Taiwan Journal of Linguistics
Vol. 19.2, 1-32, 2021
DOI: 10.6519/TJL.202107_19(2).0001

ON THE STRUCTURE AND ACQUISITION OF TELICITY AND UNACCUSATIVITY IN VIETNAMESE*

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ABSTRACT

In this paper, we investigate Chinese L2 learners' knowledge of two grammatical constraints in Vietnamese: the first, a constraint on the aspectual interpretation of accomplishment predicates, the second pertaining to alternations in the position of embedded subjects in mono-clausal *làm* causatives. Whereas the former constraint is shared by Vietnamese and Chinese, the two languages differ with respect to the latter. The results of three judgment tasks provide statistically reliable support for the idea that L2 interlanguage grammars are not ultimately limited by L1 patterns; given the absence of explicit teaching and only limited exposure to relevant structures, it is suggested that learners' performance may be guided by UG information.

Keywords: Aspect, Causatives, Chinese, Unaccusativity, Telicity, Vietnamese

* This research was funded by the Vietnam National Foundation for Science and Technology Development (NAFOSTED) under grant number 602.02-2018.300 [to the first author]. We would like to express our gratitude to the anonymous reviewers for their helpful comments and constructive criticism of the submitted draft. We are also extremely grateful to Nguyễn Văn Hiệp for his generous advice and support, as well as to Wei Ku, Dongyi Lin, Man-ki Theodora Lee, and La Sieu for their expert assistance with the Chinese data. All remaining shortcomings are our own.

1. INTRODUCTION

In this paper, we report on experiments investigating Chinese L2 learners' knowledge of two grammatical constraints in Vietnamese grammar, the first, a constraint on the aspectual interpretation of accomplishment predicates[1], as illustrated in (1); the second, a restriction on the kinds of predicate that can be embedded under the simple mono-clausal causative verb *làm*, and on the position of the embedded subjects in these constructions. Examples of the second restriction are given in (2) and (3) below. Cross-linguistically, the former constraint is shared by Vietnamese and Chinese; the two languages diverge, however, with respect to the latter restriction:

(1) a. Nó đã ăn cái bánh đó nhưng chưa xong.
3S ANT eat CLF cake that but NEG finish
'?? (Lit) He ate that cake, but hadn't finished it.'

b. ??Nó đã ăn hai cái bánh nhưng chưa xong.
3S ANT eat two CLF cake but NEG finish
'?? (Lit) He ate two cakes, but hadn't finished them.'

(2) a. ??Tôi làm thằng bé nhảy.
1S make CLF_M little dance
'I made the boy dance.'

b. Tôi làm thằng bé khóc.
1S make CLF_M little cry
'I made the boy cry.'

c. Tôi làm tờ giấy rách.
1S make CLF paper torn
'I made the paper torn.'

[1] Note that the first part of our study is confined to those predicates whose objects are interpreted as incremental Themes: this includes objects that are brought into existence (e.g., *build a bridge, bake a cake*), and objects that undergo a change of state (e.g., *paint a door, sharpen a knife*). See Dowty (1991).

(3) a. *Tôi làm nhảy thằng bé.
1S make dance CLF_M little
'*(Lit.) I made dance the boy.'
b. ??Tôi làm khóc thằng bé.
1S make cry CLF_M little
'*(Lit.) I made cry the boy.'
c. Tôi làm rách tờ giấy.
1S make torn CLF paper
'*(Lit) I made torn the paper.'

The examples in (1) illustrate two aspectual properties of Vietnamese. The first is that the pre-verbal aspectual morpheme *đã* functions as a marker of anteriority, rather than as a perfective marker. That is to say, *đã* signals only that an event or situation has begun in advance of the reference time[2]; it does not signal completion of the event denoted. As a result – and in contrast to the English translation – there is no incompatibility between the first clause of (1a), and the clause that follows it ('…*but didn't finish*'); see Soh & Kuo (2005), for further discussion. The other notable grammatical effect in (1) lies in the contrast between examples (1a) and (1b), which differ only with respect to the quantificational status of the object NP in the first clause: whereas non-quantified objects, such as the demonstrative NP *cái bánh đó* ('that cake') do not necessarily alter the (atelic) interpretation of the verb-phrase, quantified objects, such as those modified by numeral quantifiers, as in (1b), do trigger a change in interpretation: consequently, the first clause in (1b) must be assigned a telic interpretation, leading to an overall contradiction when followed by an assertion that the eating was not complete.

As for the *làm*-causative examples in (2)–(3) above, these exemplify two other minimal contrasts in Vietnamese grammar. The main point to observe is that the predicate embedded under a *làm* causative may not be

[2] Unless otherwise specified, the reference time (RT) is also the utterance time (UT). Consequently, *đã* is often treated as a past tense marker, even though this is a purely accidental interpretation (in affirmative contexts). [See Phan (2013b), Duffield (2017), Phan & Duffield (2019), for discussion].

strongly unergative:[3] that is to say, it must not assign an external thematic role to its subject argument. Example (2a) illustrates the fact that predicates whose subject argument is interpreted as Agent/Volitional Causer are excluded from simple *làm* causatives (2a); by contrast, predicates with Inadvertent Cause (2b) and Theme (2c) subjects are permitted to follow *làm* in causative constructions. These non-agentive/ volitional subjects are further distinguished by their linear position with respect to the lower predicate:[4] as shown by the distributional contrasts in (3), only predicates associated with Theme arguments permit the inverted word order in which the V_2 precedes DP_2; see also Duffield (2011, 2018).

A significant point to observe here is that the thematic restrictions only apply in 'simple' – that is to say, mono-clausal – causative constructions: bi-clausal causatives introduced by *làm cho*, such as those in (4), permit any kind of embedded predicate. However, as shown by the unacceptability of the examples in (5), the inverted word order V_2 DP_2 is not permitted in *làm cho* constructions.

(4) a. Tôi làm cho thằng bé nhảy.
1S make let CLF_M little dance
'I made the boy dance.'

b. Tôi làm cho thằng bé khóc.
1S make let CLF_M little cry
'I made the boy cry.'

c. Tôi làm cho tờ giấy rách.
1S make let CLF paper torn
'(Lit.) I made the paper torn.'

[3] To be more precise, *làm* causatives prefer weakly unergative V2s (like *khóc* 'cry') over strongly unergatives V2 (like *nhảy* 'dance').

[4] The mono-clausal vs. bi-clausal distinction between *làm* causatives vs. *làm cho* causatives (using the diagnostics of adverbial placement, scope of negation, binding *nhau* ('each other'), a.o.) has been discussed extensively in the literature. Interested readers are referred to Duffield (1999, 2011, 2018) and Kwon (2004).

(5) a. *Tôi làm cho nhảy thằng bé.
1S make let dance CLF_M little
'*(Lit.) I made dance the boy.'
b. *Tôi làm cho khóc thằng bé.
1S make let cry CLF_M little
'*(Lit.) I made cry the boy.'
c. ??Tôi làm cho rách tờ giấy.
1S make let torn CLF paper
'(Lit.) *I made torn the paper.'

These grammatical restrictions have been analyzed in previous theoretical work (Duffield 2011, 2018; Phan 2013a,b). Below, we briefly rehearse the relevant aspects of that discussion, then report the experiments investigating the interlanguage competence of Chinese L2 learners.

2. THEORETICAL BACKGROUND

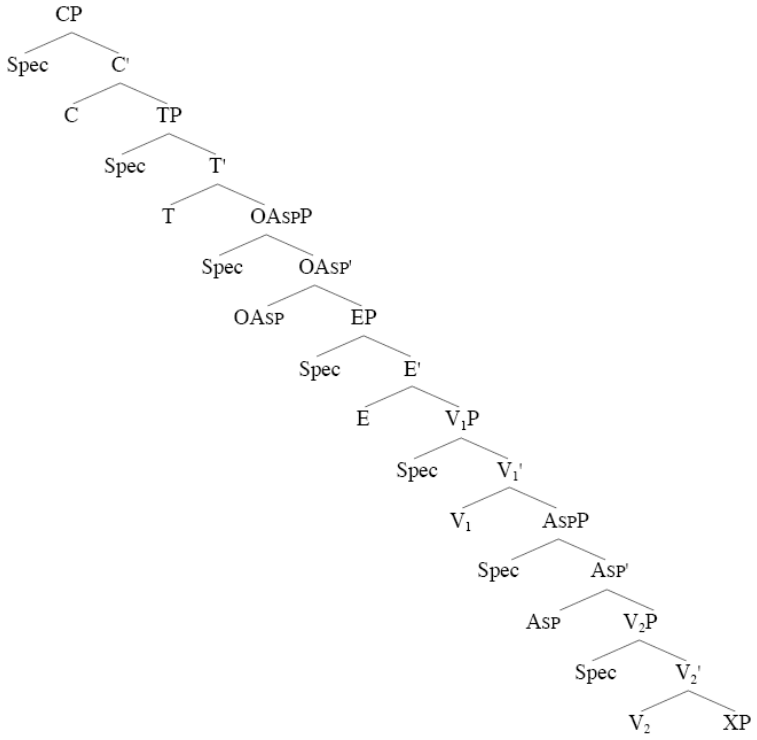
2.1 The Syntactic Representation of Aspect: 'Outer' vs. 'Inner Aspect'

In this paper, we adopt a 'Cartographic' approach to the projection of grammatical features: following work by Rizzi (1997), Cinque (1999), Cinque & Rizzi (2008) inter alia, we assume that Tense, Aspect, Mood (Modality) and Negation are projected as independent 'functional categories' in syntactic representations, according to a relatively uniform cross-linguistic template. Most relevant to the current study is the structural representation of two kinds of Aspect, traditionally termed Grammatical Aspect ('Viewpoint Aspect') and Lexical Aspect (Smith 1997, Klein 1994, Comrie 1976, Verkuyl 1972, Travis 2010, *inter alia*), respectively. As these traditional labels suggest, it was previously assumed that Lexical Aspect referred to some inherent lexical property that was indissociable from the predicate stem. The main justification for this assumption came from languages such as English or French, where this kind of semantic information is not typically morphologically realized separately from the predicate root or stem. Indeed, in such languages,

minimal semantic contrasts between, for example activities and achievements (e.g., *look for* vs. *find*) or between intentional vs. non-directed activities and achievements (e.g., *listen* vs. *hear*) are usually marked syncretically. In other languages however, these aspectual contrasts are marked by more transparent and predictable morphological alternations, either by means of affixes or through independent syntactic elements appearing internal to the verb phrase. This type of cross-linguistic evidence suggests that it makes sense to view 'lexical' aspect also as a syntactically represented functional category, albeit one that is projected internal to the syntactic VP (close to the predicate head), rather than within the higher (I- or C-related) functional domains.

On this approach, Lexical Aspect is viewed as a compositional property, specifically, a compositional property of the verb-phrase, rather than of the clause as a whole: it is expected that other lexical elements contained within the verb-phrase, including the object NP as well as other independently projected post-verbal particles, contribute equally to determining aspectual interpretations. In the work of Lisa Travis, especially Travis (2010), grammatical and lexical aspect are re-cast as Outer and Inner Aspect, respectively: they are structurally represented as in the phrase-marker in (6) below. We adopt Travis' analysis in our study.

(6) The Cartography of Outer and Inner Aspect (following Travis 2010)



Two inter-related properties of Vietnamese make it a particularly interesting proving-ground for these theoretical assumptions.[5] The most significant fact is that Vietnamese possesses an unusually large inventory of morphologically free functional morphemes (as compared to other isolating language varieties); these include the post-verbal particles that are sometimes labeled 'co-verbs' in more traditional descriptions; see, for example, Clark (1978), Nguyễn Đình Hoà (1997).

The other useful property of Vietnamese is its rigid (SIVO) word-order. The fact that grammatical morphemes are free means that the

[5] For more extensive discussion, see Duffield (2017), Phan (2013b).

underlying position of functional elements is not obscured by morphologically driven displacements such as 'tense-lowering' in English, or lexical verb-raising in French and most other Indo-European language varieties; see Emonds (1978), Pollock (1989), Chomsky (1989). In addition, the absence of phrasal movement means that surface word-order in Vietnamese provides a more reliable guide to underlying structural configurations than is the case for languages with freer word order.

2.2 The Syntactic Representation of Cause: Intentional vs. Inadvertent Cause

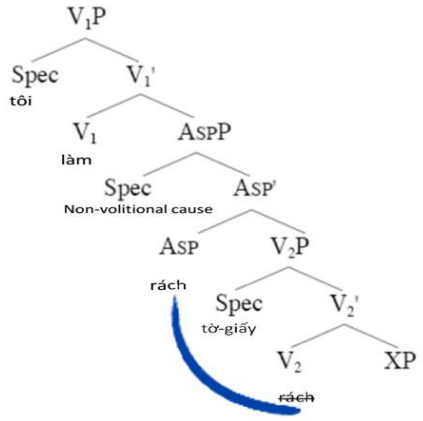
The same theoretical intuition that applies to the analysis of aspect can be applied to the analysis of causation, namely, to reanalyze 'syntactic' vs. 'lexical' causatives in terms of 'Outer' vs. 'Inner Causer', both being syntactically projected independently of the root predicate. In this paper, following Duffield (2011), these two kinds of cause are labeled Volitional Causer and Inadvertent Cause**,** respectively.[6] Regarding Volitional Causer, the general consensus in recent generative literature has been that this is abstractly represented in phrase structure autonomously from the predicate root, either as an atomic predicate ('little v'), or as a feature of the node so labeled:[7] see Hale & Keyser (1993), Baker (1997), also Pustejovsky (1991), Tenny & Pustejovsky (2000). The representational status of the second kind of cause is somewhat more controversial. In this study, however, we will assume, following Travis (2000, 2010), that Inadvertent Cause is a relational property of the Inner Aspect projection in (6); that is to say, that arguments appearing in the Specifier position of this syntactic head are assigned this thematic relation. This assumption, which was originally motivated by causative data from Western Malayo-Polynesian languages, is empirically supported by the Vietnamese contrasts in (2) and (3) above. The full paradigm, detailed in Duffield

[6] For the sake of terminological clarification, in this paper we assume the traditional *cause-become-state* features used to describe the verbal roots (see Ramchand 2008). Furthermore, the traditional *cause* feature is best decomposed into Intentional and Inadvertent Cause, which are equivalent to Agent and Causes in Travis (2002)'s terminology.

[7] Travis (2010) refers to this node as V1: see (6) above.

(2011, 2018), reveals a three-way split in the position of Volitional Causer, Inadvertent Cause, and Theme arguments that is directly predicted by the phrase-structure template in (6).[8] To be specific, the three types of arguments in examples (2)–(3) occupy different positions in the structure: Volitional Causer in (Spec, VP1), Inadvertent Cause in (Spec, AspP), and Theme in (Spec, VP2). By hypothesis, the inverted word order in (3c) is derived through head-movement of the lexical root from V2° to Asp°:

(7) VP-internal Verb-raising in Vietnamese.



Thus, the two constructions investigated here, exemplified in (1)-(3) above, can be understood as surface manifestations of the same underlying phrasal architecture: in both cases, the formal properties of the Inner Aspect projection are key to explaining the observed constraints.[9]

[8] Recent alternative treatments of Inadvertent Cause include Kallulli (2006), Schäfer (2009) and Solstad (2009).

[9] See Phan (2013a, b), Duffield (2011, 2018) for independent lexical and syntactic evidence of the projection of Inner Aspect in Vietnamese.

2.3 Parametric Differences between Vietnamese and Chinese

The empirical focus of the present paper is on Chinese learners' knowledge of the aspectually related properties of Vietnamese. Our interest in this population is motivated by the significant differences between Chinese and Vietnamese with respect to these particular phenomena, as a result of which Chinese learners have to do more than simply learn some new lexical items. In spite of the typological similarities between the two languages, Vietnamese is not a "re-lexified" form of Chinese (or vice versa). Specifically, while the quantificational effect of the DP object in Vietnamese is also shared by Chinese, as illustrated in (8):

(8). a. Ta chi-le na-ge dangao, keshi mei chi-wan.
He eat-LE that-CLF cake, but not eat-finish
'?? (Lit) He ate that cake, but hadn't finished it.'
b. ??Ta chi-le liang-ge dangao,keshi mei chi-wan.
He eat- LE two-CLF cake, but not eat-finish
'?? (Lit) He ate two cakes, but hadn't finished them.'
(Soh & Kuo 2005:204)

Vietnamese departs from Chinese in how the causative constraint is realized.

In analyzing Chinese learners' L1 settings, we adopt a distinction due to Sybesma (1999:177–178), which postulates a contrast within the group of causative constructions between mono-clausal *ba* causatives and bi-clausal *shi* ('make') and *rang* ('let') causatives: this distinction allows us to account for the cross-linguistic variation observed between the two languages.[10]

[10] In other words, we assume Chinese *ba(nong)/rang* to be the direct counterparts of Vietnamese *làm/làm cho* since they exhibit strikingly similar contrasts: being mono-clausal or bi-clausal, and being sensitive to the unaccusative/unergative distinction or not. Other causative forms (e.g., causative VV compounds) are excluded when claims are made about cross-linguistic variation.

With respect to mono-clausal *ba* causatives, the VP embedded under *ba* must be unaccusative (or at least weakly unergative): this is similar to the constraint observed in Vietnamese, where Volitional Causers are excluded in this construction – compare (9a) vs. (9b, 9c) below. Unlike Vietnamese *làm* causatives, however, Chinese *ba* causatives totally prohibit the inverted word order in which the embedded subjects intervene between the causative verbs and the embedded verbs: this is shown by the unacceptability of the examples in (10) below.

(9)	a.	*Wo	ba	nanhai	nong	tiaowu	le.[11]
		1S	BA	boy	do	dance	LE
		'I made the boy dance.'					
	b.	Wo	ba	nanhai	nong	ku	le.
		1S	BA	boy	do	cry	LE
		'I made the boy cry.'					
	c.	Wo	ba	zhi	nong	po	le
		1S	BA	paper	do	break	LE
		'I made the paper torn.'					

(10)	a.	*Wo	ba	nong	nanhai	tiaowu	le.
		1S	BA	do	boy	dance	LE
		'*(Lit) I made dance the boy.'					
	b.	*Wo	ba	nong	nanhai	ku	le.
		1S	BA	do	boy	cry	LE
		'*(Lit) I made cry the boy.'					
	c.	*Wo	ba	nong	zhi	po	le.
		1S	BA	do	paper	break	LE
		'*(Lit) I made torn the paper.'					

An anonymous reviewer draws our attention to an alternative causative construction in Mandarin Chinese, namely *nong*-causatives, in which the embedded verbs may indeed precede the embedded subject, as in (11a). However, unlike Vietnamese *làm* causatives, Chinese *nong*

[11] The Chinese examples in (9)-(12), along with grammatical judgements, were provided by Dongyi Lin and Wei Ku.

causatives exclude the word order in which the embedded verbs follow the embedded subjects, as in (11b):

(11) a. Wo nong po le zhi.
I do break LE paper
'*(Lit) I made torn the paper.'

b. *Wo nong zhi po le.
I do paper break LE
'I made the paper torn.'

Thus, a key point of variation between the two languages is that Vietnamese (but not Chinese) allows word order alternation within one single mono-clausal causative constructions. In particular, the embedded subject *tờ giấy* ('the paper') can either precede or follow V2 in *làm* constructions in Vietnamese, as indicated in (12a-b). On the other hand, the two counterparts of *làm* constructions in Chinese have to stick either to the pre-V2 order (as with *ba* constructions in (12c-d) in which *zhi* ('paper') must precede V2), or to the post-V2 order (as with *nong* constructions in (12e-f), in which *zhi* must follow V2), but not both.[12]

(12) a. Tôi làm rách tờ giấy.
I make torn CLF paper
'*(Lit.) I made torn the paper.'
b. Tôi làm tờ giấy rách.
I make CLF paper torn
'I made the paper torn.'
c. *Wo ba nong po le zhi.
I BA do break LE paper
'*(Lit.) I made torn the paper.

[12] According to our consultants, Cantonese and Yunnan Chinese behave similarly to Mandarin Chinese with respect to this point. Therefore, the word order contrast between Vietnamese and Chinese is still well-preserved, and the motivation for us to choose the Sentence Matching Test in the experiments stays valid.

d. Wo ba zhi nong po le.
I BA paper do break LE
'I made the paper torn.'
e. Wo nong po le zhi.
I do break LE paper
'*(Lit.) I made torn the paper.'
f. *Wo nong zhi po le.
I do paper break LE
'I made the paper torn.'

As for the bi-clausal *rang* causatives, these are neither sensitive to the unaccusative/unergative distinction, nor do they allow inverted word order.

(13) a. Wo rang nanhai tiaowu le.
1S let boy dance LE
'I let the boy dance.'
b. Wo rang nanhai ku le.
1S let boy cry LE
'I let the boy cry.'

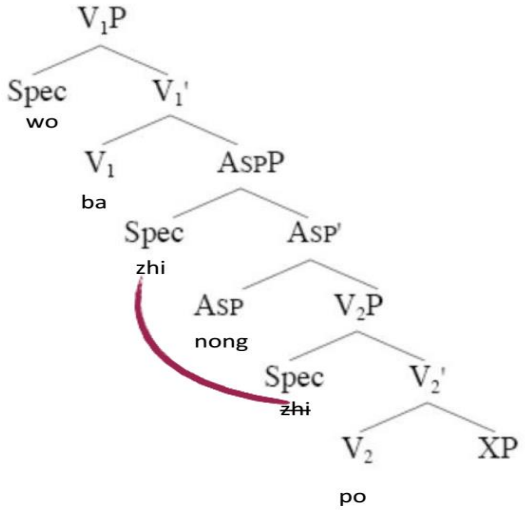
(14) a. *Wo rang tiaowu le nanhai.
1S let dance LE boy
'*(Lit.) I let dance the boy.'
b. *Wo rang ku le nanhai.
1S let cry LE boy
'*(Lit.) I let cry the boy.'

Here, we adopt Sybesma's (1999:165) analysis of the internal structure of *ba* causatives: we postulate for Chinese a clausal structure that is essentially parallel to that in (7) above.

Given this, what varies cross-linguistically is the type of movement involved: in Chinese, the head movement of V2° to Asp° is blocked since Asp° is already filled, which leaves only one option, namely A-movement

of the embedded subject from {Spec, VP2} to {Spec, AspP}, resulting in the correct surface word order.[13]

(15) VP-internal Object-raising in Chinese.



The distributional consequence of this difference is that Chinese never shows the word order alternation observed in Vietnamese in mono-clausal causative constructions by which the embedded subjects can either precede or follow the embedded verbs.

To sum up, among several aspect-related properties shared by, or distinguishing Vietnamese and Chinese, we have selected for experimental investigation two kinds of subtle grammatical constraints to investigate experimentally: (i), a constraint on the interpretation of telicity triggered by particular kinds of object noun-phrase in perfect sentences; (ii), a constraint on the placement of the arguments of unaccusative vs. unergative predicates embedded under the simple causative verb *làm*. The former constraint is shared by Vietnamese and Chinese, while the latter distinguishes the two grammars.

[13] See Sybesma (1999: Chapter 6) for extensive supporting evidence.

The experiments outlined in the next section were designed to test whether Chinese L2 learners of Vietnamese are sensitive to the subtle variations among these different causative constructions, such that they can give target-like judgments concerning restrictions that are never explicitly taught in Vietnamese L2 classrooms (to our knowledge). The logic of this approach should be clear: if learners' judgments of the acceptability (or otherwise) of minimal grammatical contrasts, such as those in (1)-(3), can be shown to converge on those of native-speakers, in the absence of explicit instruction and where L1 'transfer' is not a possible explanation, then it is plausible to conclude that L2 learners' grammar acquisition is guided by knowledge of universal syntactic principles, including the specific cartographic knowledge discussed above (knowledge of Inner Aspect, and of the position of Inadvertent Cause. See White (2003), Schwartz & Sprouse (1996), for more general arguments.[14]

Our experiments also bear on a more specific issue within generative approaches to second language acquisition regarding**]** the acquisition of parametric features: whether second language learners' access to UG constraints is 'partial' – restricted to those properties instantiated in their L1 or 'full', in the limit; compare Tsimpli & Roussou (1991), Hawkins & Chan 1997) with work by White (2003), Schwartz & Sprouse (1996), Gabriele (2009), and Nossalik (2014). Although both approaches agree that initially, L2 learners fully transfer properties of the L1 grammar, they make different predictions as to learners' proficiency. When L2 learners encounter functional features from the L2 that do not match their L1, the Partial Access Hypothesis predicts that L2 learners may superficially use the L2 form but with the underlying functional features of their L1. Full Access theories, on the other hand, predict that inter-language grammars are not ultimately limited by L1 functional features, and that L2 learners can indeed attain native-like knowledge of target grammar features. We discuss below whether the findings of our study provide evidence in support of one or other of these hypotheses.

[14] We do not discount the possibility of alternative explanations for learners' knowledge, for example, Emergentist accounts (e.g., MacWhinney 2004, 2006). The experiment is couched in generativist terms, since that is the theory used for our grammatical description. However, our results are consistent with any theory that allows for learners to go beyond the input in systematic ways that are not dictated by their L1.

3. EXPERIMENTS

3.1 Participants

Our experiments involved 36 native-speakers of Vietnamese, together with 82 Chinese-speaking L2 learners (45 advanced, 37 intermediate). The participants, aged between 18 and 22 years old, were recruited in Hanoi (Vietnam National University), where they were studying on undergraduate courses at that time. All of the L2 learners had been first exposed to Vietnamese in a formal university classroom setting; at the time of testing, they had spent nine months in Vietnam as exchange students. All were classified as adult learners of Vietnamese[15].

The Chinese L2 learners were divided into intermediate and advanced groups based on the results of an independent proficiency test. The proficiency test consisted of 50 multiple-choice sentences, which mainly focused on grammatical properties of Vietnamese sentences such as discourse-related elements (*thì, mà, là, rằng*), pre-verbal tense, aspect, and modality markers (*đã, đang, sẽ, không/chưa, có, bị, được, nên*), the post-verbal elements (*xong, hết, cả, rồi*), as well as NP-related functional morphemes. Advanced proficiency was indicated by a score of > 40 correct answers; participants scoring from 27 to 40 correct were classified as intermediate. Participants whose scores fell below 27 in the proficiency test were excluded from the experiment.

The control group consisted of 'non-linguists' that is to say, native-speakers without any linguistic training, none of whom had spent more

[15] In fact, Vietnamese was not strictly the second language of the participants: the participants were already speakers of Cantonese and Yunnan Chinese, in addition to Mandarin Chinese. They were also learning English as a foreign language at school, though their English knowledge of English was only at a rudimentary level. This was not considered to be a problem, given that Cantonese and Yunnan Chinese resemble Mandarin Chinese with respect to our linguistic phenomena under investigation. Nor was their knowledge of English of any help to them either since English diverges even more sharply from Vietnamese with respect to the properties under investigation. For the sake of simplicity, however, we still refer to the Chinese learners of Vietnamese as L2 learners. We are grateful to Dongyi Lin and Wei Ku for the judgments on Mandarin Chinese], to Man-ki Theodora Lee for those on Cantonese, and to La Sieu for those on Yunnan Chinese.

than three months abroad. Participants were not paid for their participation, but received additional course credits in their final course evaluation.

3.2 Methodology: Materials and Design

Three tasks were used: a pen-and-paper Interpretation Test, which investigated knowledge of the aspectual interpretation contributed by object noun-phrases; a computer-based Sentence Matching Task (SMT), which tested participants' sensitivity to the unaccusative vs. unergative contrasts found in causative constructions, as well as a standard off-line acceptability judgment task (AJT), to confirm the validity of the SMT.

Task 1 (Interpretation Test)

In the first task, the participants were given a written questionnaire which required them to determine the truth of certain sentences in particular contexts of utterance. For example, they were asked (in Vietnamese) questions about the interpretation of sentences containing *đã* plus either a non-quantificational or quantificational object NP; compare (16a) vs. (16b):[16]

(16) a. If it is reported that '*Nó đã ăn cái bánh đó*' (He ate that cake), is there any possibility that he has not finished that cake? Yes or No. [Condition 1: in this case, the expected answer is Yes.]

b. If it is reported that '*Nó đã ăn hai cái bánh*' (He ate two cakes), is there any possibility that he has not finished the second cake? Yes or No. [Condition 2: here, the expected answer is No.]

[16] The stimulus sentences were organized in a Latin Square design such that each participant received either the (a) or (b) version of any given test question, and all participants received equal numbers of true and false sentences. The test also included a set of distractor items in which the anterior morpheme *đã* was replaced by either the progressive morpheme *đang* or the future/irrealis morpheme *sẽ*; in both cases, the expected answer was 'No'.

Each participant was requested to answer 64 questions, consisting of 32 test sentences and 32 distractor items. Two versions of the materials were prepared, each with a different set of 32 lexical predicates. Participants were alternately assigned one or other version of the task. In this task, the independent between-item variables were thus Condition and Version. The independent between-subject variable was Proficiency: Native-speaker vs. Advanced Learner vs. Intermediate Learner. The dependent measure in the task was the proportion of acceptances; alternatively, the proportion of correct answers (correct acceptances or rejections); see below.

Task 2 (Sentence matching task - SMT)

In the computer-based Sentence Matching Task, participants are asked to judge whether two sentences, presented consecutively on a computer screen, are identical in form ("match") or not ("mismatch"). The theoretical value of this paradigm resides in the fact – originally demonstrated in Freedman & Forster (1985), and often replicated since – that identical grammatical sentences are matched by native speakers reliably more quickly than identical ungrammatical sentences (typical mean difference 30-60msecs).[17] Hence, reliably faster response latencies provide an implicit index of grammaticality.[18] If L2 learners show a similar pattern of response latencies to those of native-speakers – even if their overall reaction times are slower – then it is reasonable to conclude that they possess a similar grammatical competence with respect to the phenomena under consideration.

The SMT investigated learners' sensitivity to the grammatical acceptability of six different sentence types. Relative acceptability was modulated by three main factors: unaccusativity (unaccusative vs. unergative predicates); invertedness (canonical SV vs. VS order); the

[17] See Duffield & White (1999**),** Duffield, White et al. (2002). It should be noted that not everyone accepts the validity of the SMT as a measure of grammatical competence – or indeed the basic interpretation of the main effect: see Crain & Steedman (1985) for an early challenge; for a rejoinder, see Duffield, Matsuo & Roberts (2007).

[18] Non-matching items are foils in the experiment: the only comparison of interest is the contrast between matching grammatical vs. matching ungrammatical items.

presence of an additional causative verb *cho* ('give, let'). The conditions are listed and illustrated in the following table:

Table 1. SMT – Construction Types tested

Type	Construction	Grammatical acceptability	Example
A	Non-inverted unaccusative	?Less acceptable than B, though still grammatical	?*Tôi làm tờ giấy rách* (I made the paper torn)
B	Inverted unaccusative	Strongly acceptable	*Tôi làm rách tờ giấy* (I made torn the paper)
C	Inverted unergative	*Strongly unacceptable	**Tôi làm nhảy thằng bé* (I made dance the boy)
D	Non-inverted unergative	??Not ungrammatical but less preferable (than E)	??Tôi làm thằng bé nhảy.[19] (I made the boy dance)
E	*làm cho* Non-inverted unergative	Clearly acceptable	*Tôi làm cho thằng bé nhảy*. (I make let the boy run)
F	*làm cho* Inverted unaccusative	*Clearly unacceptable	**Tôi làm cho rách tờ giấy* (I make let torn the paper)

The SMT consisted of 60 pairs of test sentences (ten pairs per sentence type), which were all matching pairs, either grammatical or ungrammatical; and 60 pairs of mismatching distractor sentences, which involved *làm* or *cho* in their non-causative usages (i.e., when *làm* means 'to do', 'to work as', 'to make', etc.; where *cho* is used as a main predicate which means 'to allow', 'to let', 'to give'; or as a preposition, etc.). There were two versions of the SMT, each involving a different set of 60 lexical predicates.

[19] Sentences of Type D are only acceptable with an inadvertent reading.

Note that the tested constructions in Table 1 can be clustered into three groups in terms of grammatical acceptability: Constructions B and E are grammatically acceptable, Constructions A and D are 'marginal', and Constructions C and F are grammatically unacceptable. Among these constructions, Construction B is the crucial condition from the point of view of cross-linguistic variation, since the word order presented in Construction B is strongly acceptable in Vietnamese but unacceptable in Chinese.

Procedure. The experiment was run on PCs using DmDX display software (Forster, K. I. & Forster, J. C, 2003). A brief instruction paragraph was first displayed in Vietnamese; this was then followed by 8 eight practice trials (half involving matching, half non-matching pairs). The first sentence of each pair was offset towards the top left of the screen and then disappeared. After a delay of 2000msecs, the second sentence was presented towards the bottom right of the screen. A timer started at the onset of the second sentence and was stopped when the participant pressed one of the two SHIFT buttons: the right SHIFT if they considered the pair to be identically matched; the left SHIFT if they detected a mismatch. Each trial was timed out if the subject did not respond within 3500msecs of the presentation of the second sentence. The next trial appeared after an interval of 700msecs (ISI). The task included three breaks, which occurred after every 30 trials: participants could decide when to resume, by pressing the spacebar. All of the items were randomized for each participant. It took around 20-30 minutes for each participant to complete the task.

In the SMT, the independent variables (between-items were Sentence Type (A-F), Grammatical Acceptability (good, marginal, unacceptable), Unaccusativity (unaccusative vs. unergative) and Version (two levels); the between-subjects variable was Proficiency (native-speaker vs. advanced vs. intermediate learner). The dependent measure was the response latency in each trial.

Task 3 (Acceptability judgment task – AJT)

The SMT was immediately followed up by an Acceptability Judgment Task, which also tested the same six sentence types, and involved the same set of 60 test sentences. There were also 60 distractor sentences, which were the first sentences of the mismatching pairs in the SMT. As with the SMT, the AJT consisted of two versions: the participants that took version A in the SMT received version B in the AJT, and *vice versa*.

Scoring. Participants were asked to judge the acceptability of each sentence according to a seven-point Likert scale (from -3 totally unacceptable, to +3 fully acceptable). For any sentence assigned a negative score, participants were requested to provide written corrections. Hence, there were two dependent measures in this task: the acceptability score for each item, a quantitative measure, and the type of correction offered for negatively scored items, a qualitative measure. Once again, the participants took about 20 to 30 minutes to judge the acceptability and make corrections to all of the sentences.

3.3 Results and Discussion

Task 1 (Interpretation Test)

Overall, both non-native proficiency groups performed reasonably well in this task, their results generally conforming to those of the native-speaker control group: the mean correctness across the L2 groups was μ = 71.07%, SD σ = 12.62%). An Analysis of Variance revealed a reliable main effect of Condition ($p < 0.05$) and of Proficiency ($p < 0.05$), as expected. Also as expected, there was no main effect of version ($p = 0.108$). No reliable interactions were observed between Condition and Proficiency: i.e., all of the proficiency groups responded to each condition in much the same way.

Let us consider now the results by condition. As noted above, the comparison of greatest interest was that between Condition 1 and Condition 2, where a clear contrast was predicted. As indicated in Fig. 1 below, this prediction was borne out: the figure also shows that both groups of L2 learners show a very similar pattern to that of the native-

speaker control group, clearly suggesting their awareness of the difference between the two constructions (demonstrative objects vs. numeral objects) with respect to entailment of completion.

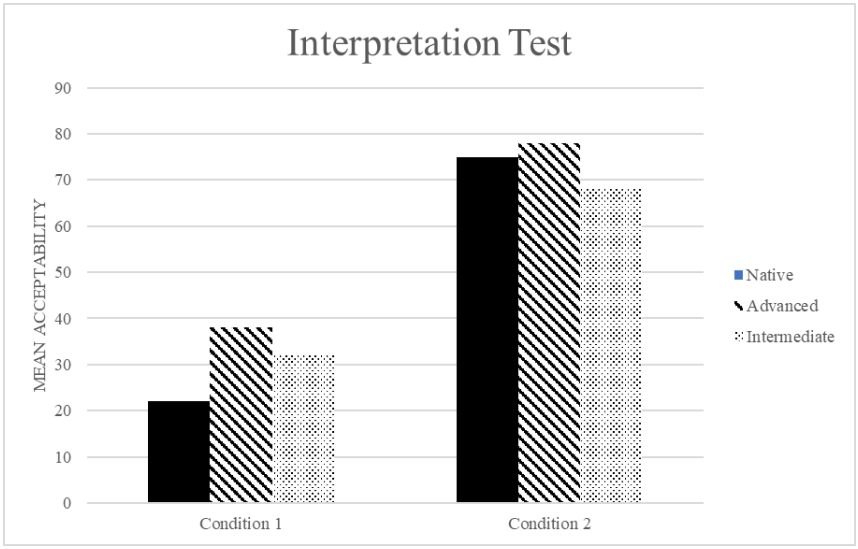
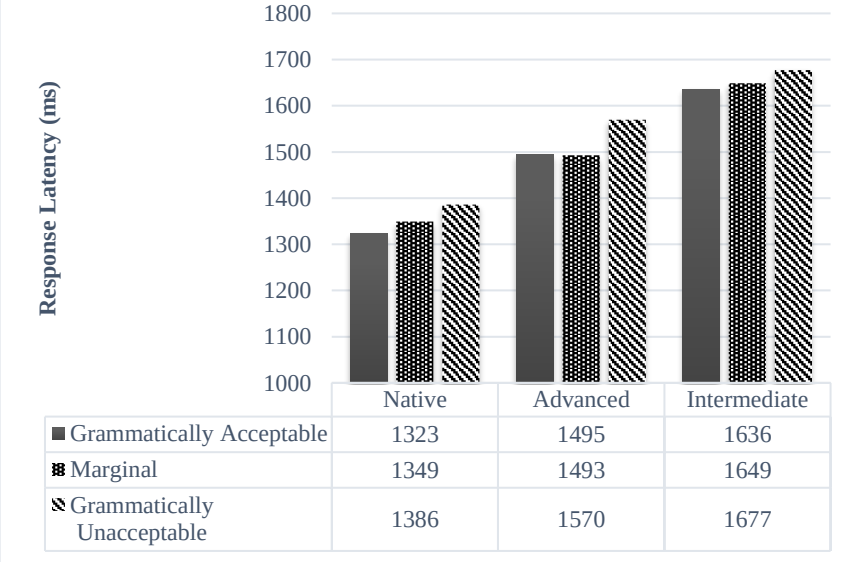


Figure 1. Interpretation Test: Mean scores by condition

The result was as expected: all participants gave low acceptance scores (= 'No' responses) in Condition 1, high acceptance scores (= 'Yes' responses) in Condition 2.

Task 2 (Sentence matching task - SMT)

In this task, the overall prediction was that the matching of grammatical sentences should elicit shorter response latencies than the matching of ungrammatical pairs, and that more advanced learners and native-speakers should respond faster than intermediate learners. Across the data, these general predictions were borne out: an ANOVA revealed a main effect of Grammaticality ($p < 0.05$), together with main effects of Proficiency ($p < 0.05$) and Unaccusativity ($p = 0.001$) (all one-tailed).



	Native	Advanced	Intermediate
Grammatically Acceptable	1323	1495	1636
Marginal	1349	1493	1649
Grammatically Unacceptable	1386	1570	1677

Figure 2. SMT: Effects of Proficiency and Grammaticality

Fig. 2 once again reveals a very similar pattern among the three groups. All of the participants were able to distinguish reliably between grammatically acceptable, marginal and grammatically unacceptable sentences. Unsurprisingly, the native-speakers' responses were generally faster than those of the learner groups.

Looking more closely by Construction Type, the results show a more complex pattern. In both Figs. 3 and 4 below, Construction Types are ordered from left to right in terms of decreasing grammatical acceptability: overall, what was predicted was a pattern of step-wise increasing or decreasing values {B/E > A/D > F/C}, increasing in the case of response latencies (Fig. 3), decreasing with respect to acceptability judgment scores (Fig. 4). This prediction was mostly borne out:

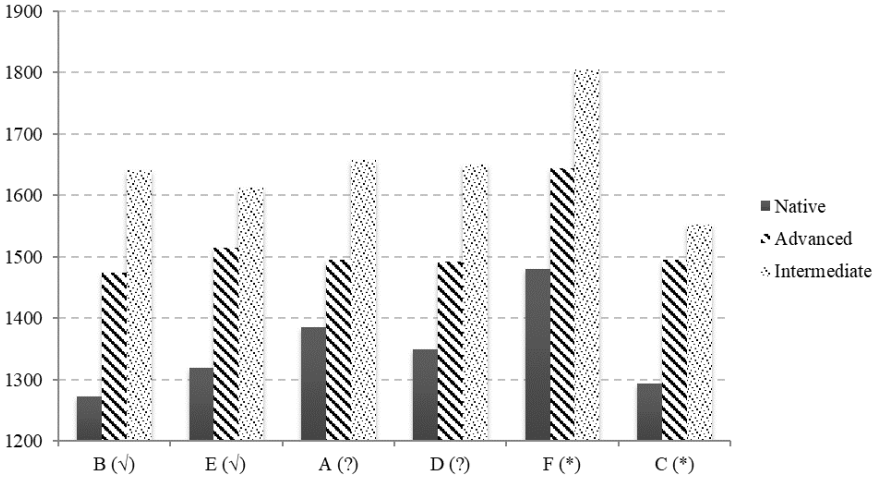


Figure 3. SMT: Response Latencies by Construction Type and Proficiency

Interestingly, in spite of cross-linguistic variation in their L1 grammars, Construction B elicited the fastest response from both native speakers and advanced learners (though not from the intermediate learners) in the SMT.

However, what remains problematic in the SMT results is that Construction C, which was judged unacceptable offline, elicited faster than average responses from all participant groups. This requires further discussion.

Task 3 (Acceptability judgment task – AJT)

As expected, statistical tests reveal a significant main effect of Construction Type ($p < 0.05$), but no effect of Version in the AJT. Although no main effect of Proficiency was observed, a marginal interaction was found between Construction Type and Proficiency ($p = 0.05$). The results are presented in Fig. 4, by Construction Type and Proficiency:

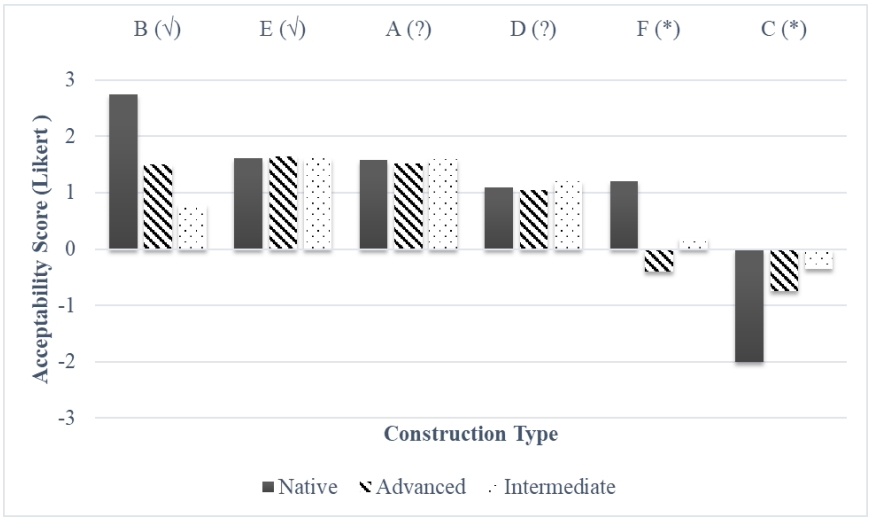


Figure 4. Acceptability Judgment Task: Scores by Construction Type and Proficiency

Native speakers are shown to correctly accept grammatical sentences (with the highest scores in Construction Types B and E) and to reject ungrammatical sentences (with the lowest scores in sentences type Construction Types F and C). Advanced learners show much the same pattern of judgment; however, the scores of the intermediate group are considerably more variable.

Significantly, in spite of the cross-linguistic variation, construction Construction B was scored the highest by both native-speakers and the advanced learners (but not by the intermediate learners, while construction C received the lowest scores from all groups. There was thus a clear discrepancy in this condition between the SMT and AJT results.

However, what remains problematic on the AJT is the fact that Construction F is judged as marginal by the native-speakers. We can better explain this discrepancy by examining the correction data.

Correction data

In the case of the 60 test sentences, native-speakers made 479 corrections, advanced learners 625, and intermediate learners, 480. Most of the corrections were made to ungrammatical (as opposed to grammatical or marginal) sentences: 69.7% in the case of the native-speaker group, 65.4% for the advanced, and 59.6% for the intermediate group, respectively. Overall, the percentage of appropriate corrections (i.e., involving altering the word order of the sentences or adding *cho* to the unergative causative constructions) accounted for 76%, 91.5%, 97.3% of the responses of the native-speaker, advanced and intermediate groups, respectively. It is interesting to note that most of the inappropriate corrections made by native speakers involved a lexical change: either (i) the replacement of the main causative verb *làm* with other agent-oriented meaning verbs such as *khiến* ('to command)' – nine cases, or *bảo* ('to ask') – 16 cases, or (ii) the addition of a pre-verb, – *bị* in the case of the unaccusative constructions (32 cases) or *phải* in the case of unergatives (20 cases).

Discussion

The main point of interest in the correction data (taken together with the quantitative results of the AJT) is the way in which they complement the SMT results**:** that is to say, the way in which the corrections offer potential explanations for those conditions in the SMT where an unexpected discrepancy was observed.

As regards the native-speakers the correction data clearly reveal why they judged Construction Types D and A as marginal. Specifically, the native-speakers considered type D sentences to be lexically problematic (64.91% of their corrections offer a lexical change of the main verb); by contrast, the unacceptability of Type A sentences was due to word order) (68.63% of their corrections involved changing the word-order of inverted unaccusatives). In addition, the correction data shed lights on why the native-speakers] judged Construction type F as marginal. 69.1% of their corrections involve the deletion of *cho* in the *làm cho* inverted unaccusative constructions.

Regarding the advanced group, on both the traditional judgment tasks as well as on the reaction time measurement task, it was found that

advanced L2 learners' judgments largely corresponded to those of the native speakers, even with respect to constraints not observed in the L1 (Construction B items). This argues against a simplistic account based on surface transfer or partial access. Finally, the intermediate learners were shown to have difficulty not only with Conditions B, but also with other conditions. The correction data reveal that some of the participants in this group incorrectly think that inverted unaccusatives are unacceptable (67.57% of their corrections involved mistakenly changing the word order into that of uninverted unaccusatives).

4. CONCLUSION

Overall, these results provide experimental support for the idea that more advanced L2 learners are able to correctly discriminate grammatical from ungrammatical word orders in Vietnamese, even in cases where their L1 grammatical settings diverge from those of the target grammar. Even though some of the results from the intermediate learner group show apparent interference effects from their L1, their overall performance suggests that L2 interlanguage grammars are not ultimately limited by L1 patterns, and that learners are able to give native-like judgments – both implicit and explicit judgments – in the absence of explicit teaching, or of any other form of direct negative evidence. In terms of larger theoretical questions, our results speak against the 'Partial Access' / 'Failed Features' hypothesis of SLA (Hawkins & Chan 2001), and are at least consistent with stronger claims concerning UG access.[20]

[20] See White (2003), Gilkerson (2006) for other ways to test UG access.

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[Received 10 July 2019; revised 28 October 2019; accepted 03 February 2020]

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越南語完整性和非賓格結構習得

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本研究針對母語為中文的人士，如何建構第二語言－越南語中兩項文法結構進行深入研究：第一，漸成謂語之動貌語義的限制；第二，使役動詞 lam (作/do)在單句句型中，嵌入式主詞位置交替現象，前項限制存在於兩種語言中；後者則否。受測者未接受上述文法的明確教導，並且對相關結構的接觸有限，在此情況下進行三份文法判斷實驗。分析資料得出統計上可靠的數據，顯示第二語言中介語言架構終究不受第一語言模式的限制。我們認為：學習者的表現可能是以普遍語法為指導的結果。

關鍵字：狀態、使役動詞、漢語、非賓格性、完整性、越南語