101. New Perspectives, Theories and Methods: Diachronic change and language acquisition

- 1. Introduction
- 2. Case studies
- 3. Summary
- 4. References

Abstract

This chapter compares the results of research on first language acquisition and diachronic change in three domains: sound change, morphological change, and grammatical change. It is shown that there are conspicuous parallels between L1 acquisition and language change, but child language development does not simply mirror diachronic evolution; there are also some striking differences between them, notably in phonology and syntax. Challenging the long-standing hypothesis that errors in child language provide the source for language change, the chapter argues that the similarities between L1 acquisition and diachronic change can be explained by the fact that both child language and adult language are influenced by general psychological mechanisms such as analogy, entrenchment, and categorization.

1 Introduction

The relationship between language acquisition and diachronic change has intrigued historical linguists for many decades (for an overview see Baron 1977). At the end of the 19th century, many scholars were convinced that the process of language learning plays an important role in historical development. Hermann Paul, for instance, emphasized the importance of first language acquisition for diachronic change: "es liegt auf der Hand, dass die Vorgänge bei der Spracherlernung von der allerhöchsten Wichtigkeit für die Erklärung der Veränderung des Sprachusus sind, dass sie die wichtigste Ursache für diese Veränderung abgeben" [It is obvious that the process of language acquisition is of utmost importance in explaining change in language use; it is the most important cause for such changes] (Paul 1960 [1880]: 34). Paul did not elaborate on this hypothesis, but other scholars made specific proposals as to how language learning accounts for language change. Henry Sweet (1888), for instance, argued that sound change in language history is the result of "defective" imitation in language acquisition:

The child learns the sounds of its vernacular language by a process of slow and laborious imitation. This imitation is always defective [...] even under the most favourable conditions there is some divergence, for it is impossible for the child to reproduce by mere imitation the exact organic movements of its teachers [...]. Even if the changes thus produced in the transmission of a language from one generation to another were imperceptible to the ear, their repetition would be enough to account for the most violent changes, if we only allow time enough. (Sweet 1888: 15)

4197-037-1pass-XII. New Perspectives, Theories and Methods-r03.3d Pages: [1421-1658] Date: [April 3, 2012] Time: [2:55]

Like Henry Sweet, Max Müller (1890) saw in language learning the primary source of language change. Specifically, he claimed that children are responsible for the regularization of irregular morphology:

it is likely, however, that the gradual disappearance of irregular declensions and conjugations is due, in literary as well as in illiterate language, to the dialect of children. The language of children is more regular than our own [...] I have heard children say *badder* and *baddest*, instead of *worse* and *worst*. (Müller 1890: 75)

Not all scholars of the late 19th century were convinced that language change is driven by language learning (Jespersen 1922: 161–162); but child-based explanations of language change have played an important role in historical linguistics until today. In contemporary linguistics, generative linguists like David Lightfoot assume that all profound changes in language history occur in the process of language learning (Lightfoot1999, 2006; see also Halle 1962; Kiparsky 1968). In Lightfoot's theory, there are two types of diachronic change that concern different aspects of language. Like other generative linguists, Lightfoot distinguishes between *E-language*, i.e. the external language which the language users experience in communication and writing, and *I-language*, i.e. the internal or innate grammatical system of Universal Grammar. E-language is a highly flexible phenomenon that is constantly changing, often in incremental and unsystematic ways, throughout the lifetime of a person; whereas I-language changes more systematically during childhood. Lightfoot makes it clear that while E-language changes are pervasive, the important changes of language history are I-language changes that occur during the critical period of language acquisition.

In non-generative linguistics, Henning Andersen (1973) proposed an influential child-based theory of language change. In his model, language learning is driven by a continuous process of inductive and abductive reasoning: children analyze the linguistic data they encounter in the ambient language, postulate hypotheses about the rules that govern linguistic behaviour, and test these hypotheses against new data in future language use. Since the cyclic application of abduction (i.e. the postulation of grammatical rules) and induction (i.e. the testing of these rules) is prone to error, a child may end up with a grammatical system that is slightly different from the one of the ambient language. According to Andersen, it is this sort of imperfect learning that accounts for diachronic change.

Child-based theories of language acquisition make empirical predictions that can be tested (Croft 2001: 45). Most importantly, they predict that there are parallels between child language and language history: if language acquisition is the source of diachronic change, child language should include the same types of changes and developmental patterns as the diachronic evolution of language. Another important prediction is that changes in child language are maintained into adult language. Only if the child's innovations survive through childhood and adolescence to adulthood can language acquisition be the source of diachronic change.

This chapter reviews a number of case studies that compare the developmental patterns in language history and acquisition. The review of the literature reveals that there are striking parallels between the two developments, but there are also differences that are important for understanding the nature of the relationship between them. It is argued that although ontogeny and diachrony are often parallel, children are not

responsible for historical change; there is no causal link between child language and language history. However, the two developments are often parallel because they are driven by the same principles of usage: adults and children produce similar types of changes because their linguistic behaviour is based on general psychological mechanisms such as analogy, entrenchment, and categorization that are involved in both child language development and language change.

2 Case studies

2.1 Sound change

When children begin to produce their first words, their pronunciation is highly variable and often deviant from the pronunciation in adult language. There is a general tendency to reduce and simplify the phonetic structure of words in early child language. Interestingly, some of the child's phonetic changes are similar to common sound changes in language history. For instance, there is a tendency in child language to devoice final obstruents (e.g. [bæt] for 'bad') and to reduce consonant clusters to a singleton consonant (e.g. [pat] for 'spot') (Menn and Stoel-Gammon 1994: 341). Both the final devoicing of obstruents and the reduction of consonant clusters are also commonly found in historical developments (Hock 1991: 80, 88–89). This has led some researchers to conclude that there are natural processes of pronunciation that affect both the child's phonetic development and diachronic change (Stampe 1969). However, other researchers have emphasized that there are also differences in the phonetic processes of child language and language history and that some of the similarities are spurious on closer inspection (Drachman 1978; Vihman 1980).

To begin with, children often substitute particular speech sounds for other types of speech sounds. One of the most common segment changes in early child language involves the substitution of stops for fricatives, for instance, as in [ti] for 'see' or [bæn] for 'van' (Menn and Stoel-Gammon 1994: 341). Since stops are produced with more articulatory effort than fricatives, this can be seen as a process of phonetic strengthening (i.e. fortition). In diachrony, by contrast, the weakening of consonants is prevalent (a process called lenition): stops, for instance, are frequently replaced by fricatives (e.g. Latin *faba* \rightarrow Italian *fava* 'bean') and geminates are often simplified (e.g. Latin *siccu* \rightarrow Spanish *sicu* 'dry') (Hock 1991: 80–86; Trask 1996: 55–60). Moreover, the same preference for strong consonants has been observed in children's simplification of consonant clusters (Vihman 1980). For example, in a cluster consisting of a stop and a fricative, or a stop and a liquid, children are much more likely to omit the fricative or the liquid than the stop (e.g. [dæs] for 'glass'). It seems that children have a proclivity for using strong consonants, i.e. oral and nasal stops, which contrasts sharply with the diachronic tendency to weaken the articulatory effort for consonants (Vihman 1980: 311–314).

Another difference between child language and language change concerns the shortening of long words. Words consisting of multiple syllables are often phonetically reduced, both in child language and language change; but the reduction processes are different. Examining data from 13 children speaking English, Spanish, Czech, Slovenian, and Estonian, Vihman (1980) found that the children of all five languages frequently omit whole syllables to reduce complex words, as in example (1a–e) from her English database.

- (1) a. [na:nə] 'banana'
 - b. [mato] 'tomato'
 - c. [ræf] 'giraffe' d. [?atobiə] 'automo
 - d. [?atobiə] 'automobile'e. [babu] 'pocket-book'

As can be seen, children usually omit unstressed syllables, preferably at the beginning of a word. In Vihman's data, 89% of the words with four syllables occur with an omitted unstressed syllable at the beginning of a word and only 6% occur with an omitted unstressed syllable at the end of a word, which is consistent with Slobin's operating principle that children "pay particular attention to the ends of words" (Slobin 1973: 191). By contrast, adult speakers are more likely to leave out unstressed syllables at the end of a word, while children tend to omit whole syllables, adult speakers are more likely to leave out unstressed syllables, adult speakers are more likely to omit only the vowels of unstressed syllables, as for instance in 'fam(i)ly' [fæmli] or 'choc(o)late' [tfpklət]. In other words, while there is a general tendency to shorten multi-syllabic words, children and adults use different strategies to accomplish this: children tend to omit syllables, whereas adult speakers omit only vowels, though often with phonetic adjustments in the retained consonants.

Finally, the most conspicuous difference between child language and language history is the differential occurrence of segment harmony. Vowel harmony is a prominent feature of adult language, which can give rise to language change (cf. Hock 1991: 68–71). There is a tendency in adult language to produce vowels of neighboring syllables with similar phonetic properties. The phenomenon is well-known from languages with vowel harmony, like Turkish or Hungarian, in which the stem vowel determines the phonetic properties of vowels in bound morphemes, and from languages with umlaut, like English and German, in which the stem vowel is assimilated to the vowel of an affix (e.g. Old English *mus-iz \rightarrow mys(-i) 'mouse-PL').

In child language, vowel harmony is characteristic of babbling, i.e. the early production of sequences of meaningless speech sounds (cf. Kent and Miolo 1994), but it disappears when children begin to produce their first words. However, while vowel harmony vanishes with the onset of language, consonant harmony is pervasive in early child language (cf. Drachman 1978; Vihman 1980; Menn and Stoel-Gammon 1994). In Vihman's data, an average of 14% of the children's words contain a consonant that has been altered so that it is phonetically more similar to another consonant of the same syllable from which it is separated by the vowel. Consonant harmony usually involves an altered segment in the onset (cf. examples in 2a–d), but may also affect a consonant in the coda (see examples in 2e) (Menn and Stoel-Gammon 1994).

(2) a. [gnk] 'duck'

b. [tæt] 'cat'

- c. [zus] 'shoes'
- d. [minz] 'beans'
- e. [dɔt] 'dog'

In language change, consonant harmony is a rare phenomenon. Vihman mentions three examples involving place and sibilant harmony in Moroccan Arabic, Navaho, and

Alawa; but consonant harmony is very rare in diachronic change (see also Drachman 1978). In fact, Aitchison (1991: 208) points out that there is a mild tendency in historical developments to dissimilate the consonants of neighboring syllables. Consonant dissimilation is especially frequent with liquids, as for instance in the change of Latin *arbor* to Spanish *árbol* 'tree', in which the second [r] has been replaced by an [l] (cf. Hock 1991: 108; see also Trask 1994: 55).

In sum, while there are some parallels between the phonetic changes in child language and language history, there are also striking differences between them, making it unlikely that language learning is the major source for diachronic sound change.

2.2 Morphological change

One of the most striking parallels between child language and language change concerns the regularization of irregular morphology. A case in point is the development of the English past tense, which has been studied intensively in both child language research and historical linguistics (e.g. Bybee Hooper 1980; Bybee and Slobin1982a, 1982b; Marcus et al. 1992; Pinker 1999; Maratsos 2000). In Modern English, most verbs form the past tense by the addition of a suffix (i.e. *-ed*); but there are also "irregular verbs" that indicate the past tense by changing the stem vowel (e.g. *sing-sangsung*). Old English had more than 300 irregular verbs, but about half of them were regularized over the past 1000 years. For instance, in Old English the past tense of *climb* was *clomb* and the past tense of *laugh* was *low*, but these forms have been replaced by regular past tense forms with an *-ed* suffix.

Parallel changes occur in the language of preschool children (Bybee and Slobin 1982a; Marcus et al. 1992; Maratsos 2000). The development of the regular past tense proceeds in three stages. The earliest past tense forms comprise both regular and irregular verbs that match the corresponding adult forms; that is, when children begin to use their first past tense forms, usually during the third year of life, they do not produce any errors because these early past tense forms are simply memorized. Then they recognize that there is a systematic relationship between the base form and the past tense form in regular verbs, resulting in novel forms such as *blowed*, *hitted*, and *goed*. However, these overregularization errors account for only about 5% of the irregular verbs that children produce at this stage; that is, the majority of the irregular verbs are not regularized during the overregularization phase (Marcus et al. 1992; see Maratsos 2000 for an alternative view). Finally, children recognize their mistakes, eliminate the erroneous forms, and use regular and irregular past tense forms in accordance with the conventions of adult language.

The most detailed study comparing the development of inflectional morphology in child language and language history is Bybee and Slobin (1982a). They investigated the formation of regular and irregular past tense forms using data from three age groups, which they compared to data from the history of the English language. The three age groups consisted of preschool children aged 1.5 to 5.0, third-grade children between the ages of 8.5 to 10.0, and university students. The data of the preschool children came from spontaneous child speech and an elicitation task; the data of the third graders were collected in a sentence-completion task; and the data of the university students were elicited in an experiment in which subjects had to supply a past tense form

4197-037-1pass-XII, New Perspectives, Theories and Methods-r03.3d Pages; [1421-1658] Date; [April 3,

for a given base form under time pressure (Bybee and Slobin 1982b). Bybee and Slobin found erroneous past tense forms in all three age groups. The responses were surprisingly similar across groups and paralleled the historical data; but there were also some differences between the preschool children and the two older age groups. The findings can be summarized in five points:

First, all three age groups extended the regular past tense to irregular verbs. Infrequent irregular verbs were especially prone to regularization. Correlating the results of their subjects' responses with frequency data from an adult corpus of spontaneous speech, Bybee and Slobin found a strong negative correlation between the frequency of particular verb types in the adult corpus and the proportion of regularized verb tokens in their data. All three age groups regularized infrequent verbs more often than verbs that occurred with high token frequency in the corpus data. The same tendency to regularize infrequent verbs has been observed in diachronic change (Bybee and Thompson 1997).

Second, the regularization rate varied not only with frequency but also with verb class. One irregular verb class that all three age groups regularized more often than average includes verbs such as *send-sent-sent* or *build-built-built*. In contrast to other irregular verbs, these verbs do not involve an alternating stem vowel, but form the past tense by devoicing the final stop of the stem. Historically, this class of irregular verbs has lost a large number of types and may soon be eliminated as a class. The high regularization rate of the *send-sent-sent* verbs in the Bybee and Slobin study is thus consistent with the historical trend towards regularizing the verbs of this class.

Third, the verbs of the *sing-sang-sung* class were often transformed into another class of irregular verbs. Specifically, these verbs were frequently produced in analogy to the *sting-stung-stung* class, which includes the same stem vowels in the past and participle forms, as in (3):

(3)	a.	sing-sang-sung	\rightarrow	sing-sung-sung
	b.	begin-began-begun	\rightarrow	begin-begun-begun
	c.	sink-sank-sunk	\rightarrow	sink-sunk-sunk

The subjects' changes of these verbs parallel their development in history. The *sting-stung-stung* class is a diachronic innovation that evolved from the *sing-sang-sung* class through the extension of the past participle to the past tense. All verbs of this class originally had a particular vowel in the past tense that was only later replaced by the vowel of the participle (e.g. *sting-stang-stung* \rightarrow *sting, stung, stung*). Thus, once again, the subjects' treatment of these verbs parallels their historical development.

Fourth, the *sting-stung-stung* class attracted not only members from the *sing-sang-sung* class but also from other verb classes including regular verbs (cf. examples 4a–c). Again, children and adults produced novel forms that are consistent with a historical trend: a significant number of the verbs in the *sting-stung-stung* class originated from other verb classes including regular verbs (e.g. *hang-hanged-hanged* \rightarrow *hang-hung-hung*).

- (4) a. clink-clinked \rightarrow clink-clunk
 - b. streak-streaked \rightarrow streak-struck
 - c. bring-brought \rightarrow bring-brung

1604

2012] Time: [2:55]

groups. The difference occurred with verbs of the *hit-hit-hit* class, which lack a particular past tense form. Like other irregular verbs in the Bybee and Slobin study, these verbs were often used with a past tense suffix (e.g. *hitted*), but while the third graders and students regularized the verbs of this class more often than average, the preschool children often left them unchanged; that is, they regularized the verbs of the *hit-hit-hit* class less frequently than other irregular verbs, which Bybee and Slobin (1982a: 35) explain by the hypothesis that young children take the stem final [t] as a cue for the past tense. Historically, these verbs are derived from regular verbs in which the past suffix collapsed with the final [t] of the verb stem (e.g. *set-te* \rightarrow *set*). When the *hit-hit-hit* class emerged, it first attracted new members from other verb classes and from borrowings (e.g. *bid*, *cost*), but then it lost its productivity and some of its members were regularized (e.g. *fast, start, lift, fret*).

Bybee and Slobin interpret their subjects' responses to the *hit-hit-hit* class as evidence for their hypothesis that children are not the primary instigators of morphophonemic change: if the responses of third-grades and students are more in line with current historical developments than the responses of the preschool children, it seems reasonable to assume that adults and older children are responsible for the diachronic innovations in the *hit-hit-hit* class and by analogy for the changes in all other verb classes. However, while this argument may be logically sound, one might wonder whether the relatively minor differences in the *hit-hit-hit* class are really sufficient to draw such a far-reaching conclusion. More striking than the differences are the extensive parallels in the performance of child and adult speakers. The subjects of all three age groups produced a large number of novel past tense forms, challenging the tacit assumption that morphological innovations are only produced by children who have not yet mastered the adult forms. Like children, adult speakers produce deviant verb forms that are consistent with diachronic trends, and thus it is conceivable that adults rather than children are the instigators of morphological change.

2.3 Grammatical change

That phonological and morphological developments are often parallel in language history and acquisition has been known for a long time; but there are also parallels in the development of grammatical morphemes and constructions that have only been recognized in the recent literature on grammaticalization (Givón 1979; Schmidtke-Bode 2009; Slobin 1994; Ziegeler 1997; Brems and Hoffmann, Chapter 99). A number of studies have shown that the development of grammatical markers in child language often takes the same pathway as in diachronic change (for a recent overview see Diessel forthc.), suggesting that grammaticalization is not only a historical phenomenon but is also found in child language. On this view, the notion of grammaticalization denotes a general developmental process that occurs in both language history and language acquisition. This section considers a few selected cases of grammaticalization that have been studied in both child language and diachronic change.

A classic example of grammaticalization is the development of adpositions from lexical expressions (Heine et al. 1991). For instance, the complex preposition *in front of* is derived from a nominal expression including a relational noun with spatial meaning. The first adpositions that English-speaking children learn are often used with reference to activities (e.g. *shoes on*) (Tomasello 1992), but there is no evidence that the ontogenetic development of adpositions originates from lexical expressions; children learn the use of adpositions in combination with nouns and verbs as grammatical markers.

However, the semantic development of adpositions is similar in child language and diachronic change. Both developments originate from adpositions with spatial meanings that are later often extended to more abstract meanings, in particular, the extension from space to time is very common (Ziegeler 1997: 228–229; see also Clark and Carpenter 1989). Since many adpositions are ambiguous between a spatial and temporal meaning, the development often remains unnoticed. However, sometimes children use a spatial adposition with a temporal meaning that is not conventionalized in the adult language, as in the following example from Bowerman (1985: 1292), in which the spatial preposition *behind* is used with a temporal meaning, as seen in (5):

(5) *Can I have any reading* behind *the dinner?* (= after)

What this example shows is that children do not simply imitate the various meanings of the ambient language; rather, they recognize the conceptual link between space and time und use this link productively to derive novel meanings.

There is a wide range of grammatical markers that originate from expressions with spatial meaning. For instance, the existential *there* is historically derived from a spatial deictic. In a recent paper, López-Couso (2008) showed that there are extensive parallels between the diachronic and ontogenetic development of existential *there*. The development comprises three stages (Johnson 2001): at the initial stage, *there* is exclusively used as a deictic expression indicating the location of a person or object in the surrounding speech situation (see example 6a). At the next stage, *there* is commonly combined with other spatial expressions in the same clause that invite a non-spatial interpretation of the initial *there* (see example 6b). And at the final stage, *there* has lost its spatial meaning and has turned into an existential marker (see example 6c). López-Couso shows that the three stages are parallel in child language and diachronic change.

- (6) a. There is my house.
 - b. There is a beer on the table for my friend to drink.
 - c. There is no fire.

Another grammatical marker that originated from a spatial source is the *be-going-to* future (Fleischmann 1989). The semantic side of the development is based on the conceptual relationship between motion, intention, and future. The source construction includes the motion verb *go*, an agentive subject, and an allative prepositional phrase that indicates the goal of the motion event (see example 7a). *Go* can also be combined with an infinitive denoting the purpose, rather than the goal, of the motion event (see example 7b). In this bi-clausal structure, the motion sense of *go* is backgrounded in favour of the semantic feature of intention. If *go* is routinely used in this context, the motion sense is gradually weakened to the effect that it is eventually no longer perceived as a separate event. At this point, *go* assumes the function of an auxiliary and the biclausal structure is reanalyzed as a simple sentence denoting a single future event (cf. example 7c). In addition, the expression *be going to* has been reduced to *gonna*, though

the full form, i.e. *be going to*, can also be used with the new future tense meaning (Hopper and Traugott 2003: 1–3).

(7)	a.	Peter is going to school.	motion
	b.	Peter is going (in order) to help John.	intention
	С	Rain is going to fall	future

The ontogenetic development of the *be-going-to* future is similar to the development in language change. Using corpus data from two English-speaking children, Schmidtke-Bode (2009) showed that the earliest utterances in which *go* occurs with an implicit future meaning denote a motion event that is combined with some other activity, as in the example (8) (adopted from Schmidtke-Bode 2009: 526).

(8) Child: Going wash a hands. [Child goes into kitchen]

These early motion-cum-purpose clauses include the verb *going* in its literal sense, combined with an activity that is conceptualized as the purpose of the motion event. The motion sense is dominant in the early uses, but it does not take long until the auxiliary use of *going* outnumbers the motion-cum-purpose sense. Interestingly, although the children's production of *be going to* changed from the literal to the metaphorical sense, the children's parents produced both senses of *be going to* with the same frequencies throughout the time of the study, suggesting that the changes in child language cannot be attributed to changes in the ambient language (Schmidtke-Bode 2009).

While the semantic development of the *be-going-to* future is similar in child language and diachronic change, the morphosyntactic developments are different. The historical development originates from a bi-clausal construction that is gradually reduced to a simple sentence, whereas the ontogenetic development originates from very simple clauses that are gradually expanded into more complex structures: the earliest motioncum-purpose clauses that children produce include the verb *going*, or the reduced form *gon*, without the auxiliary *be* and the infinite marker *to*, and often lack on overt subject. As children grow older, they gradually elaborate these structures to fully developed clauses (Diessel 2004: Chapter 4).

The development from space to time and other abstract concepts is characteristic of both child language and diachronic change, but there are also other semantic changes that can be found in both developments. For instance, Stephany (1986) showed that the acquisition of modal verbs in English and Greek parallels their development in language history. In both languages, children begin to use modal verbs with the deontic meaning prior to the more abstract epistemic meaning and thus parallel the development in diachronic change. Another grammatical phenomenon that evolved along a similar semantic path in ontogeny and diachrony is the present perfect (Slobin 1994). Historically, the present perfect is derived from an attributive construction including the possessive verb "have" and an attributive participle that modified the possessed noun (e.g. *I have the enemy bound*). Slobin showed that the source construction was often ambiguous between an attributive and a perfect meaning. If the focus was on the state expressed by the participle, the construction had its original attributive meaning, but if the focus was on the action of the subject, the possession of a current state

XII. New Perspectives, Theories and Methods

that was construed as the result of a past event. In this use, the present perfect occurred at first only with telic verbs denoting a resultant state with an (implicit) consequence for the present and/or future. However, the perfect was later extended to iterative and non-telic verbs in which the resulting interpretation of the original perfect was backgrounded. In these novel uses, which Slobin calls the "perfect of experience" and the "continuative perfect" (examples 9b–c), the present perfect does not imply a consequence as in the original "resultant state perfect" (see example 9a).

- (9) a. I have eaten lunch [and am therefore not hungry]. resultant state perfect
 - b. I have been abroad several times.
- perfect of experience continuative perfect
- c. He has sung in the choir for years.

A parallel development from the resultant state perfect to the perfect of experience and the continuative perfect can be observed in child language. The earliest present perfect forms that children produce involve telic verbs "in contexts in which the completion of one action provides the grounds for a subsequent action" (Slobin 1994: 122). Slobin identified two subtypes of this use. Either the perfect occurs in sentences that children use to "negotiate sequences of activities" (e.g. *Can I get more pie when I have picked up my clothes?*) or it occurs in sentences that function to "draw the hearer's attention to a result" (e.g. *I have already picked up my clothes so let me play with you*) (Slobin 1994: 122–123). In both uses, the construction invites the inference that the situation described by the verb in the present perfect has important consequences for the future. Starting from these early uses, which are semantically similar to the historical origin of the present perfect, children gradually extend the perfect to sentences with iterative and non-telic verbs that are pragmatically less constrained than the early uses with telic verbs.

3 Summary

The review of the literature has shown that there are striking parallels between language acquisition and diachronic change, but child language development does not simply mirror the diachronic evolution. There are also differences between the two developments that need to be taken into account in order to assess the role of child language acquisition in language change.

The most conspicuous parallels occur in the domain of inflectional morphology. As Bybee and Slobin have shown, children's over-regularization errors in the production of the English past tense are strikingly similar to the morphological changes of the past tense in language history (see also Dressler 1974; Bybee Hooper 1980; Menzel 2004). There are also parallels in the semantic development of grammatical markers and constructions. The developments of adpositions and auxiliaries, for instance, follow the same conceptual paths in language history and acquisition.

The differences between the two developments are especially prominent in sound change. There are phonetic processes that *do* occur in both child language and language history, but the differences outweigh the similarities. As we have seen, children tend to substitute plosives for weaker consonants, omit syllables to reduce complex words, and make extensive use of consonant harmony, whereas adult speakers tend to weaken strong consonants, omit vowels to shorten long words, and use vowel harmony and

umlaut rather than harmonic consonants. Aitchison (1991: 209) argues that the differences in sound change are ubiquitous because young children have not yet acquired the motor and processing skills of adult speakers (see also Vihman 1980).

However, the dissimilarities between child language and language history are not confined to phonetic processes; there are also differences in the development of grammatical markers and constructions. While the semantic developments of grammatical markers are often parallel in language acquisition and diachronic change, the morphosyntactic developments are different. There is no evidence that grammatical markers originate from lexical expressions in language acquisition as they do in diachronic change. Moreover, the constructional changes that are involved in the historical development of grammatical markers do not occur in child language. The acquisition of the English present perfect, for instance, does not originate from an attributive construction as in diachronic change; and the *be-going-to* future is acquired in the context of a simple clause, whereas the historical development originates from a bi-clausal purposive construction.

The differences between child language and language history are not consistent with the hypothesis that language acquisition is the primary locus of diachronic change. If children were the main instigators of language change, one would expect a closer match between the two developments. In fact, since the categorical and constructional changes of grammaticalization have no parallels in early child language, we can be fairly certain that grammaticalization processes do not originate from changes in language acquisition.

Nevertheless, there are some striking parallels between ontogeny and diachrony, notably the changes in morphology are very similar in the two developments; but even these changes do not have to be initiated by language learners. In the literature it is often assumed that adult speakers cannot be the instigators of diachronic change because adults are assumed to abide by the linguistic rules; but this view of adult language is not realistic. There is a great deal of variation in adult language and abundant evidence that adult speakers often deviate from linguistic conventions. As Bybee and Slobin (1982a) have demonstrated, under conditions of pressure and fatigue, adult speakers produce the same types of errors as children who have not yet fully mastered the rules (see also Kerswill 1996).

Finally, if children were responsible for diachronic change, their innovations must be maintained through childhood and adolescence into adulthood; but that is not the case. There is no evidence that children's errors persist into adult language. As children grow older, they eliminate their linguistic errors and conform to the rules (Kerswill 1996). Children create novel forms and novel meanings, but their innovations have no effect on adult language. Neither do children's errors survive into adulthood, nor do they influence the speech of adult speakers. As sociolinguistic research revealed, the transmission of change is determined by power and prestige (Labov 2001). Since children do not constitute influential groups, their innovations have no effect on adult language.

In sum, there is no evidence that children are responsible for diachronic change. This raises the question of why there are similarities between child language and language history. I suggest that the two developments are often parallel because they are driven by similar mechanisms of language use. Leaving aside the motor skills that seem to account for some of the differences in phonetic development, there are at least three

mechanisms that are involved in the developments discussed in this chapter: (i) *analogy*, (ii) *entrenchment* and (iii) *categorization*.

Analogy involves a mapping of information from one particular entity, the source, to another particular entity, the target (Gentner 1983; Holyoak and Thagard 1996). The mapping is based on the recognition of similarity; notably the recognition of structural similarity plays an important role in language development. Structural analogy is the psychological mechanism that underlies the creation of novel forms in both language acquisition and diachronic change (Gentner 1989; McMahon 1995). Entrenchment is determined by token frequency (Bybee 2006; K. Aaron Smith, Chapter 97; Phillips, Chapter 98). In the usage-based approach, the mental representations of linguistic entities are associated with an activation value that is determined by the users' experience with language. Other things being equal, frequent linguistic entities are more deeply entrenched in memory than linguistic entities that are infrequent. The level of entrenchment determines the ease of activation, which may interact with analogy. Linguistic entities that are deeply entrenched and easily activated are less likely to be regularized by analogy than linguistic entities that are only weakly entrenched and more difficult to activate (Bybee and Thompson 1997; see also Diessel 2007).

Finally, categorization plays an important role in both child language and historical development. As we have seen, there are striking parallels between the ontogenetic and diachronic developments of grammatical markers and constructions. Some authors have argued that the developments are parallel because they originate from the same "semantic space" (Ziegeler 1997). On this account, there is a limited number of "source concepts" with relatively concrete meanings that determine the development of more abstract concepts in both child language and diachronic change (see also Slobin 1985; Bowerman 1985). However, Slobin (2002) has challenged this analysis (see also Slobin1994, 1997). He argues that the ontogenetic and diachronic developments of grammatical markers are based on different cognitive processes. In accordance with the grammaticalization literature, Slobin assumes that the diachronic evolution of grammatical markers is based on pragmatic inferences drawn from concrete referential meanings (Traugott and König 1991), whereas the ontogenetic development of grammatical markers is based on the child's "discovery" of related meanings in the ambient language. Slobin's analysis reveals an important difference between the two developments: children do not simply recapitulate the pragmatic inferences that have given rise to diachronic change - the psychological processes are different. However, children's production of novel forms and uses suggests that the discovery of adult meanings is an active process that involves the same mappings between conceptual domains as in diachronic change.

4 References

Aitchison, Jean. 1991. Language Change. Progress or decay? Cambridge: Cambridge University Press.

Andersen, Henning. 1973. Abductive and deductive change. Language 49: 765-793.

Baron, Naomi S. 1977. *Language Acquisition and Historical Change*. Amsterdam: North-Holland. Bowerman, Melissa. 1985. What shapes children's grammars? In: Dan I. Slobin (ed.), *The Cross-*

linguistic Study of Language Acquisition. Vol. II: Theoretical Issues, 1257–1319. Hillsdale: Erlbaum.

- Bybee Hooper, Joan. 1980. Child morphology and morphophonemic change. In: Jacek Fisiak (ed.), *Historical Morphology*, 157–187. The Hague: Mouton.
- Bybee, Joan. 2006. From usage to grammar: The mind's response to repetition. *Language* 82: 711–733.
- Bybee, Joan and Dan I. Slobin. 1982a. Why small children cannot change language on their own: Suggestions from the English past tense. In: Anders Ahlqvist (ed.), *Papers from the Fifth International Conference on Historical Linguistics, Galway, April 6–10*, 29–37. Amsterdam/Philadelphia: John Benjamins.
- Bybee, Joan and Dan I. Slobin. 1982b. Rules and schemas in the development and use of the English past tense. *Language* 58: 265–289.
- Bybee, Joan and Sandra A. Thompson. 1997. Three frequency effects in syntax. *Berkeley Linguistics Society* 23: 378–388.
- Clark, Eve V. and Kathie L Carpenter. 1989. The notion of source in language acquisition. *Language* 65: 1–30.
- Croft, William. 2001. Explaining Language Change. An evolutionary approach. Harlow: Longman.
- Diessel, Holger. 2004. *The Acquisition of Complex Sentences*. Cambridge: Cambridge University Press.
- Diessel, Holger. 2007. Frequency effects in language acquisition, language use, and diachronic change. New Ideas in Psychology 25: 108–127.
- Diessel, Holger forthc. Grammaticalization and language acquisition. In: Bernd Heine and Heiko Narrog (eds.), *Handbook of Grammaticalization*. Oxford: Oxford University Press.
- Drachman, Geberell. 1978. Child language and language change: A conjecture and some refutations. In: Jacek Fisiak (ed.), *Recent Development in Historical Phonology*, 123–144. Berlin/New York: Mouton de Gruyter.
- Dressler, Wolfgang U. 1974. Diachronic puzzles for natural phonology. In: Anthony Bruck, Robert A. Fox and Michael W. LaGaly (eds.), *Papers from the Parasession on Natural Phonology*, 95–102. Chicago: Chicago Linguistic Society.
- Fleischmann, Suzanne. 1989. Temporal distance: A basic linguistic metaphor. *Studies in Language* 13: 1–50.
- Gentner, Dedre. 1983. Structure-mapping: A theoretical framework for analogy. *Cognitive Science* 7: 155–170.
- Gentner, Dedre. 1989. The mechanisms of analogical learning. In: Stella Vosniadou and Andrew Ortony (eds.), *Similarity and Analogical Reasoning*, 199–241. New York: Cambridge University Press.
- Givón, Talmy. 1979. Understanding Grammar. New York: Academic Press.
- Halle, Michael. 1962. Phonology in generative grammar. Word 18: 54–72.
- Heine, Bernd, Ulrike Claudi and Frederike Hünnemeyer. 1991. Grammaticalization. A conceptual framework. Chicago: Chicago University Press.
- Holyoak, Keith J. and Paul Thagard. 1996. *Mental Leaps. Analogy in creative thought*. Cambridge: MIT Press.
- Hock, Hans Heinrich. 1991. Principles of Historical Linguistics. Berlin/New York: Mouton de Gruyter.
- Hopper, Paul J. and Elizabeth Closs Traugott. 2003. *Grammaticalization*. Cambridge: Cambridge University Press.

Jesperson, Otto. 1922. Language: Its nature, development and origin. London: Allen and Unwin.

- Johnson, Christopher R. 2001. Constructional grounding: On the relation between deictic and existential there-constructions in acquisition. In: Alan Cienki, Barbara J. Luka and Michael B. Smith (eds.), *Conceptual and Discourse Factors in Linguistic Structure*, 123–136. Stanford: CSLI Publications.
- Kent, Ray D. and Giuliana Miolo. 1994. Phonetic abilities in the first year of life. In: Paul Fletcher and Brian MacWhinney (eds.), *The Handbook of Child Language*, 303–334. Oxford: Blackwell.

- 4197-037-1pass-XII. New Perspectives, Theories and Methods-r03.3d Pages: [1421-1658] Date: [April 3, 2012] Time: [2:55]
 - Kiparsky, Paul. 1968. Linguistic universals and linguistic change. In: Robert T. Harms (ed.), *Universals in Linguistic Theory*, 171–204. New York: Holt, Rinehart and Winston.
 - Kerswill, Paul. 1996. Children, adolescents, and language change. *Language Variation and Change* 8: 177–202.
 - Labov, William. 2001. Principles of Language Change. Vol. II: Social Factors. Malden, MA: Blackwell.
 - Lehmann, Christian. 1995 [1982]. *Thoughts on Grammaticalization*. Universität Köln: Arbeiten des Kölner Universalien Projekts. München: Lincom Europa.
 - Lightfoot, David. 1999. The Development of Language: Acquisition, change, and evolution. Malden, MA: Blackwell.
 - Lightfoot, David. 2006. How New Languages Emerge. Cambridge: Cambridge University Press.
 - López-Couso, Maria. 2008. Developmental parallels in diachrony and ontogeny: Existential there as a test case. University of Santiago de Compostela. Manuscript.
 - McMahon, April M.S. 1995. *Understanding Language Change*. Cambridge: Cambridge University Press.
 - Maratsos, Michael. 2000. More overregularization after all: new data and discussion on Marcus, Ullman, Pinker, Hollander, Rosen and Xu. *Journal of Child Language* 27: 183–212.
 - Marcus, Gary F, Michael Ullman, Steven Pinker, Michelle Hollander, T. John Rosen and Fei Xu. 1992. Overregularization in language acquisition. Chicago: University of Chicago Press.
 - Menn, Lise and Carol Stoel-Gammon. 1994. Phonological development. In: Paul Fletcher and Brian MacWhinney (eds.), *The Handbook of Child Language*, 335–359. Oxford: Blackwell.
 - Menzel, Thomas. 2004. On the relationship between first language acquisition and language change based on evidence from Russian. *Sprachtypologie und Universalienforschung* 57: 377–392.
 - Müller, Max. 1890. The Science of Language. New York: Charles Scribner.
 - Paul, Herrmann. 1960[1890]. Prinzipien der Sprachgeschichte. 6th edn. Halle: Max Niemeyer.
 - Pinker, Steven. 1999. Words and Rules. The ingredients of language. New York: Basic Books.
 - Schmidtke-Bode, Karsten. 2009. *Going-to-V* and gonna-V in child language: A quantitative approach to constructional development. *Cognitive Linguistics* 20: 509–538.
 - Slobin, Dan I. 1973. Cognitive prerequisites for the development of grammar. In: Charles A. Ferguson and Dan I. Slobin (eds.), *Studies of Child Language Development*, 175–208. New York: Holt, Rinehart and Winston.
 - Slobin, Dan I. 1985. Cross-linguistic evidence for language-making capacity. In: Dan I. Slobin (ed.), *The Cross-linguistic Study of Language Acquisition*. Vol. II: *Theoretical Issues*, 1157– 1249. Hillsdale: Erlbaum.
 - Slobin, Dan I. 1994. Talking perfectly. Discourse origins of the present perfect. In: William Pagliuca (ed.), *Perspective on Grammaticalization*, 119–133. Amsterdam/Philadelphia: John Benjamins.
 - Slobin, Dan I. 1997. The origins of grammaticizable notions: Beyond the individual mind. In: Dan I. Slobin (ed.), *The Crosslinguistic Study of Language Acquisition*. Vol. V: *Expanding the Context*, 265–323. London: Lawrence Erlbaum.
 - Slobin, Dan I. 2002. Language evolution, acquisition and diachrony: probing parallels. In: Talmy Givón and Bertram F. Halle (eds.), *The Evolution of Language and pre-Language*, 375–392. Amsterdam/Philadelphia: John Benjamins.
 - Stampe, David. 1969. The acquisition of phonetic representation. *Chicago Linguistics Society* 5: 443–454.
 - Stephany, Ursula. 1986. Modality. In: Paul Fletcher and Michael Garman (eds.), Language Acquisition, 375–400. Cambridge: Cambridge University Press.
 - Sweet, Henry. 1888. A History of English Sounds. Oxford: Clarendon Press.
 - Tomasello, Michael. 1992. First Verbs. A case study of early grammatical development. Cambridge: Cambridge University Press.
 - Trask, Robert Lawrence. 1994. Language Change. London: Routledge.

102. Generative approaches to English historical linguistics

Trask, Robert Lawrence. 1996. Historical Linguistics. London: Arnold.

- Traugott, Elizabeth Closs and Ekkehart König. 1991. The semantics-pragmatics of grammaticalization revisited. In: Elizabeth Closs Traugott and Bernd Heine (eds.), *Approaches to Grammaticalization*, 189–218. Amsterdam/Philadelphia: John Benjamins.
- Vihman, Marilyn May. 1980. Sound change and child language. In: Elizabeth Closs Traugott, Rebecca Labrum and Susan Shepherd (eds.), *Papers from the Fourth International Conference on Historical Linguistics*, 303–320. Amsterdam/Philadelphia: John Benjamins.
- Ziegeler, Debra. 1997. Retention in ontogenetic and diachronic grammaticalization. *Cognitive Linguistics* 8: 207–241.

Holger Diessel, Jena (Germany)

102. New Perspectives, Theories and Methods: Generative approaches to English historical linguistics

- 1. Introduction
- 2. The model: lexical and functional projections
- 3. v2 in English
- 4. The story of the modals: grammaticalization
- 5. Syntactic change
- 6. References

Abstract

This chapter focuses on introducing the most basic tenets of formal generative syntax, sufficient to outline its contribution to the study of the history of English, and to the interpretation of empirical data. As a general thing, generative approaches try to capture the way in which language "make[s] infinite use of finite means" (Chomsky 1965: 8, quoting Humboldt). The modeling of recursiveness in this approach is by tree-structures. The relationship between morphology and syntax can be fairly directly mediated in the generative model by functional categories (a "shell" of functional categories regulating subject-verb-agreement and Tense-Modality-Aspect on top of the VP, a "shell" of functional categories regulating definite/indefinite and number marking on top of the NP). The two main parameters along which languages differ syntactically, and where we also find differences between the stages of a single language are word order patterns, and whether grammatical information is expressed by bound morphemes (morphology) or by free words (syntax). Word order variation is accounted for by movement in a number of constrained ways; this chapter will discuss v2 in the history of English as a case-study. The expression of grammatical information by bound or free morphemes will be exemplified by an account of the loss of subjunctive morphology and the rise of modal verbs in English, which also entails an account of grammaticalization, as new analytic grams are recruited from existing lexical words. The chapter will conclude with a dicussion of the implications of such modeling for syntactic change.

Alex Bergs and Laurel Brinton 2012, Historical Linguistics of English (HSK 34.2), de Gruyter, 1613–1631