

Millet, rice, and farming/language dispersals in East Asia*

Introduction

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The three papers in this special issue examine the role of agriculture in the spread of language families in prehistoric East Asia. The articles take the ‘farming/language dispersal hypothesis’ of Bellwood and Renfrew (2002, *inter alia*) as a point of departure but analyze language family expansions as part of a long-term process. The first paper, by Stevens and Fuller, builds on earlier work by the same authors arguing that plant domestication occurs over prolonged periods of time comprising several millennia (Fuller et al., 2014). This means that, although demographic growth remains the primary cause behind the expansion of agricultural societies and their languages, we also need to look carefully at exactly *when* such population growth occurred in any archaeological sequence. Stevens and Fuller discuss the complex climatic, geographical and historical factors at work in the initially very different millet and rice farming systems of north China, and argue that those factors can help explain a great deal about subsequent language family dispersals across East and Southeast Asia.

* The papers in this special issue by Stevens and Fuller and by Sagart, Hsu, Tsai, and Hsing were first presented at a symposium at the National Institute for Japanese Language and Linguistics in Tachikawa, Japan under the aegis of a National Institute for the Humanities Joint Research Project “The Dispersal of Agriculture and Language in East Asia and the Pacific: Exploratory Research on the Farming/Language Dispersal Hypothesis” (PI: John Whitman). Subsequent work on the issue was supported by an Academy of Korean Studies Grant to Whitman funded by the Korean Government (MEST) (AKS-2016-LAB-2250004) and by the ERC Eurasia3angle project for Hudson.

Stevens and Fuller are circumspect about early sites showing integration of the cultivation of the two millets, *Setaria italica* and *Panicum miliaceum*, with rice. They discuss the Houli culture in Shandong as a possible candidate, but ultimately judge the evidence to be inconclusive. Given the focus on Shandong as a likely point of origin of the demic/linguistic dispersals discussed in the other two papers in the special issue, future clarification of this question will be important. The Yangshao culture that Stevens and Fuller identify as the first clear locus for the integration of all three crops ca. 4000 BC is too far inland to be relevant for the dispersal of either proto-Austronesian or proto-Japonic. The dates discussed for the latter dispersals are later (mid-3rd millennium BC for Austronesian according to Sagart et al., and 1300 BC for the spread of proto-Japonic to the Korean peninsula according to Robbeets). Since integration of all three crops is associated with both linguistic groups, identification of later sites in or close to Shandong where all three crops are integrated is an important next order of business.

A further point of intersection between Stevens and Fuller's article and the linguistic research in this issue is their suggestion that "Maritime cultures, perhaps from Shandong, carrying Chinese cereals to Taiwan, may also have transmitted farming among the coastally focused fisher-hunter-gatherers of Fujian and eastern Guangdong, which have strong cultural links to each other and to Taiwan." This is consistent with Sagart's (2004) argument that the Kra-Dai (Tai-Kadai) family of southeastern China and Southeast Asia is a sub-branch of Malayo-Polynesian, resulting from a back-migration from Taiwan to the mainland. Although the argument, based on the apparently derived structure of the numerals 5–10 in Kra-Dai and the Formosan ancestors of Malayo-Polynesian, remains controversial among Austronesianists, it receives some support from Stevens and Fuller's scenario whereby the spread of agriculture is from the north through Taiwan to southern China and beyond.

All three papers in this issue support the expansion of rice and millet farmers from the Shandong peninsula to Taiwan, an expansion that Laurent Sagart has long suggested was associated with an Austronesian (or 'pre-' or 'para-' Austronesian) population. Here, Sagart and colleagues develop this argument with new linguistic data on millet names from Taiwan. Reconstructed Proto-Austronesian names for both *Setaria italica* and *Panicum miliaceum* are suggested to be related to Sino-Tibetan, supporting the conclusion that speakers of Austronesian and Sino-Tibetan once lived adjacent to each other in northeast China.

A striking feature of Sagart et al.'s linguistic argument is that they reconstruct and compare etyma for both *Setaria* and *Panicum* in Proto-Austronesian that are primary, that is, unetymologizable lexical items. This introduction is not the place to debate the details of Sagart et al.'s reconstructions, but the fact that the

reconstructed words are not general terms for grain, or deverbal formations such as ‘cultivar,’ strengthens the case for cognacy. On the Austronesian side, the forms are best attested in languages on Taiwan, although there are some Malayo-Polynesian cognates; on the Sino-Tibetan side, they are best attested in Chinese, although there are potential Trung and Lhokpu cognates in Tibeto-Burman. This does not undermine the case for cognacy, since the primary branches of Austronesian are in Taiwan. Diminished attestation of cognates in Malayo-Polynesian reflects, in part, changes in agricultural practice, leading to transfer of the original terms for the millets to innovated crops such as sorghum and maize. In the case of Tibeto-Burman, quality of linguistic data is an issue, but so is the radically different history of the introduction of rice and millet cultivation to Southeast Asia and the Himalaya region.

In the last paper, Robbeets expands the discussion to include the Transeurasian languages, defined by her in the sense of the term “Macro-Altaic” as used by other linguists to add Japonic and Koreanic to the traditional Altaic family (Mongolic, Tungusic, and Turkic). Robbeets identifies the original speech community of Transeurasian with the Xinglongwa culture of Neolithic northeast China in the 6th millennium BC. She also proposes that long-debated Austronesian influences on the Japanese language derive from contacts as part of the Neolithic Shandong-Liaodong interaction sphere, a suggestion which is consistent with Hudson’s (2017) recent argument that Miyako Island was the northern limit of Austronesian populations in the northwest Pacific and, thus, that Austronesian influences on early Japan did *not* arrive from the south via the ‘ocean road’ route up the Ryukyu Islands, as proposed by Kunio Yanagita and other ethnologists.

In the specific case of Proto-Japonic and Proto-Koreanic, Robbeets’ view is slightly distinct from Whitman’s (2011) hypothesis (see also Miyamoto, 2016) that Proto-Japonic spread from Shandong through Liaodong to the Korean peninsula. Robbeets argues that speakers of Proto-Japano-Koreanic moved off to Liaodong from the Macro-Altaic homeland in Xinglongwa as a result of the eastern expansion of millet cultivation, without ever having been in Shandong; according to her, the relationship with Proto-Austronesian in Shandong then involves contact across the Bohai strait. The issue is probably impossible to resolve without a clearer picture of Shandong-Liaodong archaeology in the relevant period. But Robbeets does endorse Whitman’s (2011) argument that cognate vocabulary between Proto-Japonic and Proto-Koreanic excludes vocabulary for wet rice agriculture, and she extends this argument to Altaic. This leads to the conclusion that whatever one’s view is about what language families might be related to Japanese, Proto-Japonic split from them before it acquired vocabulary for wet rice agriculture.

Robbeets' hypothesis is that some Proto-Japonic vocabulary related to the millets (and dry field cultivation more generally) is cognate with Macro-Altaic (Transeurasian), while some vocabulary for wet rice cultivation represents loans from Proto-Austronesian. Again, this is not the place to debate etymologies and reconstructions, but one notes that, in contrast to the Austronesian–Old Chinese comparisons made by Sagart et al., Robbeets' proposed cognates for millet involve deverbal forms from roots such as 'sprinkle, sow.' At the level of species, the semantic fit is also not as good: the one Altaic form that specifically denotes a millet, Proto-Tungusic **pisi-ke*, is reconstructed as meaning 'broomcorn millet' (*Panicum miliaceum*), while the Proto-Japonic and Koreanic forms it is compared with, **piyaj* and *phi* < **?hVpi*, denote barnyard millet (*Echinochloa crus-galli*), not a *Panicum*. Robbeets' suggestion of Proto-Austronesian **baCaR* 'Panicum miliaceum' as a loan source for Proto-Japonic **wasaj* 'early ripening grain' and Proto-Koreanic **pasar* 'husked grain' is more plausible. As Robbeets points out, both PJ and PK had primary words for *Panicum*, so the borrowing of the PAN form in specialized senses is reasonable. The PAN source also helps explain the initial **w* in the PJ form and possibly the weak first syllable vowel in PK **pasar* > *psar* > *ssal*, if PAN disyllabic roots were generally iambic.

The three papers here represent the cutting edge of multidisciplinary research on prehistoric language dispersals in East Asia. The papers also suggest exciting new questions for future research. In terms of the model of language change proposed by Dixon (1997), the papers in this issue confirm that the Neolithic as a whole represents a period of 'punctuation,' but the analyses here also show that the Neolithic included phases of relative equilibrium as well as punctuation. The problem of explaining the variation in demographic cycles *within* Neolithic societies (see, e.g., Shennan and Edinborough, 2007) becomes a crucial aspect of the farming/language dispersal hypothesis.

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