blocks any effect of L1 Chinese. The *FTFA* account, on the other hand, allows the initial transfer of weak feature values of both Chinese and English, followed by resetting to strong values given sufficient exposure to the L3.

English Literature at the same university. At the time of testing, G2 participants were in their second year of L3 French learning; the time they spent on learning L3 French was 2 hours per week and it was predominantly classroom based. A proficiency test on French (*Diplome d'etudes en langue francaise/ DELF* or *Diploma in French Studies*) shows that the average score was 38 out of 100 for the group. The *DELF* is a standardized test described by the Common European Framework of Reference for Languages (Council of Europe 2011) and is widely used by French teaching institutes around the world. G2 participants were therefore considered L3 French beginners. Eight native speakers of English and six native speakers of French were invited as controls in the experiment. Table 1 below summarizes the participants' information.

Table 1. Language background of participants

Group	G1	G2	E1	F1
Proficiency level	Chinese: Native English: Lower-intermediate French: Nil	Chinese: Native English: Advanced French: Elementary	English: Native	French: Native
Number of participants	28	32	8	6

4.2 The Test

The experiment took the form of a grammaticality judgment test (GJT) in which participants were given 70 sentences in both English and French. One of the reasons for choosing controlled grammaticality judgment tests over spontaneous or natural production tasks was that in natural production the learners might not produce the structures in question as frequently as expected. For a full discussion and review of the design features of grammaticality judgment tests and spontaneous tests, see Kamimoto et al. (1992) and White et al. (1997).

Of the 70 sentences in the GJT, 40 are related to adverbs and negation in finite clauses in English and French respectively and are of interest in this study. The other 30 are grammatical and ungrammatical

sentences of various structures. The 40 test sentences of each language can be divided into four groups:

i) the ungrammatical use of manner and frequency adverbs between thematic verbs and objects (*SVAdvO), as in 8a and 8b:

(8a) *Jean read quickly the novel. (5 tokens)
(8b) * John opened today the parcel. (5 tokens)

ii) the grammatical use of manner and frequency adverbs in sentence initial (AdvSVO), final (SVOAdv) and preverbal (SAdvVO) positions, as in 9a, 9b, and 9c:

(9a) Gingerly, the boy entered the kitchen. (5 tokens)
(9b) Peter visited her aunt yesterday. (5 tokens)
(9c) Amy quietly left home. (5 tokens)

iii) the ungrammatical use of a negator in relation to thematic verbs (*SVNegO and *SNegVO), as in 10a and 10b:

(10a) *He ate not breakfast. (5 tokens)
(10b) *Jessica no like the picture. (5 tokens)

iv) the grammatical use of a negator in relation to thematic verbs (SAuxNegVO), as in 11a:

(11a) My sister didn't like her job. (5 tokens)

French sentence types and examples are shown in v) to viii) below.

v) the ungrammatical use of manner and frequency adverbs in preverbal positions (*SAdvVO), as in 12a and 12b:

(12a) *Ils   lentement ouvrent la   porte. (5 tokens)
          they slowly   open   the door

(12b) *Je souvent   vois mon professor. (5 tokens)
        I sometimes see my   teacher

vi) the grammatical use of manner and frequency adverbs in sentence initial
   (AdvSVO), final (SVOAdv) and postverbal (SVAdvO) positions,
   as in 13a, 13b, and 13c:

(13a) Rapidement, Marie termine   ses devoirs. (5 tokens)
       Quickly   Marie finishes   her homework
(13b) Pierre mange sa glace   joyeusement. (5 tokens)
      Pierre eats   his ice-cream happily
 (13c) Je ferme tristement   le   livre. (5 tokens)
       I close   reluctantly the book

vii) the ungrammatical use of a negator in relation to thematic verbs
    (*SVNegO and *SNegVO), as in 14a and 14b:

 (14a) *Il   mange ne pas de   petit dejeuner. (5 tokens)
         He eats   no   the breakfast
 (14b) *Mon oncle ne pas aime cette veste. (5 tokens)
         My   uncle no   like his   jacket

viii) the grammatical use of a negator in relation to thematic verbs
     (SNeVNegO), as in 15a:

 (15a) Je ne veux pas la voir. (5 tokens)
        I no want   her see

   To avoid participants becoming aware of the linguistic knowledge
being tested, the 40 test sentences together with the 30 distracters of each
language were arranged and scrambled in such a way that no two
consecutive sentences tested the same structure.

4.3 Procedure

The test was administrated to the four groups of participants separately. At the beginning of the test, G1 participants read the written instructions in Chinese, whereas instructions were written in both Chinese and English for the G2 participants so that they understood what to do. G1 participants were given the English test only, whereas G2 participants took the English test and the French test. The French test was given to the G2 participants one week after they had taken the English test. Participants were encouraged to ask questions in their native language if they had any problems with the test before the test started. When the test started, they were asked to read each of the 70 sentences and choose one answer among three options, as in 16:

(16) Peter eats slowly a sandwich.
   a. Correct
   b. Incorrect
   c. I don't know[7]

They were also asked to make corrections to those sentences which they judged to be incorrect. In addition, they were instructed not to check the answers or discuss the questions with their classmates during the test.

Corrections made by each participant were scored. One mark was given for the right correction; 0 was given for a wrong or no correction. Group means were then calculated for responses to the sentences. Two professors of English and two professors of French teaching at the same university were invited to grade the test. The four professors were native speakers of the respective languages. Statistical analyses (Independent Sample and Paired Sample T-tests) were performed on judgments and

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[7] Only judgments on 'correct' and 'incorrect' were included for statistical analysis; the choice of 'I don't know' was excluded from the analysis for the reason that one does not know whether or not the learner accepted the sentence in question. However, it is necessary to include the choice of 'I don't know' in a judgment test like this so as to avoid learners from choosing either 'correct' or 'incorrect' if they do not know the answer.

corrections separately. Of the 70 sentences, only the 40 adverb-thematic verb related sentences in which we are interested were analyzed. The test was untimed but most participants finished it within 70 minutes.

5. RESULTS

5.1 Acquisition of Thematic Verbs in Relation to Adverbs and Negators in L2 English

The grammaticality judgment test (GJT) contained 70 sentences of various structures. Forty of those sentences involved grammatical and ungrammatical adverbs and negator placements and are of interest to the study. The experimental participants' overall accuracy in judging the grammaticality and correcting the ungrammatical sentences in L2 English is displayed in Tables 2 and 3. The English and the French controls all scored above 95% accuracy in judging the sentences. Their data are therefore excluded from the analysis.

Table 2. Mean accuracy rates (%) in judging grammatical and ungrammatical use of adverbs and negators in L2 English

	*SVAdvO	AdvSVO	SVOAdv	SAdvVO	*SVNegO	*SNegVO	SAuxNegVO
G1(n=28)	97.9	95.7	24.3	93.6	92.1	18.6	91.4
G2(n=32)	98.4	98.1	91.9	97.5	96.3	92.5	97.5

Table 3. Mean accuracy rates (%) in correcting ungrammatical use of adverbs and negators in L2 English

	*SVAdvO	*SVNegO	*SNegVO	SVOAdv
G1(n=28)	96.5	89.2	21.6	90.2
G2(n=32)	98.8	97.3	95.4	98.5

As far as judgment is concerned (Table 2), the lower-intermediate L2 English learners were significantly less accurate than their advanced counterparts only in the following two sentence types: the grammatical use of manner and frequency adverbs in sentence final position (SVOAdv) and the ungrammatical use of negator preceding thematic

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verbs (*SNegVO). Paired Samples T-test indicated significant differences between groups only in SVOAdv (T = -26.180, p <0.001) and *SNegVO (T = -29.766, p <0.001). Another Paired Samples T-test performed on the correction scores showed significant differences between groups only in the *SNegVO sentence type (T = -28.120, p <0.001). No significant differences between groups in *SVAdvO and *SVNegO were found. In the meantime, the grammatical SVOAdv structure was treated as ungrammatical by G1 learners and was replaced either by an SAdvVO or an AdvSVO structure.

A number of observations emerge from Tables 2 and 3. First, there is a proficiency-related progression; G2 (advanced) learners of L2 English are more willing to accept grammatical and to correct ungrammatical sentences involving adverbs and negators than the lower-intermediate learners (G1). Second, the findings are compatible with the *FTFA* proposal that it is the L1 which gives rise to such differences: manner and frequency adverbs can be placed sentence finally in English but not in Chinese, and this difference is transferred into G1's L2 English. The grammatical SVOAdv structure of English is treated as ungrammatical by G1 learners. On the other hand, the ungrammatical *SNegVO structure of English is judged as grammatical by the same group of learners. As reviewed in Section 2, the SNegVO structure is grammatical in Chinese. Although the L2 English learners start out with a Chinese-based grammar, they improve in accuracy on grammaticality with proficiency. That the advanced learners of L2 English are acquiring the main properties of adverb placement and negator in relation to thematic verbs is confirmed by their performance in correcting the ungrammaticality of sentences involving wrong forms.

5.2 Acquisition of Thematic Verbs in Relation To Adverbs and Negators in Advanced L2 English and Elementary L3 French

Recall that the research question asked in Section 3 to which we would like answers is to test predictions made by the *L2 Status Factor Hypothesis* that successful L2 morphosyntactic acquisition constitutes L3 initial grammar and blocks L1 transfer, and by the *FTFA* account that both L1 and L2 are sources of transfer in L3 initial state and that

sufficient input triggers acquisition. We consider the results of the GJT by the L1 speakers of advanced L2 English acquiring L3 French in the initial state next.

   Paired Samples T-tests conducted on the judgment and correction scores on the English and French GJTs indicated significant differences within the group (judgment: T = 22.924, p <0.001; correction: T = 17.439, p <0.001), as in Tables 4 and 5. G2 learners were significantly less accurate in judging the grammaticality and correcting the ungrammaticality of sentences in L3 French than in L2 English. While the judgment and correction of English sentences were native-like, G2 learners were significantly less accurate in judging the grammaticality of SVAdvO, *SAdvVO, and *SNegVO and in correcting the ungrammaticality of *SAdvVO and *SNegVO in L3 French. That is to say, French has thematic raising but English and Chinese do not, and this difference is transferred into the L3 grammar. The findings that the G2 learners have persistent difficulty recognizing the grammaticality of SVAdvO and the ungrammaticality of *SAdvVO in L3 French seem to be compatible with the assumption that L1 and L2 grammars have been transferred into L3 French. What needs explaining, however, is the *SNegVO structure which is ungrammatical both in English and French but is interpreted as grammatical by the G2 learners.

Table 4. Mean accuracy rates (%) in judging grammatical and ungrammatical use of adverbs and negators in L2 English and L3 French

G2 (L2 English n=32)	*SVAdvO 98.4	AdvSVO 98.1	SVOAdv 91.9	SAdvVO 97.5	*SVNegO 96.3	*SNegVO 92.5	SAuxNegVO 97.5
G2 (L3 French n=32)	SVAdvO 21.3	AdvSVO 89.4	SVOAdv 90.1	*SAdvVO 22.2	*SVNegO 87.5	*SNegVO 22.5	SNeVNegO 78.1

Table 5. Mean accuracy rates (%) in correcting ungrammatical use of adverbs and negators in L2 English and L3 French

G2 (L2 English n=32)	*SVAdvO 98.8	*SVNegO 97.3	*SNegVO 95.4
G2 (L3 French n=32)	*SAdvVO 18.6	*SVNegO 83.2	*SNegVO 19.7

To sum up, the results obtained using the GJT with L1 Chinese learners of L2 English at two different proficiency levels and with L1 Chinese learners of advanced L2 English learning L3 French at the initial state suggest: i) Chinese speakers become progressively more accurate in their intuitions about English adverb placements and negators in relation to thematic verbs as exposure to L2 English increases; the advanced (G2) L2 English learners correctly reset adverbs and negators to the English values; and ii) Successful L2 adverbs and negator acquisition does not necessarily facilitate L3 acquisition. Although G2 learners' mental grammars appear to be constrained by their L2 English because they accept grammatical SVOAdv constructions in L3 French, they at the same time incorrectly reject the grammatical SVAdvO and accept the ungrammatical *SAdvVO, and *SNegVO constructions in L3 French. The SVOAdv constructions are possible both in English and French but not in their native Chinese. It could be argued that the ungrammatical *SAdvVO constructions are incorrectly accepted because they are an effect of L1 and L2 transfer. What is not expected, if we follow the *L2 Status Factor Hypothesis*, is the learners' intuitions about the ungrammatical *SNegVO construction which does not exist in L2 English. The construction, however, is possible in their L1 Chinese. Next we consider how these observations might be explained.

6. DISCUSSION

As reported in the previous section, the mental grammars of the G2 learners develop with increased English proficiency; it seems that they make significant progress in comparison with their lower-intermediate counterparts in acquiring adverbs and negators of English, even where structures such as adverb-finals do not exist in Chinese. The question we are interested in is whether the Chinese speakers of L2 English, after having successfully acquired adverb-placements and negators in relation to thematic verbs in L2 English, can acquire the same properties in L3 French. If they can establish new syntactic knowledge of the L3, it might suggest that acquired L2 morphosyntax facilitates L3 acquisition and at the same time constrains learners from accessing the L1, supporting the *L2 Status Factor Hypothesis* of Bardel and Falk (2007). If, on the other hand, learners have persistent difficulty with adverb placements and negators in the L3, it might suggest that interlanguage grammars developed in multilingual initial states are constrained by previously acquired linguistic knowledge (L1, L2, or Lx). With continued exposure to the target language, learners will move progressively away from the L1 and L2 to the target language, supporting the *FTFA* account of Schwartz and Sprouse (1994). We interpret the results of the study as more compatible with the *FTFA* account than with the *L2 Status Factor Hypothesis*.

First of all, let us consider why the *L2 Status Factor Hypothesis* is inadequate in explaining the observed behavior in the study. The *L2 Status Factor Hypothesis* maintains that the acquired L2 morphosyntactic properties block access to the L1 at the syntactic level and constitute the initial L3 mental grammar. Let us assume that the advanced (G2) L2 learners have acquired the verb inflection and the agreement paradigm of English. Recall in Section 2.1 that although Agr features are weak both in English and Chinese, English has agreement features (e.g. third person singular –s) which are totally absent in Chinese. For example, in 17:

17a. They/We/You/I *like* him.
17b. He/She *likes* him.

17c. Ni/ Wo/Ta/   Nimen/   Women/Tamen *xihuan* ta.
   You/I/ He/She/You (plural)/We/   They like him/her

On the face of it, the fact that the G2 learners correctly accept the grammatical SVOAdv and reject the ungrammatical SVNegO and SNegVO constructions in L2 English provides evidence for the claim that learners establish a target syntactic representation for adverb placement and negator in relation to thematic verbs because morphosyntactic properties of L2 English have been successfully acquired, supporting the *L2 Status Factor Hypothesis*. That is to say, advanced L2 English learners approximate in performance the target language grammar and move away from their L1. However, judging from their performance in thematic verb related properties in L3 French, there are grounds for thinking that the evidence is not as clear-cut as it appears.

As reported in the previous section (Tables 4 and 5), G2 learners' mental representations for adverb placement and negator properties in L2 English appear to be native-like. Ungrammatical structures such as SVAdvO (e.g. I eat slowly the apple.), SVNegO (e.g. I eat no the apple.), and SNegVO (e.g. I no eat the apple.) are correctly rejected. At the same time, the learners (G2) incorrectly accept the ungrammatical SAdvVO (e.g. Ils lentement ouvrent la porte.) and SNegVO (e.g. Mon oncle ne pas aime cette veste.) structures but reject the grammatical SVAdvO (e.g. Ils ouvrent lentement la porte.) structure in their L3 French. This is in contrast to predictions made by the *L2 Status Factor Hypothesis* which proposes that L2 steady state determines and guides L3 initial grammar building. This would be expected if learners disallow constructions like SNegVO both in English and in French. The evidence that learners reject the ungrammatical SVAdvO and SNegVO constructions in L2 English but also reject the grammatical SVAdvO and accept the ungrammatical SNegVO constructions in L3 French suggests that they are doing so not because of acquired L2 morphosyntactic transfer but because of L1 transfer.

As reviewed in Section 3, the *FTFA* account of Schwartz and Sprouse holds the view that all the L1 lexical and functional categories serve as a mental grammar for L2 grammar building when L2 learners

first encounter an L2. It also claims that insufficient time to experience enough samples of L2 data to establish the relevant L2 syntactic categories gives rise to the transfer of syntactic properties from the L1 or triggers all the options made available by UG for L2 grammar building. In other words, adult L2 learners can potentially construct grammars like those of native speakers of the target language given enough time and input of the relevant properties. If we follow the *FTFA* account in assuming that target syntactic representations are achievable but further propose that previously acquired syntactic knowledge constitutes starting points in multilingual acquisition, the observed behavior can have an explanation.

One of the aspects of the proposal, in relation to the data we have presented, is that it offers some account of the advantage that advanced L2 English speakers have over their lower-intermediate counterparts on the acquisition of adverb placement and negator. Because SVAdvO, SVOAdv, and SVNegO are unacceptable in Chinese, whereas SNegVO is, if the lower-intermediate learners of L2 English transfer the syntactic properties in question of their L1, it explains why their performance in Tables 2 and 3 is divergent from that of their advanced counterparts. By contrast, the native-like performance of the advanced L2 English speakers can be interpreted as successful restructuring to an L2 setting based on sufficient exposure and input. The proposal can also account for the non-native performance in the initial state of L3 French acquisition by the advanced L2 English learners. If we assume that previously acquired linguistic knowledge constitutes L3 initial grammar, then the initial state for the L3 French learners of the study is a set of grammatical representations determined both by the L1 Chinese and the L2 English. On the basis of the evidence in which L3 French learners have trouble rejecting the ungrammaticality of SAdvVO and SNegVO, it appears that the *FTFA* account provides a better explanation than the *L2 Status Factor Hypothesis*. The SAdvVO structure is grammatical both in Chinese and English but the SNegVO structure is grammatical only in Chinese and not in English. The problem now is one of explaining, if the *FTFA* account is correct, why L1 appears to have a more determinant effect than L2 in multilingual acquisition given the assumption that all

previously acquired linguistic knowledge is transferable[8]. A possible answer can be given to the question if we follow a proposal called *Typological Primacy Model* made in Rothman (2011), which argues that typological primacy is the strongest factor determining multilingual transfer. According to Rothman (2011), typological primacy is defined as a speaker's perception of typological proximity of the language being acquired in relation to the previously acquired linguistic systems. Previously acquired linguistic systems constitute the initial state in multilingual acquisition. But the one being perceived (L1 or L2) as the most typologically similar to the target language becomes the dominant source of transfer. In other words, in the case of L1 Chinese speakers of advanced L2 English acquiring L3 French, English will be seen as typologically closer to French than Chinese is. What this proposal fails to predict is the observation that the typologically more remote language becomes the main source of transfer. We will not pursue this particular line of enquiry as to why one particular language provides a better source of transfer than the other in multilingual acquisition here but call for further investigation on the acquisition of L3 involving different language speakers.

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[8] An anonymous *TJL* reviewer suggests that an alternative to accounting for why Chinese speakers of advanced L2 English have persistent difficultly rejecting the ungrammaticality of SNegVO in initial L3 French is because L2 English and L3 French have distinct syntax regarding negation. According to the reviewer, English requires *do* support for negation, whereas French negation involves negative concord; the L3 French learners' cannot get help from their L2 proficiency'. The reviewer, therefore, argues against ruling out rejecting the explanatory nature of the *L2 Status Factor Hypothesis*. The possibilities that L2 English is of no help to the L3 French learners and that the prediction of the *L2 Status Factor Hypothesis* still holds seem to be remote. Both English and French disallow the SNegVO structure and yet the advanced L2 English learners disallowed SNegVO structure in their L2 English but accept the same structure in their L3 French. This should not happen because the *L2 Status Factor Hypothesis* maintains that the acquired L2 syntactic knowledge will transfer into L3 and in the meantime blocks access to previously acquired grammar systems (L1 Chinese in this case).

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Stano Kong
Department of Foreign Languages and Literature
Tung Hai University
Taichung, Taiwan 40704, ROC
stanokong@thu.edu.tw

三語法語習得中論指動詞移位的現象

江丕賢

東海大學

本研究檢視論指動詞與副詞和否定詞互動的習得。對象為三語是法語的成人初學者:同時也是二語為進階英語的華人。來自語法判斷測驗的結論指出 Bardel 與 Falk(2007) 的二語階段因素假設(L2 Status Factor Hypothsis)提供了部分解釋,即母語習得的語跡是顯性的。針對影響三語習得初期的句法發展上,此假設二語習得的構詞句法(Morphosyntax)為首要因素。倚 Schwartz 和 Sprouse(1944),我們提出先前已習得的語言知識形成三語早期發展的遷移現象(transfer)以及三語早期的中介語語法中使用不同的資源因 UG 所造成的。

關鍵字:三語初期階段、副詞位置、否定詞、母語與二語的遷移現象