Workshop

The determinants of diachronic stability

28 June 2016

8:30-9:00	*Registration*
9:00-9:10	*Welcome*
9:10-10:00	Invited speaker: **Sheila Watts:** Token stability vs. type stability: Studies from the History of German.
10:00-10:15	*Coffee break*
10:15-10:50	**Thorhallur Eythorsson and Sigridur Saeunn Sigurdardottir:** Arguments in a cold climate: Stability and change in Icelandic weather verbs
10:50-11:25	**Pierre Rucart:** Arabic loans in the verbal system of Afar
11:25-12:00	**Susanne Vejdemo and Thomas Hörberg:** The role of frequency in measuring the rate of lexical replacement.
12:00-13:10	*Lunch break* (on site)
13:10-13:45	**Charlotte Galves:** Competition, stability and change in the emergence of Brazilian Portuguese
13:45-14:20	**Theresa Biberauer:** Contact and acquirers: the “exotic” factors that have shaped Afrikaans V2
14:20-14:55	**Waltraud Paul & Redouane Djamouri:** Disharmony in harmony with diachronic stability: The case of Chinese
14:55-15:10	*Coffee break*
15:10-16:00	Invited speaker: **Joel Wallenberg:** "Variational specialization: towards an acquisition-based model of diachronic stability"
16:00-16:35	**Henri Kauhanen:** Stable variation arises from noisy across-population bias distributions in the absence of global bias
16:35-17:10	**Ian Roberts:** Stable and unstable OV systems: the role of pleiotropic formal features
18:00	*Reception at Townhall*

Theresa Biberauer:

Contact and acquirers: the "exotic" factors that have shaped Afrikaans V2

All matrilectal varieties of modern Afrikaans (henceforth: *Afrikaans)* are firmly V2. This is often viewed as surprising, given speculation about the extent to which it represents a (de)creolized/creoloid variety (cf. its inclusion in *APiCS*), and significant contact with English and other non-Germanic languages throughout its history. This paper's purpose is, firstly, to highlight un(der)discussed aspects of Afrikaans's unique V2 profile: not only has Afrikaans preserved the patterns observed in Continental West Germanic, it has **extended** the contexts permitting verb-movement into the C-domain. Secondly, I consider what underlies both the preservation and the reinforcement and expansion of Afrikaans V2. The conclusion I will draw is that Afrikaans' distinctive V2 profile has its origins in non-Germanic patterns that were (in)directly incorporated into high-frequency structures (negatives and (negative) imperatives), where they served as a basis for a "third-factor" acquisition strategy, Input Generalization, producing further novel structures. Both contact and language acquirers, then, have shaped Afrikaans V2. Significantly, this means that the continuity that we see with Germanic is thus in part illusory: V2 has indeed been a stable feature in Afrikaans, but what is possible today goes well beyond the intrinsically "Germanic" pattern.

Like its parent, Dutch, Afrikaans main clauses are obligatorily V2. Unlike Dutch and non-contact varieties of Germanic more generally, however, Afrikaans has innovated a number of matrix V2 structures, including predicate-doubling V2 (1) and quirky V2 (2):

(1) ***EET*** *sal hy EET!*
eat shall he eat = 'As for eating, he'll really EAT (a lot/with gusto)!/He WILL eat!'

(2) *Wat* ***gaan loop (en) vertel*** *hy toe vir almal wat wil luister?*
what go walk and tell he then for everyone what will listen
'What did he then go and tell everyone who would listen?' (cf. de Vos 2006)

Afrikaans has also innovated complementiserless embedded clauses, which are barred in Dutch (Zwart 1997), and, seemingly under the influence of English, extended this option well beyond what is possible in "well-behaved" West Germanic (cf. Vikner 1995). "Mainland Scandinavian"/MSc-type embedded declarative V2 with an overt complementiser (Vikner 1995, Julien 2007,2009, Wiklund et al 2007,2009) is also possible (Biberauer 2003, 2009). Thus Afrikaans has a distinctive embedded declarative V2 profile: while German and MSc mirror one another, the former requiring C-**drop** and the latter overt C-**realisation** to license embedded V2, Afrikaans permits both, the maximally generalized pattern.

Additionally, Afrikaans permits V2 as an option in embedded *wh*-structures:

(3) a. *Ek wonder wat* ***eet*** *hulle saans* (***eet***).
I wonder what eat they evenings eat = 'I wonder what they eat in the evenings.'

b. *Ek sal uitvind hoe* ***kom*** *ons by die gebou in* (***kom***).
I shall out.find how come us by the building in come
'I will find out how we (can) get into the building.'

(3)-type structures are absent in full V2 languages (Diesing 1990). While (3a), V2 in the complements of *wonder*-predicates, is possible in some colloquial English varieties (Henry 1995, McCloskey 2006), (3b)-type structures, V2 in the complement of *discover*-predicates, are ungrammatical in such varieties. In Afrikaans, however, V2 is possible wherever predicates select clausal *wh*-complements. Complementiserless interrogatives, too, then, systematically permit embedded V2. Further, some speakers permit V2 with an overt complementiser (Oosthuizen 1994), a pattern not attested elsewhere in Germanic:

(4) *Ek wonder* ***of sal*** *hulle ons kom besoek?*
I wonder if shall they us come visit = 'I wonder if they will come visit us.'

Thus Afrikaans V2 encompasses not just that attested in other Germanic languages, but also additional declarative options and two unique interrogative V2 configurations.

Afrikaans's "über-Germanic" V2 profile originates, I argue, in 2 "exotic" considerations: the un-Germanic innovations in (5) – i.e. the clause-final negative concord marker, *nie*$_2$, and the negative imperative marker, *moenie* – and a "third-factor"-imposed acquisition bias, Input Generalisation/IG, in terms of which acquirers seek to maximize the features they have

postulated on the basis of the input (this latter being "exotic" in the context of generative approaches to language acquisition):

(5) a. *Hulle koop nie$_1$ koerante* ***nie$_2$***.
they buy not newspaers POL = 'They don't buy newspapers.'

b. ***Moenie*** *jou paspoort vergeet* ***nie$_2$***!
must.not your passport forget POL = 'Don't forget your passport!'

Both *nie$_2$* and *moenie* arose during the early 19th century in the contact situation in which Cape Dutch was spoken, *nie$_2$* as an emphatic tag resumptive used in communication with non-native Dutch speakers and subsequently incorporated in their speech (Roberge 2000), and *moenie* as a calque on Malay *jangan* (an initial negative imperative marker) and Asian Creole Portuguese *na/nu misti* ('not must'), once again in the mouths of non-native speakers (den Besten 1989, 1997, Ponelis 1993). Both features were incorporated into standard Afrikaans in 1925, as part of a conscious attempt, in the context of rising nationalism, to "engineer" the clear linguistic distinction between Afrikaans and Dutch required to accord Afrikaans independent official-language status. Having originated as a clause-external discourse adjunct, *nie$_2$* today instantiates a CP-peripheral Pol(arity) head (Biberauer 2008,2012):

(6) [[**CP[+v]** [TP[+V] …]] *nie$_2$*] → [**PolP** [CP[+V] [TP[+V] …]] Pol]

That this CP-external layer is not just present in negative clauses, but has been generalized to all CPs is i.a. evident from phenomena like (1), which has Verum Focus (emphatic affirmation) as one of its salient readings and which we know to have entered Afrikaans in the later 1800s (Hesseling 1923). This extension, in terms of which [Pol] is maximally utilized, with both [negative] and [affirmative] values, is one instance of acquirers harnessing IG to "go beyond the data". The consequence is that Afrikaans CPs are systematically "bigger" than Germanic V2-clauses, which means that V-to-C is always available without violating the so-called *Kayne-Rizzi-Roberts Constraint* (McCloskey 2006), in terms of which a selected C cannot be occupied by a lexical element (which I connect to the V2 semantics proposed by Truckenbrodt 2006). This leads us to expect (3) (V is in C, Pol is selected), and also the prolific availability of complementiserless embedded V2-structures (V is in C, Pol is null C), as well as the more restricted, matrix-predicate-regulated availability of MSc-style overt C-containing embedded V2 (CP recursion is required as across-the-board V-to-C in declarative complements, regardless of matrix predicate, would produce a semantic infelicity, regardless of the availability of a selectable PolP). (4) also follows from IG: following Holmberg (2013,2016), negative and interrogative Pol form a natural class, excluding affirmative Pol: non-veridical Pol. For speakers who allow (4), interrogative-marking clausal C-head *of* has merged with the already available disjunction marker *of* ('or', 'either … or'), plausibly a spellout of Pol. While Afrikaans speakers generally have generalised the negation-specific finite-clause input pointing to the systematic need for a PolP-projection to **all** finite CPs, those permitting (4) have additionally generalized over the *of*-specific input, postulating a single, underspecified (and hence acategorial) lexical item which can be merged in both C (the "standard" case) and Pol ((4)-type cases). More conservative speakers resist this reanalysis because they generalise the input they get for overt complementizers, treating all overt complementizers as the spellout of Force. Crucially, we see that IG has affected all speakers of modern-day Afrikaans, with the difference between them being the pattern that serves as the basis for their extended generalizations.

Moenie, too, has played a key role in determining the retention of Afrikaans' V2 character. The prescriptive imposition of this prohibitive marker eliminated Dutch's OV directive infinitive (*Het geld niet vergeten!*, i.e. the money not forget.INF = 'Don't forget the money!') and replaced it with a structure which signals **both** the OV- **and** the V2-character of Afrikaans main clauses. Even in heavily English-influenced Kaaps, *moenie* is completely incompatible with the VO orders that are possible in many non-imperative contexts: although it is today unambiguously a negative-imperative Force-marker (it is impossible in verbal clusters, and thus evidently not merged in the position of a deontic modal), speakers clearly still analyse it as an element that parallels finite verbs which raise to C. Unintentionally, then, Afrikaans's early 20th-century "language engineers" constructed a, from an acquisition perspective, highly salient structure that was extremely well designed to ensure the preservation of Afrikaans's characteristic West Germanic word-order profile!

Thorhallur Eythorsson and Sigridur Saeunn Sigurdardottir:

Arguments in a cold climate: Stability and change in Icelandic weather verbs

The standard view on weather verbs in Modern Icelandic is that they are "no-argument predicates" (Sigurðsson 1989:215ff., Jónsson 2005:352-353, Thráinsson 2007:267). This was essentially also the view of earlier scholarship on Old and Modern Icelandic (Nygaard 1905:6–7, Smári 1920:21). Note that the expletive *það*, attested from the 16th century onwards, is purely a "placeholder" and not an argument. It occurs sentence-initially in certain types of declarative clauses in the absence of another phrase (1a) and is not found elsewhere (1b–c). Since *það* does not have an argument status we will not discuss it further.

(1) a. **Það** rignir mikið í dag. b. **Í dag** rignir (*það) mikið. c. Rignir (*það) mikið í dag?
it rains much today today rains it much rains it much today
'Today it rains a lot.' 'Today it rains a lot.' 'Does it rain a lot today?'

In this paper we argue against the standard view and show that weather verbs in Modern Icelandic in fact do have arguments, both quasi-arguments (i.e. non-referential arguments, Chomsky 1981:325, Rizzi 2000:43–44) and overt NPs, occurring in the nominative, accusative or dative case (2). It can be demonstrated that in Modern Icelandic both the nominative and the oblique NPs are syntactic subjects. (In all instances the relevant verb can occur without an NP, comparable to (1b).)

(2) a. **Vindurinn** kólnar. b. **Vindinn** hvessir. c. **Eldi** rignir.
the-wind.nom gets-cold the-wind.acc sharpens fire.dat rains
'The wind gets cold.' 'It gets windy.' 'It rains fire.'

The quasi-arguments are mostly covert (unexpressed), but they can also be overtly expressed by the non-referential "weather-*hann*" (homonymous with masculine singular pronoun *hann* 'he'), mostly in fixed expressions with an archaic flavor. Weather-*hann* inverts with the verb, which is different from the behavior of expletive *það*.

(3) a. **Hann** rignir mikið í dag. b. Í dag rignir **hann** mikið. c. Rignir **hann** mikið í dag?
he rains much today today rains he much rains he much today
'It rains a lot today.' 'Today it rains a lot.' 'Does it rain a lot today.'

The fact that weather verbs in Icelandic occur with subject NPs and the quasi-argument *hann* constitutes clear evidence, hitherto overlooked, for the claim that these verbs can have arguments. Moreover, weather verbs in Icelandic can occur in control infinitives (4a), just as in English (4b), where this fact has been considered as evidence for the quasi-argument status of weather-*it* (e.g. Chomsky 1981:323–325).

(4) a. Stundum rignir eftir að **hafa** snjóað. b. It sometimes rains after snowing.
sometimes rains after to have.inf snow

By contrast, impersonal passives in Icelandic cannot occur in control infinitives, presumably because they are subjectless (e.g. Eythórsson 2008).

(5) *Í samkvæminu var sungið án þess að **vera** dansað.
at the party was sung without it to be.inf danced
Intended meaning: 'At the party people sang without dancing.'

A diachronic study based on various corpora, including *Icelandic Parsed Historical Corpus* (IcePaHC) (Wallenberg et al. 2011), *Icelandic Text Collection* (ÍT) and *Dictionary of Old Norse Prose* (ONP), shows that the lexical items constituting weather verbs are essentially the same in Modern and Old Icelandic. In Old Icelandic weather verbs could also occur with overt argument NPs (6a). Furthermore, it is reasonable to assume that weather verbs in Old Icelandic occurred

with a quasi-argument, even if this was always covert (6b); after all, Old Icelandic was an argument-drop language (Sigurðsson 1993, Kinn, Rusten & Walkden 2014), so an unexpressed argument with weather verbs is expected.

(6) a. Þá lægði **storminn**.
then subdued the storm.acc
'Then the storm subdued.'

b. Áður en þeir fóru á brott snjóaði mjög á fjöll.
before than they went away snowed much on mountains
'Before they left it snowed heavily on the mountains.'

Thus, there is no qualitative difference in weather verbs between Old and Modern Icelandic (although there might be a quantitative difference). The only exception is the fact that the overt non-referential quasi-argument weather-*hann* appeared in the 17th–18th centuries and still occurs as a register-conditioned variant alongside the much more common covert variant. This development presumably mirrors the situation in Old Icelandic, where it may be posited that an covert argument (referential *pro*) tended to assume the role of a covert quasi-argument with weather verbs. One possible reason as to why covert arguments in Old Icelandic turned into quasi-arguments might have to do with shift in the encoding of weather events. As proposed in a typological study by Eriksen et al. (2012), weather events can be encoded in three different ways, depending on which element realizes the weather event, i.e. predicate type (where the weather event is encoded by a single verb), argument type (where the weather event is encoded by a weather noun and a semantically vague verb) and argument-predicate type (where both the noun and the verb encode the weather event). The development of Icelandic weather verbs suggests that an argument type like (2b) has changed into a predicate type, containing a single verb (e.g. *hvessir* '(it) gets windy'). In any case, it is clear that the emergence of weather-*hann* coincided with the loss of null arguments in Icelandic, which occurred along with several other syntactic changes in early Modern Icelandic (mid-16th century) and was completed in the 18th–19th centuries.

So the emergence of weather-*hann* is expected; in fact, it has parallels in Faroese and some Mainland Scandinavian dialects (Thrainsson et al. 2012, Bandle 1973). However, whereas this element always remained rather marginal, the covert quasi-argument persisted throughout the history of Icelandic. So this is the real puzzle: Why does Modern Icelandic, a non-argument-drop language, have covert quasi-arguments with weather verbs at all, rather than an overt element comparable to Mainland Scandinavian *det*, English *it* and German *es*? The answer to this question appears straightforward, and it involves the relative diachronic stability of Icelandic (cf. Guðmundsson 1977, enumerating 25 possible external factors which might be responsible for it, including geographic isolation, special sociolinguistic conditions, high literacy and a strong tradition of purism).

In summary, our research shows that weather verbs are essentially the same in Modern and Old Icelandic, and they continue to occur with overt NPs as subjects and with covert quasi-arguments (although occasionally expressed as weather-*hann*). We propose that the covert quasi-arguments have not been replaced by overt elements altogether because they are not pronouns, but belong to a different category as non-referential arguments. Thus, even though we have been able to detect some surface changes in weather verbs in the history of Icelandic, notably the emergence of weather-*hann* and the placeholder *það*, we conclude that they are basically the same as in Old Icelandic.

Charlotte Galves:

Competition, stability and change in the emergence of Brazilian Portuguese

Brazilian Portuguese (henceforth BP) is a language that clearly emerged out of a history of intense contact situation. Recent research has shown that it distinguishes itself from European Portuguese (henceforth EP) and other Romance languages by syntactic properties also found in Bantu languages (Avelar 2015) as illustrated below.

(1) apenas 3 desses cinco monitores aparecem imagem
only 3 of-those five displays appear.3PL image
'The image appears in only 3 of the five displays'

(2) eu tô ardendo as pernas
I am burning the legs
'My legs are burning'

(3) LUBUKUSU (Diercks 2011: 703)
Mú-mú-siirú mw-á-kwá-mó kú-mú-saala
18-3-forest 18s-PST-fall-18L 3-3-tree
'In the forest fell a tree'

(4) CHICHEWA (Simango 2007: exemplo 23)
Mavuto a-na-f-a maso
Mavuto SM-PST-die-FV eyes
'Mavuto became blind' (Lit. 'Mavuto died eyes')

In (1) and (2), a genitive or locative phrase is raised from the VP to the first position of the sentence and agrees with the verb. The same phenomenon is illustrated in (3) and (4) in Bantu languages. According to Baker (2008), there is a macro-parameter (which he calls the Agreement Parameter) that distinguishes Niger-Congo languages from Indo-European languages. In the former languages, agreement depends on the position of the phrase with respect to the verb, in the latter languages it depends on Nominative case. (1)-(2) provide evidence that the BP setting of the Agreement Parameter patterns with Niger-Congo languages rather than with Indo-European languages. From a historical point of view, this is consistent with the fact that the great majority of the millions of African slaves taken to Brazil over a 300-year period were speakers of Niger-Congo languages, in particular Bantu languages, and that it is likely that Kimbundo served as a lingua franca among the Africans (Bonvini 2008). From a linguistic point of view, it is worth emphasizing that the agreement facts in (1)-(2) go against the traditional idea that one of the effects of contact on BP was the loss of agreement, since new contexts of agreement emerged. It is true, however, that subject-verb agreement morphology (as well as nominal agreement that we do not consider here) became variable in all Brazilian dialects. The rate of agreement is dependent on socio-cultural and educational variables, with urbanity and higher education favoring it. Another aspect of Brazilian syntax that makes it similar to caseless languages like Bantu (Diercks 2012) is the fact that the same pronominal forms can be used in subject (5) and object (6) position.

(5)a. **Você** ganhou 'you won' b. Eu vi **você** ontem 'I saw you yesterday' (*EP)

(6)a. **Ele** ganhou 'he won' b. Eu vi **ele** ontem 'I saw him yesterday.' (*EP)

At the same time, BP maintained 1st and 2nd person direct and indirect object clitics. Especially for the 2nd person, this created a very productive variation between the strong pronoun *você* as in (5)b. and the clitic pronoun *te* as in (7)

(7) Eu **te** vi ontem 'I saw you yesterday'

However, this variation in the 2nd person pronoun does not display the traditional aspects of grammar competition over a period of time, with an innovative form gradually replacing the conservative form. From this point of view, (5b) would be the

innovation and (7) would be the conservative construction. But the diachronic facts do not clearly match the prediction that (5b) would become more and more frequent, eventually becoming the only choice. Although the tonic pronoun has became more frequent during the 20th century (before 1930 - 3%; 1930-1955 - 6%; 1956-1980 - 30% in the corpus of familiar letters studied by Sousa 2014), the more recent records show that the clitic pronoun is still the preferred variant in speech (around 80% according to several studies considering different regions of Brazil). This crucially differs from the case of the 3rd person clitic, which completely disappeared from speech and is now learned only at school (Correa 1991). Unfortunately, up to now there has been no study on the acquisition of 2nd person pronouns, but it is clear that young children acquire the variation between tonic and clitic pronouns at an early stage. The facts so far presented suggest that linguistic contact in Brazil had two different kinds of consequences. At the syntactic level, parameter changes have occurred, which have affected the setting of Baker's Agreement Parameter and the Case system in general. This produced what Holm (2004) calls a restructured language. At the morphological level, an apparently stable competition emerged affecting the marking of subject-verb agreement on one hand, and the realization of 1st and 2nd person object pronouns as either clitics or full pronouns on the other hand. If the influence of normative pressure is likely to play a role in favoring subject-verb agreement, it is not clear that it has had any incidence on the choice of the 2nd person pronouns. It is also important to note that in some cases, the pressure of the norm is not successful at all. The 3rd person clitic that disappeared from speech despite of the insistence of the normative grammar. This suggests that *stable morphological variation* has an important property, which has to be taken into consideration in order to understand the relationship between variation and grammar. The fact that it is sensitive to different kinds of "extragrammatical dimensions" which it specializes along (cf. Wallenberg 2013) cannot hide the fact that all the variants have to be consistent with, or licensed by, one grammar (understood as a set of parameter settings). Morphological agreement, as well as 1st and 2nd person clitics, are compatible with the BP grammar, but 3rd person clitics are not. This is why they cannot be acquired. BP therefore provides interesting information about the limits of morphological variation in the specific case of the syntactic change that affected Portuguese through contact with Bantu languages. In turn, morphological variation provides clues about the nature of the new grammar. Finally, BP also provides evidence for the relative stability of the historical morphology of Portuguese at the output of the process of change. Contrary to the traditional approach that puts stress on the loss of inflectional morphology, it is morphology and not syntax that was more preserved in the language.

Avelar, J. (2015) Sobre a emergência das construções de tópico-sujeito no português brasileiro: mudança desencadeada por contato?, in J. Avelar e L. Álvarez-López (eds.), *Dinâmicas Afro-Latinas: Línguas e Histórias*, Stockholm University Press, **Baker, M.** (2008) The macroparameter in a microparametric world. In: T. Biberauer (ed.) *The limits of syntactic variation.* Amsterdam, Benjamins, 351-374. **Bonvini, E.** (2008) Línguas africanas e português falado no Brasil, in J. L. Fiorin & M. Petter (eds.), *África no Brasil. A formação da língua portuguesa*, São Paulo, Contexto: 15-62. **Correa, V.** (1991) O objeto direto nulo no português do Brasil. Unpublished Master Thesis, University of Campinas. **Diercks, M.** (2012) Parameterizing Case: Evidence from Bantu. *Syntax* 15 (3), pp. 253-286. **Holm, J.** (2004).*Languages in Contact. The Partial Restructuring of Vernaculars*. Cambridge: Cambridge University Press. **Sousa C.** (2014) Eu te amo, Eu lhe adoro, Eu quero você: a variação das formas acusativas de 2ª pessoa em cartas pessoais (1880 – 1980). Master Thesis, Universidade Federal do Rio de Janeiro. **Wallenberg, J. C.** (2013) A unified theory of stable variation, syntactic optionality, and syntactic change. Paper presented at DiGS 15, University of Ottawa, 02 August 2013.

Henri Kauhanen:

Stable variation arises from noisy across-population bias distributions in the absence of global bias

Mathematical and computational modelling has begun to elucidate the mechanisms of variation and change in natural language. Perhaps the single most important general finding to emerge from this work in recent years is a clarification of the role of bias in change: it is now generally accepted that language learners need to be consistently biased towards a certain linguistic variant for that variant to propagate through a language community. While this biasing can assume various forms from social evaluations (Blythe & Croft, 2012) to phonetic biases (Pierrehumbert, 2001) to differences in the weak generative capacity of competing grammars (Yang, 2000), the overall consensus is that a bias of one form or another is both a necessary and a sufficient condition of change (Blythe & Croft, 2012).

While work in this tradition has been successful in explicating the dynamics of language change in mathematical modelling formalisms, important oversights remain to be elucidated. With respect to the role of bias in generating variation and change, the most striking weakness of these models is the idealizing assumption that bias does not admit of variance. In other words, in each of the above-mentioned modelling studies, it is assumed that each member of a language community shares exactly the same bias for the innovatory (and against the receding) variant – same in direction and in magnitude. While such an assumption of uniformity may be defensible for certain kinds of biases, such as anatomically constrained articulatory biases, it is equally clear that for other types of biases a strong assumption of uniformity has little empirical merit. For instance, in sociolinguistically driven change the assumption of a uniform bias is little more than circular, as it begs the question of how members of a community come to agree on the "right amount and direction of bias" in the first place.

The purpose of this talk is to systematically probe the effect of noise in bias on variation and change in an artificial community of language learners. Following the idea that language learners perform frequency matching in their linguistic environment subject to some biases that filter initial frequency estimates (cf. Pierrehumbert, Stonedahl & Daland, 2014), we define a simple model of learning and transmission where individuals interact to cause changes in each other's probability distributions of usage of competing linguistic variants. Assuming just two variants for simplicity, let p denote the probability with which an individual uses variant A, the remaining probability mass $1-p$ being allocated to variant B. Language learners are assumed to estimate p based on their linguistic environment, subject to a bias $b > 0$ as follows: at each learning event, p is updated to be $(1-\gamma)p + \gamma p^b$, with some fixed learning rate $0 < \gamma \ll 1$. It is then a simple mathematical consequence of this setup that, if everyone shares the same b, then for any $0 < b < 1$, variant A will oust variant B over time, while for $b > 1$ variant B is the winner and for $b = 1$ there is no change.

To increase the realism of this frequency-matching scenario, we next assume that bias is variable from speaker to speaker. For given $\xi \geq 0$, the bias for a speaker, b, is now sampled from the interval $\left[\frac{\beta}{1+\xi}, \beta + \xi\right]$, where β gives the mean or expected, or *global* bias, while non-zero values of ξ imply some variance about β.[1] The resulting system is stochastic and, by contrast to the simple frequency-matching scenario above, the outcome of competition between variants A and B becomes nontrivial.

To investigate the dynamical consequences of choosing particular values of β and ξ, we ran a batch of computer simulations of the model for various combinations of global bias β and noise ξ, starting from a low (near-zero) initial value of p (variant B used almost exclusively). In each simulation, a community of 100 learners was assumed, and each learner sampled from 10 other speakers uniformly at random, updating his p at each iteration with $\gamma = 0.01$.

[1] This form of the sampling interval results from the fact that b enters the probability update rule as an exponent rather than as a linear term.

The results emerging from these simulations are as follows (see Fig. 1).

1. For $0 < \beta \ll 1$ and small noises ξ, *change* is observed. In other words, if the expected bias for the innovatory variant is strong, modest noise in bias makes no difference to the dynamical outcome.
2. For $\beta \approx 1$ and sufficiently large values of noise ξ, *stable variation*, quantified as the tendency of the system to settle at a value of p away from the extrema $p = 0$ and $p = 1$, is observed.
3. Stable variation is observed even for $\beta = 1$ (no global bias), for large noises ξ.

These results therefore suggest that (i) bias-driven change is resilient to noise as long as bias is strong; and that (ii) stable variation may be driven by a minor global bias coupled with noise. The fact that stable variation is observed even in the absence of global bias ($\beta = 1$) indicates that demographic noise can have dynamical consequences that affect the (quasi)stable points of a system such as the one here studied. More generally, our results support the notion that language change and stable variation are a unified phenomenon in terms of competing grammars (here, the competition between the two variants *A* and *B*; cf. Wallenberg, 2013), the former resulting from strong global biases, the latter from strong inter-speaker variability in how those biases are applied.

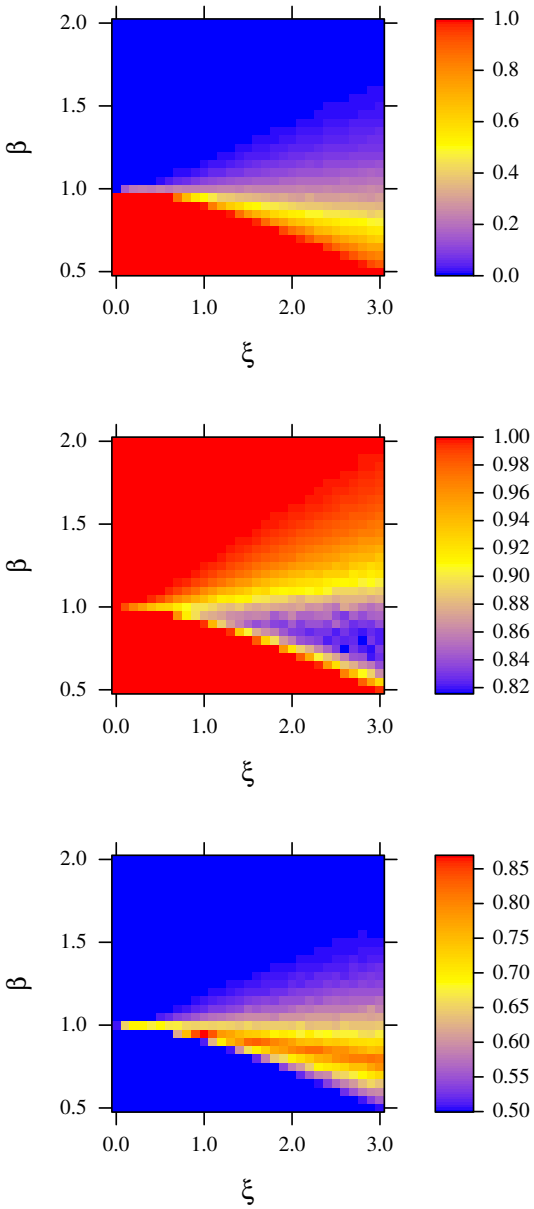

Fig. 1. (*Top*) The value of p into 30000 iterations of the simulation; averages over 50 simulation runs. For strong global bias ($0 < \beta \ll 1$ or $\beta \gg 1$), noise-in-bias ξ cannot perturb the system away from the fixpoint, which is either $p = 1$ (for $0 < \beta \ll 1$) or $p = 0$ (for $\beta \gg 1$). For lesser global biases ($\beta \approx 1$), however, the system tends to a final state $0 < p < 1$, if ξ is sufficiently large. (*Middle*) Stability of the value of p reached at the end of simulation, quantified as $1 - (p_{\max} - p_{\min})$, where $p_{\max}$ is the maximum of p over the final 1000 iterations and $p_{\min}$ is the minimum of p over the final 1000 iterations; averages over 50 simulation runs. Values closer to 1 indicate less fluctuation about the theoretical fixpoint. (*Bottom*) Stability of p multiplied by the quantity $1 - |0.5 - p|$ (inverse distance of p from 0.5); averages over 50 simulation runs. Larger values indicate stable variation (final value of p close to 0.5, plus high stability), which is observed even in the absence of global bias ($\beta = 1$).

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Waltraud Paul & Redouane Djamouri:

Disharmony in harmony with diachronic stability: The case of Chinese

In her quest for "typologically, historically and areally stable features in the world's languages", Nichols (1992: 1) has not included Chinese. However, Chinese is an intriguing case of syntactic stability; since the earliest available documents (13th c. BC) up to today, it has displayed SVO order in combination with a head-final NP (cf. among others Chen Mengjia 1956, Djamouri 1988; contra Li & Thompson 1976). In addition, a head-final split CP is attested since the 6th c. BC, and prepositions and postpositions have co-existed for nearly 2000 years now (cf. Djamouri, Paul, Whitman (2013a,b)). According to received wisdom in the typological literature, this highly "disharmonic" situation should have been unstable and Chinese should already long ago have undergone changes "in order to" become more "harmonic", viz. have more non-verbal categories pattern with the head-initial VP. Clearly, "disharmony" is not necessarily a trigger of change; on the contrary, a disharmonic situation can remain stable, as evidenced by Chinese. The aim of the present talk is to consolidate this claim. It carefully re-examines alleged cases of change towards more harmony and also relativizes the role of contact in language change.

Given Li & Thompson's (1976) influential incorrect scenario of major word order changes: SOV > SVO > SOV, we first briefly establish SVO as word order throughout the history of Chinese. There are only two constructions (focus clefts and pronouns in negative contexts) for surface OV order in Pre-Archaic Chinese (13th c. BC - 11th c. BC); accordingly, VO order (94%) outweighs OV order (6%) in the rich corpus available for PAC. The alleged "ongoing" change to SOV in Modern Mandarin (MM) likewise does not exist. Instead, Li & Thompson's (1976) main evidence for alleged SOV order in MM, i.e. the *bǎ* construction 'S *bǎ* O V' involves 'head - complement' order as does the entire extended verbal projection, insofar as *bǎ* selects as complement a verbal projection to its right (cf. Whitman 2000):

(1) Tā [$_{vP}$ bǎ [$_{BaP}$ Lǐsì [$_{Ba'}$ t$_{ba}$ [$_{AspP}$ hěnxīnde [$_{Asp'}$ pāoqì -le [$_{vP}$ t$_{paoqi}$ [$_{VP}$ t$_{paoqi}$ t$_{Lisi}$]]]]]]]
3SG BA Lisi cruelly abandon-PERF
'She cruelly abandoned Lisi.'

This analysis also invalidates Cao & Yu's (2000) idea that the *bǎ* construction emerged due to intense contact with Sanskrit via the translation into Chinese of Buddhist sutras after the 3rd c. AD. In fact, be it the contact with Sanskrit or with the surrounding OV languages such as Tibetan, Mongolian, Manchu, contact has not led to any major word order change in Chinese.

This can be illustrated by the Hezhou subvarieties of Northwestern Mandarin spoken in the Gansu Province, such as the Tangwang language. The presence of OV order in addition to VO in Tangwang is in general said to be due to contact with Dongxiang, the Mongolic OV language spoken in the same area (cf. Chen Yuanlong 1985). However, this claim does not bear further scrutiny (cf. Djamouri 2013, 2015), because the pre- vs. postverbal position of the object in Tangwang depends on its syntactic-semantic properties and thus contrasts with the generalized OV order in the Mongolic languages.

The main evidence for VO as unmarked underlying word order in Tangwang is the fact that noun incorporation respects VO order (cf. (3)), and thus contrasts sharply with noun incorporation in Khalkha Mongolian displaying OV order (cf. (4b)):

(3a) 我吃肉/洋芋/兔肉寮
wɔ [$_{V}$ tʂʰɻ-ʐʉ /-jãjɥ /-tʰu.ʐʉ -ljɔ]
1SG eat –meat/-potato/-rabbit.meat-PERF
'I have eaten meat/potatoes/rabbit.'

(3b) *我吃寮肉/洋芋/兔肉
wɔ [V tʂʰɿ-ljɔ] ʐʉ /jãjɥ /tʰu.ʐʉ
1SG eat-PERF meat/potato/rabbit.meat

(4a) Ter xün [DP zurg -ig] [V° zur -dag]
that man picture-ACC paint-HAB
'That man paints (the) pictures.'
(4b) Ter xün [V° zurag -zur -dag]
that man painting-paint-HAB
'That man is a picture-painter.'

Indefinite quantified phrases in Tangwang must likewise follow the verb, but unlike bare nouns cannot be incorporated (5b). When in preverbal position, a QP is necessarily analysed as definite (irrespective of the presence/absence of the demonstrative pronoun 'this') and must carry the objective suffix *–xa* (5c).

(5a) 我吃寮（*这）三个果子
wɔ tʂhɿ-ljɔ tʂə sɛ̃ kɛ kwɤtsɿ
1SG eat -PERF (*DEM) three CL fruit
'I have eaten three fruits.'

(5b) *我吃三个果子寮
wɔ [V tʂhɿ-sɛ̃ -kɛ-kwɤtsɿ-ljɔ]
1SG eat -three-CL-fruit -PERF

(5c) 我(这)三个果子哈吃寮
wɔ (tʂə) sɛ̃ kɛ kwɤtsɿ-xa tʂhɿ-ljɔ
1SG (DEM) three CL fruit -OBJ eat-PERF
'I have eaten the(se) three fruits.'

By contrast, definite DPs must occur in preverbal position; this also holds for the indirect object in a double object construction, irrespective of its semantic-syntactic properties:

(6a) 我書哈 (三个) 老師哈卡寮
wɔ ʂu -xa lɔʂɿ -xa kʰa -lʲɔ
1SG book-OBJ teacher-OBJ give-PERF
'I gave the book to (the) three teachers / the teacher.'
(6b) *我書哈卡老師寮
wɔ ʂu -xa kʰa-lɔʂɿ-lʲɔ
1SG book-OBJ give- teacher-PERF

In Tangwang, OV order is thus a syntactically highly marked option, against the backdrop of VO as the underlying unmarked order.

Moreover, many alleged OV characteristics in Tangwang likewise exist in MM. The fact that adjunct XPs must precede the verb mirrors the situation in Mandarin Chinese. Mandarin Chinese likewise has cases of argument PPs that must occur in preverbal position.

To conclude, Chinese, and more generally, Sinitic languages have always had an underlying VO order. The alleged OV characteristics observable in different dialects can only be fully understood and analysed against the backdrop of this robust VO order.

Ian Roberts:
Stable and unstable OV systems: the role of pleiotropic formal features
University of Cambridge
Igr20@cam.ac.uk

Taking seriously the idea that parameters are nothing more than optional, emergent formal features (i.e. not innately prespecified by Universal Grammar, and possibly not domain-specific; see Biberauer 2011, Biberauer, Roberts & Sheehan 2014), we explore the idea that a small subset of these features act as "master features", determining the ways in which many other features manifest themselves. Call these **Pleiotropic Formal Features** (PFFs; the notion of pleiotropy is familiar from genetics). PFFs have a disproportionate and profound effect on the parametric phenotype as it can be observed in surface variation (see also Biberauer & Roberts 2015). We investigate the idea that there are for 4 central features which seem to regulate the existence of other features, i.e.: **Person**, **Tense**, **Case** and **Order,** and their role in diachronic (in)stability.

PFFs have "strong" and "weak" variants: a strong PFF controls more formal features and acts in more formal domains than a weak one. Strong **Person** controls the properties of other formal features (gender, number, etc.) and also plays a role in multiple domains (potentially, all phasal (sub)domains, across all categories), while weak Person is simply instantiated with its standard values (1st, 2nd, possibly 3rd), and other φ-features are not grammaticalised. Strong **Tense** gives rise to verb-movement into the higher inflectional field, along with restricted VP-ellipsis and few or no auxiliaries; Tense will also function in numerous domains. Furthermore, strong Tense controls further FFs (e.g. future, modal and aspectual features). Verb-position may be relativized to the nature and realisation of other features, see Schifano (2015) on this in Romance. With weak Tense, we see no verb movement to "high" clausal positions, a relatively rich auxiliary system and more liberal VP-ellipsis, with modal and aspectual features either not grammaticalised or functioning independently of Tense, which simply has the values Past and Non-Past. The **Case** feature plays the role of "licensing" arguments in given positions (Vergnaud 1977/2008). Strong Case is associated with the presence of lexical, inherent and/or quirky Case, a rich inventory of Case features, and a range of domains in which the feature is active. Weak Case gives rise either to an undifferentiated feature which merely functions to make arguments active for Agree (in the sense of Chomsky 2001), or to a minimally distinct Nominative-Accusative opposition in the clause. Strong Case is associated with verbal semantics (argument structure, aspect) and can play a role in determining DP semantics (various kinds of partitive case, genitive of negation, specificity, focus, etc.); weak Case merely licenses arguments in given positions, hence the range of argument positions is likely to be relatively restricted in weak-Case systems. Weak-Case systems are likely to have a richer array of Adpositions, especially semantically empty "linker" elements (e.g. English *of*), whose sole role is to license an argument. Weak **Order** means constituents are linearised in the default fashion which, following Kayne (1994), we take to be directly determined by asymmetric c-command relations and, as such, head-initial. Strong Order pleiotropically determines the presence of features whose effect is to cause complements to move leftward, giving rise to varying degrees of derived head-finality including fully harmonic head-final order.

Here we argue that changes to PFFs underlie convergent patterns of diachronic change, readily witnessed in the history of Latin/Romance and, arguably, in the older history of the European branches of Indo-European. Concerning Latin/Romance, it is very well-known that the Modern Romance languages are morphosyntactically more similar to one another than any of them are to Classical Latin (CL, Meillet 1951/1958; for a recent statement of this observation see Longobardi 2012:308-9). Where CL had SOV order (at least in conservative and literary varieties; Ledgeway 2012), left-branch extraction, pervasive scrambling, no articles, rather free ordering of adnominal modifiers, nominal case-marking and no clitic pronouns, the Romance languages are SVO, have pronominal clitics, lack left-branch extraction, have definite articles, rigid ordering in DP, little or no scrambling and lack case outside the pronoun system (except for Romanian). The historical record is patchy at the crucial period of "Proto-Romance" (500-1000AD), but the most plausible account of the diachronic developments is that a small number of parametric changes at a deep level created the "Romance type", which diverges so strikingly from the "Indo-European type" represented by CL (see below for more on the "Indo-European type"). The loss of overt morphological case-marking on non-

pronouns, the loss of scrambling and the development of clitics can all be linked to the change in the Order feature from strong to weak. The development of articles and of restrictions on ordering in DP and the loss of left-branch extraction may reflect some further D-related PFF, although the latter two can be related to the loss of scrambling. The question of where and how the presence of an article system fits into the overall framework remains open, but recent evidence from PCM studies reported by Longobardi (2012:306f.) suggests that the grammaticalisation of definiteness has many consequences for DP-internal parameters; one possibility is that it represents an important trigger for strong Person (in CL, which lacked grammaticalised definiteness, the pervasive marking of number and gender throughout the nominal system triggered strong Person).

Furthermore, it seems clear from recent work on the older Indo-European languages that these systems conform to a general type in showing non-rigid head-final order, second-position effects, a very active left periphery, sub-extraction from DP, null subjects and objects, synthetic verbal morphology and case inflections (on Latin, see Ledgeway 2012, Dankaert 2012, Devine & Stephens 2006, Salvi 2004; on Greek Taylor 1990; on Sanskrit Hale 1995, Kiparsky 1995; on Old Church Slavonic Pancheva 2008; on Celtic Watkins 1963, 1964, Russell 1995:300-304, Newton 2006; on Germanic Walkden 2014:106-112, Ringe 2006:295; on Old Iranian Skjærvø 2009:94f. and on Anatolian Garrett 1990). Many of these properties have been lost in the more recent history of the respective branches: on Romance, see above; Greek shows a similar overall development to Romance (although morphological case is retained as an impoverished Nominative-Accusative-Genitive system alongside a very rich article system); West Germanic (aside from the recent history of English) is conservative in the clause but relatively innovative in DP; Slavic appears to be the opposite, in particular in that, aside from Bulgarian/Macedonian, it has not developed articles; Celtic has innovated VS order but is otherwise somewhat similar to Romance while Indic, presumably as a consequence of its being in the Indosphere (Matisoff 1990, 2003), has developed rigid OV order. (The situation in the Iranian languages is more complicated, see Harris & Campbell 1995:139-141, and we leave it aside here; along with Albanian, Tocharian and Armenian). Further, we can observe that (a) evidence from Anatolian in particular suggests that the parent language was head-final and (b) head-final systems are highly stable, as the historical evidence from Japanese (Yanagida 2005, Yanagida & Whitman 2009), Korean (Lee & Ramsey 2011:55), Turkic (Kornfilt 2009) and Old Tamil (Lehmann 1998:87) shows. These leads us to ask why several branches of European IE have developed in these rather similar, but, for head-final languages, atypical ways. Again, the account of these changes that the current proposal suggests is that one or two PFFs (probably Case and Order) have changed (at different times in different branches, with non-English West Germanic particularly conservative regarding Order). A further factor, which almost certainly implicates a further PFF, is the widespread second-position phenomena in these branches of IE. Following the general line of research into these phenomena instigated by den Besten's (1983) account of Germanic verb second, we take these phenomena to involve a combination of head- and XP-movement into the left-periphery of the clause; this general activation of the left-periphery (crucially, for both head- and XP-movement) may represent a further PFF, whose effects may have been to "destabilise" the presumed earlier head-final order. Furthermore, Roberts (2015) argues that the preconditions for the innovation of second-position effects include strong Person and scrambling; here, then, we may have an example where PFFs (Person, "Active Left Periphery") interact to produce a particular pattern of change, pervasive in a given family, but rare elsewhere.

Pierre Rucart:

Arabic loans in the verbal system of Afar

In Afar, a large number of strong verbs use prefixes in their inflection, in opposition to weak verbs that have only suffixes (cf. Hayward, 1978). This class of prefix verbs is the core of the verbal system in Cushitic (cf. Zaborski, 1975). Specific marks in the lexicon (Parker & Hayward, 1985) or morphological rules (cf. Bliese, 1981) have been proposed, but the two verbal classes can be unified with a single morphological template, which identification by the verbal root allows the derivation of the expected inflected forms. The difference lies in the position of the lexical vowel in the verbal root; prefix verbs never exhibit a vowel between the two first root consonants whereas suffix verbs always do (cf. Rucart, 2014).

Oddly, all the loans from Arabic are inflected as the strong verbs, and none as the weak verbs. Moreover, they represent the majority of the strong verbs and only few Cushitic verbs remain in this class. Strong verbs represent the Old Cushitic verbal system, but it tends to disappear in Modern Cushitic languages or to become residual (5 verbs in Somali, 14 verbs in Rendille).

I will argue that only the consonants of verbal Arabic root are borrowed and its vocalization follows the Afar verbal root vocalization. As a result, they adopt the strong verb configuration when they are inserted in the Afar verbal template; Arabic loans never exhibit a vowel between the two first root consonants and are consequently inflected as strong verbs.

Many Arabic verbs are borrowed in Afar under the influence of a long period of contact and the use of Arabic as a lingua franca. However, their morphology respects the verbal morphology of Afar, and they renew the Old Cushitic verbal system.

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Susanne Vejdemo and Thomas Hörberg:

The role of frequency in measuring the rate of lexical replacement.

Words are continuously being replaced in the languages of the world. But not all words are replaced at the same pace or for the same reasons. This talk will focus on how frequency interacts with several other semantic and pragmatic features of words in a statistical model predicting the rate of lexical replacement - and also discuss whether frequency is a source, a corollary or a result of these other interactions.

Lexical replacement is the process where the primary lexical (designating) expression (see Kleparski 1997) of a concept in a language is replaced by a new expression. Naturally, there are many factors that drive lexical replacement, and their interplay is no doubt complex (see, e.g. Ladd et al. (2015) for a review of studies), but the frequency factor is present in most theories of lexical replacement. High frequency may lead to higher form retention (see Bybee (2007, 10–11) on "the conserving effect"; MacWhinney (1978, 9) on "lexical strength"; Langacker (1987, 59) on "lexical entrenchment"), but weaker form integrity and semantic integrity (see Bybee (2007, 10–11) on "the reducing effect").

When it comes to the likelihood and speed of lexical replacement, Pagel et al (2007) found that frequency (presumably reflecting the conserving effect) was of great importance, especially when assessed together with word class. Monaghan (2014) confirmed the important role of frequency in predicting the rate, and also suggested that age of acquisition is important in explaining the rate, together with variables like phonological similarity and phonological length.

However, using a linear regression model we can show (Vejdemo & Hörberg In Press) that there is good reason to assess lexical replacement for content words and lexical replacement in function words separately – and when this is done, the statistical models suggested by Pagel et al and Monaghan lose a lot of their explanatory power. We present a new model that takes into account several other hypothesized factors that might contribute to lexical replacement. This includes frequency (explaining approximately 16.3% of the variability in the rate of replacement; presumably due to the conserving effect) and the number of synonyms (12.5%; presumably due to easier inferencing), together with how easy a concept is to image in the mind (6.1%) and how polysemous it is (3.4%). Age of Acquisition and word class was not found to contribute anything to this model.

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Joel Wallenberg:

Variational specialization: towards an acquisition-based model of diachronic stability

This paper looks at how a particular kind of diachronic stability can emerge, when the replacement of one form by another over time is arrested by the forms specializing for different functions, environments, or extralinguistic contexts. Kroch (1994) discussed how "grammar competition", whether of syntactic structures or morphological doublets like *dived, dove*, can be neutralized by forms ceasing to compete for the same context of use. But to date, no articulated theory of how this specialization happens has been proposed. A general pressure towards specialization in acquisition, "Principle of Contrast", has been discovered, and argued to account for patterns of word-learning (Clark 1987, 1990), but this has never been connected to a theory of language change, or extended beyond the lexicon. This paper hopes to rectify that, and show how the Principle of Contrast can be incorporated into a general and precise theory of specialization in language change. In doing so, I build on proposals in Fruehwald and Wallenberg (In preparation); Wallenberg (2013), and combine them with the variational learning model of Yang (2000, 2002) to suggest a general theory of specialization in acquisition, and how it can lead to near-stable variation in various domains of the grammar over time.

While this is primarily a study in the theory of language change, the theoretical proposals are based on a set of empirical cases, illustrating the effect of different dimensions of specialization on the diachronic pattern. The first case is a new study on a morphological doublet, *melted, molten*, in which two variants specialize over time along a binary, categorical dimension, leading to the survival of both variants. Secondly, I discuss the case study of extremely slow change from Wallenberg (To Appear), in which binary variation specializes along a continuous dimension, leading to near stable variation (i.e. very slow change). Finally, I will briefly discuss a case of phonetic change from Fruehwald (2013), which can be understood in the same framework: as continuous variation specializing along a categorical dimension.

These case studies also help us address a number of issues regarding the speed of specialization, and how this relates to near stable variation. For instance, it's possible that the extraposition change contains a case of multiple competing grammars (based on Sauerland 2003's two-structure analysis of relatives), which interacts with the process of specialization in a non-trivial way. The morphological doublet case allows us to look at the speed at which the Principle of Contrast applies; experimental evidence suggests it applies very rapidly, removing competition between variants within the acquisition of a single child, but historical changes show a different picture. In the end, I make some progress towars reconciling these findings, and show how we can begin to test precise, quantitative predictions about the diachronic "race" between competition and specialization.

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Token stability vs. type stability: Studies from the History of German

Sheila Watts, University of Cambridge (sw271@cam.ac.uk)

This paper seeks to explore how structurally similar and historically closely related languages develop differently at both the micro- and the macro-level. The relative morphological complexity of modern German places it in an unusual position amongst European languages, and makes it an outlier within continental Germanic.

Grammatical gender marking may be regarded as linguistic junk, and its loss part of the reduction in morphological complexity which is the norm for (at least) Western European languages. In most languages grammatical gender shifts to become a binary opposition, either common: neuter or masculine: feminine, with a concomitant at least partial semantic shift in favour of marking the natural gender of the referent. English and German represent the extremes of this change, with complete loss of the category in English and complete retention of the threeway opposition in German. While the change in English has been widely discussed (inter alia in Jones 1988, Kastovsky 2011), the contrasted situation of gender retention and stability in German has been perceived as more 'natural' and requiring less explanation. Frequency in discourse as a reason for stability is appealed to by both Trudgill (2011: 165), who references Langacker's notion of 'entrenchment', and Dahl, who suggests that the role of gender particularly in discourse tracking outweighs the difficulties of acquisition (2004: 200–1). This frequency, however, has yet to be examined in any detail: in particular, the relative frequency of gender marking in languages which retain gender should be compared that in those which lose it. This paper will exploit corpus resources to examine relative frequencies and the interaction between gender and case in order to develop a more nuanced picture of the German: English contrast, showing that surprisingly different internal factors are at play even prior to the very different language contact situations.

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