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Title:

**Language Acquisition, Microcues, Parameters, and Morphosyntactic Change**

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Abstract:

Based on both historical and present-day examples, this chapter discusses the connection between language acquisition and language change, focusing on generative approaches such as the cue-based theory of acquisition and change and grammar competition models. A number of problems are pointed out, mainly related to the generally target-consistent nature of first language acquisition and children's sensitivity to fine syntactic distinctions from early on, making syntactic restructuring unlikely in the acquisition process. A solution is suggested that involves considering syntactic rules and corresponding changes in terms of microparameters or microcues, affecting subcategories and minor parts of I-language grammars. Furthermore, it is argued that language acquisition is not the direct cause of diachronic change, but may explain the nature of such changes, accounting for why some things are vulnerable and others more stable.

Keywords: word order, grammatical gender, Norwegian, English, Swedish, rule size, economy, L2 acquisition, verb movement, grammar competition

## 1. Introduction

In the first volume of this Handbook, Aitchison (2003) discusses the relationship between diachronic change and child language acquisition in the chapter “Psycholinguistic Perspectives on Language Change”. She acknowledges the relatively long tradition for the view that the two processes are related, starting with Hermann Paul (1880), who argues that historical changes are due to imperfect learning on the part of children. Nevertheless, Aitchison basically dismisses any connection between acquisition and change, stating that “babies do not initiate changes” (p. 739). Her main argument is that “child overgeneralizations (such as *foots* for ‘feet’) fade away” over time, and she suggests that “imperfect learning by youngsters is possibly a mirage” (p. 738). Furthermore, she asks the question why “so many intelligent linguists have been prepared to adopt the ‘babies rule’ viewpoint”, answering the question herself in terms of ‘false models of change [having been] instilled into generations of linguists’ (p. 739).

The claim that there is a causal connection between child language acquisition and diachronic change has in recent years mainly been linked to the generative tradition, and this is presumably what Aitchison refers to as ‘false models’. The two most influential approaches within this tradition are Lightfoot’s (1999, 2006) cue-based theory of acquisition and change and the model of grammar competition (Kroch 1994, 2001). A more recent approach within the generative paradigm is developed in Meisel, Elsig and Rinke (2013), who claim that language change is linked not to first language acquisition (monolingual or bilingual), but to second language acquisition, both by adults and children. In all these generative approaches, major parameters play an important role. Given children’s early and generally target-consistent acquisition of such major distinctions in language, it is difficult to find direct links between acquisition and change. Thus, in other recent studies, the focus has been on smaller rules and smaller changes, referred to as microparameters or microcues (e.g. Biberauer and Roberts 2012, Westergaard 2009b, c, 2014a, van Kemenade and Westergaard 2012).

In this chapter, I review some traditional generative work arguing for a close connection between acquisition and change. I then point out some problems with these claims, mainly from typical findings in child language data, and argue that the main issue is related to the size of rules and the corresponding changes. According to the model of microcues (e.g. Westergaard 2009a, b, 2014a), both acquisition and change take place in small steps, affecting subcategories, features or individual lexical items. Furthermore, child language acquisition is often characterized as conservative learning, governed by principles of economy (Snyder 2007, Westergaard 2009a). Historical changes that seem to be the result of economy principles (see e.g. van Gelderen 2004, 2011), such as reductions and simplifications, may therefore be more easily related to acquisition. Instead of dismissing the idea that there is any connection between acquisition and change (as done by Aitchison 2003), I modify this in the following way: Acquisition is not the direct cause of historical change, but first language acquisition is a dynamic process that entails the *potential* for change. Whether a change actually *spreads*

in a speech community to the extent that it becomes the accepted norm will depend on an interplay of a number of factors, many of them related to social/cultural, geographical and stylistic factors. When we consider the causes of language change, it is therefore crucial that we distinguish between factors that may have instigated a change and more sociolinguistic factors that are responsible for the spread of a change. Focusing on the former, I will argue that acquisition may explain the *nature* of diachronic development, accounting for why some linguistic features change, while others are more stable.

## 2. Language acquisition: Parameters, constructions, and microcues

According to traditional generative theory, humans are endowed with an innate language faculty (Universal Grammar, UG) consisting of principles and parameters (e.g. Chomsky 1981, 1986, Snyder and Lillo-Martin 2011). The principles are universal across all human languages, while the parameters are options provided by UG, where languages typically choose one or the other setting. An example of a parameter often discussed in the literature is the head parameter, i.e. whether heads precede or follow their complements, the former setting being attested as VO order in English (*eat cake*) and the latter by OV word order in German (*Kuchen essen* 'cake eat'). Other important parameters are the pro-drop parameter, distinguishing between languages that allow null subjects, such as Italian or Spanish, and languages that require overt subjects, such as English or French, and the verb second (V2) parameter, distinguishing between languages requiring the finite verb to appear in second position (i.e. in C), as is common in most Germanic languages, and languages without this requirement, e.g. English. This is illustrated by the Norwegian example in (1) and its English translation.

- (1) I ffor **skrev hun** to bøker.  
last year wrote she two books  
'Last year **she wrote** two books.'

Within traditional generative theory, language acquisition is considered to be the process of setting these innate parameters to one or the other value. This can be done from exposure to relatively sparse input: On hearing a few examples of the relevant structure, e.g. VO in English, the parameter is set and all the corresponding structures fall into place. As there is very little evidence for abrupt development in child language data indicating parameter setting (see below), Wexler (1999) has argued that the major parameters are set even before the onset of language production. He refers to this as Very Early Parameter Setting (VEPS).

Constructionist theory takes a completely different approach to language acquisition, arguing that there is no innate endowment specific to language (e.g. Tomasello 2003, 2006). Language is assumed to be acquired based on input alone, and children's early production consists of item-based chunks, such as [*eat+cake*] or [*what+is*]. These item-based chunks are later generalized into schemas of the kind [ACTION+THING], and only after exposure to considerable amounts of input will grammatical rules and categories such as verbs and nouns appear. Thus, while generative theory focuses on children's linguistic creativity

(such as past tense *goed* for *went*, see e.g. Pinker 1999), constructivism emphasizes children's linguistic conservativeness, which has been revealed in a number of both corpus and experimental studies. A classical example of this is Akhtar (1999), a study showing that young English children (3-year-olds) use VO word order mainly with verbs they already know and are quite willing to produce OV word order with novel verbs when exposed to such input.

The microcue model represents a middle ground between these two opposing schools of acquisition (Westergaard 2009a, 2014a). The model adheres to the generative paradigm, assuming a UG consisting of categories, features and principles of structure building, but crucially no parameters. The microcues are pieces of abstract syntactic structure, built up by linguistic categories provided by UG, which makes them different from constructivist chunks or schemas. However, unlike parameters, the microcues themselves are not provided by UG, but develop in the acquisition process as part of the grammar of a specific language. The microcue model is based on findings showing that young children are typically not making major generalizations, which is what would be expected if they were setting major parameters at an early stage. Instead, child data show a high sensitivity to fine distinctions in syntax and information structure from early on, e.g. different proportions of V-Adv word order in different types of embedded clauses in Swedish, generally matching the input (Waldmann 2008) or V2/non-V2 in different contexts in Norwegian dialects (Westergaard 2009a, 2014a). This is shown in the following examples, where the child is target-consistently producing non-V2 in embedded questions (2), V2 in questions with disyllabic wh-elements (3), and both word orders (dependent on information structure; V2 when the subject is new and/or focused information) in questions with monosyllabic wh-words (4)-(5).

- (2) se her [ka **Ina gjør**]. (Ina, 1;11.22)  
 look here what Ina does  
 'Look here what Ina is doing'
- (3) koffer **har han** fått den? (Ina, 2;10.2)  
 why has he got that  
 'Why did he get that?'
- (4) ka **du skal** finne? (Ina, 2;0.5)  
 what you shall find  
 'What do you want to find?'
- (5) kor **er babyen**? (Ina, 2;1.0)  
 where is baby.DEF  
 'Where is the baby?'

This means that children are typically conservative learners, rarely overgeneralizing structures found in the input, i.e. producing non-target-consistent forms on the basis of a learned form that is overextended (e.g. Snyder 2007). According to the microcue model, language acquisition takes place in small steps, involving the addition of a subcategory, a feature or a lexical item,

typically based on positive evidence in the input. For example, some Swedish and Norwegian children seem to start out using the V2 rule only with *be*, later extending this verb movement process also to other verbs (Waldmann 2012, Westergaard 2009a), see section 6 below.

### 3. Cue-based acquisition and change

In his seminal work, Lightfoot (1979) makes a strong argument for the link between child language acquisition and diachronic change. He argues that children may fail to acquire a system that is identical to that of their parents, due to certain shifts in the primary linguistic data (PLD) that the children are exposed to. The result is that children end up with a different grammar than the previous generation. This is referred to as Reanalysis, meaning that the input is analyzed in a way that causes children to have a different grammatical representation than the parent generation. One problem with this idea is that both old and new forms typically co-exist in historical data for an extended period of time, and this variation is also attested in the production of individual speakers.

In later work, e.g. Lightfoot (1991), he makes use of Chomsky's (1986) concepts of I-language and E-language, the former defined as a person's internalized grammar and the latter as externalized language, i.e. language in use. In Lightfoot (1999:83), he argues that it is important to distinguish between grammar change and language change, referring to changes in the I-language and adjustments in the E-language respectively. Like all generativists, Lightfoot is mainly interested in changes in the I-language grammar, not in shifts affecting frequencies in language production. Nevertheless, as the E-language constitutes the input to new learners, it is important in order to explain why historical changes occur.

In Lightfoot (1999, 2006), he develops a theory of cue-based acquisition and change, where a cue is a piece of I-language structure provided by UG, triggered by relevant constructions in the input. For example, the cue for V2 syntax is formulated as in (6), referring to a clausal structure (a Complementizer Phrase, CP) with the finite verb second position, i.e. in the C head.

(6) Cue for V2:  $_{CP}[XP \text{ c}V\dots]$  (from Lightfoot 2006:86)

When children are exposed to the relevant structure in the input, this triggers the activation of the cue in their I-language grammars. As long as the trigger is robustly represented in the PLD, the acquisition process is unproblematic. However, when there is variation in the input, the activation of the cue is dependent on the frequency with which it is attested. Variation in V2 syntax may be found for an extended period of time in the history of English, as illustrated by the Middle English examples in (7)-(8), from van Kemenade and Westergaard (2012:106).

(7) Eft **sæde ðes ilke profiete**: Sitiuit in te anima mea, corpus multipliciter, again said this same prophet: my soul was thirsty, my flesh much more  
'This same prophet said again: my soul was thirsty, my flesh much more'

- (8) ... eft **þe ilca apostel seið**. Qui dicit se diligere dominum ...  
 ... again the same apostle says: The man who says that he loves God ... '...  
 again the same apostle says: The man who says that he loves God ...'

Based on findings in Middle English showing that the V2 construction was being attested less and less in texts from that period, Lightfoot (1999:156) suggests a threshold of 17-30% for the activation of V2 syntax. This means that there may be gradual change in the E-language over time, which does not affect the I-language grammar of the speakers. When the frequency drops below this critical level for acquisition, the result is that the cue is lost from the grammar of the next generation. Lightfoot (1999) refers to this I-language change across two generations as 'catastrophic' change.

However, this approach is not unproblematic, and the main issue is the considerable lack of correspondence between E-language and I-language development. Gradual changes in the E-language remain unaccounted for in this model, as pointed out by e.g. Harris and Campbell (1995) and Croft (2000). Furthermore, it is questionable whether considerable changes in the E-language may appear without reflecting changes that have already taken place in the I-language. Different proportions of certain constructions in language production are often taken to mirror different I-language grammars, both in acquisition studies and in investigations of dialect variation. For example, Valian (1991) argues that different percentages of null subjects in the production of Italian and English two-year-olds (approximately 70% vs. 30%) show that they already have different underlying pro-drop grammars.

#### 4. Grammar competition

A somewhat different generative approach to language change is the competition model developed by Kroch (1989, 2001). Under this account, variation in historical texts is a reflection of speakers having two different grammars in their internalized systems, typically understood as conflicting settings of a parameter. For example, the attestation of both VO and OV word orders across the Old and Middle English periods, as shown in (9)-(10), reflect speakers having an OV as well as a VO grammar in competition, the latter gradually winning over the former (see also Pintzuk 1999, 2002).

- (9) Ac he sceal **þa sacfullan gesibbian** (Old English)  
 but he must the quarrelsome reconcile  
 'But he must reconcile the quarrelsome ...'

- (10) Se wolde **gelytlian þone lyfigendan hælend**  
 he would diminish the living saviour  
 'He would diminish the living saviour ...' (Pintzuk 2005: 117)

The difference between the two grammars may be stylistic, geographical, sociolinguistic or represent what Kroch (2001:722) refers to as 'syntactic diglossia', i.e. co-existing grammars within the same individual. According to Kroch (1994:184), speakers 'will postulate competing grammars only when languages give evidence of the simultaneous use of incompatible forms', i.e. both

settings of a parameter. In these cases, one variant is expected to be learned first, while the other would have the 'status of a foreign element' and be learned later.

The grammar competition idea has also been popular within language acquisition studies in order to explain variation in children's production, e.g. in Roeper's (1999) model of universal bilingualism or Yang's (2002) Variational Model of first language acquisition. This variation is illustrated by the following examples, where the English-speaking child is producing non-inverted word order in a *wh*-question, although subject-auxiliary inversion seems to be in place in other questions in the same recording (examples from Westergaard 2009d:1028; data from the Brown corpus on CHILDES (Brown 1973, MacWhinney 2000)):

(11) Why **he can't** hit? (Adam, 3;4.01)

(12) What **am I** saying? (Adam, 3;4.01)

Sometimes the variation is also expressed in the input. According to Roeper (1999), English-speaking children are exposed to a residual V2 grammar (inversion with *be* and auxiliaries) as well as a productive non-V2 grammar (with all other verbs), and this causes them to develop and entertain two grammars (or parameter settings). And according to Yang's (2002, 2010) Variational Model, children keep track of the frequency of relevant constructions in the input in order to strengthen or demote the two grammars, finally ending up with the adult system.

But the idea of grammar competition is not unproblematic either. With respect to acquisition, there is little evidence that children are indiscriminately weighing two options for an extended period of time until one of them wins out. As pointed out by Snyder (2007), the Variational Model would predict massive overgeneralization at an early stage, as children move from one grammar to the other. As mentioned above, this is virtually unattested in syntax. Instead, Snyder shows that children are conservative learners, typically making errors of omission, not errors of commission. It has also been shown in a number of recent studies that children are sensitive to fine distinctions in syntax and information structure from early on (e.g. deCat 2003 on the acquisition of topicality in French, Gordishevsky and Avrutin 2004 on null subjects in Russian, or Westergaard 2009a, 2011 on variable V2 and different subject positions in Norwegian). Thus, most available data seem to point in the direction that young children are able to zoom in on the target grammar at a very early stage, although they still make some errors of omission, presumably due to a principle of economy in the acquisition process. This means that Kroch's prediction that children would learn one variant first and the other only at a later stage is not borne out by child language data.

The grammar competition idea has also been criticized in work on diachrony. Roberts (2007) points out that much of the variation that has been attested in historical records is quite stable over time. Examples of this are V2 variation throughout the Old English period (e.g. Bech 2001), or OV/VO for hundreds of

years in the history of the Nordic languages (e.g. Faarlund 2000). Furthermore, if speakers of a language may acquire and maintain two grammars in their linguistic competence, it is unclear why this situation should necessarily lead to change. Westergaard (2009b, c) has also argued that the competition model does not sufficiently take into account the linguistic factors that distinguish the two options: Since children seem to be sensitive to such fine distinctions from an early stage, this indicates that these options are not really competing with each other. This means that grammar competition should not be at the level of major categories (or macro-parameters), but at a much lower level, where there are minor distinctions between various types of subcategories. Furthermore, Westergaard (2014b) argues that grammar competition is not the child's initial hypothesis when confronted with variation, but rather a last resort, when the child fails to find a distinguishing factor between the options.

### **5. Language change and L2 acquisition**

A more recent approach to the connection between language acquisition and historical change is presented in Meisel, Elsig and Rinke (2013). Their starting point is the massive body of findings from first language acquisition studies showing that children produce target-consistent utterances from early on and which therefore provide "virtually no support for the idea that developing grammars differ in core properties from those of their caretakers" (p. 56). Thus, there is no evidence to support the idea that a fundamental reorganization of the mental grammar may take place across two generations of speakers. This is the case not only in monolingual acquisition, but also in bilingual first language acquisition. Meisel, Elsig and Rinke (2013) therefore attribute a special role to language contact and L2 acquisition, both by children and adults, arguing that it is only in this acquisition context that we see changes in what they refer to as core properties of the grammar, i.e. parameters.

According to Meisel, Elsig and Rinke (2013), second language acquisition seems to be fundamentally different from first language acquisition in that L2 learners have been found to be unable to re-set parameters and learn core properties of their second language that are structurally different from their L1 (see e.g. Meisel 2011).<sup>1</sup> Thus, L2 learners are either agents of such historical changes or they provide input that may trigger parameter settings that are different from the ones found in the previous generation of L1 speakers.

Meisel, Elsig and Rinke (2013) make an important distinction between core and more peripheral (or surface) properties of language that are related to e.g. information structure, the lexicon or sociolinguistic variation. The core properties are those that are provided by UG, i.e. principles and parameters. Principles are universal and not expected to change, while parameters may undergo historical change, from one setting to another. Many such changes have of course been attested, e.g. the development from OV to VO in the history of English or the Nordic languages, the loss of V2 in the history of English and

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<sup>1</sup> It should be noted that there is a large body of literature that argues against a fundamental difference between first and second language acquisition; see e.g. Schwartz and Sprouse 1996, Dekydtspotter, Schwartz and Sprouse 2006).



French, and the change from pro-drop to non-prodrop in the history of French. Changes may of course also occur in the peripheral properties of a language, but these are not considered by Meisel, Elsig and Rinke to be changes resulting in restructuring of the grammar.

This means that, as in Lightfoot's (1999, 2006) cue-based theory, Meisel, Elsig and Rinke's approach depends on a distinction between the abstract grammar and language in use. For example, they claim that the pro-drop parameter "merely specifies the structural prerequisites which must be met in order to allow for the subject position to remain lexically empty", while the question of the "contexts and at what rate overt pronouns may occur depends not on the parameter setting but on pragmatic factors, such as emphasis, contrast or information structure" (p. 173). This means that the frequency of null subjects "does not tell us anything about the parametric setting in the grammar" (p. 174).

A consequence of this is that grammar change should not occur very often, and Meisel, Elsig and Rinke also point out that many changes that have been assumed to be parametric cannot be historically linked to considerable L2 learning. They therefore re-examine a number of such alleged grammar changes, e.g. the loss of V2 and null subjects in the history of French, concluding that, on closer inspection, these turn out to be surface phenomena (linked to information structure or morphology) that have not had an effect on the underlying grammar. According to Meisel, Elsig and Rinke then, Old French was in fact neither a V2 language nor a pro-drop language, and the changes that have taken place in the history of French do not constitute grammar change at the parametric level.

Although the idea that L2 learners are responsible for major historical changes is an intriguing one, I find that Meisel, Elsig and Rinke's proposal is problematic in a number of ways. First and foremost, the distinction between core and surface phenomena faces the same problems as the I-language vs. E-language distinction discussed in section 3. The proposal also restricts the domain of the core grammar so much that most of language change cannot be accounted for in this model, e.g. the developments in the history of French just mentioned. Furthermore, in Westergaard (2014a) I also question the importance of parameters in traditional generative approaches by investigating the acquisition of complex linguistic variation that is not considered to be parametric in nature, showing that children are target-consistent in their production from early on. If children can learn this variation and complexity without specific help from UG, it seems unnecessary to posit a universal endowment which includes parameters in order to provide information to the language-learning child about aspects such as VO vs. OV word order, something which is relatively simple and also frequent in the PLD.

## **6. The size of rules: Microparameters or microcues**

In the three models discussed above, parameters play a crucial role. Changes in the mental grammar of speakers, the I-language, are considered to be at a macro-level, corresponding to major parameters, e.g. OV/VO, V2 or pro-drop. But as pointed out by Biberauer and Roberts (2012), such major changes are quite rare.

They postulate a four-level hierarchy of parameters, where the levels refer to the size of the class of elements undergoing the process: macro, meso, micro or nano. Macroparameters affect all items of a category (e.g. all heads), mesoparameters affect a linguistically specified subset of this category (e.g. all verbs or all nouns), microparameters affect a linguistic subcategory (e.g. all auxiliaries or all pronouns), and nanoparameters affect a small number of lexical items. Mainly discussing verb movement, Biberauer and Roberts (2012) argue that V-to-T movement (verb movement across an adverb or negation) in the history of English has been reduced from a mesoparameter, affecting all verbs in the language, as illustrated in (13), to a microparameter in Present-day English, where only auxiliaries move, as shown in (14).

(13) if I **gave not** this account to you  
'if I didn't give this account to you' (Biberauer and Roberts 2012:271)

(14) a. I **have not** done it.  
b. I **will never** do it.

Furthermore, referring to Warner (1997:383), they also show that in the 18<sup>th</sup> century, this movement operation had the status of a nanoparameter, only affecting some verbs in the language, e.g. *know*, *doubt* and a few others. Thus, according to Biberauer and Roberts (2012:272-3) "the original productive option affecting all finite verbs split ... into a microparameter affecting auxiliaries and a nanoparameter affecting a handful of idiosyncratic lexical verbs."

Biberauer and Roberts (2012) also propose that there is a size-stability correlation, in that higher levels in the parametric hierarchy are more stable than lower levels. This means that historical change frequently occurs at the nano- or microparametric level, while the higher levels (meso- and macroparameters) are more stable. The reason for this, they claim, is due to conservativeness in the acquisition process, more specifically what they refer to as the Input Generalization, which ensures that all categories behave the same way. That is, children are assumed to start out with the most general parameters at the highest level of the hierarchy (the macroparameters), gradually moving down the hierarchy if the postulated rules turn out to cover a smaller domain in the language at hand. A problem with this latter claim is that conservative learning is normally used to describe the opposite finding, viz. children's lack of (over-)generalization (e.g. Snyder 2007, Westergaard 2009a). For example, English-speaking children have not been found to overgeneralize subject-auxiliary inversion to other clause types (e.g. declaratives) or other verb types (e.g. lexical verbs), see Radford (1992).

The microcue model is similar to Biberauer and Roberts' (2012) approach in that even small changes are considered to be part of the I-language and therefore interesting to study from a generative perspective. Furthermore, neither the microcues nor the parameters are provided by UG, but are considered to develop in the acquisition process. Nevertheless, microcues are built up by categories and features provided by the innate endowment. Crucially, they differ from the cues in Lightfoot's (1999, 2006) model in that the linguistic context for a rule has to

be specified. Thus, instead of just one cue for V2 (cf. (6) above), Norwegian dialects need several microcues for this word order, as the variation is dependent on clause type, subject type and type of initial element. The following is the microcue for V2 in *wh*-questions with monosyllabic *wh*-elements, specifying clause type (InterrogativePhrase, i.e. *wh*-question), the head status of the initial element (see section 7 below), and the information status of the subject as [+FOC].

(15) Microcue for V2 in *wh*-questions with monosyllabic *wh*-elements:

$$\text{IntP} [ \text{Int}^{\circ} [wh] \text{TopP} [ \text{Top}^{\circ} [V \dots \text{XP}_{[+FOC]} \dots ] ] ]$$

An important difference between Biberauer and Roberts' (2012) parameter hierarchy and the microcue model is that in the latter approach, *all* changes are considered to be small (Westergaard 2009b, c). Thus, there is no rule hierarchy, and the explanation for why higher-level changes are historically so rare is that they are the accumulation of many small changes. Moreover, the microcue model assumes that the acquisition process does not start out with the most general rules; instead, children's grammars begin with more specific knowledge (of individual items and minor categories), extending the domain of a rule based on positive evidence in the input. To return to subject-auxiliary inversion in English, the available child data suggest that children first invert with *be* and the *wh*-words *what* and *where*, later extending the process to auxiliaries and other *wh*-elements (Westergaard 2009d, 2014a). Similarly, Swedish children have been found to produce V2 word order first with *be*, as shown in (16), only later moving other verbs to C (Waldmann 2011). Furthermore, the movement operation seems to first target a lower position in the syntactic tree (the I position), as illustrated by the non-target-consistent word order in (17), where the verb appears higher than negation but lower than the subject, and then at the final stage it moves to second position (to C), as seen in (18).

(16) hä ä min bostä. (Tea, 2;3.2, from Waldmann 2011:347)  
 here is my brush  
 'Here is my brush.'

(17) då ja ska inte gråta. (Tea, 2;10.21, from Waldmann 2011:341)  
 then I will not cry  
 'Then I won't cry.' Target form: Då ska jag inte gråta.

(18) va ska vi ha # kaffet i? (Tea, 3;4.19, from Waldmann 2011:344)  
 what shall we have coffee.DEF in  
 'What should we put the coffee in?'

## 7. Economy and complexity

As mentioned above, numerous findings from child language studies have shown that children are generally target-consistent in production from a very early age, and in cases of variation, they produce the two (or more) options in appropriate contexts, showing great sensitivity to fine distinctions in the input. But children also make certain mistakes: As shown by Snyder (2007), children are conservative learners, hardly ever making errors of commission in syntax, but

instead errors of omission. For example, they typically produce more null subjects than the target language allows; not more overt subjects. They also occasionally fail to perform syntactic movement, e.g. subject movement or verb movement (Westergaard 2011, 2014a), but overgeneralization of a movement operation is virtually never attested (e.g. subject-auxiliary inversion declaratives). In Westergaard (2009a), this is related to principles of economy in the acquisition process, ensuring that children do not produce an element, build syntactic structure or move an element to a higher position unless there is clear evidence for this in the input. Furthermore, in cases where there is variation, e.g. the two word orders in Norwegian possessives (*mitt hus* ‘my house’ vs. *huset mitt* ‘house.DEF my’), children tend to avoid complexity, showing a preference for the least complex form, even when it is also the least frequent one (Anderssen and Westergaard 2010). This means that there are certain types of historical changes that may be especially attributed to child language acquisition, viz. changes that lead to simplifications and reductions.

Economy has also been used to explain language change, e.g. in van Gelderen (2004). More specifically, she postulates the Head Principle (generalized to feature economy in van Gelderen 2011), which basically says that an element will prefer to be a head rather than a phrase, if possible; see (19). Van Gelderen uses this principle to account for various well-known historical changes from Spec to Head, e.g. relative *that* in English. The principle is operative in the acquisition process, and within the minimalist model, it is based on the argument that head-head checking is more economical than spec-head checking.

- (19) Head Preference or Spec to Head Principle:  
Be a head, rather than a phrase. (van Gelderen 2004:11)

In Westergaard (2009b) this principle is used to account for the V2 variation across Norwegian dialects as a diachronic change in progress from V2 to non-V2: The Head Principle first affects the least complex *wh*-word, *ka* ‘what’, making it a head which may move into the head position of the InterrogativePhrase (see (15) above), thus blocking verb movement to this position (and V2 word order). This development then spreads to the other monosyllabic *wh*-elements and later to the more complex disyllabic question words, finally affecting *wh*-phrases and resulting in the loss of the V2 requirement altogether (see also Westergaard, Vangsnes and Lohndal forthcoming/2017). This development is reflected in different frequencies of V2 word order in the four types of *wh*-questions, found both in individual speaker data (see Table 1, from Westergaard 2009b:61) and across dialects in the large Nordic Dialect Corpus (Vangsnes and Westergaard 2014).

Wh-element	<i>ka</i> ‘what’	<i>kor/kem</i> ‘where/who’	<i>korsen/korfor/katti</i> ‘how, why, when’	Full phrases	<i>wh</i> -phrases
% V2	8.7% (46/527)	27.9% (68/244)	80% (36/45)	91.5% (43/47)	

Table 1: The percentage of V2 word order across different *wh*-questions, female speaker born 1957 (N=863).

## 8. Acquisition may influence the *nature* of change

Given typical child language data, Aitchison (2003) can in many ways be said to be right about child language not being the major cause of language change, simply because children are too good at language acquisition. Diessel (2012) also points out that there is no evidence that children's errors survive into adulthood. In this section, I review some recent findings of a historical change in progress that may be an example of just that, and where language acquisition can be argued to be decisive for the *nature* of this change. That is to say, while child language does not constitute the direct cause of the change, it may explain why some things change and others don't. The change in question is the loss of the feminine gender in certain dialects of Norwegian. This is a change that has already taken place in other Germanic languages, e.g. Dutch, Danish or Swedish, reducing the three-gender system (masculine, feminine, neuter) to a two-gender system (common, neuter). In the following, I sketch how the change mirrors patterns that have been attested in first language acquisition (both L1 and 2L1), see e.g. Rodina and Westergaard (2013, 2015).

Gender is standardly defined as agreement between a noun and other targets, e.g. articles or adjectives (Hockett 1958, Corbett 1991). Spoken Norwegian traditionally has three genders, the main characteristics of which are illustrated by the patterns in Table 2.<sup>2</sup>

<b>Gender</b>	<b>Masculine</b>	<b>Feminine</b>	<b>Neuter</b>
Indefinite	<b>en</b> bil <i>a car</i>	<b>ei</b> bok <i>a book</i>	<b>et</b> hus <i>a house</i>
Definite	bilen <i>car.DEF</i>	boka <i>book.DEF</i>	huset <i>house.DEF</i>
Adjective	en <b>fin</b> bil <i>a nice car</i>	ei <b>fin</b> bok <i>a nice book</i>	et <b>fin</b> hus <i>a nice house</i>

Table 2: Examples of gender and declension in Norwegian: indefinite articles, the definite suffix and adjectival forms.

The indefinite article distinguishes among all three genders, with the forms *en*, *ei* and *et* for the masculine, feminine and neuter respectively. The definite article is a suffix on the noun, which means that it strictly speaking does not express gender (according to the definition just mentioned), but is rather to be considered a declension marker. Gender is also marked on other targets such as adjectives or possessives. As shown in Table 2, the adjectival forms display syncretism between the masculine and the feminine. This is the case also in some other parts of the paradigm, i.e. demonstratives, some quantifiers, and pronominal determiners in double definite forms.

With respect to frequency, the masculine is clearly the most common gender. Trosterud (2001) has carried out a count of altogether 31,500 nouns in the *Nynorsk Dictionary*, finding that masculine nouns make up 52%, while feminines make up 32%, and neuters only 16%. Rodina and Westergaard (2015) have

<sup>2</sup> Written Norwegian has two different standards, *nynorsk*, which is based on Norwegian dialects and therefore requires the use of three genders, and *bokmål*, which is based on Danish and which thus allows a two-gender system (as well as a three-gender system), cf. Lødrup (2011). See also Venås (1993) for more information about the language situation in Norway.

investigated child-directed speech in a corpus (Anderssen 2006) and found that the distribution is somewhat different in naturalistic input to children, in that the masculine is even more frequent than in the dictionary, 62.6%, while the feminine and the neuter are attested with equal proportions, 18.9% and 18.5%.

In Rodina and Westergaard (2013) it was shown that young Norwegian children up to the age of three (monolinguals and bilinguals born in 1992) have major problems with gender agreement, overgeneralizing the masculine to the feminine and neuter, producing forms such as *en bok* and *en hus* (cf. Table 2). However, the definite suffix is in place from early on with the correct declensional marking, i.e. *boka* and *huset*. This means that bound morphemes (declension class elements) are acquired much earlier than pure gender forms.

In an experimental study carried out in 2012 (Rodina and Westergaard 2015) investigating several groups of older children growing up in Tromsø, it was found that the neuter falls into place (at 90% accuracy) around age 7, while the feminine is a persistent problem for children even after this age. Figure 1 shows the accuracy with the indefinite article in the three genders across several age groups: While the masculine is unproblematic even for the youngest children (3-6-year-olds) and the neuter reaches an accuracy level above 90% already in the second group (6-8-year-olds), the feminine actually decreases in accuracy among the children (as low as 7% in the group of 11-12-year-olds). Adults above the age of 30 produce the feminine virtually 100% and teenagers use it 56%. Rodina and Westergaard interpret these findings as a very rapid change in progress, involving the loss of the feminine indefinite article, possibly feminine gender altogether.

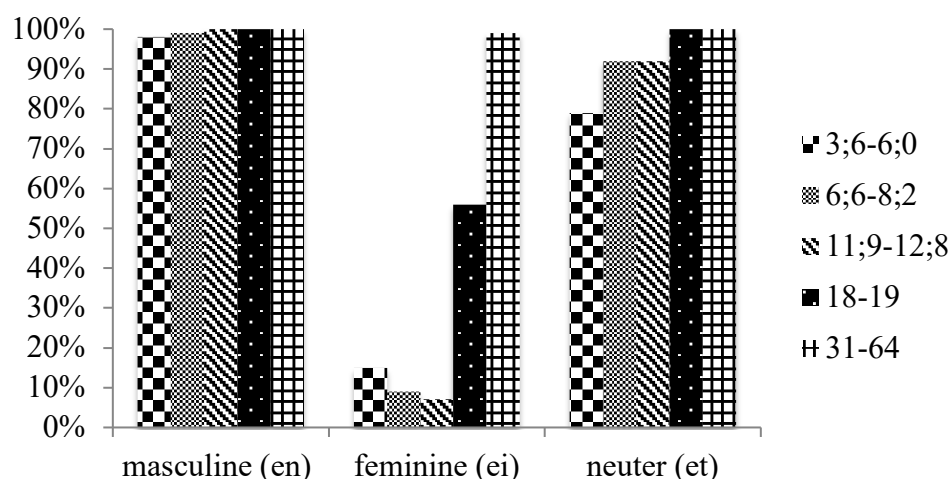


Figure 1. Accuracy of gender agreement on indefinite articles in Norwegian across five age groups (from Rodina and Westergaard forthcoming).

At the same time, the three groups of children produce the feminine definite suffix (-a) in the majority of cases, i.e. 89%, 95% and 100%. That is, the older children have developed a stable system where the formerly feminine nouns appear with the masculine indefinite article (e.g. *en bok*), but with the feminine

definite article (the suffix, i.e. *boka*). This means that the current historical change mirrors the pattern we saw in early child language about 20 years earlier.

These findings raise a number of questions, a major one being why this change is taking place at this time. Gender is a relatively stable phenomenon: despite its somewhat redundant status, children do acquire it, even in a language with non-transparent gender assignment such as Norwegian. Nevertheless, grammatical gender has been lost (e.g. English) or reduced (e.g. Dutch) in many other Germanic languages, so it is clearly a vulnerable category in some situations. Rodina and Westergaard (2015) speculate that the change in Tromsø has a sociolinguistic cause, mainly related to dialect contact. But other questions concern the *nature* of the change, i.e. 1) why is it the feminine that is lost and not the neuter, and 2) why is the definite suffix retained in this process?

In order to provide an answer to the first question, we might be tempted to simply look at frequencies in the input. But according to the percentages attested in the dictionary (Trosterud 2001), it is the neuter that should be the most vulnerable gender. And considering the equal frequencies found in child-directed speech (Rodina and Westergaard 2015), there is no reason why the feminine should be more vulnerable than the neuter. The answer should therefore be sought in the gender system itself, more specifically in the considerable syncretism that is found between the masculine and the feminine forms. This means that, while it is easy to distinguish the neuter from the other genders in acquisition, as those forms are clearly distinct, it should be more difficult for children to differentiate between the masculine and the feminine. This would therefore be a slower process and a later acquisition. Linguistic phenomena that are late acquired must obviously be more vulnerable to change than early acquisitions. One might of course also ask the further question why it is the feminine and not the masculine that is being lost. In this case, frequency is presumably an important factor after all, as the masculine is massively more frequent than the feminine.

In order to answer the second question, we should again look to acquisition. As mentioned above, Rodina and Westergaard (2013) have shown that, while a pure gender agreement form such as the indefinite article is late acquired, the definite suffix is easier to learn and thus in place very early. This seems to be the reason why this is not equally vulnerable when a change is taking place, such as the loss of the feminine gender in Norwegian.

## **9. Summary and conclusion**

Based on present-day and historical data on word order and grammatical gender, this chapter has discussed several approaches to the idea that there is a connection between language acquisition and language change. Some problematic issues have been pointed out, e.g. the fact that children are typically sensitive to fine distinctions in syntax and information structure and thus generally target-consistent in production from early on. Nevertheless, it has been argued that the acquisition process has the potential for change, and that this must be distinguished from the actual spread of a change in a speech community.

Thus, language acquisition is not argued to be the direct cause of diachronic development, but may explain the nature of historical change.

To return to Aitchison (2003), she claims that “changes tend to be small-scale and “local” ... within both child language and historical linguistics” (p. 738). Local here means within a small linguistic domain, and in my view she thus recognizes the major problem with traditional generative approaches to language change, viz. that change is considered at a level that requires massive idealization in terms of I-language vs. E-language or core vs. surface properties. This leaves many interesting aspects of language change unaccounted for, as they are considered to simply be part of peripheral syntax. But according to Biberauer and Roberts’ (2012) parameter hierarchy as well as the microcue model (Westergaard 2014a), it is in fact at this low level that most change occurs. In my view, therefore, this is where generative linguistics should focus its attention in future work.



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