Edinburgh Theoretical Historical Linguistics seminar, April 2025

What is the locus of linguistic change?

Acquistionism, lifespan-change and grammatical constraints on diachrony.

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What am I talking about?

I have a series of questions...

What might we mean by *locus*?
What do we mean by *linguistic change*?
What is *acquistionism*?
What is *lifespan-change*?
Are there *grammatical constraints on diachrony*?

How shall we do this?

When talking to Fae and Aldo about ETHL, I proposed to run the session like this...

(i) because I'm on first: use the first few minutes to get to know the crowd (who knows about phonology, who knows about syntax *etc*, who's at what stage of a-degree/their-life)

(ii) mainly, if I'm honest, talk about ideas myself, but break up every so often to encourage some discussion of an idea in the audience and then have some feedback about what people have said

(iii) otherwise throw out questions at times to the audience to see if they're listening...

(iv) have a brief break in the middle of the session (just as a pause – two hours can be a long time)

(v) generally encourage questions and interjections at any point from the audience

Historical Linguistics, me and you...

I am a Theoretical Historical Phonologist

- I engage, at least in part, in *Theoretical Historical Linguistics*

  = Theoretical Linguistics + Historical Linguistics ?

Theoretical Linguistics
= (a) developing linguistic theory
= (b) building theoretically-informed analyses of linguistic phenomena

Historical Linguistics
= (x) working out the past stages of languages ('reconstruction')
= (y) describing the changes between them ('diachrony')

Theoretical Historical Linguistics
= developing linguistic theory
= building theoretically-informed analyses of linguistic phenomena
= working out the past stages of languages ('reconstruction')
= describing the changes between them ('diachrony')
– figuring out how (a) and (b) can help with (x) and (y)
– figuring out how (x) and (y) can help with (a) and (b)

More about me – and theoretical historical linguistics

I'm excited to ask questions like the following:

- can linguistic structure place constraints on *what is a possible change*?
- if linguistic structure constrains change, then can change be evidence for linguistic structure?

Who are you? And what do you know...?

Take a few minutes to talk to the people next to you

- which areas of language and linguistics are you interested in?
- which kinds of changes are you interested in?
- what stage of degree / life are you at?
  - what might we mean by *locus*? (in terms of '**What is the locus of linguistic change?**')
  - what do we mean by *linguistic change*?
  - what is *acquistionism*?
  - what is *lifespan-change*?

Let's take this one first: what do we mean by *linguistic change*?

To tackle this, we need to consider the easy question: *what is language*?

- (this could fit in with: *which areas of language – and which kinds of changes – are you interested in*?)
- and... if I say... that my main focus will be on innovation, not propagation...?

Different kinds of historical linguists sometimes argue about which aspect of 'a change' is the important one, going so far as to claim that only one of the two aspects *is* the change – for example:

Hale (2007) talks about

change + *diffusion*

Milroy (1992) talks about

speaker-innovation + *change*

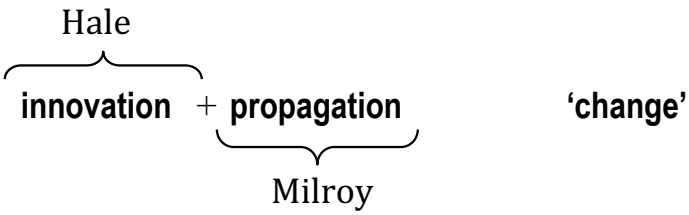
Hale (2007, 35-36):

- "The general contrast between change and diffusion must necessarily be maintained if we are to limit our attention to relevant phenomena. That the two types of phenomena really contrast can be seen quite clearly from the fact that changes need not diffuse: it is entirely possible – indeed, in my view, the norm – that many of the differences between a given acquirer's input source grammar(s) and the grammar he or she constructs will never spread to others ... I believe that diffusion is a highly unconstrained process – i.e., that any possible 'change' could just as easily diffuse under the proper sociolinguistic conditions for diffusion ..."

Milroy (1992, 169):

- "...we can propose [a] distinction ... between speaker *innovation* on the one hand, and linguistic *change* on the other. Innovation and change are not conceptually the same thing: an innovation is an act of the speaker, whereas a change is observed within the language system.... We can describe *speaker-innovation* as *an act of the speaker which is capable of influencing linguistic structure*. The innovation may, or may not, enter the language system..."

We can make sense of this if we keep the innovation/propagation distinction in mind:



I'd hope that we can agree that – if we want to understand everything about linguistic change – then we need to understand both innovation and propagation

- but for structural historical linguistics (e.g., theoretical historical phonology, theoretical historical syntax), the focus is typically on innovation

Hall-Lew, Honeybone & Kirby (2021) try to be conciliatory (dealing with all aspects of phonological change) ...

- and wade through the terminological quagmire that exists in this area:

> While the simplicity of the distinction can be disputed, we assume that it is not possible to understand the field, or possible disagreements within it, unless we recognize both aspects of change, considering both (i) phonetic and phonological structure and (ii) social and community structure; that is, we need to address both the *innovation* and *propagation* of change. The terminology used in this area is not agreed[2] (and authors in this Special Collection vary in this respect); for example, *initiation* is sometimes used as a synonym for *innovation* (a speaker-hearer or group might *innovate* a change or might *initiate* it, for example). To further complicate things, these two terms are sometimes used with different meanings, with 'an innovation' being a structural difference (of the sort s > h, for example, or a > e) and 'initiation' referring to the very first stage of the process which leads to a change affecting the phonology of a speech community.

Furthermore, some scholars talk of the *actuation* of change (following Weinreich, Labov & Herzog 1968) in a way which can overlap (or be synonymous) with this latter usage of *initiation*,[3] although this depends, in fact, on each scholar's definition of 'language' – does it reside in individuals or in communities?[4] If the latter, as Weinreich, Labov & Herzog themselves argue, then this discussion has already veered away from considering things from a purely structural perspective, because actuation then only occurs when an innovation begins to be taken up by a speech community. Nonetheless, most of the things that we need to understand in order to make sense of innovation are the kinds of things that phoneticians and phonologists work on (e.g., articulation, acoustics, contrast and phonological structures).

Does language reside in individuals or communities...?

- did I say that we need to consider the 'easy' question: *what is language*?

Hale (2007) is representing the position that 'language' is 'I-language'.

Milroy (1992) is representing the same position as Weinrich, Labov & Hertzog.

NB: 'linguistic change' means different things in different traditions.

Propagation typically requires us to consider the kinds of things that sociolinguists and dialectologists work on (e.g., social characteristics and groupings, identities, geographical and psychogeographical space). Here, too, there is terminological variation. Some use *spread* as a synonym for 'propagation' (as in 'the spread of an innovation'),[5] while others use *diffusion* in this way. This latter term is especially complex, because it can be used in the way just mentioned, or to mean *lexical diffusion* (in which an innovation is assumed to affect different words at different times, as in Bybee 2002a, b), or to contrast with *transmission* (as in Labov 2007). In Labovian usage *diffusion* refers to the acquisition of linguistic structures through contact, principally by adults in contact with other adults, including imperfect acquisition, which can lead to change (while *transmission* refers to the acquisition of linguistic structures by children in unbroken native-language descent, which can also lead to change through imperfect acquisition).

Everything clear?

- terminological disagreements sometimes correlate with conceptual disagreements and sometimes don't
- we will largely need to focus on innovation (on 'innovations'?)
  = that diachronic difference which occurs at the initiation/actuation of change
  = the difference that needs to propagate/spread/diffuse through a speech community in order to become a diachronic event in the history of a language/dialect
- so, when we talk of the locus of linguistic change, do we mean the locus of linguistic innovation?

Ok. So... what is *acquistionism*?

Honeybone & Salmons (2015), in describing a number of chapters in the *Oxford Handbook of Historical Phonology* say...

> Hale, Kissock, & Reiss assume that all change is inter-generational, due to reanalysis (or simply 'analysis') by children deriving a grammar which is different from that of a previous generation, adopting a position that we might call 'acquisition-ism'—(essentially) all change occurs in acquisition. Dresher and Lahiri also argue that at least some change must happen in acquisition.

Kiparsky (1965) expresses an acquisitionist perspective:

> Imperfect learning is due to the fact that the child does not learn a grammar directly but must recreate it for himself on the basis of a necessarily limited and fragmentary experience with speech. It is in no way surprising that the grammar should change in the process of transmission across generations of speakers.

Is it only historical phonologists...?

No. Lightfoot (2017) writes:

> Over the last decades an approach has developed that links the explanation of syntactic changes to ideas about language acquisition

And Lightfoot (2010) writes:

> Under this view of language acquisition, one can view historical change as taking place when external language comes to express cues differently, leading to the growth of new internal languages in children.

Kroch (2001) is even clearer

> Language change is by definition a failure in the transmission across time of linguistic features. Such failures, in principle, could occur within groups of adult native speakers of language, who for some reason substitute one feature for another in their usage, as happens when new words are coined and substituted for old ones; but in the case of syntactic and other grammatical features, such innovation by monolingual adults is largely unattested. Instead, failures of transmission seem to occur in the course of language acquisition; that is, they are failures of learning.

van Kemenade (2007) agrees:

> Ever since Lightfoot (1979), the generative approach to syntactic change has considered that the key mechanism of change is reanalysis, essentially the language learner's attribution of a novel underlying analysis to the same surface form.

Is acquisitionism a new idea...?

No. Paul (1886), as interpreted by Weinreich, Labov & Herzog (1968), said:

> the processes of learning language are of supreme importance for the explanation of changes … they represent the most important cause of these changes.

Grammont (1902) said:

> [t]outes les modifications fonétiques, morfologiques ou sintaxiques qui caractérisent la vie des langues apparaissent dans le parler des enfants. ['[a]ll the phonetic, morphological and syntactic changes that characterize the life of languages are found in the speech of children.']

If that is acquisitionism, what is acquisition?

White (2003) explains a generative take on language acquisition:

> UG constitutes the child's initial state (S_0), the knowledge that the child is equipped with in advance of input. The primary linguistic data (PLD) are critical in helping the child to determine the precise form that the grammar must take. As the child takes account of the input, a language-specific lexicon is built up, and parameters of UG are set to values appropriate for the language in question. The grammar (G) may be restructured over the course of time, as the child becomes responsive to different properties of the input. In due course, the child arrives at a steady state grammar for the mother tongue (S_S).

The basic picture is uncontroversial when reduced to the minimum:

S_0 + PLD = S_S

The make-up of S_0 *is* controversial, however – and how about the status of S_S?

S_0 + PLD = S_S

Where is the locus of change in acquisitionism?

The S_0 + PLD = S_S equation is overly simplistic – White's (2003) own picture is this:

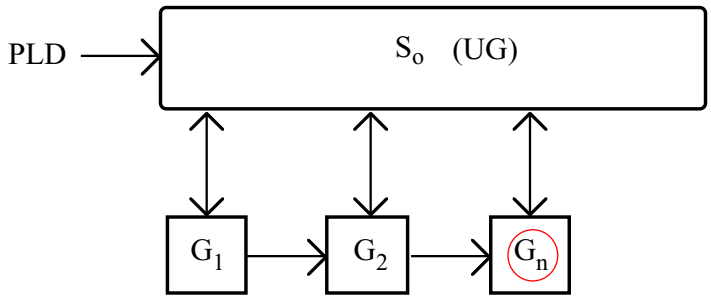


Figure 1.1 *Model of L1 acquisition*

This represents 'perfect' First Language Acquisition (FLA)

- what does imperfect transmission look like?
- one way of understanding it is to say that one of the non-final grammars 'sticks'
- is this the locus of linguistic change/innovation?

Where is the locus of change in acquisitionism?

There is more to understanding diachrony than this, though

- let's return to the simplistic FLA equation for a moment
- where does the PLD come from?
- the PLD for one generation is utterances formed on the basis of a previous generation's 'S_S' (=grammar)

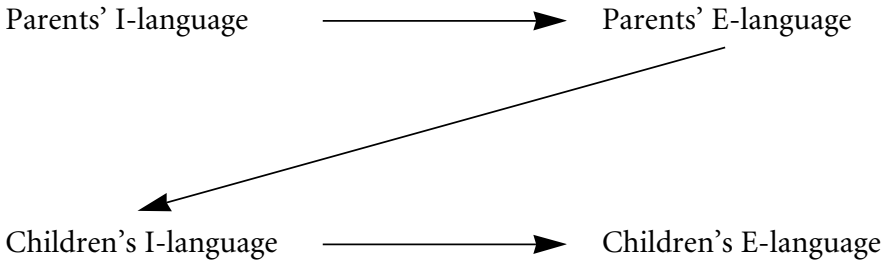
S_0 + PLD = S_S

↓

S_0 + PLD = S_S

This is no radical insight – it is the same as Battye & Roberts (1995) well-known diagram:

- S_S = 'grammar' = 'I-language'
- PLD = E-language



More diagrams/equations to locate the locus of change

One more equation will help us consider our main question:

- FLA involves a language transmission chain along the following lines
- S_S = G ('grammar') = 'I-language'
- the locus of linguistic change (of innovations in I-language) is circled

$$G^1 \rightarrow PLD \Rightarrow (FLA) \rightarrow G^2$$

On this basis, all change can be seen as reanalysis on the part of a new generation

- although, really, it's not *re*analysis
- Andersen (2001, 231) summarises the problem with using 'reanalysis' for something that language learners do

> [3]The historical linguist's interest in change has yielded us the term *reanalysis* for the cases where a novel analysis arises, but we have no established term either for the analyses [...] [...] The neologism *neo-analysis* (or *neanalysis*) would be suitable, but would it be adopted and generalized? Terminology aside, it is worth emphasizing that for language learners forming a first grammar, there is only neanalysis.Neanalysis may include reinterpretations and revisions, but reanalysis, as defined here, is strictly a linguist's notion.

Why would neanalysis occur?

Why would there ever be 'neanalysis'?

$$G^1 \rightarrow PLD \Rightarrow (FLA) \rightarrow G^2$$

The typical answer is that it's to do with the PLD – possible in a number of ways

(i) the PLD can be inherently ambiguous (confusable – 'ripe for reanalysis')

(ii) there can be change in E-language (*is this linguistic change*...?) due to chance, or sociolinguistically-driven increase in ambiguous constructions

(i) is often proposed in 'listener-based' approaches to phonological change

- Garrett (2011) sets this out thus:

Ohala (1981, 1993)	Blevins (2004, 2006a, 2008)
label: Confusion of acoustically similar sounds examples: [θ] > [f]; [gi] > [di]	label: 'change' examples: [θ] > [f]; [anpa] > [ampa]; [akta] > [atta]

Table 2: Two recent listener-based typologies of sound change

(ii) is often proposed in syntactic work, as in Lightfoot (2007)

> For example, people differ in how they use tag questions like *It is raining, isn't it?* or in how they use the topic constructions favored by sports commentators: *Taylor, he throws the ball down the middle*. People's use of their system varies, sometimes just randomly and sometimes there are statistical tendencies that can be identified.

The locus of change in acquisitionism, one more time...

We could represent the locus of innovation on this approach like this:

$G^1 \rightarrow PLD \Rightarrow (FLA) \rightarrow G^2$

$\underbrace{G^1 \rightarrow PLD}_{\text{speaker}} \Rightarrow \underbrace{(FLA) \rightarrow G^2}_{\text{hearer}}$

$G^1 + \begin{matrix}\text{inherent ambiguity or} \\ \text{increase in 're-interpretable'} \\ \text{constructions' occurrence}\end{matrix} \rightarrow \begin{matrix}\text{'re-analysis'} \\ \text{(by acquirer)}\end{matrix} \rightarrow G^2$

Acquisitionism = linguistic change is only located in First Language Acquisition

- children mistake the output of Grammar^1 for the output of Grammar^2
- they therefore acquire Grammar^2, which may be radically different from that of their care-givers-and-primary-input-givers
- a corollary of this is that there is *no such thing as linguistic change*, really, there is only (the diachronic comparison of) different grammars

I think it is fair to say that acquisitionism is the default assumption in (generative) theoretical historical linguistics.

Is acquisitionism accepted by everyone?

No. Back at the beginning of generative phonology, Halle (1962 p64, 67) wrote

> **The language of the adult—and hence also the grammar that he has internalized—need not, however, remain static: it can and does, in fact, change. I conjecture that changes in later life are restricted to the addition or elimination of a few rules in the grammar, and that a wholesale restructuring of his grammar is beyond the capabilities of the average adult.**
>
> **the primary mechanism of phonological change is the addition of rules to the grammar with special (though not exclusive) preference for the addition of single rules at the ends of different subdivisions of the grammar.**

The 'steady state' (S_S = G = I-language) is not steady?

- can the 'S_S' be a locus of change...?

S_0 + PLD = S_S

But – wait – "the ends ... of the grammar"?

- what does that mean?

The *SPE* (Chomsky & Halle 1968) model had long derivations with ordered rules

- rules could be at the 'start' or 'end' of the phonological rule component
- as in these derivations for *verbose* and *verbosity* (1968, 187, 197)
- rule (5), which adjusts the [ɔ] vowel is towards the end of the phonological grammar

verb + ōs	verb + ōs + i + ty	
verb + ṓs	verb + ṓs + i + ty	STRESS ASSIGNMENT RULES
	verb + ós + i + ty	RULE (19b)
verb + ṓws		RULE (21)
verbṓws		VOWEL SHIFT (29)
	verbā́sity	RULE (5)

(19) $$V \rightarrow [-\text{tense}] \; / \; \text{——} C \begin{Bmatrix} C_0 + i \begin{pmatrix} k \\ d \\ \check{s} \end{pmatrix} & \text{(a)} \\ (C_1 +) \begin{bmatrix} -\text{stress} \\ V \end{bmatrix} C_0 V & \text{(b)} \end{Bmatrix}$$

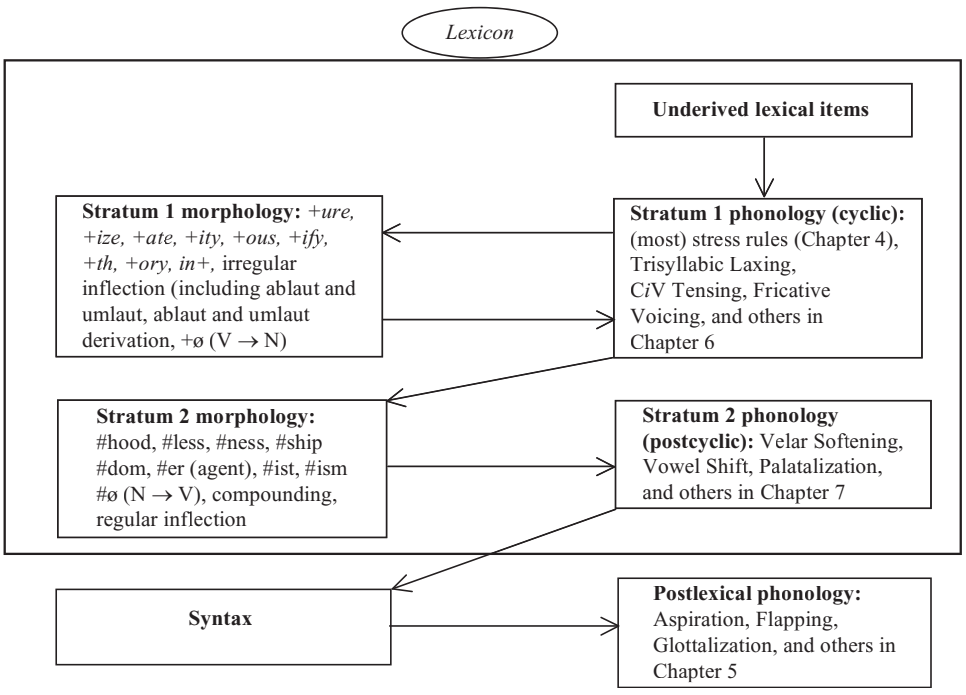
(21) DIPHTHONGIZATION $$\phi \rightarrow \begin{bmatrix} -\text{voc} \\ -\text{cons} \\ +\text{high} \\ \alpha\text{back} \\ \alpha\text{round} \end{bmatrix} / \begin{bmatrix} +\text{tense} \\ \alpha\text{back} \end{bmatrix} \text{——}$$

(29) ū ↓ ō, ō ↓ ū, ō ↓ ō

(5) $$\text{ɔ} \rightarrow \begin{bmatrix} +\text{tense} \\ -\text{round} \end{bmatrix}$$

The notion "at the end of the grammar" took on a clearer idea in Lexical Phonology, living on as Stratal Phonology

- Jensen (2022, 236) gives one representation of the LP model:
- postlexical/phrasal phonology is the 'end' of the phonological grammar



- the 'start' of phonology is Underlying Representations, stored in lexical entries
- phonological strata have sets of rules or OT-style hierarchies of constraints
- at the 'end' of phonology, things are handed to speech production
- phonology has two aspects: stored forms and phonological processes

city

stored (UR) /sɪti/

process: t → ʔ [sɪʔi] (UK)

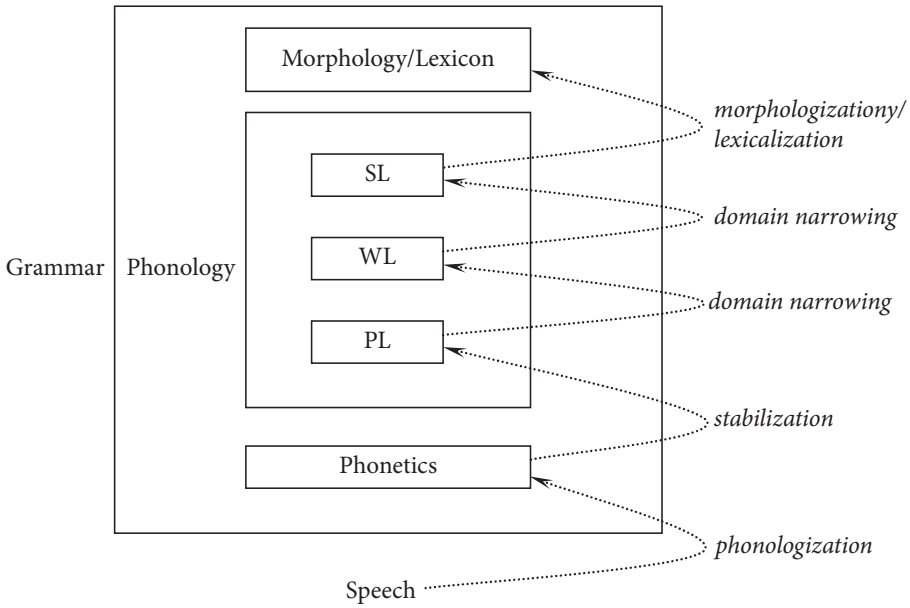
process: t → ɾ [sɪɾi] (US)

both aspects of phonology can be subject to change...

The start and end of phonology

The lifecycle of phonological processes (about which more tomorrow...) ties in with a stratal model of phonology, and the notion that there is a 'start' and 'end' of phonology

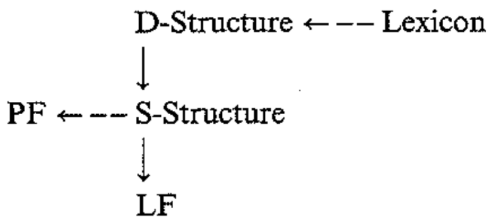
- a derivation starts at the lexicon and proceeds through phonological processes



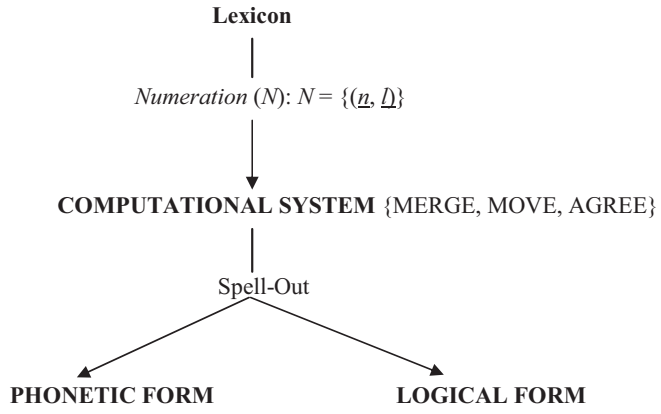
Are there *stored* and *process-like* aspects in syntax?

In generative models of syntactic 'derivation', there is a 'starting point' in the lexicon, and we could conceive of an 'end':

Chomsky & Lasnik's (1993) representation of the Government & Binding Theory model:



A representation of the model for Minimalism (from Al-Mutairi 2014)



But is there an analogue to the two 'aspects' of phonology?

- can syntactic features that are stored with lexical entries change?
- is there a correlate to the 'phonological process' – change in parameter-setting...?
- Roberts (2021): the notion of parameter change is not merely useful, it is pervasive; in fact, I wish to maintain that it is the principal explanatory mechanism in diachronic syntax.

But: the loss of object case experiencers in English (discussed, e.g., in Lightfoot 1999) could be at least in part a case of change in lexically-stored syntactic features

- earlier stages of English allowed the thematic 'underlying subject' – an experiencer – to be in a non-subject/nominative case (= 'OBJECT CASE')
- Present-Day English requires the experiencer to be in the 'subject/nominative case'

Him hungreð him hungers OBJECT CASE	He is hungry SUBJECT CASE
Me thynketh I heare me thinks I hear OBJECT CASE	I think I hear SUBJECT CASE
Him chaunst to meete upon the way A faithlesse Sarazin him chanced to meet upon the way a faithless Saracen OBJECT CASE	He chanced to meet *etc.* SUBJECT CASE

In earlier stages of English, the fact that object-case is assigned to the experiencer must be specified in the lexical entry of *hunger, think,* etc

- as English lost the ability to have experiencers in an object case, this specification in the lexical entry changed – but this seems like a minor type of syntactic change

Parameter re-/ne-setting and re-/ne-analysis

NB: Innovations involving change in parameter-settings and/or re-/ne-analysis do not necessarily change 'surface' forms.

Among Germanic languages there are sets of parameter settings which generate

- V2 – various constituents can precede the verb, which must be 2nd constituent
- SV(O) – the subject must precede the verb

A sentence like this could be generated by either V2 or SV(O) grammar:

Se cyning	lufode	þone eorl
The king	loved	the earl
S	V	O

A sentence like this could only be generated by V2:

Þæt hus	hæfdon	Romane ...	geworht	
that building	had	Romans ...	constructed	'Romans had constructed that building'
O	V	S		S V O

English syntax has changed from V2 to SV(O)

- but this is not apparent in all surface forms

Underlying change without surface change

A conceptually similar point can be made about change involving stored phonological forms ('restructuring of URs')

- the innovation of Front Rounded Vowels in English shows this

There were no FRVs in Proto-Germanic:

UR	/mu:s/	/mu:s+iz/
SR	[mu:s]	[mu:siz]

On the way to Old English a rule of *i*-umlaut was innovated

UR	/mu:s/	/mu:s+i/	
i-umlaut	—	my:si	u(:) → y(:) / _ (C) i, j
SR	[mu:s]	[my:si]	

Before OE, a re-/ne-analysis occurred involving FRVs

- but this is not apparent in surface forms

UR	/mu:s/	/my:s/
SR	[mu:s]	[my:s]

So... is acquisitionism right?

Acquisitionism is the 'default' assumption (in theoretical historical linguistics) in terms of the locus of linguistic change

- but: is it right?

What could the alternative be?

- alternatives to acquisitionism relies on the other possibility made available in the diagrams/equations of 'the language transmission chain'

$S_0 + PLD = S_S$

– what if the 'steady state' indeed is *not* so steady?
– where would the locus of change be then?

$G^1 \rightarrow PLD \Rightarrow FLA \rightarrow G^2$

In this scenario, change can (also) occur after FLA within the so-called 'steady state' of a speaker who already has a grammar with which they can compare what they hear.

There are 3 possible positions on these issues:

- all change occurs in First Language Acquisition (= strict acquisitionism)
- all change occurs in 'steady-staters' (= strong anti-acquisitionism)
- change can occur at both loci (= weak anti-acquisitionism)

How could we know which is right?

What do we predict if anti-acquisitionism is right?

- linguistic change should be observable during people's lifespans
  - weak anti-acquisitionism predicts that some but not all kinds of change occur should occur during people's lifespans
- the non-final stages that children go through in FLA should not be the same as the changes that occur in diachrony
  - weak anti-acquisitionism predicts that some but not all kinds of change should be mappable onto the non-final stages that children go through in FLA
- language-specific linguistic structure should be able to constrain change

Strict acquisitionism implies that there is a fundamental and absolute discontinuity between the pre-change and post-change linguistic state (= 'grammar')

- anti-acquisitionist positions, on the other hand, allow for the direct relatability of the pre-change to the post-change linguistic state (= 'grammar')

What is lifespan change?

Bowie & Yaeger-Dror (2015) write:

> Chambers & Trudgill (1980) noted that many studies have provided evidence of language change, since older and younger speakers very frequently differ in their speech patterns, but they described at least the vast majority of these analyses as evidence of linguistic 'change in apparent time'. They then posited a distinction between that and some hypothetical change that would continue even in the lives of individual speakers who had reached and passed this critical period, referring to the latter as 'change in real time' or 'lifespan change'

If lifespan change is real, then strict acquisitionism cannot be right

- as long as the changes involved count as 'linguistic change' (innovation in I-language?)

Sankoff, in a range of work, including Sankoff & Blondeau (2007) has argued that change can occur in the phonology of adults

- for example, in the Montreal French change r > ʁ
  - is this due to the innovation of a low-level phonological rule...? r → ʁ
- she and co-workers conducted a 'panel study' (= reinterviewing the same speakers at different points)

Sankoff (2002) writes:

> The Montreal study (the only panel study in the group) indicated that perhaps one-third of speakers who could potentially alter their (r)-pronunciation in later life in the direction of the change, actually do so. Such a mixed result is likely when other linguistic subsystems are examined in greater detail.

> In reviewing the literature to date, it is clear that phonology, even though stable in most of its features across individual life spans, is nonetheless available to some speakers for some amount of modification.

But other changes seem to be characterised by 'apparent time'

Fruehwald (2017) finds "negligible lifespan change" in a robust change in Philadelphia English

- the introduction of aɪ → ʌɪ / __ [–voice]

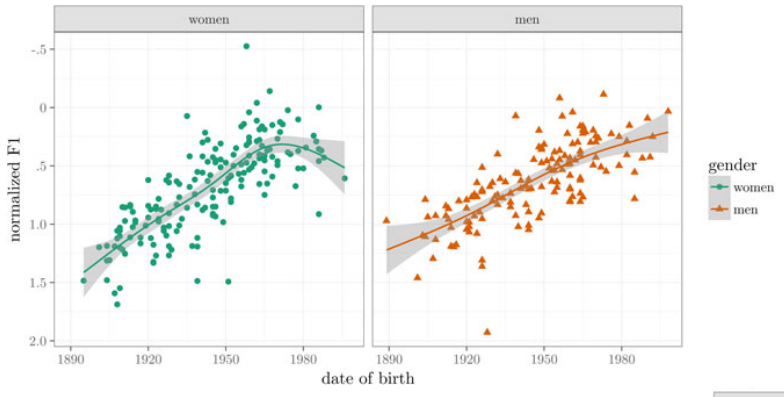


FIGURE 4. Basic pattern for prevoiceless /ay/ in Apparent Time.

The existence of 'apparent time' in such sociolinguistic studies of change implies that most of speakers' productions are stable over their lifespan

- this fits with the repeated identification of a critical period for FLA

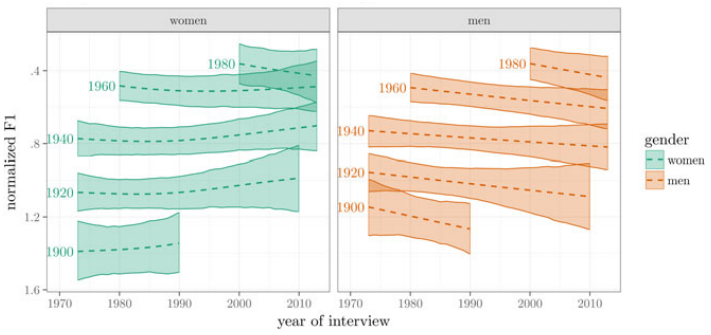


FIGURE 5. Prevoiceless /ay/ raising by date of birth cohort grouping.

Second Dialect Acquisition

Studies of Second Dialect Acquisition show that some aspects of language can change after an 'S_S' grammar has been achieved by a speaker

- Tagliamonte & Molfenter (2007) consider 'Tara', who arrived in England with a Canadian accent and began school at around age 5 (with an 'S_S'?)

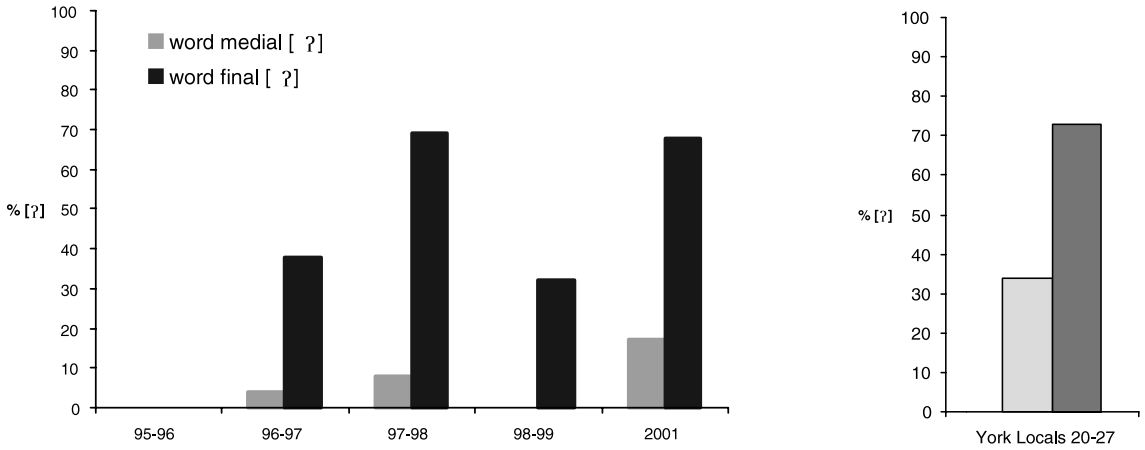


FIGURE 7A: Tara's distribution of [ʔ] by school year.

Tara acquired *t*-glottalling post-FLA (native-like after a few years)

- t → ʔ / V́_V, _#

But not all dialect features are so easily acquirable post-FLA

- Chambers (1988/1992) considered 6 children/adolescents who arrived from Canada (with an 'S_S') after a year or two in England

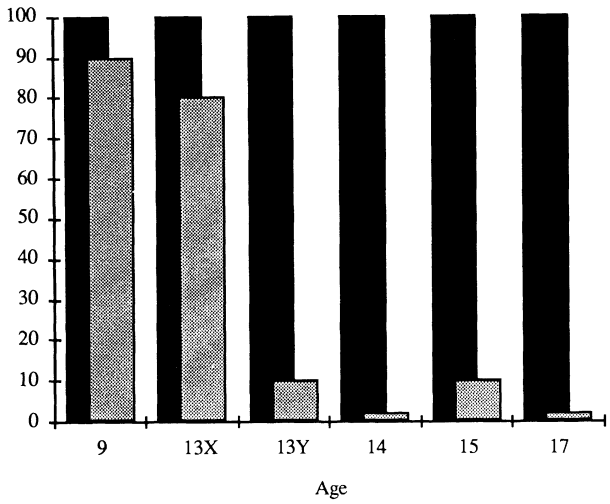


FIGURE 7. Absence of Low Vowel Merger in the speech of 6 Canadians, from youngest to oldest. In background, the scores of their English age/gender mates.

Those who arrived later in life were not able to acquire...

- the distinction between the LOT and THOUGHT vowels
- they had originally acquired a variety which had undergone the 'cot-caught merger'
- 'undoing' this would involve change at the 'start' of phonology
- URs would need to change

Older speakers did not do this (with a 'individual' component).

It seems that there is evidence that some aspects of phonology can change post-FLA

- the 'steady state' is not entirely steady – but it is mostly steady?
  - the critical period is not a myth... and second dialect acquisition is limited
  - this seems to fit with weak anti-acquisitionism

Are changes like FLA?

Foulkes & Vihman (2015) argue strongly against acquisitionism

- they argue that the non-final stages that children go through in FLA are not the same as the changes that occur in diachrony – listing the following (and others)

Error types	Typically developing (N = 11)		
	instances	%	children
stopping of /ð/	108	11.46	10
/C/ deletion	91	9.66	11
velar fronting	82	8.70	5
gliding of /r, l/	67	7.11	9
'lisping' or /θ/ for /s/ substitution	58	6.16	7
palatalization	41	4.35	7
gliding (other)	37	3.93	7
/C/ insertion	32	3.40	8
/l/ vocalization	32	3.40	6
glottal stopping	30	3.18	5
weak syll. deletion	26	2.76	6
/Cr/ reduction	25	2.65	6
/sC/ reduction	23	2.44	5
/ð/ substitution	20	2.12	5
fricativization	20	2.12	6
velarization	20	2.12	4
affricate reduction	16	1.70	5
/CC/ reduction (other)	15	1.59	5
nasalization	15	1.59	2
affricativization	14	1.49	3

Example	Age	Target	Production
(1) final /C/ deletion	3;0.5	*like*	[laɪ]
(2) initial /C/ deletion	3;0.5	*yellow*	[ɛləʊ]
(3) palatalization	3;1.10	*that is beans*	[daçɪçbiːç]
(4) palatal fronting	3;0.11	*paintbrush*	[peɪʔbɒs]
(5) weak syllable deletion	2;6.10	*Barcelona*	[baθəʊn] (said twice in this form)
(6) consonant harmony	3;1.10	*more*	[mɔːm] (/C/ insertion + harmony)
(7) /Cr/ reduction	3;0.5	*fried*	[faid]
(8) /sC/ reduction	3;1.5	*strawberry*	[dɔːbiː]
(9) /Cl/ reduction	3;1.5	*plate*	[pʰeɪʔtʰ]
(10) cluster blending	3;0.5	*play*	[feɪ]
(11) other cluster reduction	3;1.10	*milk*	[mɪk]
		stand	[tad]

Some of these child-language phenomena are like innovations that occur in phonological change

- stopping of /ð/, some deletions, blendings, *l*-vocalisation

Others are not

- initial-C deletion, consonant harmony, 'lisping'

This may show that not all change occurs in FLA?

Are changes like FLA?

As we saw above, innovations involving change in parameter-settings and/or re-/ne-analysis do not necessarily change 'surface' forms

- if this kind of change occurs in FLA, we might not expect to notice it in child language
  - (as in V2 > SVO)
  - (as in the restructuring of URs)
  - these would have very different kinds of impact on child language to what Foulkes & Vihman (2015) consider

Lahiri (2015) argues along these lines for stress change

- any of these four sets of stress parameter-settings could generate the following forms
- different generations could have quite different grammars, yet still produce (largely) the same surface forms

Different parameters eliciting identical stress patterns

	'L L L *prósody*	L 'H L *agénda*	'H H *bándage*	'H L H *cónsonant*
	(i)	(ii)	(ii)	(iv)
Extrametricality	Final syllable	Final syllable	None	Final syllable
Foot Type	Moraic Trochee	Moraic Trochee	Moraic Trochee	Moraic Trochee
Direction of Parsing	Right to Left	Left to Right	Left to Right	Right to Left
Main Stress	Left	Right	Left	Right

Observations like these are most compatible with an 'acquisitionist-type' approach to change.

Are there *grammatical constraints on diachrony*?

To return to the conceptions of FLA and the transmission chain considered above...

$S_0 + PLD = S_S$

$G^1 \rightarrow PLD \Rightarrow FLA \rightarrow G^2$

White's (2003) account was that: UG constitutes the child's initial state (S_0)

If UG consists of substantial constraints on what is a possible language ...
- these constraints are clearly constraints on *what is a possible change*

Kiparsky (2006) considers these issues:

> the traditional structuralist/generative view of the relation between synchronic and historical linguistics [...] assumes that change is constrained and explained by principles of grammar, so that diachronic change becomes evidence that can help to confirm or falsify those principles.

Kiparsky (2006) is interested in whether it is possible for a language to innovate Final Obstruent Voicing
- many languages have Final Obstruent Devoicing, but Kiparsky argues FOV is not possible
- despite that fact that possible changes *could* lead to FOV, learners can't learn it

lenition plus deletion

Stage 1:	tat	tad	dat	dad	(voicing contrast)
Stage 2:	tad	tað	dad	dað	(coda lenition)
Stage 3:	tad	ta	dad	da	(loss of weak fricatives)

– Result at stage 3: only voiced obstruents occur in codas.

Such changes are possible, so a language like stage 3 should be possible, but (Kiparsky argues) no language is like this, so a change of the type that would create stage 3 is not possible.

Kiparsky (2006) adopts an OT approach and links FOD to the idea that marked feature-values (like [+voice]) can be unavailable in 'weak positions' (like final position)

> Phonologists have postulated as a universal that marked features may be suppressed in such "weak" positions in favor of unmarked features, but not conversely. In OT, this putative universal is formally reflected by the existence of constraints that prohibit marked features in weak positions, and the absence of constraints that prohibit unmarked features in them.

*MARKED/WEAK – exists

*UNMARKED/WEAK – does not exist

Are there *grammatical constraints on diachrony*?

While the contents of UG are controversial...

- if UG exists, it places constraints on what is a possible change
- these are constraints on FLA, but they constrain change no matter where it occurs
  - as long as we understand 'change' to be innovation in I-language
- if only certain things are possible in language due to UG, changes could not bring about languages which are not possible
- language-universal grammatical structure places constraints on diachrony

$G^1 \rightarrow$ PLD $\Rightarrow$ FLA $\rightarrow G^2$

A more controversial question exists:

- can language-specific grammatical structure place constraints on diachrony?

This question links to our main concern

- does all change occur in acquisition?

Can there be language-specific *grammatical constraints on diachrony*?

Kiparsky (1995/2003) can be read as applying that there can be...

> Traditionally, the acquisition of phonology was thought of simply as a process of organizing the primary data of the ambient language according to some general set of principles (for example, in the case of the structuralists, by segmenting it and grouping the segments into classes by contrast and complementation, and in the case of generative grammar, by projecting the optimal grammar consistent with it on the basis of Universal Grammar). On our view, the learner in addition selectively intervenes in the data, favoring those variants which best conform to the language's system. Variants which contravene language-specific structural principles will be hard to learn, and so will have less of a chance of being incorporated into the system.

Can there be language-specific *grammatical constraints on diachrony*?

Hale (2003) objects to this:

> the proposal demands that the acquirer, during the acquisition process, have access to "language-specific structural principles," though these are presumably available only *after* the specific language in question has been acquired.

> Changes such as "phonologization" are not dependent upon existing representations (which the child cannot directly access), but rather represent solutions to that challenge which differ from those opted for by previous generations.

If language-specific grammatical structure *can* constrain change, this can be seen as an argument for anti-acquisitionism.

Mid-Scots θ-debuccalisation

Like English, Scots originally retained Germanic θ – however...

In Mid-Scots, what was θ in Older Scots now has some variable pronunciations as h

- this is fundamentally an 'expectable' debuccalisation: θ > h
  - there is evidence that this is non-recent change: it is also found in Ulster Scots (Maguire, pc), which indicates that it occurred before Scots was taken to Ulster (the majority of settlement was in the 17th century)
- it is recorded in traditional dialect descriptions (eg, Wilson 1915, Wettstein 1942, Zai 1942) and remnants are found in variationist descriptions of current urban varieties (Johnston 1997, Stuart-Smith & Timmins 2006, Clark & Trousdale 2009)
  - representative data from these kinds of sources shows the following:

θ-	[h]ink (Glasgow)	'think'	– alongside [θ]ink
θw-	[hwɛŋz] (Berwickshire)	'thongs' < OE *þwang*	
θr-	[hriː] (Perthshire)	'three'	
-θ-	no[h]ing (Glasgow)	'nothing'	– alongside no[θ]ing
-θ	ba[θ] (Glasgow)	'bath' !!!	
-nθ	mon[θ] (Glasgow)	'month' !!!	

Current Central-Belt Scots allows *h*-forms only in *think* and *thing*

- previously *h*-ful forms were much more widespread

This debuccalisation shows a peculiar patterning

- it occurred in 'strong' initial position, and in the 'weak' intervocalic position
  - but "[f]inal /θ/ is retained everywhere" (Johnston 1997, 507)

This seems very strange

- it seems to be a clear counterexample to the standard implicational hierarchy of lenition environments, which are expected to either occur:
  - (i) only in weak positions (the lenition being inhibited in strong positions)
  - *or* (ii) across the board – context-free – in both strong and weak positions

STRONG	WEAK	
'initial, onset'	'medial, intervocalic'	'final, coda'
[h]ink 'think'	no[h]ing 'nothing'	ba[θ] 'bath'

It makes sense, however, if we assume that it behaved like other lenitions, occurring:
(ii) across the board – context-free – in both strong and weak positions

- but, however, this patterning has been made opaque due to interaction with *CODA-h

What's *CODA-h?

Phonotactic constraints

There are gaps in the distribution/combination of segments in languages' lexicons

- in English: [baɪn], [baɪh] [klɪn], [tlɪn] [snɪn], [knɪn] [gɛfs], [gɛʃs]

A traditional strand of work on phonotactics assumes that there is a qualitative difference between accidental and system(at)ic gaps

For example, English has the following gaps in distribution:

- h is absent in codas (while all other consonants are possible in codas)
- tl and kn are absent as in onsets (while equivalent strings occur: pl, bj, kw)
- ʃs and sʃ are absent in word ends (while equivalent strings occur: fs, fθ, sθ, θs)

Many of these claims are common in the literature, as in Hammond (1999, p.58)

- Hammond, Michael (1999) *The Phonology of English: a prosodic Optimality-Theoretic approach*. Oxford: OUP.

all consonants of English except [h] can appear as a single-consonant coda.

[h] proscription
[h] cannot occur in codas.

There is a common convention to use SMALL CAPS for constraints...

- h is absent in codas (while all other consonants are possible in codas)
- h is absent in CODAs (while all other consonants are possible in codas)
- h is forbidden in CODAs (while all other consonants are possible in codas)
- h is * in CODAs (while all other consonants are possible in codas)

*CODA-h

- = h cannot occur in codas
  - [baɪh] is thus a systematic – not accidental – gap
  - [the distribution of h in English is actually more complex than this, but this is at least part of the truth...]

Loanword adaptation gives some quite compelling evidence that *CODA-h is part of the phonology of English

Persian/Farsi *shah* شه (šah)
ʃɒːh > ʃɑː

This also shows that other languages do not have *CODA-h (ranked high)

- for example, Persian/Farsi:

[ʃɒːh] 'king'
[noh] 'nine'
[dah] 'ten'

This shows that the effect of *CODA-h in English is a language-specific effect

- this seems to be a long-standing aspect of the phonology of English
  - there is no evidence for [h] in a coda during the recorded history of English

Phonotactic constraints can be slipped into OT analyses, as in Hammond (1999)

Ahab [ehæb] is unambiguous in its syllabification because of *CODA/h.

Unambiguous syllabification of Ahab

/ehæb/	FAITH	*CODA/h	PARSE
☞ [e][hæb]			
[eh][æb]		*!	
[e]h[æb]			*!

'Mixed' rule-and-constraint models can let phonotactics occur after rule-based phonology

- Sommerstein (1974) assumes that phonotactics apply at a "categorical phonetic" level
  - = around the level of Surface Representation
  - this ties in with the widespread current of phonological opinion that constraints typically apply at the surface

A rule-like syllabification algorithm can do the same as OT

- /ehab/ = *Ahab*
- /ebah/ = *

This can be done as follows:	/ehab/	/ebah/
• assign a Nucleus to sonority peaks in a string	ehab	ebah
• gather anything to the left of a Nucleus in an Onset	.e.hab	.e.bah
• gather anything to the right of a Nucleus in a Coda	.e.hab.	.e.bah.
○ apply phonotactics: including *CODA-h	[.e.hab.]	*

How does this help understand Mid-Scots θ-debuccalisation?

- I assume that the original innovation was the introduction of context free θ → h
  - like all changes, this was initially variable – I model this using two derivations

Stage 1: after the introduction of θ → h

	think		*bath*	
	/θɪnk/	/θɪnk/	/baθ/	/baθ/
θ → h	hɪnk	(—)	bah	(—)
*CODA-h	—	—	*	—
	[hɪŋk]	[θɪŋk]	*	[baθ]

(—) variable non-application

Stage 2: the current situation results from a restructuring + rule loss

	think		*bath*
	/hɪnk/	/θɪnk/	/baθ/
*CODA-h	—	—	—
	[hɪŋk]	[θɪŋk]	[baθ]

If this is right, the phonotactic constraint *CODA-h inhibited the θ > h change in codas

- this is an effect of already-existing language-specific structure, constraining change
  - if θ → h was innovated during FLA (as required by acquisitionism), while the phonology is being created, why would it have been inhibited in codas?

To conclude...

If we assume 3 possible positions on the issues considered here...

- all change occurs in First Language Acquisition (= strict acquisitionism)
- all change occurs in 'steady-staters' (= strong anti-acquisitionism)
- change can occur at both loci (= weak anti-acquisitionism)

... is there evidence that strict acquisitionism is false?

... is there evidence that strong anti-acquisitionism is false?

What is the locus of linguistic change...?

$G^1 \rightarrow$ PLD $\Rightarrow$ FLA $\rightarrow G^2$

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