

THE DEVELOPMENT OF INFLECTIONAL MORPHOLOGY
IN L2 ACQUISITION: A CROSS-LINGUISTIC ANALYSIS

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Introduction

The development of several grammatical features among adult L2 (second language) learners (e.g., inflectional morphology) may be guided by strictly general cognitive processes (e.g., Bley-Vroman, 1989; Schmidt, 1990). For instance, Flynn and Manuel (1991) argue that general learning mechanisms — non-modular and unrelated to Universal Grammar (UG) — may determine the acquisition of “peripheral” language phenomena:

Many studies that argue for differences between the child L1 learner and the adult L2 learner in ultimate attainment focus on surface aspects of L2 language knowledge connected to “periphery” of language knowledge (e.g., lexical or language-specific agreement phenomena) rather than to the more abstract subsystems of principles and rules of UG.

Similarly, Schwartz (1993, p. 159) claims that it is not warranted to extend the UG argument for the acquisition of syntax “to the other

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domains of the grammar, in particular to the lexicon and morphology (e.g., paradigms of inflection)." Schwartz states further that inflectional endings are among the most difficult features of nonnative languages for adult learners: "highest amount of variability and lowest degree of success." Schwartz (1993, p. 160) speculates that "the syntax (being built on the basis of primary linguistic data) continues to grow but the morphology seems to lag behind: learned linguistic knowledge, in this case inflectional verbal morphology, just cannot feed into the grammar."

The development of inflectional endings such as morphological markers of temporality (i.e., tense and aspect) in a nonnative language may provide evidence with respect to (i) ultimate attainment and (ii) learning environment (i.e., natural versus classroom settings). First, both impressionistic and scientific evidence do not show a high level of congruity between native and nonnative speakers' use of the target language (e.g., Birdsong, 1992; Coppieters, 1987; Towell & Hawkins, 1994). In cases where such congruity has been defended, the argument has been made for a very limited number of linguistic phenomena especially in formal syntax (e.g., Flynn & Manuel, 1991 and response from Birdsong, 1991). Among the target grammatical items which consistently lie outside of those UG-related phenomena, inflectional endings are prime candidates for non-target-like acquisition (e.g., Bley-Vroman, 1989; Coppieters, 1987; Flynn & Manuel, 1991; Schmidt, 1995; Schwartz, 1993). Second, the context (i.e., learning environment) in which L2 development occurs may also have important consequences for L2 acquisition. *Untutored students* learn the target language in a natural setting of communication (target-language community), whereas *tutored students* have access to the target language in (i) a classroom environment only, or (ii) in both classroom and natural settings. The latter is an important distinction because conflicting results from some empirical studies to be reviewed below may be attributed to the difference in the learning environment.

Aspect

Tense and aspect are the two major markers of temporality in the verb. Comrie (1976) points out that there are two options to relate a situation to the time line. First, the location of the situation is related to a specific point or segment (tense). Conversely, the internal temporal contour of the situation is represented as a point or stretch on the time line (aspect). Comrie (1976, p. 3) defines aspect as the "way of viewing the internal temporal constituency of a situation" (beginning, middle and end). For example, the preterite-imperfect contrast in Spanish is the realization of the perfective-imperfective aspectual distinction by means of inflectional morphology. Aspectual distinctions in a language can be marked covertly (inherent lexical aspect) or overtly (grammatical aspect).

Vendler (1967) classified verbs into four types according to inherent lexical aspect: states, activities, accomplishments and achievements. States have no input of energy (e.g., *to be*, *to have*), activities have arbitrary beginning and end points: processes (e.g., *to run*, *to paint*), accomplishments are durative and have inherent end points (e.g., *to run a mile*, *to paint a painting*), and achievements have inherent end points but they are punctual (e.g., *to reach the top*, *to break a leg*). The classification of types of verbs can also be made in terms of three basic semantic features: dynamicity, telicity and durativity. Dynamicity contrasts stative (non-dynamic) versus non-stative verbs (activities, accomplishments and achievements). Telic events have an inherent end point; hence, telicity separates states and activities (atelic) from accomplishments and achievements (telic). Finally, only achievements are non-durative (punctual). It is important to point out that lexical aspectual classes are not determined solely by the verb, but also by its subcategorization grid (internal and external arguments) and also adjuncts. For example, the quantized feature of the internal argument changes the basic semantic nature of the predicate in an essential way. The effect of the distinction mass-count nouns on the telic nature of the predicate is exemplified in the following sentences:

Mary smoked [cigarettes]. (-quantized: atelic)

Mary smoked [a cigarette]. (+quantized: telic)

Grammatical aspect is obligatorily encoded in the form of auxiliaries plus participles (*passé composé* in French), inflectional morphology (imperfect in Spanish), periphrastics (progressive in English), etc. Grammatical aspect may alter the inherent semantic contour (i.e., lexical aspect) of each verb: viewpoint aspect (Smith, 1991). The prototypical value of past tense aspect is determined by cases when the lexical aspectual value of the verb and the grammatical encoding of aspect coincide. The non-prototypical value is represented by the case when the aspectual inflection is in direct contradiction with lexical aspect (see Taylor, 1989 for an analysis of prototypes in linguistic theory).

The Pragmatic Marking of Aspect

When the encoding of temporal reference is not explicitly represented with morphological markers (e.g., preterite or imperfect in Spanish) the learner may rely on pragmatic devices of two types: (a) discourse organization principles and (b) implicit reference. In essence, the use of verbal morphology is not necessary to establish communication in the target language. This is not unexpected since "adults ... do not deliberately attend to form, especially redundant and communicatively less important grammatical features" (Schmidt, 1990, p. 145; see also Bley-Vroman, 1991; Schmidt, 1995; Zalewski, 1993). Most studies of the ESFP (European Science Foundation Project) show that among natural learners the development of verbal endings is a slow and gradual process which in some cases takes years, and in others merely leads to fossilization (e.g., Dietrich, Klein & Perdue, 1995; Klein & Perdue, 1992; Meisel, 1987; Perdue & Klein, 1992). For instance, Perdue & Klein (1992) argue that during the first stages of L2 acquisition learners develop a basic variety of the target language which represents an equilibrium between semantic, pragmatic and phrasal constraints. Perdue and Klein remark that some natural language learners fossilize

at this stage, while others develop further their basic variety to make it conform to target language standards. The learners who continue developing their L2 system are the ones who perceive lexical and structural inadequacies between the basic variety and the L2. Meisel (1987, p. 222) claims that developmental sequences reveal increasing performative complexity (e.g., operating principles) and/or decreasing pragmatic usefulness.

In some cases the effect of communicative demands is so great that it overrides the use of morphosyntactic features which are shared by both native and target languages. For example, Trévisé (1987) analyzed data obtained from several interviews with a Spanish-speaking 49-year-old who had spent three and a half years in France by the time of the interview. Trévisé noticed that her subject used "a single past tense form, /e/, which is not an *imparfait* or *passé composé*," and that only two verbs — *donner* (to give) and *payer* (to pay) — were used in the two forms of past tense (*passé composé* and *imparfait*). The speaker avoided use of past tense morphological marking by using periphrastics such as *venir de* — a strategic move which "does not hamper comprehension at all" (p. 235).¹ It is surprising that a native speaker of Spanish, a language which shares the same aspectual distinction required by past tense French, does not capitalize on that knowledge. Instead, this subject avoided the use of overt grammatical markers of aspect and built a rather complex narrative with adverbials, periphrastics, sequential information, interviewer scaffolding, etc., even after a long period of exposure to the target language in the natural setting.

Not only European studies, but also American studies show the effect of discursive-pragmatic factors described above (e.g., Sato, 1990; Schumann, 1987). For instance, Schumann (1987) analyzed the interlanguage of five speakers of three different languages (one Chinese, one Japanese and three Spanish) who had been living in the United States for at least 10 years at the time of the study. The subjects had learned English without formal instruction. In spite of the length of

residence in the United States the interlanguage of these nonnative speakers was quite marginal, if comprehensible at all (data samples from pp. 30-37). Schumann argues that basilectal speech "is acquired through the pragmatic functions of the mind's general cognitive mechanisms and therefore does not attain morphosyntactic regularity" (p. 39). Basilectal speech constitutes a system of communication: the formal linguistic features of the interlanguage will develop to the extent that communication does not break down. For instance, morphosyntactic aspectual markers will not be a necessary feature of this type of interlanguage insofar as other temporal markers fulfill the function of marking aspect. Schumann argues that basilectal learners mark temporal reference with four basic linguistic tools: adverbials, serialization (sequence of utterances reflects actual temporal order of events), calendric reference, and implicit reference (temporal reference is inferred from context). Similarly, Sato (1990) examined the development of L2 English past tense inflections (among other features) of two Vietnamese-speaking brothers (ages 10 and 12) during a 10-month period in the United States. Neither subject received formal instruction in English during the observation period, but their exposure to English was intensive through their adoptive parents and the surrounding community. Sato's data show that the two adolescents did not mark temporality with morphological means. In contrast, both subjects relied on other-than-morphological means to mark past tense reference (e.g., adverbs, interlocutor's marking of past tense, etc.).

The Morphosyntactic Marking of Aspect

Classroom learners also use alternative means of temporal reference instead of tense or aspect morphology. For example, second language teachers know that during the beginning stages of instruction, students use a process of relexification of their native language to communicate in the L2 (Ramsay 1990, p. 202). What is interesting is that classroom students eventually incorporate past tense aspectual

distinctions into their interlanguage system by sheer pressure to comply with target language norms (e.g., Bardovi-Harlig, 1994; Bardovi-Harlig & Reynolds, 1995; Bergström, 1995; Hasbún, 1995; Kaplan, 1987; Ramsay, 1990; Teutsch-Dwyer & Fathman, 1997). In other words, it is not the pressure to communicate per se that forces learners to incorporate morphosyntactic markers of aspect in their system (see discussion in Dietrich, et al., 1995; Sato, 1990; Schumann, 1987). If what distinguishes basiling speakers (from two to ten years of exposure to the L2 in the studies mentioned above) from classroom learners (from two to four semesters of instruction on average) is the type of linguistic environment, we have to conclude that classroom instruction is successful in generating a high level of use of morphosyntactic (inflectional) instead of pragmatic means of marking tense and aspect. These findings raise important questions: (i) how do classroom students learn to redundantly mark temporality (tense and aspect) on the verb?, (ii) is the nature of their morphological system stable across language tasks (attention to form)? and, (iii) why do students select inflectional means — as opposed to pragmatic means as natural learners — to mark temporality? In the following sections I will present two hypotheses about the nature of the development of inflectional morphology among adult learners and I will review their empirical support across different studies.

The Lexical Aspect Hypothesis

Several researchers have directly tied the inherent lexical value of the verb to the development of past tense verbal morphology (e.g., Andersen, 1986, 1991, 1994; Andersen & Shirai, 1994, 1996; Bardovi-Harlig, 1994; Bardovi-Harlig & Bergström, 1996; Bardovi-Harlig & Reynolds, 1995; Robison, 1990, 1995). The lexical aspect hypothesis is based on the assumption that learners' selection of verbal morphology will be related to the inherent lexical semantics of the verb phrase: completed events (achievements and accomplishments), simultaneous processes (activities), and states. The lexical aspect hypothesis was

originally proposed by Andersen (1986) based on data collected from adolescent natural language learners (two siblings). For example, Anthony, an English-speaking adolescent, learned L2 Spanish outside of school with his friends (his schooling in Puerto Rico was in English). Two samples of Anthony's speech were collected in 1978 and 1980 respectively. In 1978 Anthony had already spent two years in Puerto Rico and was able to interact with no major difficulties with his Spanish-speaking friends. At that time Andersen noted that 50% of the verbs used by Anthony in contexts requiring obligatory past tense/perfective aspect were marked as such. On the other hand, none of the verbs requiring imperfective carried any mark of grammatical aspect.² In 1980 Anthony used the preterite in 88% of all obligatory cases which required perfective aspect, whereas the imperfect was used in 43% of all obligatory cases. Most verbs describing punctual events were marked with perfective aspect, whereas the verbs marking states or durative events were not marked with past endings in 1978, and only to a certain extent in 1980.

Andersen (1991, p. 318) argued that L2 learners follow a particular sequence in the development of aspectual markers: Ø -> punctual -> telic -> dynamic -> statives. The apparent correlation of such a sequence with the Aristotelian classification of aspect led Andersen to conclude that past tense morphological marking in L2 acquisition is based on the lexical semantic value of the verb. Andersen (1986, p. 1991) proposed a stable sequence of developmental stages for the acquisition of aspectual marking among L2 learners: the use of imperfective markers spreads from stative verbs to non-stative verbs, and the use of perfective markers spreads from punctual verbs (achievement) to non-punctual verbs. This gradual spread of the use of grammatical aspect according to verb type occurs sequentially in time in eight stages (1991, p. 315): Table 1.

Table 1. Development of Spanish past tense aspect (from Andersen, 1991).

	State	Activity	Accomplishment	Achievement
	(to have)	(to play)	(to teach)	(to break, refl.)
1	tiene	juega	enseña	se parte
2	tiene	juega	enseña	se partió
3	tenía	juega	enseña	se partió
4	tenía	jugaba	enseñó	se partió
5	tenía	jugaba	enseñó	se partió
			enseñaba	
6	tenía	jugaba	enseñó	se partió
		jugó	enseñaba	
7	tenía	jugaba	enseñó	se partió
		jugó	enseñaba	se partía
8	tenía	jugaba	enseñó	se partió
	tuvo	jugó	enseñaba	se partía

At stage 1 learners mark neither past tense nor aspect. At stage 2 the use of the preterite is encoded in punctual verbs only. At stage 3 prototypical stative verbs appear in imperfect forms. At stage 4 the preterite spreads to accomplishment verbs, and the imperfect spreads to activity verbs: all verbs are now marked in past tense. At stage 5 the use of verbal morphology begins to overlap within each verb type: accomplishments (telic events) can now be marked by imperfect or preterite. At stage 6 activities can be used with perfective or imperfective aspect, and at stage 7 also punctual events can be marked by either imperfect or preterite. Stage 8 constitutes the end of the sequence: stative verbs can be encoded in perfective aspect.

The Discourse Hypothesis

Alternatively, several researchers have investigated the use of aspectual distinctions in past tense from the perspective of narrative

structure. Reid (1980) argues that aspect can be better understood from the perspective of *high and low focus* on the particular situations that comprise the narration (textual structure). Wallace (1982) makes a similar argument based on the distinction of *figure and ground*, and claims that this psychological distinction is part of an innate, universal, perceptual distinction. Vet and Vetters (1994, p. 1) claim that the meaning of tense and aspect forms "strongly depends on contextual factors and probably on the type of text as well, so that tense and aspect cannot be properly studied if their contribution to text cohesion is not taken into account." Finally, Hopper (1982, p. 16) argues that the nature of aspectual distinctions in languages like French (or Spanish for that matter) cannot be characterized by semantics in a consistent way; the adequate reference may only come from a *global discourse function*.

Some empirical data support the discourse hypothesis. For instance, Kumpf (1984) studied the use of past tense marking in the L2 English of a Japanese speaker who had been living in the United States for 28 years at the time of the interview. The analysis of the narrative monologues of this subject reveals that "the base form characterizes the foreground; the background manifests many forms, including those carrying aspectual distinctions, and especially tense" (p. 140). The specific aspectual marking of this Japanese subject stands in clear contrast with the results of other studies where it was the telic/punctual verbs (associated with the foreground) which were marked with past tense (e.g., Andersen, 1986; Robison, 1990; Wiberg, 1996).³ Similarly, Véronique (1987) shows that his low level informants (natural learners of French) were systematic in their use of verb morphology: V stem marked foreground information, whereas V+e forms were used for background information (p. 266).⁴ Véronique argues that "we would rather consider foreground-background as one level, maybe the most important one, of the organization of narratives" (p. 267). Finally, among studies based on tutored learners in a natural setting (ESL students from diverse L1 backgrounds) Bardovi-Harlig (1995) suggests that the

development of tense and aspect distinctions may be related to grounding in a narrative structure.

There is an inherent overlap in the prediction offered by the account based on the lexical semantic value of the predicate and the discourse-based approach, since completed events and punctual events sometimes define the notion of foreground (e.g., Bardovi-Harlig, 1995; Lafford, 1996; Reinhart, 1984). Reinhart (1984) lists the temporal and textual criteria that mark the notion of foreground: narrativity (only textual/narrative units can serve as foreground), punctuality (punctual events serve more easily as foreground), and completeness (completed events serve more easily as foreground). Bardovi-Harlig (1995) also considers the feature of "newness" (new information is more relevant for the foreground). The similarities that underlie the criteria distinguishing foreground and background information and the classification of verbs according to inherent semantic value are remarkable (telic versus atelic). The danger of engaging in a circular argument is quite high if we consider punctual and completed events as part of the defining criteria of foregrounded events. Not surprisingly, Bardovi-Harlig claims that the distinction of the predictions of each approach "may be too fine-grained for a study of interlanguage" (p. 286).

Previous studies

The potential influence of narrative grounding or lexical aspectual classes has been tested in various L2 experimental studies. In this section I will analyze some of the most prominent studies (especially classroom studies) and I will assess the degree of support they offer to the above mentioned hypotheses with respect to the explicit marking of temporality markers in L2 development.

Schmidt and Frota 1986

Schmidt and Frota is a descriptive study of the acquisition of L2 Portuguese by Schmidt (native English speaker) during a five-month

stay in Brazil based on learning diaries as well as four tape-recorded conversations (from 30 to 60 minutes per session) between Schmidt and Frota (native speaker of Portuguese). The conversations were recorded during weeks 7, 11, 18 and 22 (Schmidt did not have instruction or interaction in the target language during the first three weeks in Brazil). The study included the analysis of several features of the target language, but the choice of tense "caused more problems ... than person, number or conjugation class" (p. 257). Their data show that Schmidt's strategy to select past tense marking in Portuguese was lexical: out of 29 verb types that Schmidt used in all four recorded conversations, 24 occurred consistently in either imperfect or preterite. Schmidt and Frota considered two alternative explanations for these data: the lexical aspectual class of the verbs, or the input frequency (distributional bias).

It is difficult to reach a definitive answer concerning the potential impact of one or both of these factors because the analysis of the input available to the learner is indirect and incomplete. The assessment of the available input in the L2 was based solely on the data provided by the native speaker who acted as the interlocutor of Schmidt (the co-author) during the taped conversations. In spite of the assumption made by Schmidt and Frota that the selection of past tense marking of the native speaker of Portuguese was not "bizarrely atypical," it is doubtful that it may be representative of the input available to this learner in the natural environment. In fact, in one of the diary entries (week 6) Schmidt comments that he noticed the extended use of the imperfect in one native speaker, "which I never heard (or understood) before, and during the evening I managed to produce quite a few myself, without hesitating much. Very satisfying!" (p. 279). It is doubtful that this type of use of the imperfect was also instantiated in the interview format of the taped conversation. In fact, Schmidt (1990, p. 147) argues that it is difficult to decide which one of the above mentioned options was more likely to have generated the specific selection of past tense verbal morphology made by Schmidt during the oral interviews.

Robison 1990, 1995

Robison (1990) conducted an empirical study based on one Spanish speaker learning English (natural setting) to investigate the prediction of the Primacy of Aspect hypothesis (POA). According to Robison the POA "holds that *in the initial stages of language acquisition*, verbal morphemes are used redundantly to encode lexical aspect — the temporal features inherent in the lexical meaning of the predicate — and not grammatical aspect or tense" (p. 316, italics added). Robison analyzed two aspectual distinctions: the stative-dynamic distinction and the punctual-durative distinction. The data were based on a series of oral interviews conducted by the researcher. As expected, the distribution of morphological markers was not equal for all types of verbs. However, the data showed support for POA for the punctual-durative distinction but not for the stative-dynamic distinction. Indeed, Robison's subject marked a higher proportion of stative verbs — instead of dynamic verbs as predicted by POA — with the progressive marker (*-ing* inflection). The progressive does not match the situation type of statives because the latter have no endpoints. In contrast, the progressive is normally associated with processes. This restriction of the progressive with statives is also valid in Spanish (the native language of Robison's subject). It is an open question whether the subject picked up this idiosyncratic use of the progressive from other nonnative speakers (or even native speakers), or whether this idiosyncratic behavior is part of a creative process of hypothesis testing of the target language system (MacLaughlin, 1990).

On the other hand, Robison obtained confirmatory evidence for the prediction of POA from the distribution of verbal endings associated with the punctual-durative distinction. He claimed that his study

furnished confirmation from one person's interlanguage that *when L2 verb morphemes enter the interlanguage* of an adult language learner, they are not uniformly distributed across

all verbs, but rather as in L1 acquisition, may be distributed according to the lexical aspectual classes of the verbs (p. 329, italics added).

However, two paragraphs later, Robison's position changes: "the prediction supported by this study is that ...verbal morphology correlates with lexical aspect at least *during some stage during the development of an interlanguage*" (pp. 329-330, italics added). The change in Robison's perspective is substantial because the sequence and timing of appearance of morphological markers of temporality are central for the analysis of the development of aspectual distinctions in L2 acquisition (cf. data from Salaberry, 1997 below).

In a second study, Robison (1995) analyzed English L2 data from 30 to 60-minute oral interviews with 26 college-level L1 Spanish speakers in Puerto Rico. The subjects were divided into four levels of proficiency based on the appropriate marking of morphological endings from written data. Interestingly, the results showed that the use of past tense across lexical aspectual classes was rare: Table 2 presents the data in percentages.

Table 2. Distribution of *past tense* morphological marking by aspectual class (adapted from Table 2, Robison, 1995)

	State	Activity	Accomplishment	Achievement
Group I (n=6)	1.4%	2.7%	4.5%	9.2%
Group II (n=7)	3.7%	4.3%	10.9%	32.1%
Group III (n=8)	0.9%	3.2%	11.6%	17.2%
Group IV (n=5)	1.0%	3.1%	18.1%	22.6%
Natives (n=3)	20.4%	15.3%	25.6%	31.2%

First, notice that the highest percentage of past tense marking occurred with *achievements* in group II (32.1%), but this high percentage dropped dramatically in group III to 17.2%. Second, there is

a noticeable — albeit small — increase in past marking of *stative* and *activity* verbs as well from group I to group II and a subsequent regression of this trend in the transition from group II to group III. Third, it is important to point out that the native speakers' data were collected by Robison in the United States in 1990, whereas the data from all student groups were collected in 1975 in Puerto Rico. It is apparent that the native speakers of English were probably not in contact with the Puerto Rican environment where the nonnative speakers learned English: all three native speakers grew up in the Midwest and had graduated from a middle class suburban high school. In this respect, it is doubtful that the control group of native speakers could provide a reliable assessment of the type of input that the nonnative speakers received in Puerto Rico.

Finally, it is important to point out that the lexical classes of statives and activities (both atelic) dominate the distribution of verb tokens in groups II through IV in a 2-to-1 ratio. However, data based on movie narratives (e.g., Bardovi-Harlig & Bergström, 1996; Hasbún, 1995; Ramsay, 1990; and Salaberry, 1997, 1998) generally show that the use of telic events (both accomplishments and achievements) is always higher than the use of atelic events (especially statives). In this respect, no discrimination of the effect of narrative type can be made in the data from Robison, because his data were elicited in a variety of ways. His informants were requested to provide (i) a description of their neighborhood and/or hometown, (ii) a narration of a show, movie or story they had seen or read, (iii) a description of various family members and friends, the last two years of their lives, their future plans and desires, what various people do in their work, and a special memory about a person place or event, and (iv) a questionnaire based on a series of pictures taken from the Bilingual Syntax Measure.

Ramsay 1990

Ramsay's study was based on the analysis of guided oral production of L2 Spanish students. The subjects were L1 English

speakers from diverse backgrounds (i.e., learning environment) and levels of experience with the language (including graduate students). The elicitation procedure used by Ramsay was based on a series of pictures from a children's book (Disney's *The Magic Stick*). The story was presented to the students as a series of ten episodes (ten pictures) with captions. The text associated with each picture included blank spaces that students had to complete. The inclusion of text with each picture was used to prevent students and native speakers from using the "historical present" in their narratives (e.g., Klein, 1994, p. 133-41). The first episode of the story did not have any blank spaces; it was all text. The amount of text in the remaining nine episodes decreased gradually. The text provided students with a series of cues about the appropriate marking of past tense morphology. Among native speakers, this procedure may help prevent the switch to the normal use of historical present, but among nonnative speakers it may help them pay attention to the morphological marking of verbs in past tense Spanish.⁵

Two significant features of the distribution of lexical aspectual classes in Ramsay's data are that (i) neither native speakers nor nonnative speakers used verbs of the activity type to a large extent and (ii) the distribution of verbal endings was similar for accomplishments and achievements. As a consequence, it is difficult to test the proposed spreading of aspectual marking from both ends of the continuum of verb types as determined by inherent aspect (e.g., Andersen, 1991). This particular distribution of aspectual classes may be a result of the type of elicitation procedure used in the study: telic events provide the story line and states provide the background of the story. Ramsay's data show the distribution of verbal morphology according to two lexical aspectual classes only: statives and telic events. To facilitate the interpretation of the data, the use of past tense marking in percentages is presented in Table 3.

Table 3. Distribution of past tense marking in Ramsay's data in percentages

Level	Stative	Telic
Group 1	0%	10%
Group 2	0%	25%
Group 3	30%	60%
Group 4	84%	86%
Group 5	98%	99%

It is important to note the following features of the marking of past tense verbal morphology: (i) in general, students did not mark statives with past tense markers until stage 3, but some telic events were marked with past tense starting in stage 1; (ii) learners marked statives (mostly) with the imperfect at stage 3; (iii) in contrast, approximately 25% of all telic verbs at stage 2 (average of 10 tokens) and about 60% of telic verbs at stage 3 (average of 23 tokens) were marked with the preterite; and (iv) no telic verb was marked with the imperfect during stages 2 or 3. In sum, Ramsay's data show a high degree of association between lexical aspectual class and morphological marking of grammatical aspect (for the contrast of statives and telic events only).

Bardovi-Harlig and Bergström 1996

Bardovi-Harlig and Bergström analyzed data from L2 French (collected among L1 English speakers) and L2 English (collected among learners from diverse L1 backgrounds). The analysis of the French data shows no support for the effect of the lexical semantic values of the verb phrase on the use of inflectional morphology. A summary of the distribution of verb morphology of the French data by lexical aspectual class and by level is presented in Table 4.

Table 4. Distribution of verb morphology (raw scores) according to inherent aspect: French data (adapted from Table 5 in Bardovi-Harlig & Bergström, 1995, p. 317)⁶

	Morphol.	State	Activity	Accomp.	Achiev.
Group 1 (n=4)	PC	0	6	5	26
	IMP	5	10	0	0
	Pres	14	16	4	14
Group 2 (n=7)	PC	3	13	13	62
	IMP	6	1	1	4
	Pres	7	6	2	24
Group 3 (n=7)	PC	10	29	34	80
	IMP	14	3	2	1
	Pres	23	4	2	7
Group 4 (n=5)	PC	5	16	19	69
	IMP	23	9	9	10
	Pres	7	3	1	6

First, the distinction between achievement and accomplishment verbs is not empirically validated, as acknowledged by the authors: "early strong use of achievements (63.4%) followed *closely* by accomplishments (50.0%)" (p. 318, italics added). The strong use of *passé composé* with both types of verbs is also maintained in subsequent stages of development with the following percentages for achievements and accomplishments respectively: 66% and 72% at stage 2, 87.9% and 87.2% at stage 3, and 79.3% and 61.3% at stage 4. Notice also that at stage 4 achievements were marked less often with *passé composé* than accomplishments (61.3% versus 79.3% respectively), contrary to the prediction of the lexical aspect hypothesis. Second, there is no evidence for the gradual spread of *passé composé* from accomplishment to activity verbs as predicted by the lexical aspect hypothesis (p. 318). In fact, the distribution of verbs marked with *passé composé* within these two aspectual classes remains similar throughout all four stages. The use of *passé composé* (raw scores) with activities and accomplishments

are as follows: 6 and 5 (group 1), 13 and 13 (group 2), 29 and 34 (group 3), and 16 and 19 (group 4).

Third, the comparison of the use of grammatical markers across all four aspectual categories is compromised by the unequal distribution of types and tokens for the category stative relative to the other categories (and especially achievement verbs). In fact, 81% of all state verbs (tokens) correspond to only two verb types: *être* and *avoir* (to be and to have). In essence, the category stative is not representative of a particular aspectual category; it more accurately reflects the evolution of two specific (basic) lexical items (lexical learning) in the L2 French of these subjects. Fourth, the evolution of French past tense grammatical markers is representative of tense rather than aspectual distinctions: the transition from stage 1 to stage 2 shows a dramatic shift in the use of verbal morphology (proportion of present tense-past tense markers) across all lexical aspectual categories. The transition to past tense is represented mostly by *passé composé*. The proportional use of *passé composé*-present from stage 1 to stage 2 for non-statives is as follows: for activity verbs from 6:16 at stage 1 to 13:6 at stage 2; for accomplishment verbs, from 5:4 at stage 1 to 13:2 at stage 2, and for achievement verbs, from 26:14 at stage 1 to 62:24 at stage 2. The shift of present tense marking to *passé composé* marking is also representative of the state verb category: proportional use of *passé composé*-present from 0:14 at stage 1 to 3:7 at stage 2. Notice also that for state verbs, the number of uses of *imparfait* for the state verbs remains unchanged from stage 1 to stage 2. In spite of this tendency, learners decreased the use of present tense and increased the use of *passé composé* within this verb category. This is even more compelling evidence since the state category is heavily represented by two single lexical items typically associated with the imperfect.

Finally, the data from the three non-state verb categories show that the transition from the use of unmarked to marked values of past tense (non-prototypical) occurs in the shift from stage 3 to stage 4. It is at this stage that these learners have begun to use *imparfait* with all

non-stative categories (marked value). With regards to the proposed spread of the *imparfait* from state to non-state verbs (Bardovi-Harlig & Bergström, p. 319), it is clear that the use of *imparfait* with non-state verbs is almost non-existent until stage 4. In turn, there is a sudden jump in the use of *imparfait* from stage 3 to stage 4 for non-state verbs. On the other hand, the early use of *imparfait* with state verbs (compare with 0 counts of *imparfait* in non-state categories at stage 1) is accounted for by the fact that language input normally favors the past tense marking of *être* and *avoir* with *imparfait* instead of *passé composé* (see analysis of textbook data from Salaberry, 1998). At stage 4 the use of *imparfait* has become heavily associated with the state verbs, although a few uses of *passé composé* remain (marked value of aspect).

The L2 English data reported in Bardovi-Harlig and Bergström are more difficult to analyze for three main reasons. First, the learners do not share the same L1 background. Of the total of 23 L2 English students who participated in the study 8 spoke Arabic, 4 Korean, 4 Japanese, 2 Spanish, 1 Amharic and 1 Thai (p. 326).⁷ In fact, most of these languages are not typologically related. Second, the L2 English students from this study cannot be considered classroom learners only as is the case with the L2 French students reported in the same study. These students were learning the L2 in the target language community. Third, English does not provide as clear a test case of tense-aspect distinctions as determinants of verb morphology as is the case in French or Spanish (obligatory marking of both aspect and tense in past tense). Despite these major contrasts between the two groups of learners reported by Bardovi-Harlig and Bergström, the L2 English data are also revelatory of tense distinctions occurring in the target language development of these learners.

As with the French data, the analysis of the English data show no signs of the proposed spread of morphological markers according to lexical aspectual classes (from telic to state verbs). First, Bardovi-Harlig and Bergström state that "in English for Group 1, achievements and accomplishments show the same level of past marking, with 46.4% and

47.1%..." Second, the shift from present tense to past tense occurred for statives as well: "the use of simple past with states increases noticeably from Group 1 (15.0%) to Group 2 (56.9%) ..." (pp. 317-8). Finally, the heavy use of present progressive or tenseless progressive (no auxiliary) at stage 1 shifts towards past progressive at stage 2 (p. 320). Hence, the shift from non-past to past tense marking with activity verbs occurs at the same time that it happens with state verbs. In sum, the spread of past tense marking in association with aspectual class of verb is not evident in the English data either.

Hasbún 1995

Hasbún (1995) analyzed written data from 80 L1 English speakers enrolled in four different levels of Spanish instruction: first to fourth year. The analysis of a written task was selected because it was assumed it would generate longer narratives (p. 98). The written narrative was based on an 8-minute silent video which was an excerpt from the film *Modern Times*. After the students watched the film twice they were asked to narrate it in writing. They were allotted 40 minutes to complete the task. The students were asked to start the story with the phrase "*Había una vez ...*" (Once upon a time ...) to prevent "advanced learners and native speakers of Spanish from shifting to the historical present."⁸ According to the experimental instructions, advanced nonnative speakers rarely used present tense. However, native speakers were less affected by the instructions and used the historical present to a larger extent than advanced nonnative speakers.⁹ A summary of the data from Hasbún's study is presented in Table 5.

First, the data from native speakers provide empirical evidence against a theoretical distinction between punctual and non-punctual telic events (performances). The distribution of preterite-imperfect in the categories accomplishment and achievement remained proportional in contrast with the distribution of grammatical marking of statives and activities. Among nonative speakers there was a shift from non-past to past marking for both telic events (accomplishments

and achievements) from period 1 to period 2. In periods 3 and 4 telic events were marked with the preterite except for a few tokens. In other words, the hypothesized spread of use of preterite marking from achievement to accomplishment verbs does not occur. Second, Hasbún's data do not show a spread of past tense marking (preterite) from telic to atelic events (activity verbs) and later to stative verbs: the marking of tense distinction occurred in period 2 across all categories of aspectual class. In fact, the first uses of past tense marking did not occur with achievements, but mostly with statives (followed by accomplishments and activities). The overall use of the preterite in period 1 (10 instances) corresponded to four "frequently used verbs:" *ser* (to be), *tener* (to have), *hablar* (to speak) and *ir* (to go). Interestingly, the first two are

Table 5. Distribution of verb morphology (average of raw scores) according to inherent aspect.

	Gram	State	Activity	Accompl.	Achiev.
Group 1	PRET	10	3	8	0
	IMP	1	0	0	0
	Present	149	105	85	96
Group 2	PRET	23	25	41	66
	IMP	39	5	3	3
	Present	52	44	59	52
Group 3	PRET	19	64	110	238
	IMP	79	27	2	6
	Present	11	6	15	13
Group 4	PRET	37	64	140	304
	IMP	126	61	9	12
	Present	26	9	4	4
Group NS	PRET	46	39	112	305
	IMP	107	55	13	20
	Present	40	54	58	143

stative verbs. The only instance of an imperfect corresponded to another stative verb: *estar* (to be). In period 2 all events (atelic and telic) were marked with preterite in roughly proportionally similar ways.¹⁰ On the other hand, statives in period 2 were mainly marked with the imperfect.

Third, it is reasonable to assume that the number of verb types corresponding to statives is quite limited as is the case in other studies with data from Romance languages (e.g., Bardovi-Harlig & Bergström, 1995; Bergström, 1995; Salaberry, 1997, 1998). The low number of verb types in this category — or any category for that matter — represents an ideal scenario for item-based learning (e.g., N. Ellis, 1996; R. Ellis, 1997).¹¹ Fourth, the profile of past tense marking among advanced students is similar to the native speakers' profiles. Hasbún argues that the choice of verb morphology by native and advanced nonnative speakers is different; but this is true only to the extent that nonnative speakers used the present tense less often than native speakers. That is to say, nonnative speakers' behavior conformed to the expectations of the researcher: the use of the phrase "*Había una vez ...*" prevented them — to a relative extent — from using the historical present. Native speakers' behavior, on the other hand, was less affected by the instructions. In sum, both native and advanced nonnative speakers (group 4) show a similar profile of use of the contrast preterite-imperfect with verbs from all aspectual classes.

Lafford 1996

Lafford (1996) asked thirteen L2 Spanish students from three different levels of proficiency (Intermediate Low, Intermediate Mid and Intermediate High on the ACTFL-OPI scale) to do an oral retell of a 10-minute silent video (The Sorcerer's Apprentice from Disney). She analyzed the data from two different perspectives: telicity (atelic versus telic verbs) and grounding (foreground versus background). A summary of the distribution of morphological markers in the data from that study is presented in Table 6.

Table 6. Distribution of morphological marking of verbs by level (atelic/telic) (Adapted from Lafford, 1996)

	Interm. low	Interm. mid	Interm. high
Preterite	6/5	19/11	32/35
Imperfect	0/0	0/0	46/0
Progressive	1/0	1/0	9/0
Present	34/1	63/12	67/7
TOTAL	41/6	83/23	154/42

The analysis of these data show the following: (i) the majority of verbs (across all levels) were atelic predicates, (ii) among the subjects from the Intermediate Low and Intermediate Mid levels the use of past tense was represented largely by the preterite, (iii) the only uses of the imperfect among the students in the Intermediate High level were associated with atelic verbs conveying background information, and (iv) the proportion of past tense-present tense was higher for telic verbs across all levels. In sum, these data show that the use of past tense verbal morphology was not directly associated with the lexical aspectual class of verbs during the beginning stages of acquisition (Intermediate Low and Intermediate Mid). Among the students classified in the Intermediate High level the use of the imperfect was restricted to atelic predicates. In other words, the use of the preterite may have functioned as a default marker of past tense. However, the results of Lafford's study — even though suggestive — must be taken with caution due to the low number of tokens per cell (both within and across levels).

Salaberry 1997, 1998

Salaberry (1998) analyzed the development of aspectual markers (i.e., *passé composé/imparfait*) in French as a second language (French L2) among college-level students. Thirty-nine English-speaking students enrolled in a second semester course in French and 30 native speakers of French performed two tasks: a written narration of a short

movie (6 minutes) and a discourse-based cloze test (41 items). The film selected for this study (Chafé, 1980) was shown only once and the students were given up to 15 minutes to complete the written narrative. The passage used for the cloze test was an excerpt from the magazine *Paris Match* (an interview). The order of presentation of the tasks (cloze test versus free narration) was counterbalanced to control for any effects of order of presentation.

The analysis of the data from the written narrative task revealed that both native and nonnative speakers used mostly past tense marking. A total of 1200 tokens of past tense verbs were analyzed in the written narratives of all subjects as in Table 7.

Table 7. Distribution of morphological marking per lexical aspectual class (tokens)

	Stative	Activity	Accomp.	Achiev.	TOTAL
FRE122					
PC	24	46	29	376	475
IMP	53	45	22	38	158
Natives					
PC	23	40	33	308	404
IMP	65	47	10	36	158

First, these data show that the narratives of the native speakers were not necessarily longer than the ones from nonnative speakers (although native speakers used a more varied repertoire of verb types). Second, the majority of tokens used by both groups corresponded to achievement verbs marked with perfective (*passé composé*): 55% of all tokens for native speakers and 59% for nonnative speakers. Third, the use of *imparfait* with statives among the French students was highly correlated with two verbs: *to be* (42 tokens) and *to have* (7 tokens). For native speakers, the same association was weaker: *to be* (34 tokens) and *to have* (4 tokens). In sum, 92% of all uses of *imparfait* with statives among FRE122 students corresponded to the two archetypal statives,

whereas for native speakers only 58% of uses of *imparfait* with stative verbs corresponded to those verbs (see also analysis of Bardovi-Harlig & Bergström, 1996 above). The results from the cloze test corroborated the analysis of the movie narrative data: inherent lexical aspectual values were related to the selection of verbal morphology, although the use of the imperfective marker with statives was closely associated with archetypal stative verbs. In sum, these data showed that (i) classroom instruction may increase the rate of development of the prototypical value of past tense aspectual marking by the end of the second semester of instruction, and (ii) the lack of access to L2 discursive-pragmatic conditions (academic instruction only) may delay the acquisition of viewpoint aspect (see Smith, 1991).

Salaberry (1997) analyzed the development of past tense verbal morphology in L2 Spanish among 20 college-level L1 English students divided into 5 groups: second semester (SPA112), third semester (SPA123), third semester advanced (SPA203), sixth semester (SPA311) and nearnative speakers (graduate students in Spanish). Four native speakers acted as a control group. The study was based on the analysis of oral movie narratives collected at two different times two months apart (both cross-sectional and longitudinal analysis). To minimize the effect of planning and monitoring (Ellis, 1987; Ochs, 1979; Tarone, 1988) the movie was shown only once (each time) and the narrative was elicited in the context of a role play situation. The students were asked to play the role of a witness who had to recount the events depicted in the movie (based on a robbery) to another student who played the role of a detective in charge of preparing the police report. Subsequently, the student playing the role of detective was requested to narrate the witness' report to the chief of detectives (a native speaker). Interestingly, native and near-native speakers used exclusively present tense in their narratives, whereas the students in SPA112 to SPA311 recounted the stories exclusively in past tense (with the exception of one student from SPA311).

A total of 2,054 verb tokens were analyzed in the data from all four groups of students. A summary of the data is presented in Table 8.

Table 8. Distribution of lexical aspectual classes by verbal morphology (across time in percentages)

	TIME 1				TIME 2			
	Telic	Activ.	State	Tokens	Telic	Activ.	State	Tokens
SPA112								
Preterite	60%	26%	15%	47	81%	7%	12%	75
Imperfect	0%	0%	100%	1	50%	0%	50%	4
Present	60%	10%	30%	91	59%	13%	29%	70
SPA123								
Preterite	74%	12%	14%	203	83%	9%	8%	149
Imperfect	33%	19%	48%	42	34%	0%	66%	29
Present	34%	7%	59%	68	49%	1%	50%	68
SPA203								
Preterite	85%	7%	8%	102	90%	6%	5%	105
Imperfect	9%	11%	81%	47	7%	10%	83%	30
Present	24%	5%	70%	37	27%	25%	48%	44
SPA311								
Preterite	94%	5%	2%	175	86%	8%	6%	172
Imperfect	7%	7%	86%	85	13%	4%	83%	92
Present	53%	13%	35%	112	55%	9%	36%	76

The analysis of the data showed that (i) the number of verb tokens increased with the level of experience of the students, (ii) the number of verb tokens per level remained almost unchanged from Time 1 to Time 2, (iii) the number of verb tokens was unequally distributed across lexical aspectual classes irrespective of level, and (iv) the SPA112 group (second semester) was the only group which did not use a contrast of past tense morphological marking by means of the use of both preterite and imperfect. The absence of the imperfect among SPA112 students is

particularly important at Time 2 because at that point the imperfect had been introduced as a formal grammatical topic and had been practiced for two weeks (see also oral data from Lafford, 1996).

Among the groups that used both markers of past tense, the increase in the use of the preterite with telic verbs was consistent and gradual both across time within each group and across levels. The change in the percentage of telic verbs marked with preterite shifted from 74% (SPA123, Time 1) to 83% (SPA123, Time 2) to 85% (SPA203, Time 1) to 90% (SPA203, Time 2) to 94% (SPA311, Time 1). However, in the transition from Time 1 to Time 2 within the SPA311 group the direction of change was reversed: 86% of telic verbs were marked with the preterite. This slight change may plausibly signal a tenuous attempt at marking viewpoint aspect (non-prototypical marking of lexical aspectual classes). In fact, this reversal in the constant increase towards complete marking of verbal morphology according to lexical aspect has been shown in previous studies of academic learning of L2 Spanish as well (e.g., Hasbún, 1995; Ramsay, 1990). A similar trend is evident in the use of the imperfect: a consistent and gradual increase both across time and across levels towards complete correspondence of imperfect morphology with lexical aspect. In this case we identify a change of 48% (SPA123, Time 1) to 66% (SPA123, Time 2) to 81% (SPA203, Time 1) to 83% (SPA203, Time 2) to 86% (SPA311, Time 1). Once again we notice that in the transition from Time 1 to Time 2 for the SPA311 group the direction of change is reversed with the percentage moving slightly back to 83%. In sum, the data from Salaberry (1997) show that the lexical aspectual semantics of the verb phrase has an increasing influence on the selection of verbal endings throughout development of the L2. The increasing effect of lexical aspectual class with level of experience in the target language is substantiated with the analysis of both morphological markers of past tense (preterite or imperfect) in parallel (concurrent effects). In contrast, the effect of lexical aspect during the beginning stages of acquisition is minimal compared to the effect of tense contrasts.

In a pilot study following Salaberry (1997), I investigated the development of past tense marking in a language which does not use inflectional endings to contrast past tense aspect (i.e., English) among native speakers of a language which regularly uses inflectional markers for that purpose (i.e., Spanish).¹² The data from the pilot study were collected among 17 Spanish native speakers learning L2 English in an academic setting (third and fourth semester of instruction). The participants were requested to narrate in writing one of the two movies used in Salaberry (1997): Chaplin's *Alone and Hungry* (also used by Hasbún, 1995 and Bergström, 1995). The movie was shown once and the students were allotted a maximum of 20 minutes to complete the narration. A total of 539 tokens were analyzed in the data from all subjects. As in similar previous studies, the majority of tokens corresponded to telic predicates: 292 verb tokens among the 3rd semester students (approximately ten times more tokens than the stative category) and 180 verb tokens among the 4th semester students (approximately eight times more tokens than the stative category). A summary of the data in percentages is presented in Tables 9 and 10.

Table 9. Distribution of verbal morphological endings *across* lexical aspectual classes (percentages across rows)

	3 rd semester		4 th semester	
Morphology	Telic	Stative	Telic	Stative
Past tense	91%	8.6%	90%	10%
Present	92%	6.6%	83%	16%

Table 10. Distribution of verbal morphological endings *within* lexical aspectual classes (percentages down columns)

	3 rd semester		4 th semester	
Morphology	Telic	Stative	Telic	Stative
Past tense	70%	73%	77%	65%
Present	24%	19%	17%	26%

There is no indication that lexical aspectual class has an effect for the selection of inflectional morphology neither across nor within lexical aspectual classes. The use of past tense marking was categorically more common with telic events for both groups of students (approximately 90% against 10%). However, the same trend is evident in the marking of present tense. In other words past tense marking was not used preferentially with telic events. Similarly, the analysis of past tense marking within each lexical aspectual class reveals that approximately three fourths of verbal predicates were marked with past tense irrespective of lexical aspectual class.

Further research on the development of L2 tense-aspect morphology

The previous review of empirical studies on tense and aspect development among academic learners reveals conflicting results. In this section I will take a look at the potential confounding factors that may lead to such contradictory results. I will analyze methodological and research design factors that should be considered in the implementation of future research studies.

As stated in the introduction section, empirical studies on the development of inflectional morphology among L2 adult learners may provide important information about the process of L2 acquisition. In this respect, the studies from the previous section show a number of generalizations across proficiency levels, language learning environment and procedures of data collection. For instance, it is possible that the following phenomena affect the choice of inflectional markers of past tense among adult learners: (i) adult L2 learners are cognitively capable of narrating stories set in past tense contexts (e.g., Dietrich, et al., 1995; Klein & Perdue, 1992; Schumann, 1987; Trévis, 1987); (ii) narratives among both native and nonnative speakers are structured along the lines of figure and ground (prototypical aspectual value) (e.g., Bardovi-Harlig, 1995; Kumpf, 1984; Meisel, 1987; Reinhart,

1984); (iii) untutored learners mark figure and ground (mostly) with pragmatic devices and tutored learners (mostly) with morphosyntactic means (e.g., Sato, 1990; Schumann, 1987; Trévisé, 1987 for untutored learners; Bardovi-Harlig & Bergström, 1996; Hasbún, 1995; Ramsay, 1990; Salaberry, 1997, in press for tutored learners); (iv) non-prototypical aspectual values reflect conventional choices made by speakers who share a common background (be it determined by linguistic or cognitive-linguistic factors) (e.g., Andersen, 1994; Coppieters, 1987; Ramsay, 1989); and (v) classroom learners do not have direct access to the distributional bias of aspectual oppositions (cf. marked values) present in native speakers' discourse (e.g., Andersen, 1994; Andersen & Shirai, 1994; Wiberg, 1996).

However, despite the above mentioned list of preliminary generalizations there are several areas of research that need to be pursued further in order to obtain a better understanding of the development of tense and aspect in L2 acquisition. In this respect, it is important to identify crucial features in the development of morphological markers across (a) learning environments and (b) data collection/data analysis procedures. In terms of learning environment, it is important to recognize the following factors

- (i) setting effects (e.g., natural versus academic environments),
- (ii) instruction effects (instructed versus non-instructed learners),
- (iii) age effects (e.g., adults, children and adolescents), and
- (iv) language typology effects (e.g., all subjects share the same L1).

In terms of data collection and analysis, the following factors are essential for the appropriate design of future research studies:

- (i) grouping factors (i.e., levels of L2 proficiency of selected subjects),
- (ii) selection of longitudinal versus cross-sectional analysis,
- (iii) classification of verbal predicates (i.e., operational tests),
- (iv) data elicitation procedures (e.g., role play setting),
- (v) use of oral versus written data,
- (vi) selection of discrete item grammar tests versus narrative tasks,
- (vii) use of personal versus movie narratives,
- (viii) use of sentence level versus discourse level grammar tests,
- (ix) use of introspective studies, and
- (x) type of data analysis (e.g., analysis within or across lexical classes)

For instance, if we decide to compare the study from Salaberry (1997) with other studies, several features of the procedure of data collection should be taken into account. In terms of learning environment (factor a), in Salaberry (1997) learners had exposure to the target language mainly through academic instruction at the college level (items i and ii), all subjects were college-level students (item iii), and all learners were native speakers of a single language (i.e., English) (item iv). In terms of data collection procedure and data analysis (factor b), the grouping of subjects was done according to placement in course level (item i), the data on movie narratives were collected at two different times (item ii), the operational tests were explicitly described and reliability was assessed through interrater and intrarater procedures (item iii), the films used for the narrative task were shown once and the narratives were elicited with a role play (item iv), and the film narratives were delivered in oral instead of writing format (items v, vi, and vii). Items viii through x are not directly applicable for the comparison with the studies reviewed above. In sum, the careful control of the above mentioned factors may provide researchers with principled means to identify and assess discrepancies among empirical studies.

Two other important factors should be considered for the design of future studies on the development of temporality: the use of replication studies and the analysis of discursive-pragmatic factors. First, it is apparent that some differences in outcome between studies may be due to minor methodological differences in data collection procedures. The use of complete replication studies (e.g., Bergström, 1997) may help us understand which factors of data collection procedures may have a major impact on the outcome of the study. Finally, discursive and pragmatic factors should also be incorporated into the analysis of the development of past tense verbal morphology. In fact, the restricted scope of analysis of the studies that investigate the development of aspectual marking according to lexical aspect, and the intriguing results of some studies which contradict the strong version of the lexical aspect hypothesis (e.g., Coppieters, 1987; Housen, 1994; Kumpf, 1984; Lafford, 1996; Liskin-Gasparro, 1997; Salaberry, 1997) warrant a closer look at the interface between semantic, discursive and pragmatic factors in the development of L2 aspectual marking.

The recent account offered by Andersen and Shirai (1994) of the development of aspectual distinctions in L2 learning points in the direction of discursive-pragmatic factors as the ultimate determinant of the acquisition of aspect. Andersen and Shirai argue that the Relevance Principle (aspect is more relevant to the meaning of the verb than tense, mood or agreement) and the Congruence Principle (learners choose the morpheme whose aspectual meaning is most congruent with the aspectual meaning of the verb) "are especially sensitive to discourse-pragmatic function. Verbs and inflections are chosen to fulfill the needs of the speaker in ongoing discourse..." (p. 147). In fact, it should be pointed out that neither the Relevance Principle nor the Congruence Principle can explain the combined use of preterite and imperfect within each lexical aspectual category after stage 5 of the developmental sequence proposed by Andersen (1986): see Table 1 above. Notice that from stage 5 to stage 8 the learner is marking grammatical aspect irrespective of the lexical aspectual class of the

verb (i.e., viewpoint aspect). In other words, the aspect hypothesis is relevant for the development of L2 past tense marking until stage 4 only. From stage 5 onwards the learner must select between two potential markers of grammatical aspect according to discursive as well as semantic conditions. In fact, Smith argues that "the speaker expresses a given aspectual meaning according to the grammar of the language and the conventions of use for that language. . . . *The conventions involve standard and marked choices, shared information between speaker and receiver, and other pragmatic considerations*" (1991, p. 12, italics added). The conventions of use represent the type of information that the native speaker may not share with the nonnative speaker and where the discrepancies between them may surface. Several studies in L2 development have shown these differences (e.g., Coppieters, 1987; Salaberry, 1998).

Conclusion

In this paper I have claimed that the development of morphological markers of temporality (i.e., tense and aspect) in a nonnative language may provide relevant evidence for the use of general cognitive processes in second language acquisition (see Bley-Vroman, 1989; Flynn & Manuel, 1991; Paradis, 1994; Schmidt, 1990; Schwartz, 1993). In this respect, it is important to identify and investigate the underlying factors that lead towards the acquisition of verbal morphology among adult learners. Subsequently, I described the claims made by two recent hypotheses on the development of verbal morphology (lexical aspect hypothesis and discourse hypothesis) and I reviewed several empirical studies that test those hypotheses. The analysis of these empirical studies shows their results to be potentially contradictory (e.g., Bardovi-Harlig & Bergström, 1996; Hasbún, 1995; Lafford, 1996; Ramsay, 1990; Robison, 1990, 1995; Salaberry, 1997, 1998; Schmidt & Frota, 1986). Therefore, I have argued that several factors should be considered in the comparative analysis of empirical data that support specific

hypotheses on the development of past tense verbal morphology. In particular, I have claimed that future research should be especially attentive to four main factors: learning environment, data collection and analysis procedures, the use of replication studies and the analysis of discursive-pragmatic factors as well as semantic ones.

Notes

- 1 *Venir de* is literally translated as “to arrive from (doing something).”
- 2 Learners may use present tense to convey imperfective aspect in contrast with perfectivity. The important point here is that Anthony was not yet able to use the target-like marking of grammatical aspect.
- 3 Similar results have been obtained in the analysis of creoles. Givón (1982) shows that in creoles the Ø form (base form of the verb) marks the main plot of the narrative.
- 4 However, this was not the case for his intermediate-level informants.
- 5 The implementation of the procedure was so successful that native speakers never used present tense. However, as we will see in other studies, native speakers rarely use past tense to narrate sequenced events of the type exemplified in the Disney story.
- 6 The use of the progressive is not included in Table 4 due to the low count of tokens in this category.
- 7 The native language of the other three students was not reported.
- 8 There is an underlying assumption that beginning and intermediate academic learners will not resort to the “historical present” when cued to use past tense, whereas advanced learners and native speakers will use historical present even when asked to narrate the story in the past tense (see also Salaberry, 1997).
- 9 Sebastian & Slobin (1994: 244) also show that adults favor the use of historical present in narratives, whereas children until age five favor the use of past tense.

- 10 The data shown in Table 5 do not present raw scores from other markers of temporality. For instance, three activity verbs were marked with present progressive in period 1, but, in period 2 three verbs were marked with present progressive, and four verbs were marked with past progressive. This may signal the beginning of a shift from nonpast to past marking with the use of the progressive as well.
- 11 This assumption may only be speculative because there is no information about the number of verb types in this category.
- 12 To the best of my knowledge the only lexical aspect study which has tested this particular combination of source and target language has been Robison (1990). However, Robison's study was based on data from a single subject who was also a non-academic learner in the natural environment.

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