

Lexical evidence for the prehistoric spread of cultivars in South America: exploring the CINWA database (for a presentation or a poster)

The Andes and tropical forests of South America belong to the few regions of the world in which people began experimenting with the deliberate tending of plants and the selection of phenotypes with desirable traits in the early Holocene. The first evidence for cultivation of particular plants in South America is, however, strikingly diffuse spatially: for example, the earliest evidence for cultivation of arrowroot and avocado comes from present-day Colombia, whereas that for cultivated peanut comes from the Bolivian lowlands (Pearsall 2008), without a single geographical center of early cultivation emerging (Piperno 2011). For most of the around 150 plants that are known at present to the indigenous people of South America (Denevan 2001), it remains unclear how they spread from their initial center or centers of cultivation through (parts of) the continent.

Here, I present first systematic results of an investigation of how linguistic evidence can contribute to elucidating the vectors through which individual cultivars and associated knowledge spread from speech community to speech community. The empirical basis is the CINWA database (www.cinwa.org), a free online resource in CLLD-CLDF format that has been created specifically for this purpose (but that may be put to other uses in the future, too). CINWA includes names of cultivated plants in more than 100 languages from Northwestern South America, i.e. the region that is most relevant to incipient cultivation in South America.

One option when names for newly encountered cultural items –including cultivated plants– are needed is to *borrow* the designation from the language spoken by the communities that are first encountered with it. Assuming that such processes have often taken place in pre-historic South America as cultivars spread, the work seeks to infer *borrowing chains* that link formally similar terms in subsets of the languages (see Haynie et al. 2014 on Wanderwörter in South America generally). Directionality of borrowing cannot always be established unequivocally, though there are some helpful standard criteria to establish an objective and well-reasoned account. These include evidence for reconstructability of etyma within known language families vs. the absence of such evidence; together with evidence from research on loanword phonology, which suggests that some phonetic and phonemic adaptations are more plausible in one direction than the other given the (reconstructed) phoneme inventories and phonotactics of the involved languages, often allow for a clear and well-grounded inference of directionality (Campbell and Kaufman 1976; see Uffmann 2015 for theoretical background).

Epps (2015) was able to show, on the basis of precisely such a combination of evidence, that horticulture is a recent innovation among speakers of the Nadahup languages of Amazonia, showing the power of such reasoning. But also CINWA data –whose systematic evaluation has only commenced as this abstract is written, but which will be concluded by the time of the conference– already suggest significant, and partially surprising, results. For instance, the peanut butter fruit (*Bunchosia armeniaca*), which grows in warm and temperate zones at 500–2000 masl, is designated in unrelated languages of the Peruvian upper Amazon by forms like *oshon* (Chahayuita, Hart 1988) or *úshu* (Aguaruna, Wipio Deicat 1996). The lowland Quechua variety of San Martín has *ushun* (Park et al. 1976); since this word is not found in any other variety (and indeed the Quechuan homelands were likely unsuitable for the cultivation of the fruit), we can assume that it was borrowed from a language of the local linguistic ecology. More strikingly, in Mochica, a dormant language of the Peruvian north coast on the other side of the Andes, which is again warm enough for peanut butter fruits to grow, Brüning (2004) could record the form <oshorre> (with the final <e> probably Spanish-incuded) from the last speakers, showing evidence for language contact involving exchange of cultivars across the Andes.

The presentation will include three parts: alongside (i) an introduction to the database and discussion the theoretical background and practical approach for analyzing the data, it will provide (ii) an overall bird's eye view of the results as well as (iii) selected case studies.

References.

- Brüning, Hans Heinrich. 2004. Mochica Wörterbuch. Diccionario mochica. Mochica – castellano / castellano – mochica. Ed. José Antonio Salas García. Lima: Universidad de San Martín de Porres, Escuela Profesional de Turismo y Hotelería.
- Campbell, Lyle, und Terrence Kaufman. 1976. A Linguistic Look at the Olmecs. *American Antiquity* 41(1): 80–89.
- Denevan, William M. 2001. *Cultivated landscapes of native South America*. Oxford: Oxford University Press.
- Epps, Patience. 2015. Historical linguistics and socio-cultural reconstruction. In: Claire Bown und Bethwyn Evans (eds.): *The Routledge Handbook of Historical Linguistics*, 579-597. Abingdon/New York: Routledge.
- Hart, Helen. 1988. *Diccionario chayahuita – castellano*. Canponanquë nisha nisha nonacaso'. Lince, Lima: Ministerio de Educación/Instituto Lingüístico de Verano.
- Haynie, Hannah, Claire Bowen, Patience Epps, Jane Hill, and Patrick McConvell. 2014. *Wanderwörter in languages of the Americas and Australia*.
- Park, Marinell, Nancy Weber, and Victor Cenepo Sangama. 1976. *Diccionario quechua*: San Martín. Lima: Ministerio de Educación/Instituto Lingüístico de Verano.
- Pearsall, Deborah M. 2008. Plant domestication and the shift to agriculture in the Andes. In: Helaine Silverman und William H. Isbell (eds.): *Handbook of South American archaeology*, 105-120. New York: Springer.
- Piperno, Dolores R. 2011. The origins of plant cultivation and domestication in the New World Tropics. Pattern, process, and new developments. *Current Anthropology* 52: 453-470.
- Uffmann, Christian. 2015. Loanword adaptation. In: Patrick Honeybone and Joseph Salmons (eds.): *The Oxford Handbook of Historical Phonology*, 644-666. Oxford: Oxford University Press.
- Wipio Deicat, Gerardo. 1996. *Diccionario aguaruna – castellano, castellano c aguaruna*. Rev. by Alejandro Paati Antunce and Martha Jakway. Lima: Instituto Lingüístico de Verano