Dolukhanov et al. 2005: The chronology of Neolithic dispersal in Central and Eastern Europe

* Use radio carbon dating of cooking pottery to estimate a timeline of ag development in Europe
* Pottery spread faster through Eastern Europe than the resolution of carbon dating can detect, meaning that pottery spread faster than 4 km/yr
* Eastern Europe saw slower rates, around 1.6 km/yr
* The signature of the Neolithic period is the transition from hunter-gather societies to agro-pastoral farming.
* Generally support the idea of dispersal driven diffusion of ideas.

Bellwood 2001: Early Agriculturalist Population Diasporas? Farming, Languages, and Genes

Bellwood 1996: Phylogeny and reticulation in prehistory

* Main point: spatial dispersal informs phylogenetic relationships
* Describes two competing models assign different mechanisms of the structure in modern cultural patterns.
* Phylogenetic commonality (bifurcating hierarchy) is contrasted with reticulated commonality (network structure)
* A number of geneticists have recently presented evidence which they believe indicates a relatively close relationship between language families and genetic geography on a world scale (Cavalli- Sforza *et al.* 1988; 1994;Ruiz-Linares *et al.* 1995; Chen *et al.* 1995)
* Phylogenetic models, stressing common- ality of descent, imply dispersal by culturally and linguistically related populations from common origins in circumscribed homeland regions.
* Reticulate models, as recently, presented by anthropologists and archaeologists, stress the importance of continuing processes of interaction between contemporary commu- nities.
* the existence of truly phylogenetic relationships within an array of cultures and languages *must* imply some form of migration/dispersal trajectory at source. Simi- larities resulting from interaction alone are phenotypic, not phylogenetic.
* Of course, there is a danger of circular reasoning here - traces of phylogeny are stated to imply movement from an ancestral source, and traces of such movements imply phylo- genetic relationships.
* A differentiation, albeit with overlap, between large scale ‘phylum-form- ing’ and small-scale ‘ethnic group-forming’ processes surely lies at the heart of the issue under debate.
* The essential question addressed here is whether these major language families have developed
  + 1  through linguistic diffusion alone amongst relatively unmoving human populations  (i.e. by convergence) NO SUPPORT
  + **2**have spread through language shift by populations previously speaking unrelated languages (often get language sharing or bilingualism rather than expansion of one language at the expense of the other)
  + **3** have spread through dispersal of actual *speakers* of ancestral languages within these families. (evidence in the spread of English into unoccupied areas rather than into densely packed areas like India or China)

Of these three processes, only the third requires actual population dispersal -the first two involve only diffusion. Naturally, all three processes work to some degree hand-in-hand, but it is unreasonable to assume that all three have worked in even proportions in all historical situations.

* No linguist (circa 1995) has proposed a convincing mechanism to explain language family distributions on large scales using convergence principles alone.
* An attempt by Trubetzkoy 1939 to show convergence principles proved unsupported.
* The second style requires widespread adoption of a new trait and cohabitation between the old trait and the new trait. In the case of language only, this mechanism would be total bilingualism.
* In known cases of languages interacting spatially without dispersal showed bilingualism and language sharing rather than shift and extinction.
* Seems difficult for a language or trait to spread across large spatial reaches through multilingualism only
* The third type requires dispersal. There is no evidence of dispersal on long time scales, but there is evidence in the more recent past.
* Believed to be the primary mechanism of large-scale movement of languages.
* The conquest model, or ‘elite dominance’ model, where a ruling language wipes out a weaker language is exceptionally rare (Dyen 1990: 219).
* Language start in small, localized regions and spread outward through human dispersal rather than language only dispersal.
* Agriculture had few origins and then spread from there. Agriculture has spread from these regions mainly (but not entirely) by de- mographic growth of the agricultural popu- lations themselves (cf.Barbujani et *al.* 1995 for Europe) rather than by adoption of agriculture by pre-existing and unmoving hunter-gatherers (Bellwood 1990; 1994 and in press a).
* Some archaeologists regard agriculture as easily diffusable to ‘receptive’ foragers (e.g. Gebauer & Price 1992: 8),but evidence suggests that such foragers have mostly existed only in agriculturally marginal regions, especially in rich maritime environments (such as parts of coastal Europe) where agriculture was restricted by geomorphic or climatic factors and where existing foragers were able to maintain sufficient demographic balance against incoming agriculturalists to allow for successful interaction and diffusion of ideas and techniques.
* major agricultural- ist language families originated in relatively restricted areas of the earth’s surface, in areas - not coincidentally - where ag- riculture originated from primary forag- ing base-lines (e.g. southwest Asia for Indo-European, Turkic, Elamite (with Dravidian?), Sumerian, Semitic and per- haps Afro-Asiatic as a whole; central and southern China for Tai-Kadai, Austro- nesian, Austroasiatic, Hmong-Mien and possibly Sino-Tibetan; Mesoamerica for Mayan, Mixe-Zoque, Otomanguean and perhaps Uto-Aztecan: Bellwood 1994;in press b).
* Regions of agricultural origin are regions where the geographical distribu- tions of many different language families intersect, and also where the origin zones of many of those intersecting language families were located.
* Over time, popu- lations have tended consistently to move out from such zones of primary agricul- ture through demographic growth, rather than in; their languages have moved out wards with them (the exceptions do not negate the general pattern at the *language family* level).
* Explosive population growth came from the advent of agriculture.
* We can also see many examples of the ex- pansion of relatively homogeneous packages of material culture in the regional archaeological records of early agriculture. This kind of ho- mogeneity *could* be a result of phylogenetic patterning; unfortunately the archaeological record *per se* is unable to give unambiguous evidence for spreads of population as opposed to spreads of material culture and stylistic ele- ments through interaction.
* In many regions, as time progressed forwards from periods of agricultural beginnings, so archaeo- logical patterns became more fragmented.
* See Zeitlin 1994
* This early agricultural-phase homogeneity in so many regions of the world archaeological record can hardly document diffusion alone, simply because diffusion alone via some kind of ‘interaction sphere’ model through unmoving, pre-existing and diverse hunter-gatherer populations could seemingly not lead to all the shared elements of iconography and style which make the archaeological complexes listed above so strikingly homogeneous.
* Tree-shaped hierarchical structures of subgroup relationships should reflect a slower outward dispersal and continuing internal contact since they depend on relatively long periods of regional stasis and interaction in order to accumulate the shared subgroup innovations which produce the hi- erarchical tree shape.
* A rapid spread over a large geographical region should yield a linguistic family tree of a ‘rake’ shape, with very little hierarchical differentiation at the highest level.
* The generation of human diversity in the past has not been entirely re- ticulate and dependent on processes of *in situ* interaction between peoples of different ethno- linguistic background. Neither has it been en- tirely radiative and dependent on adaptation in isolation. But to rule out phylogeny as of *any* significance in the patterning of difference and similarity between human cultures is surely no more than a ‘whimsical view’, in the words of Mace & Page1 (1994: 563).

Holden 2002: Bantu language trees reflect the spread of farming across sub-Saharan Africa: a maximum-parsimony analysis

* They argue that Bantu languages spread along with the spread of agriculture, so the language spread was determined by the trait as much as the trait determined the language.
* Parsimony tress of Bantu languages where compared with archeological evidence for the spread of farming in this part of Africa.
* Aiming to investigate how far the Bantu language tree may reflect loader cultural history in the region.
* Bastin et al. 1999 and Hinnebusch 1999 questioned whether a tree model can describe languages because of diffusion of linguistic elements between neighbors.
* The debate seems to lie on a gradient between tree-like and network-like
* This debate is part of a wider debate on the level of interconnection between human cultures.
* Huffman 1982 first suggested that the bantu language spread along with the expansion of farming over the past 2000 years. –Supporting vertical transmission
* Vansino 1990, Bastin et al. 1999, Hinnebush 1999 argue that the diffusion of bantu words between neighboring speech communities was widespread.
* Holden argues that the lack of horizontal transfer of agriculture between lineages (defined as traits that appear convergent on the tree) is support for tree-like structures describing language.
* Bantu originally coded for cognates by Bastin et al 1999
* Citation for cognate Swadesh 1971
* I think this citation is a great example how it’s difficult to distinguish between different causal mechanisms when only using spatial and phylogenetic clumping as your metric.
* Bantu linguistic relationships are closely correlated with geographic distance between languages: geographically proximate languages also tend to cluster on the tree. Henrici 1973, Bastin et al 1999, Hinnerbusch 1999.
* Authors have previously argued that a correlation between linguistic and geographical distance implies borrowing, no descent, is the main process underlying observed patters of linguistic variation.
* It has long been though that Bantu languages were introduced to east and souther Africa by the spread of farmers (Huffman 1982, Phillipson 1993)
* Bantu language trees mirror closely the spread of farming across this region of Africa in the Neolithic and EIA.
* The branch order of major subgroups on Bantu tree and geographical distribution of those subgroups overlap with distinct archeological traditions associated with the spread of farming between 3000 BC and AD 500.
* Earliest Neolithic sites were found in approximately the same area as the northwest language zones.
* Make a Bantu language tree and then use that tree to infer agricultural origins
* Applying the methods from Gray and Jordan (2000) Austronesian language to the Bantu languages
* Argue that farming was responsible for the spread of Bantu languages because its spread corresponds to the timing and spatial patterning.

Lilley 2017: Agriculture emerges from the calm

* News article about Roberts et al. 2017. Argue that carbon isotopes show that two societies living in neighboring habitats used different subsistence modes through the course of environmental change and therefore, environmental change could not have been the cause of one ( but not the other) becoming an agriculturalist.