L2 English Morpheme Acquisition Order: The Lack of Consensus Examined From a Case Study of Four L1 Chinese Pre-School Boys

Melissa Cox

General consensus seems to exist about the L1 English morpheme acquisition order among native speakers. Conversely, the same kind of concurrence is not found for L2 English morpheme acquisition. This may be due to a lack of consistency in the methodology used to measure acquisition. This article examines the morpheme acquisition order of four Chinese-speaking pre-school boys to demonstrate that certain criteria for measuring morpheme acquisition are more illustrative than others. The degree of success is a particular criterion in evaluating morpheme acquisition that affects methodological consistency necessary to make a comparison. By means of this case study, the article highlights methodological inconsistencies among L2 English morpheme studies that inhibit a legitimate comparison. The educational implication is that it is thus more difficult to identify atypicalities in L2 English acquisition to then be able to provide appropriate intervention.

Introduction

Studies show that for L1 English morpheme acquisition order, there is general consensus concerning when learners acquire particular morphemes; however, the same cannot be said for L2 English morpheme acquisition orders. A closer examination of these studies reveals that L1 English researchers employ consistent methodology when measuring acquisition, whereas researchers of L2 English do not necessarily. The review of the literature will divide previous studies into three categories depending on the criteria used to measure morpheme acquisition; the categories will be termed Mastery, Graded, and Emergence. The goal of this article is to consider what extent methodological inconsistencies contribute to the lack of consensus among L2 English learners.
morpheme acquisition studies. The hypothesis is that certain criteria for measurement are more useful than others and that, as a result, they should receive more credibility in considering morpheme acquisition when making any kind of comparison. After examining model studies that respectively employ the three criteria, the case in point is illustrated in the example of the L1 English acquisition of four Chinese-speaking L1 pre-school boys who are learning English in the United States.

First and Second Language Morpheme Acquisition of English

Studies Based on the Mastery Criteria

A review of morpheme acquisition studies begins with Brown, who set the framework with his 1973 study of the L1 English acquisition of three pre-school aged children he called Adam, Eve and Sarah. Measuring the children’s stage of language development by their mean length of utterance (MLU), a figure that is calculated by counting the average length of morphemes the child produces per utterance, Brown (1973) established when children acquired particular morphemes. A child was considered to have acquired a given morpheme when it was present 90% of the time in obligatory contexts in three successive speech samples for each child (Brown 1973). An obligatory context for morphemes is considered the context in which a certain morpheme is required for grammaticality. For the purpose of this article, this methodology established by Brown (1973) will be labeled as “Mastery.” Brown found that the L1 English order of acquisition of morphemes was consistent among unrelated learners. For example, he found that the present progressive and plural morphemes were acquired early, whereas auxiliaries were mastered later. He attributed this constancy to “some factor or some set of factors that cause the grammatical morphemes to develop in a consistent order among the children” (1973: 272). A complete representation of his morpheme findings can be found in Table 1, alongside those of another set of researchers, de Villiers and de Villiers (1973), to be addressed next.

In a study that sought to measure the L1 English morpheme acquisition order among 21 English-speaking children between the ages of 16 and 40 months, de Villiers and de Villiers (1973) found results consistent with those of Brown (1973). Like Brown (1973), de Villiers and de Villiers (1973) also employed the Mastery criteria but used two methods of calculation. In the first, Method 1, the authors first ordered a given morpheme according to the lowest MLU sample at which it was present in 90% of obligatory contexts. In Method 2, the percentages of each morpheme were added across all the subjects and averaged. The resulting mean percentages were then ranked. The morpheme acquisition order found by de Villiers & de Villiers (1973) using these methods can be understood in comparison to Brown’s (1973) in Table 1. The numbers indicate the ranking of a given morpheme in the acquisition order.

Except for the later acquired morphemes, roughly corresponding to morpheme number 10 and higher in Table 1 for Brown (1973), the criteria for acquisition that Brown established is the Mastery order described above. Morphemes in the later stages did not meet the 90% criteria but rather are ordered as acquired in relation to one another. According to Brown (1973), this ordering likely reflects the ultimate order of acquisition.

<table>
<thead>
<tr>
<th>Method 1</th>
<th>Method 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>present</td>
<td>progressive</td>
</tr>
<tr>
<td>progressive</td>
<td>plural</td>
</tr>
<tr>
<td>past irregular</td>
<td>possessive</td>
</tr>
<tr>
<td>possessive</td>
<td>contractible</td>
</tr>
<tr>
<td>copula</td>
<td>3rd person</td>
</tr>
<tr>
<td>article</td>
<td>contractible</td>
</tr>
<tr>
<td>past regular</td>
<td>copula</td>
</tr>
<tr>
<td>3rd person regular</td>
<td>copula</td>
</tr>
<tr>
<td>3rd person irregular</td>
<td>regular</td>
</tr>
<tr>
<td>uncontractible</td>
<td>copula</td>
</tr>
<tr>
<td>auxiliary</td>
<td>contractible</td>
</tr>
</tbody>
</table>

If we consider that slight variances, perhaps due to factors to be discussed later, do not detract from the general comparability of the findings, Table 1 shows that the orders found by the studies are consistent, noting that the same system of measurement was employed. Specifically, to note some patterns, for both studies the present progressive and plural are acquired early, while the contractible and

1 Because the language-acquisition study I use in my own study does not measure the proportions it and as, I do not take into account the emergence of these morphemes in any of the studies reviewed here. The introduced sentence also includes ellipses.
contractile copula and auxiliary are among the later acquired morphemes. In the middle of the learning process, articles and possessives are found to be acquired.

According to Ellis (1994), Brown's "influential" study suggests a "fixed order" of English morpheme acquisition. De Villiers and de Villiers (1973) study Brown's (1973) results and claim that the significantly more accurate those of Brown (1973). As evidenced by its frequent inclusion in other studies of morpheme acquisition order, Brown's frame of reference for L1 English morpheme acquisition order. It thus seems that general consensus exists about consistent findings for first language English morpheme acquisition. These can be used to help development of English speakers.

Turning now to the second language English acquisition of English, Hakuta (1976) also used the Mastery criteria in the morpheme acquisition of Uguisu, a 5 year-old Japanese girl. During this 60-week longitudinal study, Hakuta tracked the order of Uguisu's acquisition of English morphemes according to the timing of data collection during which each morpheme was identified as acquired. This acquisition order is illustrated in Table 4, where it is contrasted with the findings of two other L2-English studies. Like other researchers, Hakuta found the present progressive to appear early, but in his study some morphemes, such as the plural, third person irregular, past irregular and past regular never appeared.

Studies Based on the Graded Criteria

In addition to studies previously reviewed that employed the Mastery criteria for the acquisition of morphemes, other studies employed a measurement system that will be termed "Graded" for the purposes of this article. By this method of calculation, unlike that of Mastery, a graded system is used to note how a morpheme is used; that is, not just whether it is mastered, but rather how often it is used both correctly and incorrectly.

The first of these studies to be reviewed is that of an early L2 English morpheme study by Dulay and Burt (1973). These authors studied the natural speech from 145 Spanish L1 five-to-eight-year-olds in a cross-sectional study. The authors found similarities in the order of acquisition of morphemes among groups of L2 English learners; however, this order differed from the L1 order as proposed by Brown (1973). For the Graded calculation, the authors took into account and used Brown's (1973) criterion of obligatory contexts. Nevertheless, whereas Brown considered a morpheme acquired if it was present 90% of the time in three consecutive speech samples, what has previously been identified as the Mastery criterion, Dulay and Burt (1973) employed a point system to sort morphemes depending on how they were used. They use the term "func-

Table 2

L2 English Morpheme Acquisition Order Determined by Dulay and Burt (1973)

| 1. plural |
| 2. present progressive |
| 3. contractible auxiliary |
| 4. article |
| 5. irregular past |
| 6. 3rd person singular |
| 7. possessive |

In an attempt to address the issue of establishing universal tendencies for the acquisition of English morphemes among learners of diverse L1s, Bailey, Madden and Krashen (1974) replicated Dulay and Burt's (1973) study but with adults of different L1s, in another cross-sectional study. Like Dulay and Burt (1973), Bailey et al. (1974) used Brown's (1973) same concept of obligatory contexts and assigned a point system, the Graded methodology, to assess how a morpheme was used in performing their calculation. This calculation consisted of dividing the correctly formed and used functions by the obligatory contexts for them.

By using this ratio, Bailey et al. (1974) found that there was a strong degree of correspondence for the accuracy of acquisition of eight morphemes between the Spanish L1 group and the rest of the L2 English language learners with diverse L1s. Furthermore, they also found that the adult order of acquisition of English morphemes did not resemble the order established by previous English L1 studies but rather resembled the order for child L2 English learners such as that established by Dulay and Burt (1973). Their results for adult learners were charted in

1. plural
2. present progressive
3. contractible auxiliary
4. article
5. irregular past
6. 3rd person singular
7. possessive
the form of a graph, as were the results of Duyal and Burt (1972). An *interpretation* of their graph reveals they also found the present progressive to appear first but in contrast to other researchers, they found the possessive and third person singular to appear later. Their morpheme order findings appear in Table 4 in comparison to the findings of Hakuta (1976) and other L2 English researchers.

As a consequence of these findings, Bailey et al. (1974) assert the existence of two orderings for English morphemes: one for children learning English as a first language and one for children and adults learning English as a second language. In other words, they claim that there is a distinct "natural order" for the acquisition of morphemes among second language learners of English regardless of age or first language background.

**Studies Based on the Emergence Criteria**

A third set of criteria by which researchers have considered L2 English morphemes acquired is that of "Emergence." According to the Emergence criteria, the presence of a given morpheme in the language of an L2 learner is all that is required to document acquisition.

Cameron and Lee (1999) used this methodology in their study of three Chinese (Mandarin) speaking children who were learning English as a second language in an English-speaking environment in Canada. These authors did not consider the concept of obligatory context as defined by Brown (1973). Instead, they differentiated between three stages of acquisition: emergence, learning and mastery. They noted that for their study they considered emergence for the establishment of an L2 English morpheme ordering. If a morpheme was used correctly at least once by the participants in the data collection for a given month, it was marked as present. Otherwise, it was considered absent. They provide no further information about the criteria for the use of a morpheme in question.

This Emergence method of calculation is to be contrasted with the Mastery and Graded techniques previously detailed and described. Table 3 illustrates the month of exposure to English during which particular morphemes emerged among the three subjects.

**Inconsistencies**

From studying the morpheme orders of the studies reviewed, juxtaposed anew in Table 4, it seems to be the case that although there is consistency found in the ordering of L1 English morpheme acquisition (Table 1), the same cannot be said for that of L2 English morpheme acquisi-

Table 3: Emergence of Morpheme According to Month of English Exposure in Cameron and Lee (1999) Subjects

<table>
<thead>
<tr>
<th>Morpheme</th>
<th>Example</th>
<th>Alex</th>
<th>Bev</th>
<th>Casey</th>
</tr>
</thead>
<tbody>
<tr>
<td>article</td>
<td>a/the</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>plural regular</td>
<td>-s</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>possessive</td>
<td>'s</td>
<td>7</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>present copula</td>
<td>is/am/are</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>progressive</td>
<td>-ing</td>
<td>7</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>past tense regular</td>
<td></td>
<td>16</td>
<td>7/17</td>
<td>15</td>
</tr>
<tr>
<td>verb plural</td>
<td>play</td>
<td>6</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>3rd person regular</td>
<td>plays</td>
<td>7/18</td>
<td>8/17</td>
<td>9</td>
</tr>
</tbody>
</table>

meant to be illustrative.

To take specific examples of differences, the reader will note that although the possessive occurs in the middle in both Cameron and Lee's (1999) study and Hakuta's (1976), it occurs last in Bailey et al.'s (1974) study. On a similar note, although Bailey et al. (1974) and Hakuta (1976) found the present progressive to be the first morpheme to be acquired, it emerged much later for Cameron and Lee's (1999) subject "Alex." This lack of agreement between L2 morpheme acquisition studies is particularly noticeable when compared with the consistent results found in Table 1. As was noted in Table 1, the present progressive and plural, for example, were acquired consistently early among the subjects of the L1 researchers Brown (1973), and de Villiers and de Villiers (1973), while the contractible and uncontractible copula and auxiliary are among the later acquired morphemes. Among their subjects, articles and possessive morphemes were found to be acquired in the middle of the learning pattern. Such similarities are not as evident among the L2 research findings represented in Table 4. Given the diversity of methods of calculation reviewed, of which three have been identified in this article, the issue of methodological inconsistency...
seems an important factor to consider in accounting for resulting differences in morpheme acquisition orders. 

Methodological Debates

It is relevant to observe at this point that morpheme researchers usually collect their data either longitudinally, as did Brown (1973), Hakuta (1976) and Cameron and Lee (1999); or at a single point in time, that is, cross-sectionally, as did de Villiers and de Villiers (1973), Dulay and Burt (1973) and Bailey et al. (1974). In the longitudinal method, a few select subjects are followed over long periods of time to observe their changing language development, whereas in cross-sectional studies, researchers only collect data at one particular instance. Various statistical measurements are then employed to determine acquisition.

It is acknowledged, however, that the validity of this latter type of measurement is providing insights into morpheme development is itself uncertain. Rosansky (1976), for example, has observed a lack of correlation between results found longitudinally and cross-sectionally, even among the same subject. In order to circumvent these resulting discrepancies which could be due in part to differences in data collection methods, some researchers including Fraser (1977) propose a L2 morpheme acquisition order based on groupings tendencies. Another approach, Pica's (1983, 1988) target-like use analysis, also offers an important alternative as it takes into consideration not just the presence of morphemes in obligatory contexts, but also their use in contexts when they are not required. Despite these discrepancies in L2 morpheme acquisition research, which have been attributed to differences in data collection methods, it is interesting to note that Brown (1973) and de Villiers and de Villiers (1973) found consistent results for L1 English acquisition despite collecting data longitudinally and cross-sectionally respectively. Furthermore, Dulay and Burt (1973) and Bailey et al. (1974) found consistent results as illustrated in Tables 3 and 4 using Graded methodology though collecting data cross-sectionally. This suggests that, when considering validity of measurement, the method of data collection is not as important as the criteria used to consider acquisition, providing more reason to consider the role of methodological inconsistencies in morpheme acquisition measurement. Rosansky's (1976) findings only underscore the importance of employing consistent methodology to make any conclusions given the questionable validity of cross-sectional data collection.

Hypothesis

The apparent importance of consistent methodology and the superiority of some criteria over others, leads to the present hypothesis: Certain criteria are more helpful than others for measuring morpheme acquisition orders. This hypothesis will be more explicitly tested by measuring the L2 English morpheme acquisition orders of four research subjects considering two of the measurement criteria identified, those of Emergence and Mastery. The findings may illuminate why little consensus has been reached for L2 English morpheme acquisition order, particularly exploring the role of criteria usefulness for methodological consistency.

Methodology

To carry out the investigation, the author elicited speech samples from four boys with Chinese dialects as their native languages who were learning English as a second language. The four boys were enrolled in a child-care center in a Mid-Atlantic state in the U.S. where 56 percent of the students were non-native speakers of English, the majority of whom were Chinese. The language of instruction at the center is English but non-native speakers, including the four subjects, receive supplemental ESL instruction. This support is in the form of special pull-out language sessions with the language coordinator.

It is in this capacity that the author collected her data. Once a week for three months, barring exceptional circumstances, the author conducted two pull-out language sessions with two groups of three learners each.
two of whom in each group were identified as research subjects. These constituted the only additional English-language support for the subjects during the week and were supervised by the language coordinator.

Participants

The two groups consisted of three boys and one girl each. The first group consisted of boys from the same pre-school class; the girls from the same kindergarten class; boys from the same pre-school class; and girls from the same kindergarten class. The second group consisted of boys from the same pre-school class; the girls from the same kindergarten class; boys from the same pre-school class; and girls from the same kindergarten class.

Table 3: Background Information for Subjects

<table>
<thead>
<tr>
<th>Subject</th>
<th>Date of Birth</th>
<th>Age During Study</th>
<th>Age at Enrollment in Child Care Center</th>
<th>Pre-test L1 Evaluation (average score on a scale of 1-5)</th>
<th>Pre-test L1 Language Age Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joshua</td>
<td>3/31/1999</td>
<td>4-9</td>
<td>5.0</td>
<td>4</td>
<td>3.11</td>
</tr>
<tr>
<td>Damian</td>
<td>4/30/1999</td>
<td>4-9</td>
<td>2.5</td>
<td>4.2</td>
<td>4.11</td>
</tr>
<tr>
<td>Adrian</td>
<td>1/23/1998</td>
<td>4-12</td>
<td>6.0</td>
<td>4.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Sidney</td>
<td>7/10/1998</td>
<td>5-6</td>
<td>5.6</td>
<td>4.5</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Procedure

During the language sessions, the emphasis was on providing the children with supplemental language input and practice as opposed to providing specific grammar lessons. Activities included reading stories, having the children retell the stories of wordless picture books; playing games with image cards to learn the vocabulary of common objects and verbs; putting together puzzles that provided vocabulary exposure and opportunities to convey sequences of time; playing games; and engaging in coloring activities to focus on prepositional relationships, in particular for the older group. There were also sessions focusing on the he/she distinction in English as these pronouns do not exist in spoken Chinese and were frequently misused by the children.

Instruments

Over the course of the three months, during what amounted to nine data-collection sessions which lasted between 20 and 45 minutes each, the author tape recorded then transcribed the interactions. Each of the subjects was pre-tested by an experienced tester with the Pre-School Language Scale 4 test (PLS4), a test primarily designed to evaluate the L1 English of native-speaking children. This test was selected because it is a widely used standardized test for pre-school children which looks at a broad range of language functions of both auditory comprehension and expressive communication. The test assessed the subjects' language level in terms of that of a native English-speaking child at particular ages. The results of the subject's overall English language abilities at the start of the study in L1 English years are represented in Table 5.

The pre- and post-tests contained one or two questions on each morpheme taken from the PLS4 plus from an earlier version, the PLS3 test. The reader should note that, due to the nature of the PLS4 and PLS3 tests, the morpheme items tested do not correspond exactly to those measured by Brown (1973) and others researchers. Specifically, as the PLS tests did not measure the acquisition of the prepositions in and on, neither did this study. Likewise, as the tests did measure acquisition of the morpheme -er, "one who," this author studied it, even though it was not addressed in the studies reviewed.

Results and Discussion

To determine the L2 English morpheme acquisition order of the subjects, two criteria of measurement were employed to test their usefulness in producing illustrative results. To review, this article has identified three criteria of measurement of English morpheme acquisition order: Mastery, Graduated and Emergence. According to the Mastery definition, a child is considered to have acquired a given morpheme when it is present 90% of the time in obligatory contexts in three successive speech samples for each child. The Gradated methodology uses a point system to compare the rates of accurate usage of various morphemes. In the Emergence criteria, it is simply noted whether or not a given morpheme is present.

For the present study, the two example measurement systems employed were Emergence and Mastery. Each data collection session was considered one speech sample. Assessing the acquisition of morphemes in terms of the two methods, Emergence and Mastery, yielded the results shown in Table 6. Only those morphemes which the subjects had not already acquired, as determined by the pre-test, are included. The numbers indicate the session number (1-9) in which the morpheme was considered acquired.

Using the session number in which a morpheme was considered acquired under each method, as depicted in Table 6, Table 7 juxtaposes
Table 6
Session Number When Morpheme was Acquired by Two Methods of Analysis

<table>
<thead>
<tr>
<th>Morpheme</th>
<th>Joshua</th>
<th>Damilas</th>
<th>Adrián</th>
<th>Sidney</th>
<th>Joshua</th>
<th>Damilas</th>
<th>Adrián</th>
<th>Sidney</th>
</tr>
</thead>
<tbody>
<tr>
<td>plural regular</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>plural irregular</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>possessive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>past irregular</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>comparative</td>
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<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>copula</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3rd person singular</td>
<td></td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>3rd person irregular</td>
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<td>1</td>
<td></td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>&quot;one who&quot;</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 7
Order of Morpheme Acquisition per Child per Method

<table>
<thead>
<tr>
<th>Emergence</th>
<th>Joshua Mastery</th>
<th>Emergence</th>
<th>Joshua Mastery</th>
<th>Emergence</th>
<th>Joshua Mastery</th>
<th>Emergence</th>
<th>Joshua Mastery</th>
<th>Emergence</th>
<th>Joshua Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>present progressive</td>
<td>present progressive</td>
<td>1. plural regular</td>
<td>present progressive</td>
<td>present progressive</td>
<td>1. plural regular</td>
<td>present progressive</td>
<td>present progressive</td>
<td>1. plural regular</td>
<td>present progressive</td>
</tr>
<tr>
<td>1. copula</td>
<td>1. copula</td>
<td>1. auxiliary</td>
<td>1. auxiliary</td>
<td>2. 3rd person regular</td>
<td>2. 3rd person regular</td>
<td>3. past irregular</td>
<td>3. past irregular</td>
<td>4. superlative</td>
<td>4. superlative</td>
</tr>
<tr>
<td>1. auxiliary</td>
<td>1. auxiliary</td>
<td>2. 3rd person regular</td>
<td>2. 3rd person regular</td>
<td>3. past irregular</td>
<td>3. past irregular</td>
<td>4. superlative</td>
<td>4. superlative</td>
<td>5. plural regular</td>
<td>5. plural regular</td>
</tr>
<tr>
<td>1. comparative</td>
<td>1. comparative</td>
<td>1. past irregular</td>
<td>1. past irregular</td>
<td>2. superlative</td>
<td>2. superlative</td>
<td>3. past irregular</td>
<td>3. past irregular</td>
<td>4. superlative</td>
<td>4. superlative</td>
</tr>
<tr>
<td>1. auxiliary</td>
<td>1. auxiliary</td>
<td>2. 3rd person regular</td>
<td>2. 3rd person regular</td>
<td>3. past irregular</td>
<td>3. past irregular</td>
<td>4. superlative</td>
<td>4. superlative</td>
<td>5. plural regular</td>
<td>5. plural regular</td>
</tr>
<tr>
<td>1. comparative</td>
<td>1. comparative</td>
<td>1. past irregular</td>
<td>1. past irregular</td>
<td>2. superlative</td>
<td>2. superlative</td>
<td>3. past irregular</td>
<td>3. past irregular</td>
<td>4. superlative</td>
<td>4. superlative</td>
</tr>
<tr>
<td>1. auxiliary</td>
<td>1. auxiliary</td>
<td>2. 3rd person regular</td>
<td>2. 3rd person regular</td>
<td>3. past irregular</td>
<td>3. past irregular</td>
<td>4. superlative</td>
<td>4. superlative</td>
<td>5. plural regular</td>
<td>5. plural regular</td>
</tr>
<tr>
<td>1. comparative</td>
<td>1. comparative</td>
<td>1. past irregular</td>
<td>1. past irregular</td>
<td>2. superlative</td>
<td>2. superlative</td>
<td>3. past irregular</td>
<td>3. past irregular</td>
<td>4. superlative</td>
<td>4. superlative</td>
</tr>
<tr>
<td>1. auxiliary</td>
<td>1. auxiliary</td>
<td>2. 3rd person regular</td>
<td>2. 3rd person regular</td>
<td>3. past irregular</td>
<td>3. past irregular</td>
<td>4. superlative</td>
<td>4. superlative</td>
<td>5. plural regular</td>
<td>5. plural regular</td>
</tr>
</tbody>
</table>

Note: Morphemes listed are based on the present tense in bold.
the order of morpheme acquisition for each child according to the criteria of Emergence and Mastery.

Paying particular attention to the differences in what is considered Mastery among the four subjects in Table 7, it seems significant to note that though many morphemes are considered acquired if Emergence is the considered acquired when more stringent standards are employed, such as those used in Mastery. For example, while past regular and third person regular of acquired among the four subjects seems to depend entirely on the type of measurement criteria used, the difference in what is considered acquired. That is to say, these morphemes are found along with several others, supports the case for using the Mastery criteria to measure acquisition over that of Emergence.

According to both methods, for example, regular plurals were established among all the learners at one point or another during the course of the study. Yet the post-test did not reveal universal passing of regular plural test items. To account for this difference, the phenomenon of formulaic speech must be considered. The use of formulaic speech may characterize the language of memorization-dependent learners, an individual difference.

For many of the regular plural morpheme items in the speech of the four subjects, the utterance of the plural morpheme -s may have been due to a formulaic memorization of a chunk, not a competent application of the plural -s morpheme or even an understanding of the morpheme's function. This is a significant possibility because of the prevalence in the speech samples of such likely formulaic plurals as shoes, socks, mitten, and boots. In contrast, less standard noun units, such as those in the post-test which are not normally considered formulaic, are pluralized with less regularity. There is no way of knowing, of course, to what extent a child applied knowledge of a formulaic chunk when uttering a pluralized noun.

It also seems at first glance that the present progressive is established early among the four subjects, as seen by the results of the pre-test. This finding is not unlike those of both the LI studies (Brown 1973, de Villiers and de Villiers 1973) and many L2 findings, such as those of Cameron and Lee (1999) and Hakuta (1976). Nevertheless it is important to note that among present progressive utterances of the four subjects, during the data collection sessions where complete utterances were noted, the BE + V-ing construction was not always consistent. Counted, all of the subjects used the V-ing construction even in the pre-test, but when considering the more stringent Mastery assessment, none of the subjects fully acquired the full BE + V-ing construction by consistently mastering the employment of the auxiliary. Yet they evidently understood it, as the results of the auditory comprehension component of the pre- and post-test revealed, making comprehension another consideration in the establishment of the acquisition of L2 English morpheme orders.

What is especially salient to notice among the data, though, is that by the Emergence criteria no clear order is apparent for most of the learners. As the reader will note from Table 7, only for Damian is there any kind of order for his morphemes under Emergence. This finding underscores the very usefulness of Emergence as a set of measurement criteria and thus, if this methodology being capable to produce a meaningful morpheme acquisition order. In contrast, by the Mastery criteria, there is at least more of a sequence, particularly in the case of Sidney. These findings, along with the previously mentioned problem of Emergence more liberally allowing a morpheme to be considered acquired, put into question the dependability of Emergence as a criterion.

Having established that the Emergence criteria, at least, are of questionable utility, the next question that emerges is to what extent other measurement systems can be relied upon to produce helpful results, thus possibly accounting for inconsistencies in L2 morpheme acquisition orders. It seems that more of an argument can be made for employing the Mastery technique, as already discussed. Yet it still remains the case that, if different researchers employ different measurement criteria, regardless of what they are but especially if they are not useful, it would be difficult to establish a consensus for morpheme acquisition order.

Table 8 juxtaposes the morpheme order results from previous studies, already showing as differing in Table 4, alongside the development of the example subject "Sidney" from Table 7. By providing for a more legitimate comparison of the order of acquisition of morphemes, Table 8 shows that there is little concurrence among these L2 morpheme acquisition orders.

To elaborate, consider that among Cameron and Lee's (1999) findings for "Alex," plural appears early while past tense, though it appears late, at least appears. However, for Hakuta's (1976) subject, plural and past tense never appear. Furthermore, among both Cameron and Lee's (1999) subject and Hakuta's (1976), possessive is among one of the middle morphemes to appear during the courses of their studies. Yet Table 7 shows that, among the four subjects studied here, possessive never appears, regardless of the form of measurement employed.

Conclusion

Given the questionable helpfulness of Emergence as a measurement criterion, as well as the discrepancies in the orders found by this study and previous ones, there seems to be sufficient evidence to support the hypothesis that certain criteria for measurement are more useful than others and that as a result, they should receive more credibility in con-
<table>
<thead>
<tr>
<th>&quot;Alex&quot; (Cameron and Lee, 1999)</th>
<th>&quot;Sidney&quot; (Emergence)</th>
<th>&quot;Sidney&quot; (Mastery)</th>
<th>&quot;Uguliuu&quot; (Hakuta, 1978)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. article</td>
<td>present progressive</td>
<td>present progressive</td>
<td>1. present progressive</td>
</tr>
<tr>
<td>2. plural</td>
<td>-er &quot;one who&quot;</td>
<td>-er &quot;one who&quot;</td>
<td>2. 3rd person irregular</td>
</tr>
<tr>
<td>3. copula</td>
<td>plural regular</td>
<td>plural regular</td>
<td>3. past participle</td>
</tr>
<tr>
<td>4. possessive</td>
<td>comparative/superlative</td>
<td>comparative/superlative</td>
<td>auxiliary was</td>
</tr>
<tr>
<td>5. progressive</td>
<td>1. plural regular</td>
<td>1. copula</td>
<td>4. possessive</td>
</tr>
<tr>
<td>6. past tense</td>
<td>1. past irregular</td>
<td>2. past irregular</td>
<td>5. copula</td>
</tr>
<tr>
<td></td>
<td>1. past regular</td>
<td>3. plural regular</td>
<td>6. auxiliaries</td>
</tr>
<tr>
<td></td>
<td>1. 3rd person regular</td>
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<td></td>
<td>1. copula</td>
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<td></td>
<td>1. auxiliary</td>
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<tr>
<td></td>
<td>(plural, 3rd person irregular, past irregular and past regular never appeared)</td>
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</tbody>
</table>
as cognitive processing.

As for cross-linguistic influence, the phenomenon in L2 acquisition, according to Benson (2002), is that it exists, but is neither considered the only understood in several capacities: it can be positive (facilitative) or negative (leading to errors) depending on whether structures exist in both languages or not. Such differences, though, can even have inconclusive effects depending on whether a feature in the L1 is absent or also present in the L2, making slavishness which does not always facilitate predictable acquisition. According to Benson (2002), this effect can either delay or accelerate rates of development; transfer can occur at all levels of language, including phonological and syntactic, for example. Morphology seems to be affected, the says, but to a lesser extent than other aspects of language.

Another element to be taken into account is the length of the data collection period for this study. The author only had a limited time period of three months for her study. Brown studied his subjects for at least a year, while both Hakaiza (1976) and Cameron and Lee (1999) were able to collect data for more than a year. The continued observation by this author of the subjects over the course of a longer period of time would have provided more data, which may or may not have disputed the conclusions found. Observation of the subjects from their first exposure to English also would have allowed the author to better determine the order in which the English morphemes emerged.

What seems more significant in explaining the inconsistencies in the findings of L2 morpheme researchers, though, is the lack of methodological consistency in the measurement of morpheme acquisition, particularly taking into account the usefulness of the measurement system employed. The general findings indicate that Emergence is not illustrative in measuring acquisition. As a result, there is even more reason to question methodology.

Regardless of any effect of other factors such as learning differences, it is essential to employ the same method of calculation to talk about L2 English morphological orders. Only once a frame of reference for general tendencies in L2 morpheme acquisition order is established by consistent means can any value come from having a basis for comparison among learners.

Of course, one may wonder why to expect that all the existence of a fixed order for L2 English morpheme acquisition. This is a valid question, but one that cannot be further explored until consistent methods of measurement are utilized, morpheme acquisition, of course, being only one aspect of second language acquisition.

Nevertheless, a consistent body of research on morpheme acquisition, order is worthwhile because of the benefit that could come from having a basis on which to compare learners. This basis could prove important for designing interventions for learners who display atypicals. It is thanks to frames of reference already established for L1 English morpheme acquisition that educators can identify atypicalities in the first language acquisition of English-speaking children to then provide development support. To provide the same assistance for second language learners, that is, to be able to provide the intervention necessary to facilitate the L2 acquisition of English, it is first necessary to know what the basis of comparison is, if there is one. This can only be achieved by establishing consistent methods for measuring L2 English morpheme acquisition by useful measurement techniques.

Melaina Cox received her M.S.Ed. degree in TESOL in May 2004 from the University of Pennsylvania. An earlier version of this article was written as the master's thesis she completed as part of her course of study. She spent the 2004-2005 academic year in Brussels, Belgium, teaching English as a Fulbright scholar.

E-mail: melainacox@fulbrightweb.org

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