

RESEARCH

The many faces of uniformitarianism in linguistics

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The notion of uniformitarianism, originally borrowed into linguistics from the earth sciences, is widely considered to be a foundational principle in modern historical linguistics. However, there are almost as many interpretations of uniformitarianism as there are historical linguists who take the time to define the notion. In this paper I argue, following Gould (1965; 1987), that this confusion results from the fact that uniformitarianism as originally proposed in geology is not itself a uniform notion, and permits at least four readings. Only some of these readings involve substantive claims rather than methodological imperatives, and only some of these readings are useful for the study of language change. The weakest conclusion to be drawn is that these distinct notions need to be kept apart when invoked by historical linguists.

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1 Introduction

In this paper I examine the notion of uniformitarianism in modern-day historical linguistics. Uniformitarianism is widely believed to have been borrowed into linguistics from Charles Lyell's *Principles of Geology* (1830–1833), and some version of uniformitarianism is assumed by scholars of various theoretical persuasions, e.g. Labov (1972a; b; 1994), Hock (1991), Lass (1997), Croft (2003), Roberts (2007). I argue here that these conceptions bear little in common with each other. Using Gould's (1965) distinction between methodological and substantive uniformitarianism in geology as a prism, and taking into account the development of thought in geology and the other historical sciences since Lyell's work, I discuss the utility and necessity of a uniformitarian principle for historical linguistics, and what such a principle would look like.

Uniformitarianism can be defined, at a very broad-brush level, as the principle that the present is key to the past; in Section 2 I delve into the definition in more detail. The history and origins of linguistic uniformitarianism in the 19th and early 20th centuries have been addressed in detail in various works (Wells 1973; Christy 1980; Nerlich 1990: Chapter 3; Roberts 2017: 338–342), and I will not recapitulate their findings here. Section 3 is a critical catalogue of how linguists have used the term. Section 4 discusses the relations between these different uses, and Section 5 concludes.

2 The fate of uniformitarianism in geology and beyond

Though present-day linguists seeking intellectual antecedents for their uniformitarianisms occasionally cite 19th-century geologists, particularly Lyell, the later history of uniformitarianism in geology and the other historical sciences has rarely been taken into account.¹ This is particularly unfortunate since the subsequent literature on

¹ In fact, Lyell did not coin the term “uniformitarianism”; that was Whewell (1832), in a review of volume 2 of Lyell's *Principles of Geology*. Nor was Lyell enormously original in his uniformitarian thinking: the crucial ideas reached Lyell from the work of James Hutton via John Playfair, and were present in earlier work

uniformitarianism reveals a systematic ambiguity in the usage of Lyell and his contemporaries.² Janda & Joseph (2003: 23–37) anticipate some of the discussion provided here in their handbook introduction, but, despite being widely cited, their attempt to sort the wheat from the chaff as regards uniformitarianism in particular has apparently had little influence (see also the recent discussion in Roberts 2017). The present paper goes beyond the discussion in these works by drawing a comparison with the fate of uniformitarianism in other historical sciences in the last fifty years and identifying a wider range of attested and potential linguistic uniformitarianisms, as well as providing tentative suggestions for how the problem can be resolved.

A short but highly influential paper by Gould (1965) provides an especially sharp critique of the term “uniformitarianism”. Gould observes that the work of Lyell and his school had two prongs. One was substantive: Lyell argued on empirical grounds against a major role for catastrophic change in the earth’s geological history, preferring instead natural processes that were steady and relatively constant. Another was methodological: Lyell wanted to establish geology as an “exact science” (1833: 3), and to do so he felt it necessary to assert the uniformity of natural laws across time and space, thus denying the possibility of supernatural explanations for natural phenomena. Gould (1965: 224) shows that this was not itself an empirical postulate that Lyell sought to defend on the basis of evidence, but rather an assumption intended to bring geology within the purview of empirical investigation more generally (cf. also Hooykaas 1963: 32).³

For Lyell, the substantive and methodological issues were related, but not conflated. Whewell (1832) initially applied the term “uniformitarianism” to the substantive thesis that the rate of geological change was uniform on balance across time, and it was later geologists who started to apply the term more broadly. This led to a “pseudocontroversy [...] as debunkers of uniformitarianism attack the substantive theory while supporters uphold the methodological principle” (Gould 1965: 225).

Gould goes on to argue, with many others (Dawson 1894; Krynine 1956; Read 1957; Simpson 1964: 132; Gould 1980; Baker 1998; Knight & Harrison 2014; Pievani 2014; Romano 2015), that Lyell’s substantive proposal is false, and that there is no constancy of rate in geological change. Romano (2015: 73) goes so far as to state that all substantive uniformitarianisms in geology “have been definitively falsified”; Balashov (1994) suggests that much the same is true in cosmology, given the acceptance of the Big Bang theory and the almost total rejection of its competitor the steady-state theory (cf. McCrae 1968; Simpson 1970: 57–58; Kragh 1996). Such claims, in turn, can in principle be challenged on the basis of evidence and argumentation. Some sort of substantive uniformitarian thesis might turn out to be true for linguistics, geology, and cosmology, for one or two but not the other(s), or for none of them: these are empirical questions.

Methodological uniformitarianism, by contrast, is regarded by Gould both as a necessary assumption for scientific inquiry – the “basis for extrapolating from the known to the unknown” (1965: 226) – and as a redundant term in modern science, since it can be

(see Gould 1987: 61–97 for discussion and contextualization). Janda & Joseph (2003: 148–149, note 44) provide an impressively long list of scholars espousing uniformitarian ideas before Lyell, going back at least to Galileo Galilei; Shea (1982: 456) suggests that Herodotus was a uniformitarian.

² Kennedy (2000) and Slaymaker (2006) are encyclopedia treatments informed by the critical voices surveyed here. Romano (2015) provides a recent and comprehensive review of the fate of the term in geology.

³ Writing slightly earlier, Hooykaas (1963), in a detailed study of uniformity in geology, theology, and biology, independently reaches many of the same conclusions as Gould. Following a continental European usage, Hooykaas proposes to distinguish between “actualism” (roughly Gould’s methodological uniformitarianism) and (more) substantive uniformitarian claims (see also Naumann 1992). This paper is framed around Gould’s discussion because Hooykaas admits that he is not fully consistent in distinguishing the two terms (1963: v), but Hooykaas’s views will be returned to in Section 4.

contrasted only with the now largely discredited view that supernatural interventions played a role in shaping world history (cf. also Hooykaas 1963: 140).⁴ Gould therefore suggests that the term be abandoned entirely (see also Shea 1982; Janda & Joseph 2003: 36).

Gould (1987: 119–126) builds on this bipartite distinction (following Rudwick 1972). Methodological uniformitarianism is divided into two subcategories: *uniformity of law* and *uniformity of process*. The uniformity of natural law is a precondition for rational investigation of an unobservable past, since otherwise there would be no warrant for extending inductive inference into the diachronic domain. Uniformity of process is just the reflex of Ockham's razor when constructing explanatory narratives in the historical sciences: "If a past phenomenon can be rendered as the result of a process now acting, do not invent an extinct or unknown cause as its explanation" (Gould 1987: 120). Both of these uniformities remain methodological heuristics, not testable claims.

Rudwick and Gould also divide substantive uniformitarianism into two: *uniformity of rate* and *uniformity of state*. The first of these has already been addressed: it is the claim that (geological) change proceeds at a steady, uniform pace. Uniformity of state, on the other hand, is the claim that at any given time the earth has looked and behaved – on balance – much as it does today, and hence that there is no global vector of progress. Clearly the uniformities of rate and of state are empirical claims; moreover, they are logically independent of one another. It is possible for change to proceed abruptly and catastrophically while still tending in no particular direction overall, or conversely for it to proceed inexorably along a certain overall trajectory in a stately, gradual fashion.

With Gould's and Rudwick's distinctions in mind, we can now turn to examine the uses linguists have made of the concept.⁵ It will be seen that different linguists have picked up on different facets of Lyell's composite notion. Uniformitarianism is often summed up by means of the aphorism "the present is key to the past" (cf. Labov 1975). Unfortunately, this slogan is just as ambiguous with regard to the substantive/methodological cut as the notion of uniformitarianism itself (Simpson 1964: 130; 1970; Gould 1965). This "semantic chaos" (Romano 2015: 66) is a problem in need of a solution.

3 A typology of linguistic uniformitarianisms

This section catalogues the linguistic equivalents of Gould's and Rudwick's four uniformitarianisms: state, rate, law, and process. In each case I consider what a linguistic uniformitarianism of this type could look like, and whether it has actually been proposed by a linguist.

3.1 Uniformity of rate

Uniformity of rate is not a position that has had many defenders in the history of linguistics.⁶ In its original form, glottochronology – the branch of lexicostatistics dealing with how languages relate to each other chronologically – was based on the assumption that basic vocabulary changes occur at a constant rate (Swadesh 1952), with approximately 81% of basic vocabulary retained in any given millennium. However, as Bergsland & Vogt (1962:

⁴ This recognition did not originate with Gould. In a review of Müller (1864), commenting on the Lyell-inspired ideas that "what is real in modern formations must be admitted as possible in more ancient formations, and that what has been found to be true on a small scale may be true on a large scale", Whitney (1865: 567) remarks that "We should have called these [...] obvious considerations, which hardly required any illustrations."

⁵ There exist more fine-grained decompositions of the notion of uniformitarianism. Mayr (1982: 375–381) identifies six distinct components (see also Simpson 1970). For the purposes of this paper, Gould's (1987) four will suffice.

⁶ Despite its name, the Constant Rate Hypothesis of Kroch (1989) in fact has nothing to do with uniformity of rate: it is about the rates of change in different contexts for a single linguistic change during its time course.

128) point out, “The truth of this assumption is by no means self-evident; no proof has been given that it derives from the nature of language itself”. Bergsland & Vogt show that in fact the rate of vocabulary change can vary dramatically between languages: East Greenlandic, for instance, has a relatively high rate of replacement, whereas that of Icelandic is comparatively low. Today, glottochronology is rejected entirely by most historical linguists (see e.g. Wells 1973: 429–430; Campbell & Poser 2008: 167–168), and those researchers who continue to pursue related approaches are quick to point out that they no longer require the assumption of a constant rate of change (Gray & Atkinson 2003: 436).⁷

Work in evolutionary biology by Gould and others on punctuated equilibrium (see Eldredge & Gould 1972) – the idea that change may occur very rapidly rather than smoothly and gradually under certain circumstances – has perhaps been more influential in linguistics than any conception of uniformity of rate. Dixon (1997) is the most extended presentation of the idea in relation to language change. In Dixon’s model, the history of languages is characterized by lengthy periods of relative stasis punctuated by short, sharp bursts of change. For Dixon, natural and social events such as mass migrations, technological developments, and natural disasters are crucial in triggering such rapid change. Though it has gained some traction with archaeologists, Dixon’s model has remained controversial among linguists, and the languages of Australia, which Dixon takes to support his approach, have been claimed to be more amenable to a gradualist scenario than previously thought (papers in Bower & Koch 2004). In an overview article on punctuated equilibrium, Bower (2006) concludes that the jury is still out.

Punctuated equilibrium has also found application in Lightfoot’s (1991; 1999) “catastrophist” approach to syntactic change: “languages sometimes undergo a period of rapid change, then settle into relative stasis. [...] Changes sometimes take place “catastrophically”, and [...] grammars change abruptly” (1999: 105).⁸ This too has not been without its critics: see e.g. Plank (1984) and Fischer (2007: 105–111), and diachronic generative syntacticians have also tended towards embracing a more gradualist picture of change in recent years (e.g. Biberauer & Roberts 2008; Westergaard 2009; Roberts 2010; 2017; Biberauer & Walkden 2015; Mathieu & Truswell 2017). Crucially, however, neither Dixon nor Lightfoot has ever claimed that their punctuated-equilibrium-inspired models of change are a methodological necessity; rather, they claim that such models are empirically supported. Perhaps for these reasons, almost no one has, to my knowledge, proposed a definition of uniformitarianism in the linguistic literature that ties it to a constant rate of change. Nichols (1990: 489) argues that the rate of branching in linguistic phylogeny is fairly constant, but this is not part of her definition of uniformitarianism (1990: 476), instead following from uniformitarianism in conjunction with her empirical findings. Campbell & Poser (2008: 309–316) provide some reasons for scepticism.

The only explicit defence of uniformity of rate I am aware of is in a recent chapter by Plank (2015), who makes the case that the time needed for grammaticalization processes is relatively uniform, and frames the issue in terms of uniformitarianism versus “diversitarianism”. Concretely, Plank suggests that, when locative nouns develop into adpositions, the time taken is usually around 400 years or just over 15 generations. For Plank this is very much an empirical issue, however, and he is at pains to emphasize the tentative nature of this conclusion, given that research on the stability of features and the duration of changes is still in its infancy (2015: 83): most such research has been *inferential*, based

⁷ See Bochkarev, Solovyev & Wichmann (2014), however, for a recent tentative suggestion that Swadesh’s hypothesis of constant rate may be correct when the window of observation is sufficiently large, and evidence from the Google Books corpus pointing in this direction.

⁸ For explicit reference to punctuated equilibrium see e.g. Lightfoot (1991: 173).

on present-day typological distributions (e.g. Dediu & Cysouw 2013; Kauhanen et al. 2018), with very little direct longitudinal work having been carried out either in apparent time or using the historical record.

3.2 Uniformity of state

By contrast, uniformity of state is at the heart of many definitions of uniformitarianism in the linguistic domain. Croft (2003: 49) puts it this way: “the rules that govern language structure today are the same that governed language structure yesterday and will be the same that will govern language structure tomorrow”, and, more generally (2003: 233), “languages of the past [...] are not different in nature from those of the present”. Roberts (2007: 174) characterizes uniformitarianism as “the idea that all languages at all times reflect the same basic U[niversal]G[rammar]”. Assuming that the rules that govern language structure in general are those provided by Universal Grammar, these two statements are equivalent.⁹

The Cartesian position that evolutionarily modern humans are uniform with respect to their innate endowment for language has been held by the majority of modern linguists (cf. e.g. Osthoff & Brugmann 1878: xii–xiii; Boas 1938: 143; Labov 1994: 23), and should almost certainly be the default assumption – the more so if Universal Grammar turns out to be much simpler than often maintained. However, it is still a substantive claim, and as such must be distinguished from methodological uniformitarianism. Roberts (2007: 174), for instance, rejects the idea that “earlier stages of certain languages may have lacked subordination [i.e. clausal embedding–GW] altogether” on the grounds that it is not compatible with his conception of uniformitarianism, since Universal Grammar does not allow for grammars without this property.¹⁰ But if the view of Pinker & Bloom (1990) is adopted, according to which the emergence of language in the species consisted of “an evolutionary sequence of increasingly complex and specialized universal grammars”, then we might in principle expect there to have been languages without subordination at an earlier stage, before Universal Grammar in its current form had crystallized. It is worth emphasizing that, if indeed it happened, this crystallization must have taken place at the very latest 50,000 years before the advent of the written record (Fitch 2010: 273; Tallerman & Gibson 2012: 239–245), and so we would expect to see no trace of such languages today. Thus Pinker & Bloom (1990) and Roberts (2007) are not in conflict as regards the implications for historical linguistics as normally practiced – rather, the different predictions relate to what Lass (1997: 235) terms “palaeolinguistics” (cf. Roberts 2017: 343, 351).¹¹

Dediu & Ladd (2007) also argue that there exists genetic variation in respects that are relevant to the faculty of language in the broad sense; Berwick & Chomsky (2016: 171–172) argue that more recent work has failed to substantiate their claim. Crucially, regardless of whether they are correct, the stance that they argue for is incompatible with Roberts’s

⁹ From a functionalist perspective or a Minimalist perspective, things are not so simple. At least some of the rules that govern language structure in general may be the result of functional pressures canalized through diachrony, and at least some may reflect principles that are not inherent to UG but rather more deeply grounded in natural law (the “third factor” of Chomsky 2005). In that sense, Roberts’s (2007) version of uniformitarianism constitutes a somewhat weaker claim than Croft’s. I gloss over these distinctions in what follows.

¹⁰ This depends, of course, on what UG contains. Roberts (2007) allows for the possibility that a language might lack *finite* clausal embedding. Moreover, nothing in the formalization in Collins & Stabler (2016), for instance, forces a grammar to allow for clausal embedding of any kind. See in particular Roberts (2017: 352–356) for discussion of the implications of different conceptions of UG for uniformitarianism.

¹¹ It is also a moot point whether the systems developed by our evolutionary ancestors before modern Universal Grammar, if we follow Pinker & Bloom’s reasoning, should receive the label “languages” (cf. Campbell & Poser 2008: 391).

conception of uniformitarianism, at least insofar as such genetic variation relates to the faculty of language itself. Who is right is a substantive question, to be settled on empirical and theoretical grounds, and not purely a matter of basic scientific good practice (though see Section 4).

Some invocations of the uniformity of state in linguistics rest on shakier grounds. In particular, Roger Lass has repeatedly argued (1975: 10–12; 1978; 1980; 1993; 1997: 29, 235; 2000) that certain types of historical scenario are “methodologically inadmissible” in view of uniformitarian considerations. It is worth engaging with Lass’s arguments in detail here both because he makes his view of uniformitarianism particularly explicit (see in particular Lass 1997: 24–32) and because it constitutes a prime example of the most problematic type of uniformitarian reasoning.

Lass defines the crucial principle as follows:

General Uniformity Principle (Lass 1997: 28)

No linguistic state of affairs (structure, inventory, process, etc.) can have been the case only in the past.

Lass then takes a simple example (1997: 29): no living language has only rounded vowels, so it follows that we should not reconstruct a language stage that has this property. A more detailed and concrete invocation of the uniformity principle, essentially employing the same reasoning, is in Lass (2000: 216–218). Here, he argues that the claim that all grammatical material has its origin in lexical material – sometimes found in the literature on grammaticalization and unidirectionality (e.g. Hopper & Traugott 2003: 132) – implies that there was once a stage at which all languages were isolating, with only lexical material, and that this is in violation of uniformitarianism (as understood above) since at no time in recorded history has this been the case.

The argument as stated is valid, but the problem lies with Lass’s General Uniformity Principle. To see why, consider another hypothetical example. No living language contains the words *wulfaz* ‘wolf’ and *h^waperaz* ‘which of two’ and also allows referential pronominal subjects to remain unexpressed; yet we have no qualms about reconstructing this state of affairs for Proto-Germanic (Walkden 2014; Ringe 2017), despite being in clear violation of the General Uniformity Principle. This is clearly an extreme case: no one would maintain that reconstructing a language with these properties is inadmissible. The question then becomes: what is the difference between this case and the case of only rounded vowels or only lexical material, and how can we revise the principle to rule out the latter two while allowing the former? We cannot simply appeal to absolute (un)likelihood to settle the question, since the probability of a given language having the sequence of sounds /wulfaz/ for the meaning ‘wolf’ (for instance) must be infinitesimal.

Lass (1997: 26) himself warns against too simplistic an understanding of uniformitarianism, stating that we “must distinguish between what Simpson (1964) calls the “immanent” and the “configurational”” (see also Simpson 1964: 121–130; 1970: 59–60; Lass 1997: 28, footnote 35; and Nichols 1990 on “principles” vs. “conditions”). Only states of affairs that are immanent are protected by the General Uniformity Principle. Thus, some immanent law must be at work to rule out languages with only rounded vowels, or with no grammatical material. But, crucially, it is precisely these hypothesized “laws” that are in question when someone reconstructs a language with these properties. We are not necessarily dealing with rejection of uniformitarian reasoning in general: a reconstruction of a language with only rounded vowels could also be taken to constitute a (potentially implicit) denial of the immanence of the law that rules these out. Deciding which states of affairs/laws/processes/entities are immanent and which are merely configurational

involves making a substantive claim, and this involves construction of a predictive theory of one kind or another which goes beyond simple facts. Even a typological generalization, when extended into the past beyond the present-day dataset that motivates it, represents a theory: in extending it in such a way, we are claiming that it reflects an immanent fact about language rather than a configurational one. Such claims can always be challenged.¹²

An instructive parallel to Lass's (2000) rejection of pre-grammaticalization languages with no grammatical material is again provided by Lass (1997: 26) himself. Here Lass observes that, at some point in its history, there was no life on Earth, and subsequently life developed. This is "not in itself problematical" because it is the processes that matter, and processes that we can observe in action today can give rise to amino acids from simple inorganic compounds: no immanent principle of biology or chemistry rules out a state of affairs in which Earth contains no life. The case of a language with no grammatical material is entirely analogous: processes of grammaticalization that we know to be operative in today's world could easily have been responsible for the "first step" and the earliest instances of grammatical morphology. Unless some postulated law rules out the existence of a language with no grammatical material, the mere fact of its nonexistence today is not problematic in the slightest. And if there is such a law, the question becomes a substantive one: is it correct?¹³

In sum: the same reasoning that Lass (2000) uses to rule out languages with no grammatical material could be employed, wrongly, to rule out a state of the world in which no life (yet) existed, or in which all life was single-celled. Lass (2000: 216) attempts to defuse this objection by stating that this "presupposes a theory (such as exists in biology) that accounts for increase in typological or phyletic diversity over time, and there is no such theory in linguistics". But this puts the cart before the horse: the claim that all grammatical material has its origin in lexical material is precisely such a theory, since it predicts a transition from purely lexical languages to mixed lexical-grammatical languages of the kind that we see today. Whether or not it is a *good* theory is another question: the other arguments in Lass (2000), and the criticisms of grammaticalization theory adduced in the papers in *Language Sciences* 2001, would suggest that it isn't. But that's beside the point here.¹⁴

To close this section, it should also be noted that several linguists in the 21st century have explicitly rejected the uniformitarian position. The examples I know of involve the rejection of one or more substantive uniformitarian claims. Newmeyer (2002: 365) suggests that the idea that "there is some overall directionality to language change" – and specifically that OV is more likely to shift to VO than vice versa (cf. also Gell-Mann &

¹² Lass (1997: 26) also proposes a Principle of Uniform Probabilities, which states that "The general distribution of likelihood in a given domain was always the same in the past as it is now". The argument presented in the main text extends to this principle too: this is only the case where the distribution of likelihood is governed by immanent (rather than configurational) factors.

¹³ For further criticism of Lass's arguments against unidirectionality, see Comrie (1981: ch. 10; 1992; 2003). Comrie (2003) claims, following Deutscher (1999), that in other sciences uniformitarianism is understood only diachronically, relating to processes rather than states, whereas Lass's interpretation is synchronic, restricting potential states, and can be rejected on that basis. (Many thanks to Guy Deutscher for making a version of this paper available for me to read.) As will be clear from the discussion above with reference to Gould (1965; 1987), Hooymaas (1963), and Romano (2015), the situation outside linguistics in fact appears to be somewhat more complex.

¹⁴ Another case study comes from historical pragmatics. Bax (2004) claims that pragmatic or "indexical" indirectness developed from ritual indirectness during the later Middle Ages and is thus – effectively – culturally specific to the modern era. Collins (2009) suggests that this challenges the Uniformitarian Principle. The considerations in this section suggest that, if so, it challenges only a particular substantive uniformitarian claim (about the universality of pragmatic competence), with no deeper methodological implications.

Ruhlen 2011) – is inconsistent with uniformitarian assumptions.¹⁵ He also characterizes Comrie’s (1992) claim that morphophonemic alternations were not present in the earliest human languages, and Givón’s (1979) claim that the “pragmatic mode” tends to give way to the “syntactic mode” over human history, as non-uniformitarian. As should be clear from the above, all three of these claims of overall directionality reject a particular corresponding substantive uniformitarian claim, in that they claim that a distribution or state of affairs found at a particular time is not immanent. None of these authors, however, takes issue with (methodological) uniformitarian reasoning in general. When Newmeyer (2002: 360, 373) argues against the “uniformitarian hypothesis” and pleads for a “non-uniformitarian view of language” it is uniformity of state that he rejects.

Debates over substantive uniformitarianism are also current in pidgin and creole studies. DeGraff (2009) and McWhorter (2018) contrast the “uniformitarian” position – that creoles do not exist as a linguistically definable subset of the world’s languages – with “creole exceptionalism”. Here the issues are as much synchronic as diachronic, but they are certainly substantive.¹⁶

The same holds for the considerations in Trudgill (2011). With reference to Labov’s discussion of the uniformitarian principle, Trudgill (2011: 168–169) writes:

“sociolinguistic typology shows us that there is one very important respect in which the present is not like the past at all. This has to do with the enormously rapid development of transport and communications facilities in the past 150 years – but even more importantly, it has to do with demography, and, as a consequence, social network structure [...] the dominant standard modern languages in the world today are likely to be seriously atypical of how languages have been for nearly all of human history”

The point is well taken; but again, it is a caution against a particularly naïve application of substantive uniformitarianism to the nature of human society and communication, not an attack on uniformitarianism as methodology. See also Labov (1994: 23), Ringe (2013: 202), Heggarty (2015: 601), and more generally Bergs (2012) on the danger of anachronism through rigid overapplication of substantive uniformitarian reasoning.

3.3 Methodological uniformitarianism

Rudwick (1972) divides Gould’s (1965) notion of methodological uniformitarianism into two: uniformity of law, and uniformity of process. Uniformity of natural law is the necessary methodological basis for all scientific inquiry (see e.g. Hooykaas 1963: 32, 140), and as such has unsurprisingly not received special mention in the linguistic literature. Certainly none of those questioning the substantive uniformitarianisms in Sections 3.1 or 3.2 above have attacked this methodological principle. Uniformity of process, however, has a particular linguistic champion in the work of William Labov (e.g. 1972a; b; 1975; 1994), who is often cited in this context.

¹⁵ As observed by a reviewer, the empirical basis of Newmeyer’s claim is dubious, and likely skewed by the fact that the well-studied European branches of Indo-European have undergone the OV > VO change. VO > OV, meanwhile, is attested in at least some Mande languages of West Africa and Ethiopian branches of Semitic, while many historically well-attested languages (e.g. Japanese, Korean, Tamil) have remained consistently OV throughout their history.

¹⁶ In defining uniformitarianism, DeGraff (2009: 895) provides three quotations from the Neogrammarians. The first asserts that the processes at play in language change are the same throughout recorded history; the second advocates a methodology of looking at present-day language change in order to shed light on past changes; and the third asserts the invariance of the human language faculty (Osthoff & Brugmann 1878: xii–xiii). Here there are two (different) substantive claims and a methodological imperative, illustrating clearly the multiple meanings that are prevalent in writings on uniformitarianism in linguistics.

Labov's three-volume work *Principles of Linguistic Change* begins with a discussion of the uniformitarian principle in his introduction, "The use of the present to explain the past" (Labov 1994: 20–24). Labov's statement of this principle, following Christy (1983: ix), is that "knowledge of processes that operated in the past can be inferred by observing ongoing processes in the present" (cf. also Harris & Campbell 1995: 310; Hock 1991: 630).¹⁷ For Labov it is a methodologically necessary response to what he terms the Historical Paradox (Labov 1994: 21):

"The task of historical linguistics is to explain the differences between the past and the present; but to the extent that the past was different from the present, there is no way of knowing how different it was."

Labov briefly discusses the principle's use in the work of Whitney and the Neogrammarians. More importantly, he cites Gould (1980), stating that "we must be careful not to confuse a commitment to uniformitarian thinking with a commitment to gradualism" (Labov 1994: 24), i.e. to a linguistic version of (Lyell's) uniformity of rate. Nowhere does Labov use the term "hypothesis" to refer to uniformitarianism, as is common in the rest of the literature.

The methodological nature of Labov's principle of uniformitarianism is clear throughout (e.g. "We have no other choice", Labov 1994: 157). Only occasionally does Labov suggest that there might be an empirical issue at stake. For instance, he states that "To the extent that this principle depends on uniformities in the physiological basis of language, it must be correct", but that this is more problematic in the context of historical social differences (Labov 1994: 23). If the principle is necessary on methodological grounds, whether it is correct or not is beside the point, so here Labov is straying into substantive uniformitarianism. However, on the whole, the empirical validity of uniformitarian postulates is not Labov's concern: rather, throughout the work, he makes a case for the validity of careful study of change in progress as a way to elucidate the processes of change active in the past, contrary to the practice of most historical linguists of the nineteenth and twentieth centuries, who have preferred to examine the historical record itself.

A similar stance is found in Song (2018). While Song defines the principle (with reference to Lass 1980; 1997) as the claim that "languages of the past [...] are not essentially different in qualitative terms from those of the present", he notes that there is no knock-down empirical or logical argument for this claim. Rather, "In the absence of the Principle of Uniformitarianism [...] no typological analysis will be possible" (Song 2018: 24), because no generalization about the full range of human languages can be drawn if the languages of the past cannot be brought into the picture. Here the *assumption* of a particular substantive uniformitarianism is justified on methodological grounds.

4 The relation between substantive and methodological uniformitarianisms

4.1 Uniformitarianism as null hypothesis

Gould's (1965) position is that substantive and methodological uniformitarianism are effectively orthogonal to one another. The short survey of uniformitarianisms in linguistics presented above suggests that this picture needs to be nuanced somewhat. Here, Hooykaas's (1963) survey of different conceptions of uniformity across historical disciplines becomes highly relevant. Hooykaas is able to show that proponents of uniformitarianism were not unified in what, exactly, they thought was uniform across space and time (e.g. 1963: 152–153):

¹⁷ As Janda & Joseph (2003: 28) observe, Labov's earlier work contains a stronger – and substantive – claim: "the forces operating to produce linguistic change today are of the same kind and order of magnitude as those which operated in the past" (Labov 1972b: 275).

for some it was the character of geological and biological changes, while for others it was their energy, their rate, or the situation brought about by these changes.

The fundamental problem is that all methodological uniformitarianisms are reliant on a corresponding substantive claim. For instance, if it can be shown that, in a given domain, the processes or causes operative in the past were not the same as those operative today, this poses severe problems for the view that it is a matter of scientific good practice to assume that they were. Even the uniformity of law is not immune in principle to this objection: it is at least a logical possibility that natural law does *not* operate uniformly, though how this would ever be demonstrated is unclear.¹⁸ Conversely, every substantive uniformitarianism has (in principle) a methodological counterpart. To return to the example of the genetic uniformity underlying the language faculty: even synchronically it might be the case that the language faculty is non-uniform, to a limited extent. But there nevertheless might be good reasons to assume that it is uniform – for instance, the desire to avoid scientific racism, or more generally sensitivity to the social or political implications of this kind of research.¹⁹ Or if intensive research has failed to falsify a particular claim, a researcher might feel justified in adopting it as a working assumption.

This leads to an alternative view of methodological uniformitarianism, which I will term *uniformitarianism as null hypothesis* (cf. Roberts 2017: 343). This view is nicely represented by Ringe & Eska's (2013: 3) version of uniformitarianism:

“the processes that we see operating around us in the present must be assumed to have operated in the same ways at any given time in the past, *unless we can demonstrate a discontinuity in their causes between that past time and the present*” [emphasis mine]

“*Unless we can demonstrate a relevant alteration in the conditions of language use or language acquisition between some time in the past and the present, we must assume that the same types, range, and distribution of language structures existed and the same types of linguistic change processes operated at that past time as in the present*” [emphasis mine]

The empirical scope of the substantive claims involved in these two definitions, mere lines apart, is radically different: only processes/causes in the first quotation, whereas the second brings in types, range, and distribution. As above, what we need to discover is whether these are immanent or configurational. However, the italicized sections are crucial: given the right kind of evidence, it is possible to make a case against this version of uniformitarianism in a given domain. Uniformitarianism here involves making an assumption as a starting point for historical research, and is not to be understood as an intellectual strait-jacket. It is methodological in that there is “no practical alternative” to this assumption (Ringe & Eska 2013: 31), but substantive insofar as the assumption itself is not sacrosanct. The general methodological stance – assume uniformity unless it can be shown otherwise – “dissolves into a principle of simplicity that is not peculiar to geology but pervades all science and even daily life” (Goodman 1967; cf. Janda & Joseph 2003: 24–25). Exactly how highly we value such a principle of simplicity is likely to depend on our metaphysics and where we place ourselves in the grand old conflict between rationalism and empiricism.

¹⁸ Shea (1982: 458) points out further potential problems for the uniformity of law.

¹⁹ This is, of course, a case of a non-scientific factor exerting influence upon the scientific domain. While in principle it is desirable to avoid this, in practice there are many other factors of this kind, not all of which are avoidable (researchers' subconscious biases, the vicissitudes of funding bodies, the cognitive effect of what the researcher had for breakfast, etc.). Hooymaas (1963: 169) observes that metaphysics has very often played a role in discussions of uniformitarianism, even if the two things ought to be independent of one another.

4.2 Some practical suggestions

The most crucial thing for modern historical linguists, in light of the above, is **to clarify whether their uniformitarianism is a substantive claim** (“Uniformitarian Hypothesis”) **or a methodological heuristic** (“Uniformitarian Principle”). As we have seen, usage outside linguistics is not uniform in this regard. Some (e.g. Kennedy 2000) use the term exclusively for the methodological heuristic. Others (e.g. Scharnberger 1983; Romano 2015) suggest that the term be used exclusively in its original, substantive Whewellian sense. Still others (e.g. Shea 1982) recommend that the term be abandoned entirely.

Historical linguists should be more aware than most that lexical items change, and that attempting to legislate about their usage is often a distraction from more contentful questions (cf. Janda & Joseph 2003: 26). Disambiguating the term, or using it consistently, is therefore useful only insofar as it leads to more *conceptual* clarity and less confusion, regardless of how the terminological pie is sliced. My own suggestion would be **to adopt Hooykaas’s (1963) and Romano’s (2015: 74) distinction between (substantive) uniformitarianism and (methodological) actualism**, widely made by continental European scholars, though the latter term is problematic in an English-language context because of the semantic shift undergone by *actual* and its derivatives from ‘current’ to ‘real, important’, a change not shared by other Indo-European languages (Simpson 1970: 61).

The principle of actualism may reduce to Ockham’s razor in general terms, but specific invocations of it involve the assumption of a substantive uniformity as null hypothesis, and historical linguists should try **to specify what exactly is supposed to be uniform** for their purposes. As seen in Section 3, some substantive uniformitarian claims are better supported than others given the current state of our knowledge: for instance, uniformity of the human language faculty during recorded history seems to be on much safer ground than uniformity of human societal structures, and the uniformity of natural law is virtually unassailable.

Finally, it is advisable **to avoid using uniformitarianism (or actualism) as a stick to beat other researchers with**. Actualism may be necessary for good historical science, but individual assumptions of uniformity should not be immunized against critique. To elevate them to articles of faith is a much greater threat to good historical scientific discourse.

5 Conclusion

As I have demonstrated above, uniformitarianism as understood in linguistics is not itself a uniform notion, and does not reflect the conceptual or empirical advances in other areas of historical science. The most important cut is between substantive uniformitarianism and methodological “actualism”: are we dealing with a hypothesis with empirical content, or a methodological precept that is necessary in order to do good historical science? The distinction is crucial, since the danger exists that substantive hypotheses are illegitimately elevated to the status of methodological necessities for rhetorical purposes, in order to score points against those who disagree. This danger is exacerbated by the fact that for every methodological principle of uniformity there is a corresponding substantive assumption that does duty as null hypothesis.

I have made four concrete prescriptions for historical linguists to consider:

- 1) to adopt Hooykaas’s (1963) and Romano’s (2015: 74) distinction between (substantive) *uniformitarianism* and (methodological) *actualism*;
- 2) to clarify whether their uniformitarianism is a substantive claim or a methodological heuristic;
- 3) to specify what exactly is supposed to be uniform;
- 4) to avoid using uniformitarianism as a stick to beat other researchers with.

Abbreviations

OV = object-verb, UG = Universal Grammar, VO = verb-object

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Competing Interests

The author has no competing interests to declare.

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