# Merlijn de Smit: Historical Linguistics and Process Philosophy

## *1. Introduction*

This paper is simultaneously a criticism and a defense of the family tree model[i]. The criticism is broadly based on that of Raukko and Östman (1994, 1995), who hold that traditional genetic linguistics has generally focused on structural aspects of language at the expense of pragmatics and the wider cultural, situational context in which communication takes place (Raukko and Östman 1995: 33-36). By emphasizing the latter, Raukko and Östman, even though they endeavour to widen or complement our notions of genetic relationships, end up at a position where no coherent notion of genetic relationship can be stated, as Laakso (1995: 70) points out in her reply. Though I agree with the thrust of Raukko and Östman's argument, I believe an overarching view allowing for both a meaningful conception of genetic relationships as well as holistic, multilingual causation of individual linguistic events may be statable. I will try to articulate such a view, following Fortescue (2001) in applying A.N. Whitehead's philosophical notions to linguistics.

I intend to build my case around the following arguments:

1) The basic object of historical linguistics – which is what we examine when we examine an instance of linguistic change, a linguistic innovation – is an individual moment of linguistic cognition, a 'linguistic event'[ii]. A linguistic event is basically an act of thought, and needs to be taken as such – as rational, and teleological (in a specific sense).

2) Markers of genetic identity in historical linguistics - 'Early Proto-Finnish', 'Uralic', etc. - cannot be applied to linguistic events themselves. There is nothing Uralic about such an event carried out in, say, the Esplanade in Helsinki five minutes ago. However, markers of genetic identity cannot be applied to the abstract structures actualized in linguistic events either. The structure of any linguistic sign is abstract; it becomes only concrete in actual usage; and we cannot sensibly say that abstract objects are genetically related to one another.

3) The level of 'linguistic event' is distinguished in different forms by Raukko and Östman (1994, 1995) and Croft (2000). Raukko and Östman are correct in their emphasis on the importance of the sociocultural context and the pragmatic framing of a given act of communication, however, their model of genetic relationships is unworkable. Croft's evolutionary model does more justice to genetic relationships, although his model is misguided, I believe, particularly in its elimination of teleology and its tendency to disregard abstract linguistic structure. The 'process philosophical' model sketched below may do justice to the 'linguistic event' while not being open to some of the criticism that can be levelled at Raukko and Östman's proposals on the one hand, and Croft's on the other.

### 1.1. An aside on Whitehead

The term 'process philosophy' is applied mainly to the work of Alfred North Whitehead (1929) and successors such as Charles Hartshorne. To my knowledge, Fortescue's (2001) is the only application of Whiteheadian philosophy to linguistics. Whitehead's philosophy rejects the notion of (isolable) substances propagating, and changing, down time: rather, 'actual occasions' or atomic events are taken as primary, with space and time itself arising out of the relationship between them. In

other words, 'becoming' is not explained on the basis of 'being'; but the other way around. Events 'become' (a process Whitehead calls 'conscrescence') by relating to their own universe of (past) events as well as to 'eternal objects' or Platonic forms; and then they perish, to live on (perhaps) in subsequent events. Regularities in the inheritance of events in one another, as well as in their grasping of the same eternal objects, may give occasion to more-or-less ordered 'societies' of events (a molecule; the table; me; you).

Also, Whitehead rejects the dichotomy between perception and causation (and, more widely, between matter and mind) which leads to the problems raised by Hume: if causation is merely inferred from contiguous sensory expressions, we have little rational basis to assert the validity of inductive reasoning (that similar cause and effect-relationships will persist in unobserved regions of space and time). In Whitehead's view, causation and perception are two sides of the same coin; causation *is* a primitive form of perception, of experience (Whitehead 1929: 334). Thus the subject (an actual occasion) does not observe the universe impassively; rather, its causal and perceptual impressions constitute what the subject is. There is, in Whitehead's view, no external reality beyond that experienced by an actual occasion somewhere, implying a thoroughly relational view on the universe, and a thoroughgoing panpsychism (in which matter and mind are seen as complementary aspects of the same ultimate reality; in this case, that of actual occasions).

Whitehead's works are marked with an occasionally complex terminology, particularly when dealing with his analysis of experience. I will, in the following, use 'event' instead of the Whiteheadian term 'actual occasion' or 'actual entity', and will not try to apply the categories Whitehead uses to distinguish different levels of causation and experience to linguistic change; rather, I will stick to the traditional categories of reanalysis (abductive change) and extension (deductive change).

## *2. Linguistic event and linguistic structure*

Any realist conception of linguistic reconstruction implies that genetic relationships are not exhibited by any particular linguistic subsystem in an essentialistic fashion. 'Realist conception' here means any conception which distinguishes between 'related' and 'relatable': languages are, or are not, genetically related regardless of whether they can be proved to be so or not. Two languages may be, according to a realist conception, genetically related even if one of them has undergone a total turnover of lexical material and basic morphological markers through the course of its history; they just cannot be *known* to be so. Implied in this conception is also that any linguistic reconstruction is a more or less general and abstract model of an actual, historical language, as stressed by Lass (1993), rather than a shorthand description of shared synchronic traits among any number of related languages. Synchronic commonalities between conservative subsystems in languages may indeed more or less reliably reflect genetic relationships, but this is an empirical and contingent relationship, not a matter of conceptual necessity. This means there is nothing 'Uralic' about any given utterance in, say, Finnish. Of course, a given utterance is marked by abstract structures on a variety of levels, and is produced against a given historical background including past other utterances – but neither of these provide for a direct marker of genetic identity.

Yet it is precisely to this basic level of singular linguistic actions, utterances, 'moments' of linguistic cognition, that our historical methods refer. The two main mechanisms of structural change, specifically, are reanalysis and extension. Reanalysis refers to the assignment of an alternative structure to an utterance that is, on the face of it, ambiguous; extension to the actualization of an alternative structure

through its usage with new expressions which are unambiguously marked with that alternative structure. As an example of a structure which has undergone reanalysis and extension throughout the history of Finnish, take the passive perfect: *mies on kutsuttu* (man-ACC(Ø) (is invited)-PASS PF). The zero accusative on the object is phonologically indistinguishable from the nominative, and the construction admits of an alternative analysis as a copular clause with a subject and a nominal predicate: *mies on kutsuttu* (man-NOM is-COP invited). In a number of contexts, however, the two analyses lead to different surface structures. A negated clause, for instance, would lead to the usage of a partitive object in the first, but a nominative subject in the second clause (*miestä ei ole kutsuttu* vs. *mies ei ole kutsuttu*). In Old Finnish, variation testifying to the ongoing extension can be found with this structure (De Smit 2006: 99).

The point that our methods of historical analyses refer to singular occurrences should be nuanced in one important respect. Though all that is *actual* in linguistics are singular linguistic events involving utterances, and reanalysis and extension happen in the production and comprehension of utterances, an innovation does not amount to a change unless it becomes part of the social, *ideal* system of norms governing the linguistic behaviour of a community (Coseriu 1974 [1958]: 127). Authors such as Keller (1994: 38, 55-56) and Croft (2000: 32) each propose large differences between actuation and propagation – in Keller's view, an innovation makes its way into the norms of a speech-community by an 'invisible-hand' process, independently from the teleology of any individual speaker, whereas in Croft's evolutionary model, social adaptedness is the key to innovations surviving or not. I would argue that not too much stress should be placed on differences between mechanisms of innovation and propagation. First of all, as Andersen (1988: 72-73) indicates, a given reanalysis leading to an extension in a surface grammar may well occur independently at various points in a linguistic area. And as Itkonen (2002: 416) points out, the contrasting psychological (innovation) and social (acceptance) sides of linguistic change are already immanent in the dual categories of reanalysis and extension: whereas reanalysis abductively infers a given linguistic structure on the basis of exposure to linguistic material, extension – the manifestation of a reanalysis in surface grammar – 'tests' the acceptability of the reanalysis against the standard of a linguistic community by performing actions that may be accepted as correct or incorrect. Also, we analyze a given historical change by repeating its logical structure in our minds; as historical linguists, we 'see' how a given analogical extension has taken place by 'doing' it (Anttila 1989: 407, 1992: 25-27; Collingwood 1993 [1946: 215-217]). Thus the transition between an individual innovation and a linguistic structure being a norm among a given group of speakers is, as it were, obscured from our view: what can be studied is the former *in as far as* it has given rise to the latter. The notion of linguistic changes as being performed by collective agents (Anttila 1992: 29, Itkonen 2002: 418) seems apt in this regard.

## 2.1. The reality of abstract structures in linguistic change

It is important to distinguish between abstract structure and past linguistic utterances. Both are immanent in the present relevant to historical linguistics; the first as the key to the decoding and analysis of new utterances, the latter as stored into the memory of speakers. In their conception of 'emergent grammar', Bybee and Hopper (2001: 8) draw much attention to the latter as ”chunks of discourse”; elsewhere Hopper (1987) notes that: ”It has been noted before that to a very considerable extent everyday language is built up out of combinations of such prefabricated parts. Language is, in other words, to be viewed as a kind of pastiche, pasted together in an improvised

way out of ready-made elements.". This view on grammar is, on the one hand, attractive to historical linguistics in the way it allows for the creativity of speakers in imposing structure upon the languages they use, as emphasized by Coseriu (1974 [1958]: 59), on the other hand, it must be understood that structure is not a linguistic epiphenomenon, but that reanalysis applies to abstract structures rather than to actual utterances, as emphasized in Andersen's (1973: 767, 776-777) model of abductive and deductive change. Abstract structures, by definition, do not exist concretely at any particular point in time and space; rather, they exist potentially, as more or less general or indeterminate forms, unless actualized in time and space (namely, in a linguistic event). Reanalysis has been identified with the Peircean concept of abduction in logic (Anttila 1989: 197, Andersen 1973: 774;1974: 19-23); abduction refers to the suggestion of an underlying hypothesis to account for the facts observed, thereby to the suggestion of a *possibility*[iii]. In this sense, linguistic change is teleological in Peirce's sense: teleology is not an actual future state retroactively exerting causal influence on an actual present state, rather, teleology refers to "the potency of present possibilities" (Shapiro 1985: 12, Anttila 1993: 55). A final cause is thus ideal: a general type, rather than any (future) actuality, and thus final causes and efficient causes may well co-occur (CP 1.211-1.213; Short 1981: 370).

Through deduction of testable predictions from a hypothesis, and inductive testing of these, the suggested possible explanation may be confirmed or disconfirmed in actual fact – the linguistic equivalent of deduction is precisely extension (Andersen 1974: 23, Itkonen 2002: 416). The modal structure of the mechanisms of change (reanalysis as suggestion of possibility, extension as actualization) seems to suggest that a structure undergoing reanalysis is somewhat indeterminate: "After reanalysis, typically extension alters one aspect of the surface grammar before others. At this point, a surface structure has some of the structurally ambiguous aspects that it had before reanalysis, but also one (newly extended to it) that is unambiguously characteristic of the new analysis, and often at least one that is characteristic of the old. For this reason, speakers must be able to see both analyses at once." (Harris and Campbell 1995: 59). Importantly, the notion of extension as the actualization of potentialities suggested by a reanalysis can be made sense of only in a teleological framework.

## 2.2. Reanalysis and extension as the only basic mechanisms of linguistic change

Harris and Campbell add a third basic mechanism of syntactic change to reanalysis and extension, namely syntactic borrowing: "(...) a change in which a foreign syntactic pattern (either a duplication of the foreign pattern or at least a formally quite similar pattern) is incorporated into the borrowing language through the influence of a donor pattern found in a contact language." (Harris and Campbell 1995: 122). This has been challenged recently by Aikhenvald (2003) who studies syntactic changes in Tariana, a moribund Arawak language in the Vaupès region of northwestern Brazil. Remarking that Tariana moves in many respects towards a system remarkably convergent to the East-Tucanoan languages it is in contact with, Aikhenvald remarks about these apparently contact-induced changes that "(...) to just lump them under an umbrella label of 'borrowing' or 'calqueing' is an oversimplification which obscures the different possible historical scenarios for each case." (Aikhenvald 2003: 27) and regards language contact as a background condition under which other mechanisms of change, such as reanalysis, extension and grammaticalization, can play themselves out (Aikhenvald 2003: 3). Syntactic borrowing has been identified with

extension as well as by Anttila (1989: 170), Croft (2000: 148-149) and Mufwene (2001: 162). I would agree with these in that I believe regarding syntactic borrowing as a mechanism of change on the same level as reanalysis and extension is a category mistake. Borrowing or transfer are terms which by conceptual necessity happen between *languages* seen as more or less discrete, isolated systems. The concept is considerably more abstract than those of reanalysis and extension, which take place on the concrete level of linguistic events and analysis of utterances. In our example above, we raised the assignment of a (subject – copula – nominal predicate) structure to utterances such as *mies on kutsuttu* as an instance of reanalysis, and the occasional appearance of negated sentences such as *mies ei ole kutsuttu* as an extension. However, the same change may also be regarded as a syntactic borrowing, namely, of the importation of the Swedish underlying structure of the passive perfect (which employs a grammatical subject), and the change in question has indeed been regarded as such (Schlachter 1986: 108). Clearly, it seems procrustean to regard changes like these as proceeding through *either* reanalysis and extension *or* syntactic borrowing: it would seem to do more justice to the change in question to regard it as being an instance of reanalysis and extension involving both Finnish and Swedish patterns.

It seems to me that Harris and Campbell's trichotomy results from imposing a dichotomy of 'internal' and 'external' changes upon a basic taxonomy of basic mechanisms of change. It is easy to see why doing so seems attractive from a perspective interested in preserving a clear conception of genetic identity. If the history of a language is a series of internally-motivated innovations and borrowings, contact-induced changes and changes operating on inherited material are distinguished on the most basic level of analysis: there is a basic difference between 'genetic' transmission (through analysis, reanalysis, etc. of individual linguistic events) and introduction of borrowed material. If, on the other hand, reanalyses and extensions may involve monolingual and bilingual material to a various extent, there is no easy way to avoid notions of language mixing or that, rather, the notion of 'genetic' as implying some kind of continuity within one linguistic system (as opposed to involving transfer of material, patterns, etc. from a contact language) is simply ill-applied to the most basic level of analyzing linguistic change.

## *3. The disanalogy between linguistic and biological evolution*

The strength of the Darwinian theory in biological evolution lies precisely in its reduction of superficially teleological, historically unique changes to the causal realm of underlying biochemistry. By 'causal' I mean that a given event is dependent either on necessary and sufficient conditions or random; in biological evolution, a given sequence of DNA may be replicated either succesfully or be subject to random copying errors – randomness here does not refer to an event's non-immanence in preceding necessary and sufficient conditions but rather to its irrelevance for teleological concerns. Teleology does come into play in as far as the adaptiveness of a given biological innovation is determined by its function in the behaviour of an organism (Ruse 1973: 192-196) but it does not come into play in the causal origins of that innovation. Ultimately, explanation in evolutionary biology is of the deductive-nomological type (a given event is seen as subject to a covering law) used in the natural sciences, even if the complexity of organisms themselves as well as the complexity (and changeability) of the environment against which their survivability is determined makes prediction impossible (Ruse 1973: 85-86).

### 3.1. The non-causal nature of linguistic change

This strength is precisely what is absent in historical linguistics. First, we have lack of predictability and thereby the lack of nomic 'laws' of historical change (Coseriu (1974 [1958]: 23, 152); Itkonen (1984: 203-204); Lass (1980: 3, 1997: 329-330); Anttila (1989: 399-400)). In and of itself, this would make possible a comparison between language change and chaotic, unpredictable systems in the natural sciences (geology, meteorology) and indeed biology, as with Lass (1980: 137-138) and Croft (2000: 2-3). Historical events are indeed unique – but so are those of biological evolution, and this does not imply ultimate independence of nomic laws, as the uniqueness is due to the sheer complexity of the system involved. But the disanalogy goes deeper. Linguistic innovations are not causal ones in the sense that complex naturalistic events are. The reason lies in the normativity of language, and ultimately of the rationality on which linguistic behaviour is based (Shapiro 1983: 11; Itkonen 1984: 103-104, 2002: 420-421). Normativity presupposes freedom of action, if they are to be understood as norms: conformance to a norm implies that an agent may act to realize one of a number of states-of-affairs, and has information at her disposal to guide her in undertaking action (Weinberger 1985: 313-314); the agent could have acted otherwise. As Von Wright (1963: 6) notes, norms such as these are determinative rather than descriptive: the norms reflected in the structure of Finnish determine what can be counted and understood as a Finnish utterance, and in that sense, though the existence of the system of norms itself is a contingent, historical fact, the conformance of Finnish utterances to the norms of Finnish grammar is necessary (Von Wright 1963: 107). Von Wright (1963: 6-7) states that the hallmark of rules of grammar is precisely that they are somewhat open, that they are never completely determined: as noted above, it is the presence of potentialities in linguistic change (such as reanalysis of ambiguous structures, but also metaphorical novel usage of expressions, etc.) which ultimately makes it possible. Linguistic changes operate on norms, rather than on utterances. Thus, linguistic utterances may be correct or incorrect – and language change relates precisely to a change in the range of possible utterances which may be regarded as correct measured against the conventions of a speech-community. Genes, however, cannot be correct or incorrect. Genetic mutations may be adaptive or maladaptive – but this plays no role in their causation.

Another important disanalogy is that, regardless of whether one takes a realist or a nominalist or conceptualist view on the norms of language, it seems clear that the structures involved are abstract objects, which nonetheless influence the behaviour of speakers and are immanent in utterances. Language change cannot be understood without reference to this; indeed, linguistic understanding itself cannot be understood without it. In genetic replication, a genetic code is copied directly as a genetic code, and the organism may be regarded as merely the vehicle of its genetic code; but in linguistic behaviour, a structure is *inferred* from the concrete acoustic (or visual) signal which is its material form (Andersen 1973: 767). A 'gene' may be regarded as a somewhat abstract entity, at least to the extent that it may be regarded as the type of which individual, concrete strands of DNA are tokens – but this abstractness does not play any causal role in its replication. Structures-as-types, however, play a crucial role in the production and understanding of utterance-tokens. If strands of DNA are taken as signs (of protein structures? of phenotypes?) then they are, in Peircean terms, sinsigns – actual, concrete objects that gain a 'meaning' through the causal, natural processes they are associated with. Linguistic utterances, on the other hand, are legisigns – it is the abstract, conventional structure that they embody in virtue of which they are signs. (Shapiro 1983: 34-35).

Thus, there is replication going on in linguistic utterances in the sense that abstract structural patterns re-appear in various utterances; but unlike biological evolution, the replication of these abstract patterns cannot be reduced to concrete, underlying causal mechanisms. There is also selection going on in the spread of novel abstract patterns in that these may be positively or negatively valuated by a speech-community; but again, unlike biological evolution, the factors involved in the production and in the spread of these abstract patterns cannot be rigidly seperated.

## 3.2. The past as background factor, rather than cause

These differences put a heavy strain on any interpretation of linguistic history through an analogy with biological evolution. More importantly for the purposes of this paper, the disanalogy between the underlying causal mechanisms of biological evolution and the non-causal nature of linguistic change questions whether it is sensible to speak of genetic relationships between actual events or the utterances they objectify. The material world has a chronology, but no history in the proper sense of the word: matter is governed by laws which apply uniformly across time and space (Lass 1980: 10); moreover, to the extent that the natural world contains unique events and entities, these unique events and entities are to be reduced to the workings of elementary elements which are not unique themselves[iv]. Elementary particles have no individuality. History is history in the sense that it is the history of thought, of ideas (Collingwood 1993 [1946]: 216; Von Mises 1957: 188-189). In that sense, it must be conceived of as non-deterministically, as genuinely involving alternative possible states-of-affairs, including imaginary ones which may never be realized. In as far as thought is rational, it must also be conceived as essentially involving normativity.

As Von Mises (1957: 74-75) remarks, history as such presupposes some measure of determinism in the natural background against which history plays itself out. We cannot even conceive of a wholly non-deterministic universe, and rational contemplation of means and end, as well as putting our plans into action, presupposes that nature behaves as we expect it to do. But for human actions, it functions as a background, limiting the range of possible states-of-affairs we may undertake to realize, rather than causally determining the course of our actions. Regarding the causation of linguistic change, Aitchison (2001: 134) forwards the concept of multicausality: ”Like a road accident, a language change may have multiple causes. A car crash is only rarely caused by one overriding factor, such as a sudden steering failure, or the driver falling asleep. More often there is a combination of factors, all of which contribute to the overall disaster. Similarly, language change is likely to be due to a combination of factors.” The metaphor is apt, but should be made more specific: a car crash is genuinely multicausal only in as far as a driver is present in the car, whose deliberate, if unsuccessful, actions are pivotal in determining the final result. Factors such as the possible failure of brakes, the slipperiness of the road, and even the alcohol content of the driver’s blood serve as background factors which constrain and influence the effect of the driver’s actions but do not determine the overall result (unless the driver is so drunk as to no longer be a rational agent!). In contrast, a driverless runaway car hurtling down a road to crash into a tree is a mechanical system ultimately subject to deterministic laws of physics, even if the event is so complex that the chains of cause and effect cannot be unraveled by a human observer.

Likewise, ambiguity with regard to analysis in a given linguistic structure *may* be a factor in causing a speaker to reanalyze a structure, and extend the new analysis to unambiguous contexts – but this is by no means preordained. The structural ambiguity here is a background factor, not a cause. Similarly, an interlingual

identification made by a bilingual speaker (Weinreich 1974 [1953]: 39-40) may lead him to transfer phonological features from language A to language B, but the presence of perceived similarity is, again, a background factor, rather than a determining cause. The disanalogies between language and biological evolution mentioned above might be taken to signify merely that, and not to necessitate the scuttling of the term 'genetic' when talking about historical relationships between languages, but that just brings us back to the problem mentioned earlier. Applying the term 'genetic' to the relationships between actual occasions of linguistic usage becomes vacuous if the 'background' of an actual occasion of linguistic usage may include a variety of linguistic structure from one language (as is the case with analogical extension) or from more than one (as is the case with most contact-induced structural change). We cannot meet the challenges of alternative models involving promiscuous genetic mixing on this level of analysis.

### 3.3. The abstractness of linguistic structures

We also cannot take recourse to referring to linguistic structures: a linguistic structure is abstract and not located in space and time unless it becomes immanent in some actual occasion of usage, and it would be a category mistake to assert that abstract structures have a genetic (and thereby temporal) relationship with each other. This should be furnished with some argument, as a model allowing for the abstract existence of temporally bound structures exists, namely Popper's World 3. Popper's World 3 is distinguished from World 1 (the physical world) and World 2 (the individual mental world) as including socially shared products of the human mind, such as works of literature, art, social conventions, and so forth – but also proverbial Platonic entities such as mathematics (Popper 1983 [1977]: 38-41). Linguistic structures are an obvious candidate for World 3 status (Pihlström 2000: 10). A socially shared system of structures such as 'Finnish' may develop, may persist for a while as 'objective mind', and fall into disuse at some point during human history. Basing genetic relationships upon abstract structures seems, at first sight, not to be problematic here. However, asserting that the Finnish language, with its genetic relationships to Early Proto-Finnic etc. has existence as a World 3 object necessitates specifying its location in space and time: an object that can have temporal relationships with other objects must have location of some kind. Whitehead (1929: 324) refers to the same problem when denying that actuality can be wholly grasped in terms of universals: ”(...) the complex nexus of ancient imperial Rome to European history is not wholly expressible in universals. It is not merely the contrast of a sort of city, imperial, Roman, ancient, with a sort of history of a sort of continent (...). The nexus in question does involve such a complex contrast of universals. But it involves more. For it is the nexus of *that* Rome with *that* Europe.”

The obvious alternative, that a language exists in the minds of speakers, just like a composition of Verdi exists as a World 3 object in the minds of composers, musicians, and listeners, brings us back to nominalism or conceptualism: it becomes difficult to account for the role as final cause that abstract structures do seem to have in processes of linguistic change (Katz 1981: 201). In effect, we would be reducing World 3 to World 2. Aside from this, it would be tantamount to stating that an abstract structure exists in linguistic events, which brings us back to the difficulties concerning genetic relationships mentioned before. It does not do to replace 'actual events' with some form of hypostasized speaker's knowledge of his grammar. This would just shift the level of analysis from events to that of language acquisition – but the issues concerning the analysis of linguistic change remains the same, though the 'temporal atoms' move further apart from one another in physical time.

The alternative, however, is not intuitively attractive. It proceeds by taking Whitehead's lead - as I have implicitly done so far and as has been done by Fortescue (2001: 217-218) in his application of Whitehead's philosophical system to linguistics - and regarding patterns, qualia, abstract objects, etc. as existing *as potentials* outside of their realization in actual events (Whitehead 1929: 29-30). Thus "'change' is the description of eternal objects in the evolving universe of actual things." (Whitehead 1929: 81). But any Platonic realist conception of abstract objects – 'potential' or not – implies that *all* conceivable linguistic structures, whether they are realized in the actual usage of Finnish, Haida, Warlpirli, Old Church Slavonian or perhaps in a language yet to emerge in the far future – exist as such (Katz 1981: 9, 2000: 133-138). This is a direct consequence of taking abstract objects as potentials, outside of space and time, and actual only in as far as they are immanent in concrete events.

The idea seems counter-intuitive because there seems to be something historically very specific about, for instance, the rules of modern Finnish phonology. However, this intuition is basically just a consequence of the essentialist view on genetic relationships I argued against at the beginning of this paper. The phonemic sequence, underlying syntactic structure, and meaning of *mies on kutsuttu* does, indeed, seem to be specific to Finnish: yet it is an abstract structure, and specifying in what respect it is Finnish, and by extension, Uralic, and possibly related to structures in cognate languages, etc. is precisely the question. My reason for adopting the Whiteheadian view on abstract objects, rather than the intuitively perhaps more attractive Popperian view, is that the Popperian view would only superficially solve the problem by relegating the identity markers in question to objects that are abstract, yet temporally bound. The Whiteheadian view, on the contrary, forces us to bite the Platonic bullet and allow abstract linguistic structures an existence as potentialities without any designations referring to time and place, genetic interrelationships, etc., forcing us to look for those elsewhere and trying to come up with a more robust notion of them.

## *4. Bridging structure and process*

To sum up, the issue is not just that linguistic changes are unique, historical events, but linguistic events themselves are, too. As ultimately subjective acts of linguistic cognition, which do indeed involve objectified prior linguistic events (as utterances) in their own historical background but which themselves are based on rational and, in cases of innovations, genuinely creative processes of thought, it seems hopelessly far-fetched to draw lines of genetic transmission between linguistic events themselves. The abstract linguistic structures that are immanent in linguistic events offer no solution either: by themselves, they exist outside of space and time.

### 4.1. Emergentist and Platonic views on linguistic structure

Whitehead's strict Platonic view on abstract objects has been criticized, however, by Charles Hartshorne, whose proposed alternative may have an intuitively attractive analogue in linguistics. Hartshorne (1978: 32, 59, 177) proposed to weaken Whitehead's conception of abstract objects significantly, to the point of allowing only the most general categories (such as 'quality') a potential existence as Platonic object, and allowing for the temporal emergence of abstract objects: "To use the current term, "essences" may well perfectly emerge in the universe, not merely in the world of actuality but in the total universe of actuality and possibility. It is true that, before an essence emerges, there must be a possibility of which its appearance is the actualization; but the question is whether such a possibility need be as *definite* as

the quality which actualizes it." (Hartshorne 1978: 32). In similar fashion, Everett W. Hall (1963 [1930]: 106) argues that the outer form provided to an individual event by the immanence of an abstract object in it may well be provided, instead, by the immanence of the past in the present through causation and memory; in linguistic history, structure would emerge out of the frequency of particular expressions, locutions, etc. present in the memory of the speaker, and an abductive inference on the part of the speaker.
This, of course, recalls the conception of emergent grammar as defended by Paul Hopper (1987) and Joan Bybee (Bybee and Hopper 2001; Bybee 2006), and mentioned earlier. Bybee (2006: 714) describes the relationship between structure and usage as follows:

> *"What we see instantiated in language use is not so much abstract structures as specific instances of such structure that are used and reused to create novel utterances." This point has led Hopper (1987) to propose grammar as "emergent from experience, mutable, and ever coming into being rather than static, categorical, and fixed. Viewed in this way, language is a complex dynamic system similar to complex systems that have been identified, for instance, in biology (...). It does not have structure a priori, but rather the apparent structure emerges from the repetition of many local events (in this case speech events)."*

At first sight, this view seems to conflict with a Platonic view on linguistic structures (see for example Pihlström 2000: 4). However, it seems to me that any contradiction between an emergent and a Platonic view on grammar are largely superficial, *unless*, 1) the abstract objects to which linguistic structures are taken to refer are regarded as accounting for grammaticality, or conventionality, which would, as mentioned, amount to taking as given precisely what should be accounted for in the interface between abstract object and actual event; 2) the concept of grammar as the set of abstract structures which are normative at a given time and place, for a given community of people, is replaced by (non-normative) concepts such as individual knowledge of grammar (as done, for example, by Bybee 2006: 730). Grammar may, to an extent, be *explained* with reference to the ritualization of oft-repeated routines, but the ritualization itself, the conventionalization of frequent expressions, the establishment of analogical patterns across morphological paradigms, etc. is an abductive process; it involves reference to an abstract object, even if the basis to this abduction is the frequent actual occurrence of given structures (Fortescue 2001: 186). Studying the relationship between cognition and grammar does not make the study of grammar itself in autonomous linguistics redundant (Lass 1997: 11).
If these two lines of thought are avoided, it seems to me to be perfectly possible to reconcile a view on grammar as, on the one hand, a set of abstract structures instantiated in the actual occasions of conventional language usage by a group of speakers at a given time and place; and, on the other hand, as emergent upon conventional usage through the analyses and abductions performed by speakers with a memory of past usage. The first is a necessary ingredient in an account of normativity; the second in an account of language change.

## 4.2. The argument so far

To make the linguistic 'ontology' I have been arguing for explicit, I suggest we are dealing with the following basic concepts:
1) The linguistic 'event'; a 'moment' of linguistic usage (Fortescue 2001: 9). This is the only object linguistics deals with that concretely, actually exists. 'Linguistic event'

is not synonymous with 'utterance', though linguistic events include the perception of utterances; a 'linguistic event' is always a moment in an individual speaker's mental life, and thus irreducibly subjective. Past linguistic events (perhaps produced by another speaker) may persist within a linguistic event, possibly as precisely the utterance that is comprehended by the subject of a linguistic event. It should be noted that I stress the word *past* here: there are no synchronous events. Even face-to-face communication between two speakers involves one of them comprehending a *past*, albeit an exceedingly near past, utterance[v]. Linguistic events are not open to causation (and, mutatis mutandis, genetic transmission). They are, rather, better seen as the uncaused ultimates of linguistics. It is, of course, true that the communicative behaviour of speakers takes place in physical space and time – but this is not the space and time linguistic historians are interested in; it is, rather, the temporal and spatial dimensions which are *created* by linguistic events in their relationships with each other.

2) Linguistic structures as abstract objects; these exist *potentially* unless they are actualized in a given linguistic event through the actions of the subject of that event. As mentioned, the realism with which abstract structures are to be regarded is a matter of controversy. I would suggest a somewhat weak realism in which linguistic structures as sets of sentences are accorded existence as potentialities; but not grammars as the set of *possible* sentences, which involves a notion of grammaticality. Linguistic structures *as* abstract objects are both grammatical and ungrammatical linguistic structures. Grammaticality, and with it, the integration of linguistic structures into the grammar of *a* given language, is something to be accounted for on the level of actual events.

3) The actualization of linguistic structures in linguistic events may be seen as the result of an emergent process: linguistic norms governing such actualization are inferred by agents intending to conform to such norms. This does not entail structures that are not abstract objects: "A society does not in any sense create the complex of eternal objects which constitutes its defining characteristic. It only elicits that complex into importance for its members, and secures the reproduction of its membership." (Whitehead 1929: 127). It does mean that we cannot relegate the conventional, normative nature of a linguistic system shared by a given speech-community – and with that, the spatiotemporal boundedness of languages - to such a level of abstract objects. It must be accounted for in the interface between 'events' and 'eternal objects'.

## 4.4. Lines of transmission

Aside from eternal object and events, Whitehead (1929: 46) distinguished 'societies' and 'nexus' as complexes of events with various degrees of internal order, characterized by the common actualization of the same eternal objects conditioned upon the immanence of past events in actual ones. Fortescue (2001: 203-204) contrasts the notion of language as a society of individual linguistic events propagating down time with the notion of language as an eternal object – which Fortescue accepts in the case of language as *langue*, as abstract structure. Fortescue criticizes the notion of language as a society of events on the basis of a lack of teleology applicable to the society as a whole – however, he mentions that such a teleology can be ascribed to the individual speakers that make up such a 'society' (Fortescue 2001: 205).

Whereas genetic relationships cannot be well applied to the pure potentiality of language, i.e. eternal objects or linguistic structures, and neither to individual actual events, they may well be applicable to regularities concerning the actualization of

linguistic structures into actual events. Actual events are immanent into one another through causation, perception, memory, etc.: similarly, linguistic events are thoroughly integrated into one another (a relationship which may involve a single or a multiplicity of speakers). It is precisely the way linguistic events relate to each other through time (and create the temporal dimension relevant to them which we, as historical linguists, are interested in) that accounts for the emergence of language as a social system of norms, as mentioned above. Earlier, I rejected the application of Popper's World 3 to linguistic structures – but the regular actualization of a set of given structures in a spatiotemporally bound set of events, i.e. a Whiteheadian 'society', seems to me a far more obvious target of application. Whitehead's 'society' exhibits both the features which seem so incongruous with Popper's World 3: its seeming abstractness and lack of spatiotemporal specificity; and yet the spatiotemporal 'thisness' that is yet there with objects such as ancient Rome, Verdi's requiem, Protestantism and the Finnish language. The kind of object identified here is what Thompson and Hopper regard as grammar, when claiming that ”what we think of as grammar is a complex of memories we have of how our speech community has resolved communicative problems. 'Grammar' is a name for the adaptive, complex, highly interrelated, and multiply categorized sets of recurrent regularities that arise from doing the communicative work humans do.” (Thompson and Hopper 2001: 56).

If the basic concept of genetic relatedness can be defined as that, in a meaningful sense, a language at time *n*+1 may be said to be a genetic ancestor of a language at time *n*, and, with very few exceptions, languages have only a single genetic ancestor, this definition is applicable to a view on language as a Whiteheadian society if 'a language at time *n*+1' is regarded as a number (not just one) of singular linguistic events each marked by the same or similar linguistic abstract objects and if no upper temporal bound is set: the whole history of linguistic events from Proto-Uralic to the modern-day dialect of Kiihtelysvaara would be a 'language' in this sense, as well as the set of linguistic events carried out in the dialect of Kiihtelysvaara just yesterday. It is not so much the actualization of the same linguistic abstract objects as the immanence of individual linguistic events in each other that form the basis of genetic relatedness: the former is a consequence of the latter. The term 'genetic' is more or less metaphorical here, as there is no isolable individual which could be seen as ancestral to another: a language is a 'genetic' ancestor of another if they are both temporal cross-sections of the same society of events moving down time.

An alternative would be to take the individual idiolect, rather than a 'linguistic event' as the basic unit, as is done by Mufwene (2001: 11) and as seems to be implicit in Ross' restatement of the family tree model as diachronic social networks with speakers as its nodes (Ross 1999: 213-214). In a sense, this makes little difference to the model as presented here, in that idiolects are developed on the basis of abductive and deductive inferences on the part of a child-learner (or an adult learning a second language) and that they are thus developed creatively against a background of communicative input, rather than as the genetic descendants of other idiolects – similar to the linguistic events treated here. I would however tend to reject such an approach, as, first of all, we can make sense of the emergence of linguistic structure on the basis of communicative *actions* of speakers, but not idiolects, whether we conceptualize these as the abstract *potential* for linguistic behaviour at the avail of a speaker at any given point in time, or as the grammatical knowledge of a speaker at any given point in time (perhaps hypostasized as a set of neural structures in the speaker's brain). A second reason is that an individual idiolect is clearly not the basic unit we need to take into account when making sense of

language change: this basic unit is, again, a communicative action of a speaker as experienced in a linguistic event. Idiolects are subject to change over time. It thus does not do as most basic level of actuality in which, in Whitehead's words, the adventures of eternal objects take place and which in that way may account for the paradoxes of identity and change over time.
However, the model presented here – in which the bearer of genetic markers of identity is a diachronic network of individual linguistic events involving each other and exhibiting (partially) the same linguistic structures – does involve speakers to the extent that the transmission of language down time, with its branchings or perhaps also mergings, is contingent upon the history of its speakers. In this, the model strongly resembles Ross' 'social network model', described as ”founded on a transparent fact that the species evolution metaphor ignores: that languages have speakers, and that language resides in their minds. Speakers use language to communicate with each other, and the model treats speakers as nodes in a social network, such that each speaker is connected with other speakers by social (and therefore communication) links.” (Ross 1999: 213-214). If we define a speech-community as a community of linguistic events, the history of a language is the history of a speech-community.

## 4.5. Splits and mergers

Above, I described the linguistic object for which genetic metaphors are applicable as a diachronic network or community of linguistic events – involving each other through memory, perception and comprehension – partially marked by the same linguistic structures, with 'genetic' applied to diachronic, spatiotemporally extended 'cross-sections' of the same basic object rather than to the diachronic (causal) relationships between clearly definable individuals, the continuous 'community of events' from Proto-Uralic to any of its daughters can be seen as a 'language' in the genetic sense, as can any periodical cross-sections of it.
One way to make the model more precise would be to emphasize the 'community of events' aspect at the cost of the 'similar linguistic structures' aspect[vi], arguing that the latter arises mostly from the former. This entails, of course, that there needs to be some kind of continuity in the 'community of linguistic events' to assert genetic identity. This would be an attractive road to take, in that it allows us to make sense of multilingual communities such as Kupwar, in which non-related languages spoken by various social groups in the village appear to differ only in one or a few salient structural aspects (the lexicon and set of morphemes) (Gumperz and Wilson 1971: 154-155), assuming that varieties such as those of Kannada and Urdu spoken in Kupwar have arisen gradually. The same would go, with the same precondition, for the case of Ma'a (Thomason 2001: 82, Field 2002: 175), where the retention of a Cushitic basic lexicon as a marker of ethnic identity would allow us to specify the language as genetically Cushitic, rather than Bantu. In both of these cases, it is not so much the continuity of the lexicon or of a few structural aspects in and of themselves, but their salience to their speakers, and the role they play as markers of identity (implying some kind of continuity of a community-of-events despite deep-going structural changes) which would lead us to dub Ma'a as Cushitic. If Ma'a, however, as Field (2002: 175) argues, arose due to a rather sudden shift of speakers of a Cushitic language to Bantu with the retention of some amount of lexicon, this conclusion would not be warranted as there is no 'continuity of events' between the two.
Another potentially problematic situation, and one which does occur to some extent, is that of a group of speakers imperfectly shifting to a dominant language while

remaining relatively isolated from the speech-community of that dominant language. If Ma'a is the result of a language shift, it may be an example, even if typically language shift appears to lead to the retention of source-language syntax and phonology with the adoption of target-language lexicon and morphology (Thomason and Kaufman 1988: 50, 212). While usually varieties such as these are genetically related to their target languages, Ringe et al. (2002: 64, 107) regard cases such as these as outside of the family tree model. I would argue that language varieties such as these arise nongenetically, in that neither a 'community of events' can be asserted between the target language and the resulting linguistic variety, or between the source language and the resulting linguistic variety. They would be the results of what Ross (2003: 177-178) dubs 'catastrophic change' as opposed to 'non-catastrophic' change: the kind of gradual contact-induced linguistic change that does not involve a radical fissure in language as a diachronic community of events. If Thomason and Kaufman's (1988: 3) analysis of creole languages is correct, these too would have a non-genetic origin; if on the other hand, Mufwene's (2001) analysis of creole languages as developing quite gradually from their lexifiers is correct, these would obviously have to be grouped genetically with their lexifiers. In other words, it is the history of speakers, rather than structure, which holds all the cards.

## *5. Discussion*

The model outlined here meets, I believe, Raukko and Östman's challenge in that is allows us to throw out the bathwater without throwing out the baby. We can assent to a holistic background involved in the analysis of individual communicative acts and distinguish the presence of various linguistic models and patterns – not necessarily from the same language – behind these, without projecting genetic lineages to multiple ancestor languages. Rather, language as a diachronic entity is a community of linguistic events propagated down time, exhibiting regularity in the linguistic patterns embodied by these events. Language as a unit of genetic linguistics is thus an emergent entity, to be distinguished from and irreducible to linguistic events themselves, but not identical with the abstract objects which form the subject-matter of autonomous linguistics.

### 5.1. Advantages of the framework

First of all, the model allows us to do away with the distinction of 'internal' vs. 'external' changes on the level of the analysis of innovations itself, which harmonizes well with the notion that mechanisms such as reanalysis and extension, and their logical equivalents of abduction and deduction, are in play both in contact-induced and non-contact-induced changes. Any innovation is 'internal' in that it is internal to the mind of a single speaker; however, the reanalysis or extension carried out by the speaker may well involve patterns from more than a single lect or language. The adoption of an extension by a speech-community is 'external' in that it takes place through contact between speakers - ”the spread of any feature is borrowing as long as it is happening” (Anttila 1989: 154), even if it is 'internal' to the system of norms which the utterances of those speakers adhere to.

As opposed to the Darwinian paradigm in biology, applied to linguistics by authors such as Croft (2000) and, less explicitly, Mufwene (2001), the process-philosophical paradigm does not assert causal mechanisms at work in the emergence of basic units but allows these explicitly to emerge in a creative, non-deterministic and teleological fashion. The reality of reanalysis in linguistic change forces us to take abstract structures into account as 'possibilities' even on the most basic level of linguistic events. The idealistic tendencies of authors such as Peirce and Whitehead

– assigning reality to patterns and universals as 'potentials' – seems to fit with historical linguistics better than the nomic and causal mechanisms underlying biological evolution. Moreover, the thoroughly relational nature of Whitehead's actual occasions – where 'objectified' past actual occasions live on in present ones – seems to fit very well with language where individual linguistic events necessarily involve other (past) linguistic events.

In a more general sense, the Whiteheadian framework when applied to language allows us, as Fortescue (2001: 2) emphasizes, to combine both the rationalist approaches to language in grammatical theory, etc. as applied to language as abstract structure (for example Katz 1981) and the empirically oriented approaches undertaken by for example the emergentist view on language of Bybee and Hopper (2001). In historical linguistics, this enables us to avoid substituting the history of a language with the history of linguistic cognition. The diachronic aspect of language – which is really the only *actual* aspect – is rooted in the individual actions and 'moments of linguistic cognition' of speakers, and it is from the fallible grasping of social norms by these speakers that historically specific grammars emerge. There is no real contradiction between this and between regarding language as abstract structure.

### 5.2. Disadvantages of the framework

The most obvious disadvantage of the model presented here is that it does not assert a correlation between a genetic event (a split in a language, genetic continuity of a language, or the 'nongenetic' emergence of new languages) and specific linguistic results. Theoretically, it is possible for two languages to be held distinct in the model if they are spoken by different communities without any contact, even if the languages are structurally identical. This is a consequence of basing genetic markers of identity on diachronic networks or communities of linguistic events, rather than on structural criteria.

The strength of the traditional family tree model in historical linguistics is that it is to some extent immanent in the comparative method. The reconstruction of a more or less unitary proto-languages on the basis of the comparison of different linguistic varieties today will always lead to some kind of family tree diagram. The model sketched here implicitly assumes that there are linguistic situations where an application of the comparative method yields the wrong results (if any), if extralinguistical circumstances such as the ethnological history of the speakers are not taken into account. But this seems to be simply a feature of linguistic history. As Muysken and Bakker (1994: 42) note, Angloromani is a language of ethnic Romani with a largely Romani lexicon and an English grammar, Media Lengua is a language of ethnic Quechua with a largely Spanish lexicon and a Quechua grammar. Counterposed sociohistorical situations have led here to very similar linguistic outcomes. A strict application of structural criteria would probably lead to a classification of Ma'a as genetically Bantu (based on its largely Bantu bound morphology), Media Lengua as Quechua and Angloromani as English. Reasonable as such classifications seem, one may well wonder whether they are useful. Languages do not have disembodied histories of their own, apart from the history of the uses they have been put to by their speakers. If genetic classifications and the resulting family tree diagrams drawn of languages do not – albeit very schematically – correlate with the social history of speech communities, they signify nothing.

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i I will use 'genetic linguistics' and 'the family tree model' more or less interchangeably, and with those terms I mean a conception on the history of languages based on the following premisses:

1) In a meaningful sense, a language at time *n*+1 may be said to be a genetic ancestor of a language at time *n*, and, with very few exceptions, languages have only a single genetic ancestor.

2) Languages change over time.

3) Languages show internal variation in regional and social dimensions, which a consequence of the fact that linguistic innovations do not necessarily affect all regional and social varieties of a language. Over time, linguistic varieties will tend to diverge.

4) From the three premisses above, it follows that the evolution of daughter languages from an ancestor language may be depicted according to a tree model. With very few exceptions, this model is universally valid.

ii In one crucial aspect, the notion of 'event' as used here differs from Croft's 'utterance': Croft (2000: 26) defines utterance as ”a particular, actual occurrence of the product of human behavior in communicative interaction (i.e. a string of sounds), as it is pronounced, grammatically structured, and semantically and pragmatically interpreted in its context.” The linguistic event as I will use it here explicitly involves one mind

only: a speaker producing an utterance, engaging in verbal thought, or interpreting an utterance directed at her. Thus a linguistic event (as used here) is always subjective. The analysis of linguistic events proceeds through the same methods as those used in human history – Collingwood's 're-enactment'.

iii Possibilities here should not be confused with logical possibilities in the sense of 'possible worlds'. Certainly there is nothing logically contradictory in the abstract notion of a unicorn, and one may conceptualize a coherent possible world with unicorns – but the likelihood that the abstract notion of 'unicorn' is instantiated in the near future of actual events playing themselves out on our particular planet is just about zero. The set of 'real and present possibilities' open to be actualized in the future of the specific current event (and the multitude of past, objectified events immanent in it) is restricted: "(...) there are no actual occasions in the future to exercise efficient causation in the present. What is objective in the present is the necessity of a future of actual occasions, and the necessity that these future occasions conform to the conditions inherent in the essence of the present occasion." (Whitehead 1933: 251). It is only on this condition that history is understandable: it is precisely the way human actions proceed non-deterministically, yet conditioned and constrained in many ways by the situation they take place in, that history becomes history - in that historical events become an object to understanding in the hermeneutic sense. If human actions were unconstrained in that the set of 'possible futures' open to be actualized by my actions equalled the set of logically possible futures, they would, for all intends and purposes, be random events, and not be understandable by any means.

iv This difference between historical and physical events should be nuanced a bit. As Joynt and Rescher (1961: 152-153) point out, physical events are non-unique only in as far their scientific description is concerned, i.e. in as far as they are, as concrete, actual events, subsumed under general types. Within a process-philosophical framework, *all* events are unique. Also, the methodological issues that may result from the uniqueness of historical events do not vitiate determinism as a philosophical position.

v Aside from past linguistic events as the object of perception and comprehension as utterances, a given linguistic event may also include its own past as stored in the memory of its subject. Useful here may be Polanyi's (1962: 601-602) distinction between focal knowing and subsidiary knowing. What is focally known is subject to our attention and conscious reflection; what is subsidiarilly known is not, but it is implicit in our performance of skills as well as in focal knowing. The integration of subsidiary knowledge into focal knowledge may be regarded as to be similar to Peircean abduction in that both involve an inference or an interpretation based on prior knowledge which is not open to conscious reflection (Mullins 2002: 201-202). Individual acts of abductive and deductive linguistic change (reanalysis and extension) are themselves linguistic events, as is the abductive inference of a rule from a number of examples stored in memory (but not necessarily open to conscious recall).

vi Arguably, a situation in which two structurally very different languages co-occur in the same 'community of linguistic events' without *any* differentiation with regards to the social context in which or the social subgroups by which they are used does not occur, and would provide no problem to the model presented here. If such a situation were, however, to occur, we would be dealing with a genuinely hybrid or mixed language. A more problematical case would be that of two isolated communities, without any communicative links between them, speaking a structurally identical language. Whether such a situation can be reasonably expected to occur is beside the point here. The model adopted would cause us to draw the counter-intuitive conclusion that in such a case we are dealing with two different (albeit structurally identical) languages.