Hillel, Stav A. (2009). 'A critique of lexical abruptness and *Stammbaumtheorie* in the Comparative Method.'

Assuming a time-honored position within the discipline of historical linguistics (Fox 1995, p. 33), the Comparative Method (CM) is a '*sin que non* of linguistic prehistory' (Harrison 2003, p. 213) given its purported ability to discern genetic relatedness between, and to reconstruct putative antecedent forms of, current language states (Fox 1995, p. 17). However, despite the continuous employment of the CM (Lehmann 1992, p. 151, Fox 1995, p. 122), novel insight into the nature of phonological change—Labov (1972), Wang (1969, 1977), Chen and Wang (1975), *inter alia*—and increasing concern with contact-induced language change phenomena—Campbell (2001), Dixon (1997), Matras (2009), Matisoff (2001), Dench (2001), amongst others—have raised reservations concerning its competency (Bowern & Koch 2004, p. 1). In this paper, I explore two limitations of the CM as a heuristic; its incapability to recognise: (i.) lexical gradualness vis-à-vis phonological change; and (ii.) language relations other than the phylogenetic.

Prior to critique however, what is the CM precisely and what light can it shed on the history of languages? The CM is a set of procedures[1] that compares synchronic states of a language *x* and of a language *y*, assumed to be genetically related[2], and constructs an antecedent language state of which both *x* and *y* are said to be reflexes, based on the 'cognate with' relation between two (or more) forms in a correspondence set (Harrison 2003, pg. 217). Each

[1]Importantly, albeit characterised as rigorously scientific by its proponents (Campbell p. 92), the CM is not a set of formalisations (Fox 1995, p. 19, McMahon & McMahon 2005, p. 19); its nature is not algorithmic (Dixon 1997, p. 31). As Dixon (1997) notes, it is 'essentially irrelevant' the way in which a proto-language is reconstructed (p. 31). Given this, the procedures of the CM are mere guiding principles, 'quasi-procedure[s]' according to Dixon (1997, p. 30). This is an important note to make in a critique of the CM; what we are critiquing is not an equation proper, merely an approach—at best a framework—to language prehistory (cf. Nichols 1996).

[2] This too is worthy of critique which space disallows. Briefly however, the decision of which languages to compare is "guided" by luck. As Crowley & Bowern (2010) comment, it 'is a matter of being in the right place at the right time' (p. 108). Greenburg's (1987) Mass Comparison—multilateral—technique has been thought to aid in the process, but, given the general rejection of Greenburg's historical linguistics methods by linguists (Campbell 2001, p. 45), seldom is it employed (McMahon & McMahon 2005, pp. 19-20).

correspondence set, e.g. *f: p: p* of languages states *x*, *y*, *z* respectively, is assumed to go back to a proto-phoneme *x*, based on—*inter alia*—the widest distribution of a segment in language states *x*, *y*, *z*. As for cognancy, it is the demonstration that a form *x* and a form *y* are formally and semantically alike (Lass 1997, p. 127). As initial exemplification, consider the following reconstruction of the Proto-Semitic etymon **ʃalam* 'peace':

PROTO-SEMITIC	AKKADIAN	ARABIC	HEBREW
**ʃalam*	*ʃalam*	*salam*	*ʃalom*

(Semitic Roots Repository, 2012)

It is assumed that the thee reflexes constitute cognates given their similarity in form and meaning: *SalVm*[3] 'peace.' The etymon **ʃalam* is reconstructed, given its postulated phones exhibit the widest distribution in the daughter languages. The above example yields the following phoneme inventory and rule(s) whence the daughter languages are derived:

PROTO-SEMITIC

Consonants phonemes:

*m

*ʃ

*l

Vowel phonemes:

*a

Rules:

*ʃ → s in Arabic

[3] Where *S* = *s* or *ʃ*, *V*= some vowel *x*.

Genetic relatedness and language subgroupings are then able to be inferred from a lattice of shared retention/innovations—common proto- and novel-features respectively—and the relative chronology between them, yielding a phylogenetic tree as in figure 1 below:

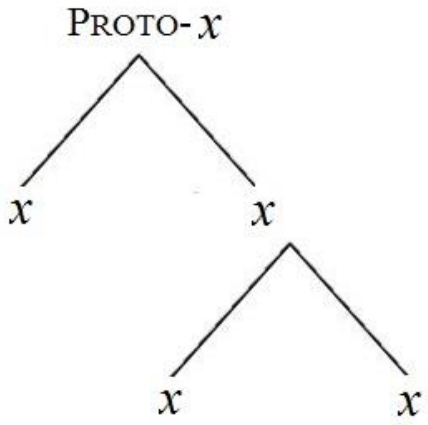

Figure 1, Phylogenetic tree.

Any critique of the CM is simultaneously a critique of the Neogrammarians, in whose theoretical paradigm the CM is situated (Ross & Durie 1996, p. 3). The view of sound change implicit in the CM is the adoption of the Neogrammarian hypothesis (Hale 2007, p. 124), which states that 'sound laws admit no exception' (Lehmann 1984, p. 19). In its application, this means:

(i.) a sound change *x*, occurring in a given definable phonetic environment, affects all forms in the language in question;

(ii.) a sound change *x* is diffused throughout the entire speech community in question.

(McMahon 1994, p. 20, Hock 1986, pp. 630-633)

A corollary of the contents of (i.) and (ii.) is that there can never be a time, given a rule s→ʃ /_V [+high] for instance, where a form *x*, exhibiting the appropriate environment, has s, and a form *y*, exhibiting the same environment, has ʃ (Atkinson, Kilby & Roca 1982, p. 332). That is, for the

Neogrammarians, sound change is *lexically abrupt*[4], i.e., occurring in all forms with the appropriate environment simultaneously (Harasowska 1998, p. 31).

However, the reactionary doctrine of Gilliéron, that 'every word has its own history' (Iordan & Orr 1970, p. 107), and its substantiation by Wang (1969, 1977), Wang and Chen (1975), Lass (1984), amongst others, has evidenced that sound change is, if not invariably, at least at times, *lexically gradual*. This view of phonological change known as lexical diffusion suggests that there can be a time in which a form *x*, exhibiting the appropriate environment, has s, and a form *y*, exhibiting the same environment, has ʃ (Phillips 2006, pp. 1-7). Labov (1981) too exemplified lexical diffusion, refuting the Neogrammarian view, when he demonstrated that the lexical diffusion of the lexical split of /a/ in Philadelphia was observable in certain forms but not others (p. 267). As exemplification, consider the following data from Sommerfelt (1962, p. 75), where the elision of /χ/ before /w/ is slowly diffusing through the lexicon of Welsh:

$Time_1$	$Time_2$	$Time_3$	$Time_4$	$Time_5$	
χware	*ware*	*ware*	*ware*	*ware*	'to play'
χwanen	*χwanen*	*(χ)wanen*	*wanen*	*wanen*	'flea'
χwa:ir	*χwa:ir*	*χwa:ir*	*χwa:ir*	*wa:ir*	'sister'

Important to our point, lexical items with the environment: *#_w* at $time_2$, $time_3$, and $time_4$ exhibit variation; 'to play' at $time_2$, for example, has elided /χ/, whereas 'flea' and 'sister' retain /χ/. Such data would be unanticipated given a lexically abrupt, that is, Neogrammarian, view of sound change.

It is thus the adoption of the Neogrammarian view of sound change that renders the CM incapable of recognising the lexical gradualness of phonological change. To see what this may mean in application, consider the following Modern Greek[5] data from Babiniotis (2000, p. 303), particularly the lexemes in the Cretan and Cypriot varieties, where a change from /s/ to /ʃ/ is gradually diffusing through the respective lexica:

[4] The Neogrammarians also understood sound change as *phonetically gradual*, i.e., imperceptible to speakers, change occurring incrementally (McMahon 1994, p. 49).

[5] The division of Modern Greek into Athenian, Salonikan, Cretan, and Cypriot varieties is based on Trudgill's (2003) analysis.

ATHENIAN	SALONIKAN	CRETAN	CYPRIOT	
ɛcli'sia	*ɛcli'sia*	*ɛcli'ʃia*	*ɛcli'ʃia*	‘church’
jɛri'sia	*jɛri'sia*	*jɛri'sia*	*jɛri'sia*	‘Senate’
lafiroɣoɣi'sia	*lafiroɣoɣi'sia*	*lafiroɣoɣi'sia*	*lafiroɣoɣi'sia*	‘looting’
sinu'sia	*sinu'sia*	*sinu'sia*	*sinu'sia*	‘copulation’

The reflex ‘church’ yields the correspondence set: *s : s : ʃ : ʃ*, the other three: *s : s : s : s*. Wanting to reconstruct a pre-form of the four varieties, the CM would suggest the postulation of two proto-phonemes, undoubtedly an *s, and another proto-phoneme *ʃ. Importantly, exceptionlessness precludes the writing of the rule s → ʃ /_ V [+high] in the Cretan and Cypriot varieties, as, given (i.) and (ii.), one would anticipate that ʃ occur in the lexemes for ‘Senate’, ‘looting’, and ‘copulation’ too. Moreover, evoking a causal explanation from another strata of the grammar—or indeed from a language-external source (e.g.: shibboleth forms, frequency etc.)—is precluded, given the (pre-)structuralist view of the autonomy of sound change espoused by the Neogrammarians, that is, phonological change is unconditioned by non-phonetic factors (Kiparsky 1988, p. 363). However, as Mackridge (1985, pp. 16-17), Joseph & Philippaki (1987, p. 232), Luraghi, Pomei & Skopeteas (2005, pp. 15-16), *inter alia* comment, ʃ has never been an occurring segment (phoneme/phone) in the phonology of Greek. Consider for instance that the orthographic sigma <*σ*> represents both s and ʃ in the lexemes for church <*εκκλησία*> in the Creten (Kontosopoulos 2007, p. 62) and Cypriot (Yiagoulis 1994, p. 46) varieties. Accordingly, this example demonstrates that the inherent conceptualisation of sound change in the heuristic as exceptionalessness can result in the postulation of proto-segments erroneously reflective of a language’s (pre-)history.

Influenced by genetic metaphor from evolutionary biology (Hoenigswald & Wiener 1987), the CM also assumes the *Stammbaumtheorie*—the family tree model—(Dixon 1997, p. 49), which suggests that language genesis is explainable by language (dialect) splits (Bynon 1977, pp. 63-64, Fox 1995, p. 123) effected by language-internal change (Odlin 1989, p.8). Moreover, the tree model implies that these splits are neat and discrete (Bowern & Koch 2001, p. 8). That is (and grossly simplified), an appropriate number of differentiating innovations between a variety *x* and a variety *y* is the divergence of that variety *x* from *y*; thus, when we say for example, that the Romance languages *developed* from Latin, *developed* refers to—insofar as the CM traditionally understands it—the increase of differentiating innovations and ensuing

split[6]. Given this, the CM constructs subgroups, that is, a band of languages that 'have undergone a set of common innovations and can be reconstructed as descending from a single language' (Bowern & Koch 2011, p. 2), from which degrees of genetic relatedness can be inferred (Trask 2000, p. 327) dependent upon on the relative distance between the languages in question on the tree schema. For example, below in figure 2, phylogeny is greater between x_1 and x_2, than between x_1 and x_4; the "parent" of x_1 and x_2 is PROTO-x, of x_3 and x_4, x_2:

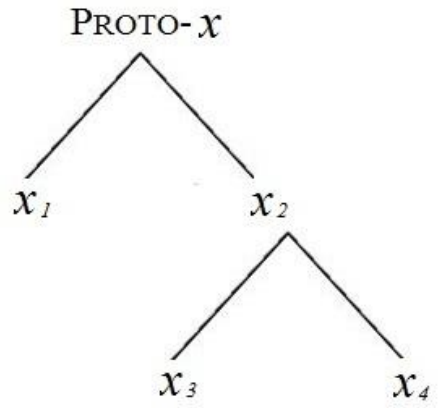

Figure 2, Degrees of phylogeny.

As Noonan (2010) notes, the CM is a heuristic for demonstrating genetic relatedness resulting from variety divergence (p. 63), that is, the process by which x_1/x_2, and x_3 /x_4, are differentiated from PROTO-x and x_2 respectively. It is precisely this—the ability of the CM to demonstrate only phylogeny by divergence—that precludes from consideration other mechanisms of language change. This is problematic when considering pidgins/creoles and mixed/hybrid languages in which language contact—convergence—constitutes a fundamental role and where divergence becomes somewhat of a secondary factor (Holm 2000, p. 3). Moreover, the corollary of divergence—that every language has only one "parent"—is also retrogressive when considering genetic classification in such cases (Fox 1995, p. 125). For instance, consider the case of Modern Hebrew, whose genetic classification is contested. Whilst the CM would unproblematically place the language in the Semitic Family based on the 'cognate

[6] The demarcation line between a state in which two varieties exist with differentiating innovations and a state in which we have two languages is somewhat arbitrary. For our purposes here, let us accept the principle of mutual intelligibility, that is, if speakers of *x* can comprehend speakers of *y*, and conversely, *x* and *y* are two varieties of the same language. If not, *x* and *y* are distinct languages (Hudson 1980, p. 35).

with' relation (Faber 1997, p. 6, Kalev 2010, p. 1, Noonan 2010, p. 57, Wexler 2006, p. xix, Zuckermann 2008, p. 72), since the language's revival, many have questioned this position, given its various sources of influence (Matras 2009, p. 210). For example, Wexler (as in Zuckermann 2008, p. 73) suggests that Modern Hebrew is essentially Indo-European, given its relativists were predominantly speakers of Indo-European languages (Yiddish, Russian, Polish, etc.), only its lexis Semitic (Hebrew as lexifier). In contrast, Zuckermann (2008) suggests that it is genetically both Indo-European and Semitic (p. 73) characterising it 'Semito-European' and 'hybrid' (2006, p. 57). As exemplification of this "amalgamate" phylogeny, consider the following illustration from Zuckermann (2009, p. 51):

(1) *yésh*	*l-i*	***et***	*ha-séfer*	*ha-zè*
EXIS	DAT-1sg	ACC	DEF-book	DEF-msgPR
There is	for me		the book	the this

'I have this book'

(2) *yésh*	*l-i*	*ha-séfer*	*ha-zè*
EXIS	DAT-1sg	DEF-book	DEF-msgPR
There is	for me	the book	the this

'I have this book'

In clause (1)—what is said to be more natural of Israeli speech—, *ha-séfer* 'the book' is treated as the direct object marked by the accusative *et* 'ACC', characteristic of Standard Average European, what Zuckermann (2009) calls 'the *habere* 'to have'—taking the direct object—pattern' (p. 51). In clause (2), *ha-séfer* 'the book', unmarked by *et* 'ACC', is the subject, characteristic of "Semitic", that is, older/pre-revival, Hebrew. As this example evidences, the CM is not able to capture the complexity in cases where super-, sub-, (and ad-) starta, all potential "parents", constitute important sources of a language's genetic profile. In place of the CM's tree schema as in figure 1, a more accurate (but incomplete) description—at least for Modern Hebrew—would be something akin to that in figure 3 below:

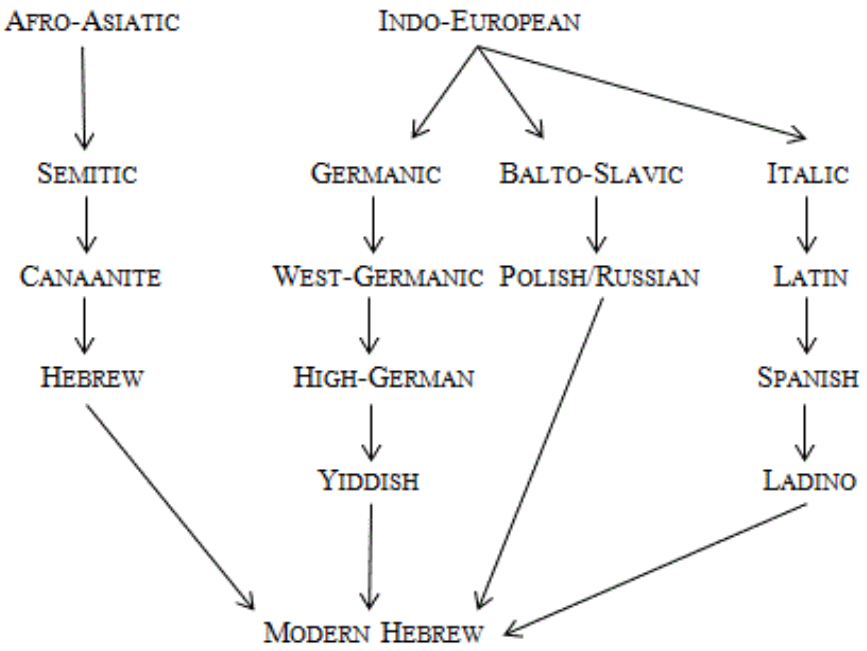

Figure 3, Descriptively more accurate phylogenetic tree for Modern Hebrew.

The phylogeny of English is another case in point. Given the language's rich history of language contact and borrowing, its genetic profile is somewhat obscured (Stockwell & Minkova 2001, p. 19). On the one hand, the high number of common grammatical and lexical forms with Germanic languages (genetic retention) in English, allows the CM unequivocally to situate the language in the Germanic (Western branch) language family (Fox 1995, pp.123-125, Dixon 1997, p. 52), e.g.: Proto-Germanic (P-G) **wiban* > Old English (OE) *wif* > Modern Englsih (ME) *wife*, P-G **fader* > OE *fæder* > ME *father*, P-G **kwon* > OE/ME *cow*, P-G **unda* > OE *ond* > ME *and*. On the other hand however, the CM fails to recognise the influence of the French superstratum —amongst others—to be found in its lexicon, phonology, and grammar (Lutz 2012, p. 510). For instance, according to the Oxford English Dictionary (2012), 28.3% of lexical items of current English are of French origin, e.g.: Old French (OF) *jugier* > Anglo-Fr (A-F) *juger* > ME *judge*, OF *arbiter* > ME *arbiter*, Middle-French (ME) *carrotte* > ME *carrot*, OF *moton* > ME *mutton*. At the level of phonology, the influence of French is evident in alternating forms such as *half* /haf/ ~ *halves* /havs/, *house* /haʊs/ ~ *houses* /haʊzəz/, a result of the phonemicisation of the English allophones [f] and [v] with the influx of French lexical items with distinctive initial /f/ and /v/ in the 13th century (Thomason & Kaufman 1988, p. 124). As for the morphological level,

English exhibits the following French suffixes: *-ation* 'state of being X-ed', *-acy* 'state or quality', *-age* 'condition/state', *-ery* 'collectivity', *-ment* 'condition of being X', amongst others (Amsler 1999, p. 223). These facts suggest that English, whilst Germanic *by divergence*, can be characterised as Romance *by convergence*. Indeed, this is reflected in Bailey & Maroldt's (1977) Middle English creole hypothesis, where it is surmised that the Norse/Norman Conquests effected a process of creolisation given the contact between the respective languages—Norman French, Danish, English (Gerritsen 1984, p. 117). Moreover, vocabulary enrichment during the Renaissance constitutes a source of language contact for English, the Greek (G) *katastrofi* > ME *catastrophe*, G *poliγlot* > ME *polyglot*, and the Italian *moderato* > ME *moderato—inter multa alia—*, entering the lexicon (Stockwell & Minkova 2001, p. 41, Baugh & Cable 1996, p. 195). Paralleling the case of Modern Hebrew, the CM is unable to capture the developments that have influenced English other than the language's divergence from its single "parent." The following tree schema is more representative (but again incomplete) of English:

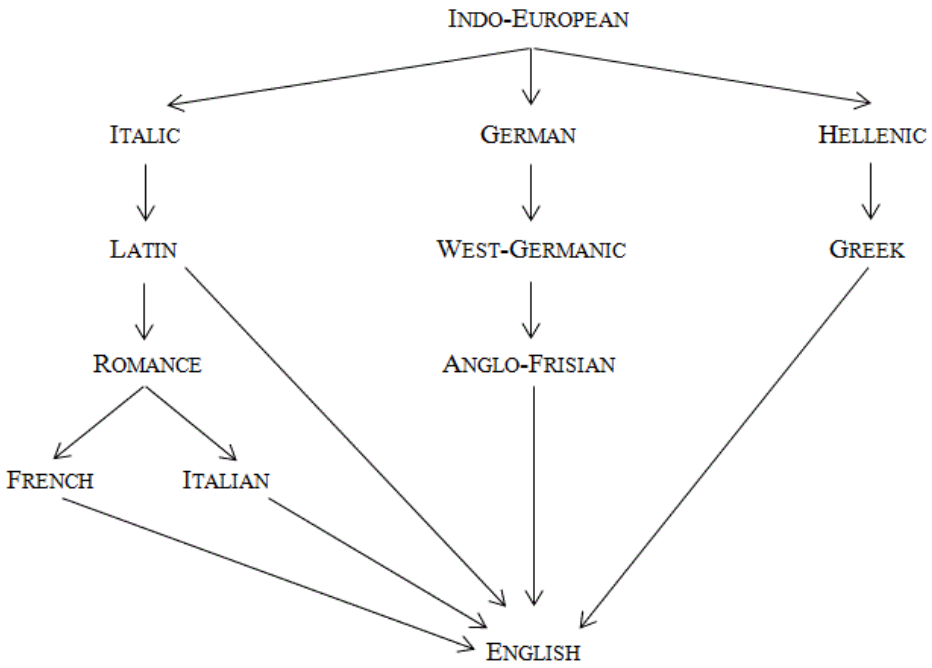

Figure 4, Descriptively more accurate phylogenetic tree for English

In this paper, I demonstrated that the CM yields an inaccurate image of the nature of language evolution; the heuristic implies that sound change is *lexically abrupt* and that genetic relatedness is only a question of divergence, not convergence. Albeit others have proposed different models/conceptualisations—Schmidt's (1872) *wave model*, Swadesh's *lexicostatistics* (and subsequent *glottochronology*) (1950), *inter alia*—the CM is still employed in the discipline (Lehmann 1992, p. 151, Fox 1995, p. 122), as, following Harrison 2003, it 'is the only tool available to us for determining genetic relatedness amongst languages' (p. 213). Whilst we have critiqued two assumptions inherent in the method, we note that the CM is not without worth. For example, with reference to sound change, Lass (1997) suggests that both views, the Neogrammarian and the lexical diffusional, are correct, stating that 'all phonological change starts with lexical diffusion and most ends up Neogrammarian, given enough time' (pp. 140-141). Indeed, this does seem to be a possibility; above in Sommerfelt's (1962, p. 75) data for example, at time$_5$, elision of intial /χ/ is complete, that is, "Neogrammarian." With reference to genetic relatedness, as Thomason and Kaufman (1988) note, the CM is successful when considering the genetic profile of those languages which have undergone 'normal transmission' (p. 10), creoles and the like outside its scope. As they comment, 'a language cannot have multiple ancestors in the course of normal transmission' (Thomason and Kaufman 1988, p. 11). In conclusion, it seems that whilst the CM is undoubtedly useful, any reconstruction and family tree can only ever be tentatively accepted as indicative of linguistic prehistory.

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