Review of: "The normalization of biradical roots: the origin of triradicals and the proto-semitic language"

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In his "the normalization of biradical roots: the origin of triradicals and the proto-semitic language," Nicholas Campbell inductively reasons that the Semitic languages innovated their characteristic non-concatenative morphology, incorporating "roots" of three radical consonants into a variety of templatic "patterns," out of a primordial and presumably agglutinative biradicalism sometime around 3,500 BCE. Ultimately, his hypothesis rests upon two premises: that triradicalism is a secondary development within Semitic, and that biradical roots were "regularized" to triradical ones at a measurable and constant rate over time. It therefore suffers from two primary defects: he departs from a series of unwarranted and untested assumptions about the nature of Semitic languages, taking them for granted, and he exchanges a more rigorous scientific investigation incorporating testing and falsification in favor of statistical models adapted to endow his proposal with a factitious scientificity.

Campbell objects to historical and comparative linguistic methodology, arguing that "using a language from an entirely different language family to explain phenomena in Semitic is suspect" and "the ability to reconstruct Proto-Semitic or Afrasian forms is a very different endeavor from arguing that the historical evidence of a biradical history has merit." In fact, there is nothing at all suspect about employing cross-linguistic phenomena to explain a feature of a given language. Semitic languages are human languages, subject to the same physical and mental constraints as any other human language, and therefore there is absolutely nothing about them that defies comparison to other human languages. Furthermore, it is impossible to argue in favor of biradicalism without engaging in historical reconstruction. The extant "historical evidence" for biradicals is slim, restricted to a small handful of high-frequency roots; all the other evidence that Campbell and his sources adduce implies linguistic reconstruction by means of comparative methods, and in fact Campbell's approach is expressly historical and comparative, as he acknowledges when he states that "the biradical history should be evident based upon studies of linguistic change."

Absent this historical and comparative context, the deficits of his approach and the premises that undergird it are obvious. For example, he notes:

"The example given is from Hebrew: *prd, prm, prs, prq, prr,* all meaning "dividing" in some form. The problem here, as pointed out earlier, is that scholars are unable to define the meaning behind the endings *-d, -m, -s, -q, -r.*[…] The inability to decipher what the suffixes add to the meaning does not negate the existence of those suffixes. Identifying a shared meaning between roots sharing two radicals may point to an underlying biradicalism even though the reconstruction of any single biradical lexeme might be on tenuous ground."

The lexical evidence does not support the premise that these verbs all mean "'dividing' in some form." In its basic meaning, the verb *prd* means 'spread out', e.g., one's wings (Ezk 1:11), acquiring the derived sense of 'diverging, separating' only in the passive, i.e., 'to be spread out'. Similarly, *prm* means 'tear (garments) to pieces'; its cognates in other Semitic language suggest that it derives from a basic meaning of 'chop up, mince', and *prs* means 'break bread' (Is 58:7) in its basic stem. The latter appears in the causative stem meaning 'with cloven hooves,' but this meaning is likely denominal and not primordial; its cognates are similarly unhelpful, ranging from 'decide' to 'destroy'. In its basic meaning, *prq* means 'tear away, tear off' (Gn 27:40) or 'drag away from, rescue' (Ps 136:24). Finally,*prr* doesn't exist in the basic stem, only in the derived stems, in which it means 'break, destroy, suspend, foil, make useless.'

It is impossible to reduce these myriad meanings, i.e., spreading one's wings, tearing or chopping something to pieces, breaking bread, pulling or tearing a piece off something, and finally ruining something, to the basic meaning of 'divide' except through speculation and imagination. Those who do so have constructed a category for their own purposes, within which they have classified a host of similar sounding verbs, playing a Wittgensteinian language game of family resemblances, and they have mistaken this game for genuine insight into the nature and structure of this language. By casting such a wide net, they could capture almost any meaning they seek, which is why it is so necessary to falsify such hypotheses by considering alternate ones and testing them against the evidence to assess their truth content and explanatory powers. For example, the similarities between these roots may reflect our own apophenic tendencies (finding patterns in random data), or they may reflect semantic contamination (the process by which words acquire new meanings from similar-sounding words). Advocates of biradicalism in its various forms such as Campbell have not sufficiently tested their hypotheses to exclude these other potential explanations for the evidence, much to their own detriment.

The rigorous statistical model that he endorses and applies does not compensate for these deficits. Its inspiration is ultimately Lieberman et al.'s quantitative model for a well-documented historical phenomenon, the regularization of English verbs over the course of 1,200 years. Lieberman et al. did not need to hypothesize that the 'strong' conjugation of English verbs was gradually supplanted by the 'weak' conjugation, because the English corpus amply demonstrates this phenomenon, in real time. Agmon and Bloch, and Campbell by assumption, work without such data; they depart from the assumption that biradicals were gradually regularized to triradicals, and then use Lieberman et al.'s quantitative model to prove that this assumption must have happened. This is circular reasoning.

Agmon and Bloch conclude that the triradicalization of Hebrew verbs must have commenced 7,800 years "before Biblical Hebrew," which "corresponds rather nicely to the onset of agriculture," which they date to "11,000 years ago in W. Asia." These figures require us to accept another set of untested assumptions, namely that "Biblical Hebrew" dates to 1,200 BCE, because it is convenient for their statistical model. For them, "Biblical Hebrew" is coterminous with entirety of the non-Aramaic portions of the Hebrew Bible, but the biblical narrative ranges up to the Hellenistic era, and the language of the Hebrew Bible is by no means uniform. Campbell is obviously aware of this problem and attempts to salvage Agmon and Bloch's model by introducing a broader range of figures (9,000-8,000 BCE), but the circular nature of this model is its fundamental defect. He additionally proposes additional adjustments for the study of the corpus, introducing further untested assumptions:

"The decay rates proposed by Lieberman et al. have been adjusted for this study for three reasons. First, the corpus of the Hebrew and Aramaic texts is smaller than the English corpus used by Lieberman et al. Second, the difference in normalization rates between an Indo-European language and a Semitic language are likely different. Third, additional factors have influenced development in English that are not applicable to the Hebrew Bible or Aramaic Targum: the establishment of it as a lingua franca (and contact with other languages), professional editing in modern publishing, and the regard for the texts (literature versus holy scripture)."

The size of the different corpora is irrelevant, or at best merely requires us to adjust our expectations of the margin of error, if we are seeking to arrive at a rate that explain the data before us. In the case of the evolution of languages, however, most of these quantitative models assume a constant rate of change across a vast span of time and even wildly different languages, against the evidence which suggests that language change occurs at different rates in different languages over different periods of time. Campbell intuits this ("the difference in normalization rates between an Indo-European language and a Semitic language are likely different") but does not follow it to its logical conclusion: even if we take for granted that originally biradical words transformed into triradicals according to some nebulous phonological or morphological process or processes, we cannot assume that the rate by which they changed was consistent over a span of thousands of years or multiple languages (Proto-Semitic, Proto-West Semitic, Proto-Central Semitic, Proto-Northwest Semitic, Canaanite, Old Hebrew, Biblical Hebrew, Late Biblical Hebrew, etc.) over the course of multiple migrations, invasions, displacements, and so forth. Some of Campbell's other adjustments are similarly questionable: both Hebrew and Aramaic have a history of contact with other languages, much like English and many other languages, modern redactions and publishing have only occurred within a trivial range of time relative to the size of both corpora, and the "regard for the texts" cannot be quantitatively measured. With regard to this last factor, Campbell runs the risk of retrojecting modern attitudes towards the Hebrew Bible back to the period of its composition, another unwarranted assumption.

Campbell's adjusted date of 3,500 BCE ("the rise of civilization with Sumer in Mesopotamia and the transition from the Predynastic to the Early Dynastic Period in Egypt") suffers from the same deficits as Agmon and Bloch's date of 9,000 BCE ("the onset of agriculture in W. Asia"): as the former acknowledges, both dates predate Hebrew, and indeed Semitic as a family of discrete languages, by some millennia, according to the most conventional and widely accepted models. Campbell appeals to a Bayesian phylogenetic analysis of the Semitic languages to situate his proposed date in the early period following the emergence of Proto-Semitic from an undifferentiated Afrasian. This is problematic in the extreme, given his stated reticence to engage in linguistic reconstruction, as reconstructing these putative biradical roots would serve as a potent means to test his hypothesis. In any case, it is no more possible to reconstruct biradicalism for the common ancestor of the Semitic languages on the basis of a single text, the Hebrew Bible, and two of its translations into Aramaic, than it would be to reconstruct the Latin case system on the basis of Dante's *Divina Commedia* and two French translations of the same text, so the path to reconstructing the primordial situation in Semitic — two radicals or three — must necessarily pass through a careful historical and comparative analysis of the linguistic evidence, and it cannot be circumvented with statistical modeling.