

ARCHAEOLOGY, LANGUAGE, AND THE ANDEAN PAST: PRINCIPLES, METHODS, AND THE NEW 'STATE OF THE ART'

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Abstract

*This book emerges from the conference *Lenguas y sociedades en el antiguo Perú: hacia un enfoque interdisciplinario*, a gathering of linguists, archaeologists and anthropologists at the Pontificia Universidad Católica del Perú in August 2009. This chapter sets out first the *raison d'être* of our enterprise: why it seemed so important to foster a meeting of minds between these disciplines, to converge their disparate but complementary perspectives into a more coherent Andean prehistory.*

Next, it is asked how linguistics can inform us about prehistory at all, exploring some general methodological principles and how they might be applied specifically in the case of the Andes. The 'traditional model' for associating the linguistic and archaeological records in the Andes is then reviewed — but pointing also to various inherent infelicities, which duly call for a far-reaching, interdisciplinary reconsideration of the Andean past.

Therefore we attempt to sum up the new state of the cross-disciplinary art in Andean prehistory, as collectively represented by the papers that emerged both from the Lima conference and from the symposium that preceded it, held at the McDonald Institute for Archaeological Research at the University of Cambridge in September 2008. Progress and new perspectives are explored first on key individual questions. Who, for instance, were the Incas, and whence and when did they come to Cuzco? How and when did Quechua, too, reach Cuzco, as well as its furthest-flung outposts in north-west Argentina, Ecuador and northern Peru?

Finally, the scope is broadened to overall scenarios for how the main Andean language families might correlate in time and space with the archaeological horizons that in principle might best account for their dispersals. Four basic hypotheses have emerged, whose respective strengths and weaknesses are assessed in turn: a traditional 'Wari as Aymara' model, revised and defended; alternative proposals of 'Wari as both Aymara and Quechua', a suggestion of 'both Chavín and Wari as Quechua'; and the most radical new departure, 'Wari as Quechua, Chavín as Aymara'.

Keywords: Quechua, Aymara, Wari, Chavín, Horizons, archaeology, language prehistory

Resumen

ARQUEOLOGÍA, LENGUAS Y EL PASADO ANDINO: PRINCIPIOS, METODOLOGÍA Y EL NUEVO ESTADO DE LA CUESTIÓN

El presente volumen resulta del simposio «Lenguas y sociedades en el antiguo Perú: hacia un enfoque interdisciplinario», una reunión de lingüistas, arqueólogos y antropólogos realizada en la Pontificia Universidad Católica del Perú en agosto de 2009. La presente contribución expone primero la razón de ser de nuestra iniciativa: el por qué nos parecía tan importante promover un encuentro entre estas disciplinas, con el objeto de hacer converger sus perspectivas dispares —pero, por lo tanto, complementarias— para avanzar hacia una prehistoria andina más coherente.

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Seguidamente, preguntamos cómo es que la lingüística está en condiciones de proveernos datos sobre la prehistoria. Primero examinamos algunos principios metodológicos generales a tal fin, antes de examinar cómo estos se dejan aplicar mejor en el caso específico de los Andes. A continuación, pasamos revista al «modelo tradicional» de las supuestas asociaciones entre los registros lingüísticos y arqueológicos en la región, señalando al paso varios desaciertos inherentes, los mismos que claman por una reconsideración profunda e interdisciplinaria del pasado andino.

Por lo tanto, este artículo prosigue con el propósito de resumir el nuevo estado interdisciplinario de la cuestión de la prehistoria andina, tal como lo representan los artículos que resultaron tanto del encuentro de Lima como del simposio que le precedió, llevado a cabo en el McDonald Institute for Archaeological Research de la University of Cambridge en septiembre de 2008. Se analizan, en primer lugar, los avances y nuevas perspectivas sobre algunos temas específicos, entre ellos: ¿quiénes fueron los incas, de dónde procedían y cuándo llegaron al Cuzco?, ¿cómo y cuándo alcanzó el quechua el Cuzco, así como sus más alejados puestos de avanzada en el noroeste de Argentina, Ecuador y el norte del Perú?

Por último, ampliamos nuestro alcance a escenarios generales que buscan correlacionar, en el tiempo y el espacio, las principales familias lingüísticas de los Andes con los horizontes arqueológicos que, en principio, mejor podrían explicar sus dispersiones. Han surgido cuatro hipótesis básicas, cuyos respectivos puntos fuertes y débiles pasamos a evaluar: el modelo tradicional, ahora revisado y defendido, de «Wari como aimara»; y propuestas alternativas de «Wari como aimara y quechua a la vez», «Chavín y Wari como quechua», y —más radical aún respecto al modelo tradicional— «Wari como quechua, Chavín como aimara».

Palabras clave: quechua, aimara, Wari, Chavín, horizontes, arqueología, prehistoria de las lenguas

1. Archaeology and Linguistics in the Andes: A Much-Needed Conversation

The Andes rank among humanity's rare independent hearths of agriculture and cradles of 'pristine' civilisation, a chapter of undeniable significance in the wider story of humankind. And it is no coincidence that the region is home also to what by number of speakers counts as our greatest surviving link to the speech of the Americas before European conquest: the Quechua language family (Figure 1). Its prehistory is a rich and turbulent one, jostling with many other indigenous tongues, each with its own tale of origins to tell, not least the Aymara that still dominates the Lake Titicaca region today.

For times before the final cataclysmic encounter between the conquistadors and the Incas, our historical sources are for the most part mute, for the *kipu* can no longer, or not yet again, be 'read'. As for the mytho-histories recorded for us during the early decades of the colonial period, it is not clear how far back they can take us, nor how reliably. Their accounts are often contradictory, and were recorded through the distorting prism of the conquistadors' world-view, through which historians must negotiate if we are to interpret these chronicles reliably.

Yet written texts are far from our only record of the Andean past. To piece prehistory together we may look also to a range of other sources and tools across the sciences and humanities. The succession of societies that rose and fell in the Central Andes over the millennia before the Incas have left us a rich record of material culture and human interaction with the environment for archaeologists to uncover and interpret. Geneticists, meanwhile, are beginning to trace an emerging picture of the relationships that underlie human population diversity in the Andes. But perhaps least well appreciated of all is how, by comparing how a plethora of indigenous languages and dialects across the Andes relate to each other, linguists too can infer rich details on the prehistory of the populations that spoke them.

The data and methods of each of these disciplines are all largely independent of one another, however, and each opens up but its own partial window on the past. Only together might they tell us the fullest tale of Andean origins. In other parts of the world, for a few decades now the disciplines have sought to converge their different but thereby also complementary perspectives into a single, holistic picture of our prehistory.

The Central Andean region has so far been conspicuous by its absence from this interdisciplinary enthusiasm. Yet it was not always thus. For the great pioneers of Andean archaeology, not least Max Uhle and Julio C. Tello, did indeed see interaction between archaeology and language as a *sine qua non* for a true understanding of the region's prehistory. More recently though, specialists in each discipline have seemed

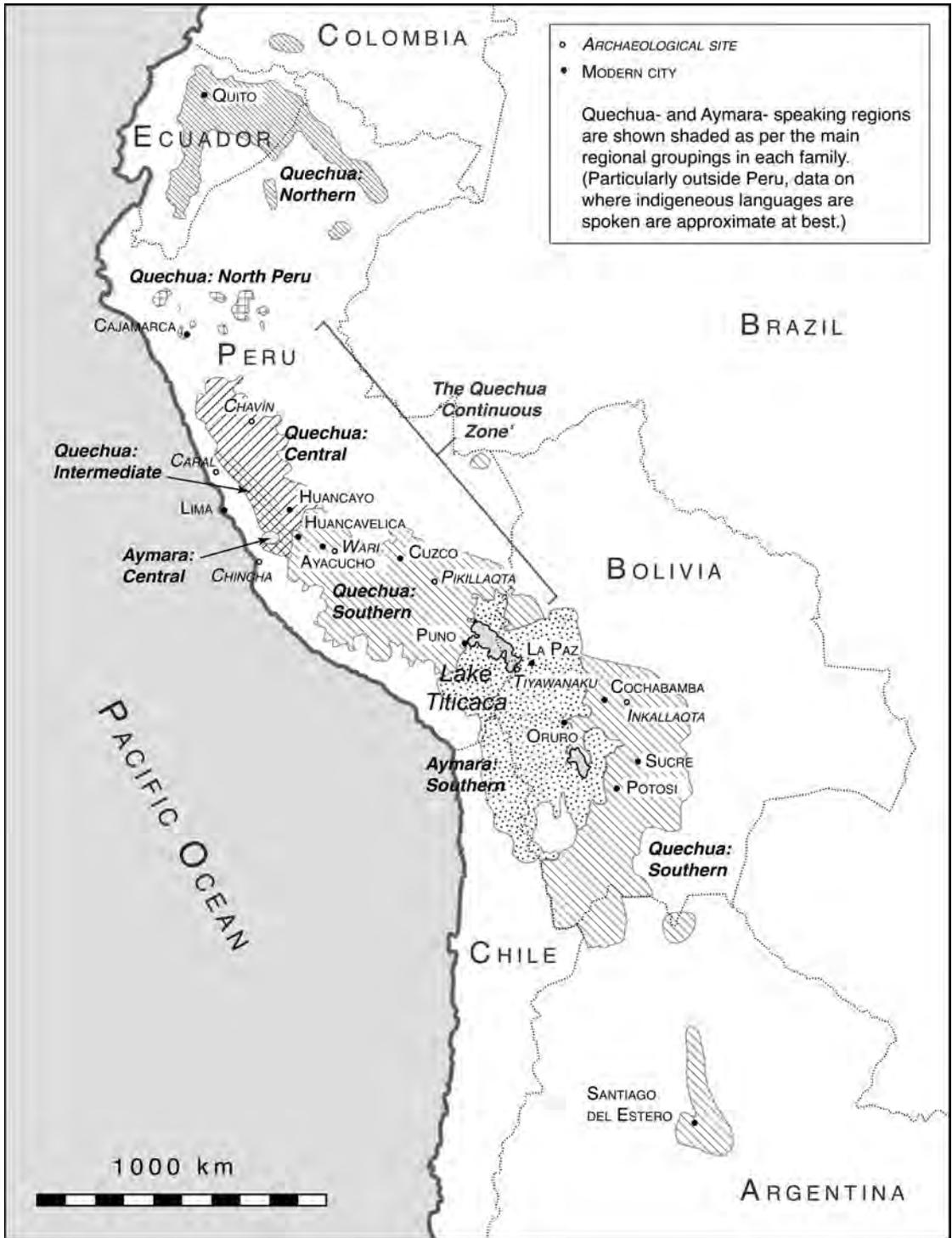


Figure 1. The two major language families of the Andes: present-day distribution (figure prepared by David Beresford-Jones and Paul Heggarty, compiled based on maps in Cerrón-Palomino [2003: 55-73] and Chirinos Rivera [2001]).

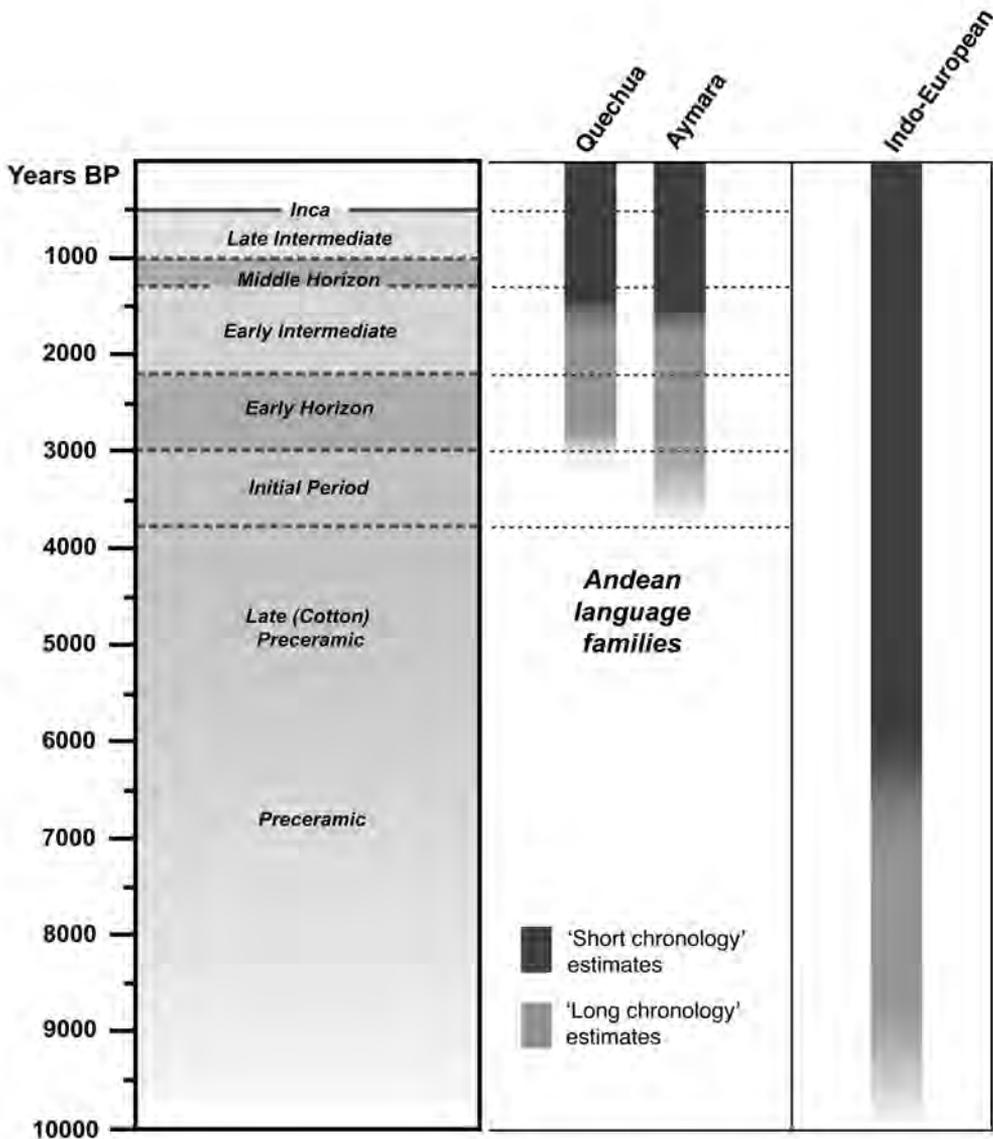


Figure 2. Time-depth estimates of the major Andean language families, set alongside Indo-European, and a simplified Andean archaeological chronology (figure prepared by David Beresford-Jones and Paul Heggarty).

content to work largely in isolation from, if not in ignorance of, the findings of the other. Those rare efforts that have been made — among them Isbell (1974), Bird *et al.* (1984), Browman (1994), Stanish (2003), and Hiltunen & McEwan (2004) — still hold a number of identifiable shortcomings in the eyes of scholars from other disciplines (see for instance Isbell 1984, Cerrón-Palomino 2001).

On the other hand, that so little has been done thus far only leaves the prospects all the brighter for significant advances in our understanding, if we can at last properly weave all these disparate stories together. In few regions of the world, moreover, do the timescales of the critical and richest phases in both the archaeological and linguistic records overlap so closely as in the Andes (Figure 2). So much so, in fact, that the region can even prove a valuable case-study for how one might achieve a more holistic view of prehistory in other parts of the world as well (see for instance Heggarty & Beresford-Jones 2010).

The task is all the more urgent here, too, as both our archaeological and linguistic records are progressively and irrecoverably destroyed: by looting to supply the market in illicit antiquities; and by the inexorable, imminent extinction of most indigenous language varieties spoken across the region — even the future of Quechua itself is not secure (Adelaar 1991: 50, Marr 2011). For all these reasons, the time is surely ripe for a fresh collaboration between the various disciplines whose shared purpose is to understand the single Andean past. This is what motivated us, a linguist and an archaeologist of the Andes respectively, to convene our *Cambridge Symposium on Archaeology and Linguistics in the Andes* in 2008 (published as Heggarty & Beresford-Jones [eds.] 2012) and then — together with Rodolfo Cerrón-Palomino and Peter Kaulicke — the Lima Symposium whose proceedings appear in this volume.

These symposia served first to dispel a number of popular myths about the language history of the Andes, not only peddled among tourist guidebooks to Peru, but until now still all too current even among archaeologists and historians: that the Incas were responsible for the wide dissemination of Quechua out of a Cuzco homeland, for instance, or that Tiyawanaku¹ had earlier driven the expansion of Aymara across the *Altiplano*. Indeed, too few non-linguists appreciate that Quechua is not a single language at all, but a language *family*, whose time-depth and phases of expansion have significant (pre-)historical implications.

It is true that the geographical distribution of Quechua today seems to make for an uncannily close overlap with the greatest extent of the Inca Empire (Figure 1), and the Incas themselves did indeed promote Quechua as their ‘official language’ of Empire. Yet while the forms of Quechua spoken in Southern Bolivia can be derived directly from that of Cuzco at the time of Inca imperial expansion, this is not quite so straightforward even for the far-flung Quechua of Argentina. The Quechua of Ecuador, meanwhile, was certainly not transplanted from Cuzco, even if it may have been through Inca policies that speakers of other regions were relocated there.

And as for where the original Quechua homeland lay, it has long been clear to historical linguists that Quechua had already spread widely across central and southern Peru many centuries before the Incas first rose out of obscurity (Figure 3). The Inca heartland itself, meanwhile, is dotted with placenames that seem not Quechua but Aymara: the river *Vilcanota* flowing past *Ollantaytambo*, and even *Cuzco* itself, the ‘owl [stone]’, recalling one of the Incas’ origin myths. (The popular ‘navel [of the world]’ etymology seems quite unfounded.) Spanish chronicles also report a ‘secret language’ of the Inca nobility, citing a few verses that clearly betray their non-Quechua origins. We owe much of our understanding of these enigmas to the lifelong work of Rodolfo Cerrón-Palomino (e.g. 1999, 2008b, 2012).

This brings us on to a second widely-held misconception, surrounding that other great linguistic survivor in the Andes. Today, Aymara is spoken in regions centred on Lake Titicaca, and across much of the ancient realm of Tiyawanaku, whose ruins stand near its southern, Bolivian shore. But again, it is all too easy to be beguiled by the apparent co-incidences between modern language geography and the extent of an ancient material culture. For the language data turn out to betray Aymara’s spread here as too recent to be compatible with the millennium or more that has elapsed since Tiyawanaku fell. Within its modern Altiplano heartland, Aymara exhibits such limited variation (Briggs 1993) that linguists can be confident that its expansion there is of relatively recent date (see Torero 1987: 339 and Heggarty 2007: 38–43). Moreover, placename studies and early Spanish colonial reports attest that Aymara was once spoken widely across many other regions (Figure 4), in forms now lost to us, and suggest that its expansion across the region *predates* that of its now larger partner in Andean linguistic domination, Quechua (see for instance Adelaar with Muysken 2004). To this day, forms of ‘Central Aymara’ (alias Jaqaru/Kawki) are still spoken in scattered pockets in the highlands inland from Lima, some 800 km north of Titicaca. The widespread association between Tiyawanaku and Aymara (see for instance Kolata 1993: 241), quite fails to explain any of this historical and toponymic evidence for Aymara’s former wide presence across southern Peru. Nor can it account for the very deep and intimate associations between the Quechua and Aymara language families, as Cerrón-Palomino (2000) points out.

For linguists, then, the putative link between Aymara and Tiyawanaku, ingrained alike into archaeological literature and Bolivian national mythology is, as Cerrón-Palomino (2000: 132) puts it, “linguistically speaking, unsustainable”.² It is perhaps worth spelling out the interdisciplinary indiscipline that has brought us to this pass. For the linguistic consensus, and the multiple lines of evidence it is founded upon, have been largely ignored by many in archaeology, in particular Browman (1994), who argues that continuity in the

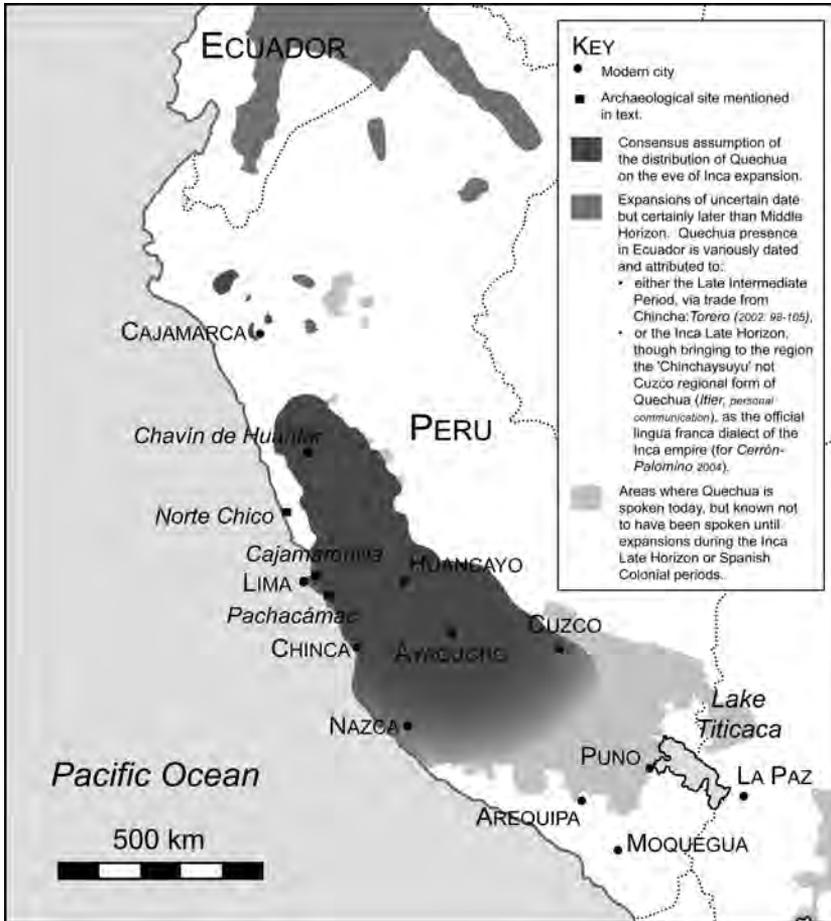


Figure 3. Assumed expansions of Quechua prior to and since the rise of the Incas (figure prepared by David Beresford-Jones and Paul Heggarty).

material culture record of the Titicaca Basin (itself a matter of debate among archaeologists) should entail continuity also in language use — when in reality there is no necessary one-to-one equation between the two levels. Others, in particular Stanish (2003: 221-226), do acknowledge the relevance of linguistic evidence, but nonetheless misconstrue it in favour of models that cannot be squared with it. The difference between the esoteric modern Kallawayá speech, and the long extinct Puquina language, for instance, may seem a linguistic detail, but one that prehistorians confuse and conflate at their peril. Stanish's scenario for Titicaca prehistory relies on seeing Puquina as a rare "mixed language" (with Quechua). But this definition applies only to modern Kallawayá, which is not at all the same thing as, nor a direct descendant of, Puquina. It merely retains a lexicon partly from Puquina, within a 'language' (or at least a secret ritual register) which otherwise is entirely Quechua. Indeed it is precisely the great difference between the two that Kallawayá *is* a mixed language, based grammatically on Quechua, while Puquina was *not*. As even our limited surviving documentation of the language makes clear, Puquina was perfectly well endowed with its own, very different grammar. Thus Stanish's hypothesis that "sixteenth-century Pukina was a mixed language that had evolved into a lingua franca and was not the natal language of any significant population" is quite mistaken. Rather, the linguistics makes clear that Puquina was indeed a fully-fledged independent native language of the region, and had a former distribution, traceable both in Spanish colonial documentation and in toponymy, that falls intriguingly in line with that of Tiyawanaku in the archaeological record — see for example Torero (2002: 48, 49, 404), Cerrón-Palomino (2012).

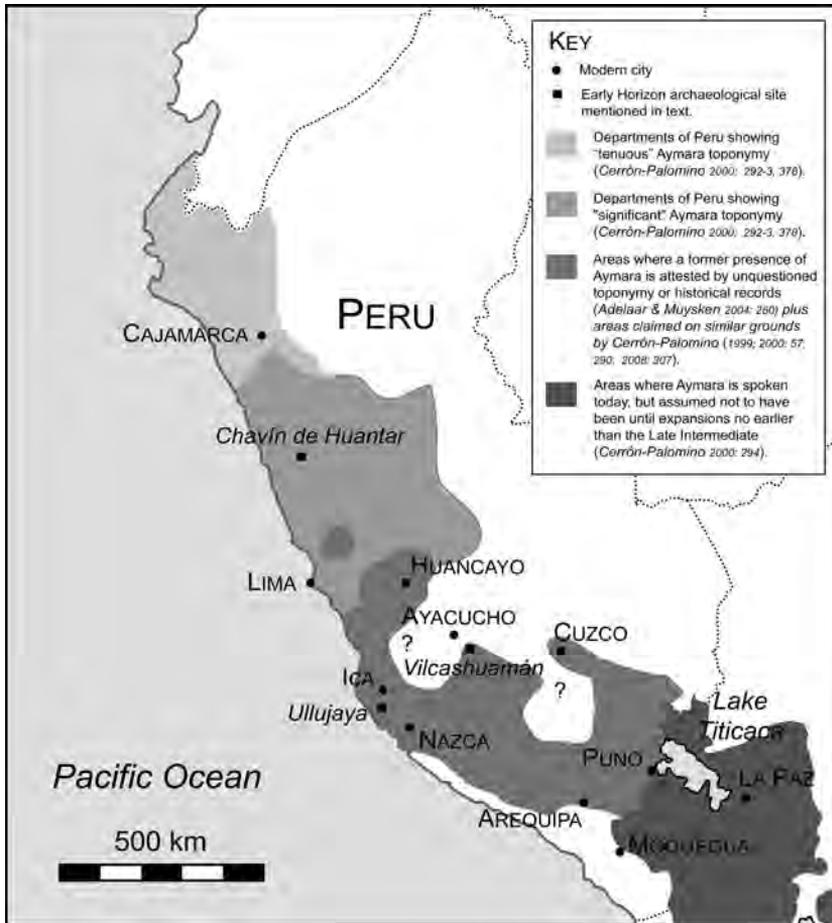


Figure 4. Current and assumed earlier distributions of Aymara, by nature and strength of evidence (figure prepared by David Beresford-Jones and Paul Heggarty).

In short, established interpretations by leading archaeologists of the Titicaca Basin — among them Kolata (1993), Browman (1994) and Stanish (2003) — base their linguistic arguments for their scenarios on misconceptions of the language data. Those very misconceptions are sometimes even invoked as if they offered cross-disciplinary *support* for the authors' preferred interpretations of the material culture record, when in fact the language data directly undermine the scenarios proposed. These cautionary tales show how important it is that our disciplines truly engage with and talk to each other, if we are correctly to understand each other's data. So it would be well for us here to set out here precisely what historical linguistics really has to say on the Andean past, as we shall do in §2 below.

Before that, however, and out of cross-disciplinary justice, let us immediately note that the problem cuts both ways, of course. For Andean linguists, for their part, have tended to rest all too comfortably close to their own 'traditional model' (as we term it herein) to account for the expansions of the Quechua and Aymara families. Established since the 1970s, this was principally the work of the two key authorities in the field of Andean linguistics over the last few decades: Alfredo Torero, generally seconded by Rodolfo Cerrón-Palomino. Torero's (1972, 1984) pioneering hypotheses relied heavily upon dates derived from a technique known as 'glottochronology', and on his own proposed family-tree classifications for the divergence of Quechua, and of Aymara. Taking in turn each of the major branches in his trees, Torero sought to map them one-for-one against an assumed sequence of discrete migrations. Yet glottochronology is in fact now largely discredited, and Torero's tree-like vision of Quechua divergence has also been challenged: see

Landerman (1991), Taylor (1994) and Heggarty (2005). Indeed, we propose instead an alternative ‘dialect continuum’ model for the Quechua family, which implies a quite different pre-history (see Beresford-Jones & Heggarty, this volume). But Andean linguists have not yet followed through on those linguistic objections, to take them to their logical conclusion also for what they entail for language prehistory; instead the traditional Torero model has remained largely unchallenged until now. And this while archaeologists have long since shied away from the facile invocation of ‘migration’ as the only or even the prime motor for culture change, a dangerous hangover from the days when material culture was simplistically associated with ‘peoples’. And as we shall shortly see, the specific sequences of migrations that Torero espoused turn out to show few, if any, meaningful correlations with the archaeological record.

We have tried to overcome such interdisciplinary shortcomings and provoke debate with a new vision for a cross-disciplinary prehistory of the Andes, outlined in our presentations to the Cambridge and Lima symposia, and set out in detail in the position paper for the former, which appears here as Beresford-Jones & Heggarty (this volume). Our proposal is founded firstly upon a significant reclassification, which we feel is long overdue, of the relationships between the various regional languages and ‘dialects’ within the Quechua family; and secondly on the search for a far more satisfactory correlation with the archaeological record. Necessarily this involved setting aside any simplistic associations between material cultures, languages and ‘peoples’, which so blighted the inter-disciplinary project in the days of cultural history — see the warnings from Isbell (1984), Stanish (2003: 222) and Lau (2012). Rather, we have sought to start afresh from a set of first principles for how to go about linking the different disciplines of prehistory. We look not to facile equations of ‘language equals culture equals genes’, but to a more plausible equation that language *families* reflect major expansive *processes* which should also be visible in the material culture record. Direct, strong correspondences need to be established on each of three key levels: geography, chronology and causation. In other words, archaeological and linguistic patterns must match in the right place, at the right time, and for the right reason.

Our logic appeals in particular to the principle that language spreads do not ‘just happen’ in a demographic and social vacuum. Spectacular linguistic impact occurs only when a language has behind it some real-world driving process of a scale to match. There is no better example than Rome, and the resulting language family aptly named Romance, in that word’s original sense of speaking ‘in Roman’ (Latin *rōmānicē*). Among its members are the likewise aptly named Romanian and Romansch, as well as Italian, French, Catalan, Spanish, Portuguese, and others. Looking back to the Andes, this suggests that we should look to the wider-spread Horizons, not the Intermediate Periods, as offering the most natural explanations for the major Quechua and Aymara dispersals. With the Incas too late to account for the time-depth of either family, the most plausible candidate for the first major expansion of Quechua turns out in our view to be the Wari Middle Horizon, with the Chavín Early Horizon more tentatively suggested as behind the earlier spread of the Aymara family. This effectively both upturns the traditional Torero hypothesis (which we set out in more detail in §3 below) and revisits the long-running debate in archaeology as to the nature, duration and extent of ‘Horizons’.

Our proposal, unashamedly provocative to both archaeologists and linguists, duly achieved the desired result: a vigorous cross-disciplinary debate throughout both the Cambridge and Lima Symposia, crystallising into the papers in the Cambridge proceedings and in this volume. With our own hypothesis detailed elsewhere (Beresford-Jones & Heggarty this volume), our purpose in this chapter is a broader one: to provide a general overview of *all* of the main candidate hypotheses now in contention as an overall framework for a cross-disciplinary Andean prehistory. That is, as well as the traditional model and our own counter-proposal, we survey here also the various new alternatives put forward by other scholars at our two symposia and in these ensuing volumes. We shall compare, contrast and assess them alongside each other for their respective strengths and weaknesses.

In order to determine on which grounds to assess them in the first place, however, we must first clarify the wider methodological background. How is one to go about establishing valid correlations between the different but complementary records of the past that are language and material culture? Answering that question is the task of §2 below. It entails exploring briefly a number of principles from linguistics that are indispensable to an understanding of how language data can inform us of prehistory at all. Or in

other words: for the purpose of archaeology, what does historical linguistics actually *say*, particularly in the Andes? (Readers with an interest in fuller treatments may find them in Heggarty 2007, 2008, Heggarty & Beresford-Jones [2010], and Heggarty & Renfrew forthcoming a). We consider these methodological questions first in terms of general principles, and then more specifically in practice in the Andes.

To that end, we go on in §3 to review in some detail the traditional model for associating the linguistic and archaeological records in the Andes, and draw attention to certain infelicities in the associations it proposes, and which any improvement upon it will have to clear up. The scene is then set for us to complete our review of the range of new alternatives to, and variations upon, that traditional model, which have emerged from the debate in our two symposia. In other words, §4 explores the current ‘state of the art’ of ongoing efforts to bring together the complementary records of linguistics and archaeology in the Andes.

2. What Does Historical Linguistics Actually Say?

2.1. Language Correspondences: Relatedness or Contact?

Among those outside the discipline, historical linguistics suffers from one widespread and particularly misleading misconception. This is the assumption that its practitioners look for correspondences between different languages simply in order to demonstrate thereby that those languages have a common origin. Or in other words, to imagine that language correspondences necessarily indicate *relatedness*.

In fact, there are *two* types of processes that give rise to patterns of correspondences between languages; and not only are the mechanisms separate, they are all but the reverse of each other, not least in their footprints in the material culture record.

a) The first type of correspondence between languages results from some *expansive* and ultimately *divergent* process. In this case one does indeed start out from a single original source language, which over time diverges into different ‘daughter’ languages. For given that all languages inevitably change through time, once the same original language is implanted in two or more different regions, and contacts are lost (or at least reduced) between the populations in each, their speech will not only continue to change, but will henceforth begin to do so in different ways from region to region. The emerging regional speech forms, then, while retaining much of their common linguistic inheritance, progressively *lose* more and more of their original correspondences. They thus diverge into different regional accents, dialects, and ultimately different languages — all imprecise terms which necessarily denote stages along a continuum of degree of linguistic divergence.

b) The second process, conversely, begins with multiple different source languages, but which enter into a process of *convergence* over time, when their originally different speaker populations come into *contact* and interact with each other. These languages thereby *acquire* correspondences which they did not originally have, although they are typically of a quite different type, linguistically, to those correspondences that survive from relatedness.

It follows that just because one can identify some correspondences between two languages means nothing specific in itself. Everything depends on which particular *type* of correspondence one finds. The business of comparative-historical linguistics is to *compare* languages to identify which type of correspondence they show (if any), and from that information to go on to work out the *histories* of those languages as of either divergence or convergence.

Few examples are clearer than English, which certainly attests to an enormous convergence impact from Norman French, and learned borrowings from Latin. Nonetheless, there is not a shred of linguistic doubt that English is no Romance language, and that those convergence signals can be perfectly well distinguished from the overwhelming evidence of correspondences of a different type, which reveal that the linguistic *ancestry* of English lies elsewhere. They place English squarely within the Germanic family instead, derived by divergence out of an original Proto-Germanic ancestor language. For the (pre)history of

the British Isles, the implications could hardly be clearer as to the respective strengths of the demographic and cultural impacts from various quarters. Indigenous Celtic speech largely gave way to seaborne invaders from continental Europe: a defining core of linguistically ‘West’ Germanic Angles, Saxons, Frisians, and so forth; but refashioned first by Norse-speakers from Scandinavia, *viz.* ‘North’ Germanic; and then by the Normans, infusing a rich Romance veneer over the still Germanic core. The result is the language in which this paper is written; to the historical linguist, every sentence is a reaffirmation of the past forces that created it.

As this case of English well illustrates, the distinction between language divergence or convergence matters enormously for other disciplines, because the two processes reflect very different real-world (pre) histories of the human populations involved. Languages do not determine the external contexts in which their speaker populations live; on the contrary, languages, particularly the patterns of divergence and convergence between them, are moulded by and reflect those real-world contexts. While it may be contrary to popular perception, it is a founding axiom of linguistics that all natural languages are, to all intents and purposes, effectively equal in their communicative utility, in the sense that any language will adapt to whatever new purposes may be required by its speaker population (for clarification, see Heggarty 2007: 338, endnote 6). Whether certain languages ‘succeed’ over time, and spread and diverge into families, at the expense of others that become marginalised and extinct, is nothing to do with any intrinsic linguistic qualities of their vocabularies, grammars or sound systems. For speakers of any language to imagine so is only to delude themselves as to the relationship between language and ‘culture’. Any of a panoply of Quechua or Aymara derivational suffixes soon makes a mockery of attempts to measure a language’s ‘wealth’ by how many ‘words’ it can boast. Quechua borrows Spanish words, just as Spanish borrows English ones, for obvious real-world reasons that have nothing to do with the languages themselves. Had it been Atahualpa who had invaded and conquered Spain, it would be Spanish that would now be borrowing Quechua words *en masse*, not vice versa.

2.2. Misleading Temptations: ‘Language and Culture’, and ‘Folk Etymology’

Another popular misconception well worth debunking here, and which follows from precisely the same basic logic, is the idea that particular aspects of a language’s grammar or lexicon might offer us some peculiar insight into the ‘culture’ that spoke it, or even allow us thereby to identify it in the material culture record. For languages typically lose or gain new characteristics for purely linguistic reasons that have nothing whatever to do with culture. Even the briefest reflection on many a simple example reveals as much. German, for example, does have a complex grammatical gender system, but English does not, yet they are relatively closely related languages descended from the same Proto-Germanic ancestor language. That English has since lost the original Germanic grammatical distinction hardly denotes any fundamental change in the perceptions of the significance of that contrast between male and female, on a cultural or on any other level. Nor does it reflect any deep cultural gulf today in this respect between English-speakers and their linguistic relatives in Germany.

To the linguist it is mere invention to conjure up supposed cultural correlates and pseudo-‘explanations’ for such linguistic differences, when in any case we already know the real reasons why English lost its gender distinction. It was a change in grammar, itself triggered by differences with the Old Norse spoken by Viking Era settlers in England, and by what linguists call ‘phonetic attrition’, incremental changes merely on the level of sound, all but unnoticed by native-speakers themselves. None of these changes in the language system had anything whatever to do with ‘culture’. In the case of Quechua, consider the famous contrast between its two words that both correspond to the same English word *brother* or Spanish *hermano*, but differ depending on the point of view from which a brother is being referred to: the same man would be called *tura* by his sister, but *wawqi* by his brother. Much is made of this supposedly ‘cultural’ difference, and yet a moment’s linguistic reflection reveals that effectively the same distinction of the sexes surfaces in English too, just by a different means: *her brother* vs. *his brother*. There are in fact a host of other levels of linguistic analysis which need to be taken into account in assessing when and in which contexts this distinction is expressed in the languages concerned, which enthusiasts for facile ‘language as culture’

hypotheses are all too often simply unaware of. None of these, or countless other linguistic differences or parallels (for more examples see Beresford-Jones & Heggarty 2012: §3.2), entitle us to say anything about how *culturally* close or distant Quechua-speakers may be to those of any other language, or indeed to different groups of Quechua-speakers. (Most Quechua speakers are in any case speakers of Spanish *too*). Beguiling as supposedly shared or different grammatical or lexical characteristics may seem at first sight, these illustrations show why it is so fanciful to imagine that one can infer even present, let alone past cultural affiliations on the basis of them, when they obey linguistic, not cultural, determiners.

The temptation to the contrary continues to be attractive to anthropologists, not least in the Andes, hence for instance Núñez & Sweetser's (2006) narrow interpretations of space-time relationships in Aymara. Again, sanguine analysis of the linguistic detail, and the substitution of some simple synonyms, soon undermines their case (In English too, as in countless languages, the past came *before* us, just as much as the future lies *before* us.) A few archaeologists and anthropologists do continue to appeal to a 'language as culture' approach in order to seek insights into the linguistic past in these terms — see for example Lau's (2012) suggestions and even some of the contributions to this volume — but the methodology is so acutely exposed to subjective interpretation that we feel it is much better given a very wide berth.

Another form of pseudo-linguistics that exerts an abiding, fateful attraction — but is equally misleading and counter-productive — is what is all too well known to linguistics as 'folk etymology'. In the Andes, countless terms in native languages, particularly placenames and personal names, have acquired 'translations' and thereby supposed 'explanations' of their origins: classic cases include the terms *Aymara*, *Atahualpa*, *Cuzco*, *Apurímac*, *Ollantaytambo*, *Titicaca* and *Potosí*, to mention just a very few. Many have become common currency among unsuspecting scholars of the Andean past of various disciplines. Placing trust in such fanciful folk etymologies, however, can only undermine, far more than support, any interpretations of prehistory raised on such tottering foundations. For *linguists* of the Andes — those really in a position to judge — such folk etymologies are little more than old wives' tales. However reliable and on good authority they may seem at first sight, plenty of the etymologies offered even by 'El Inca' Garcilaso, for example, or the self-styled 'Academia Mayor de la Lengua Quechua' in Cuzco, turn out to be clearly erroneous (see Cerrón-Palomino 2004 and 1997 respectively). For a fuller explanation of the dangers, see Beresford-Jones & Heggarty (2012: §3.3). Cerrón-Palomino's (2008b) *Voces del Ande*, meanwhile, stands as a reference guide and case-study in the depth and thoroughness of linguistic detail to which etymologies must in fact be scrutinised, exemplified for dozens of key terms in Andean prehistory.

2.3. Language Families: Expansion and Divergence

Steering clear of all of these distractions, the level on which languages *do* reflect the real-world forces that operate upon the populations that speak them is an entirely different one in linguistic analysis: that of the relationships between languages as a whole. For certainly, any convergent interactions between languages, and particularly any territorial expansion that then leads a language to diverge into a wider family, are indeed entirely a function of demographic, social, cultural and political forces or 'processes'. It is these forces, created by and acting upon the communities that speak those languages, that can bring them together or break them apart, or lead a population to switch from one language to another. The relationship here is eminently one of cause-and-effect: real-world processes leaving linguistic effects.

Among the relevant processes are many that can affect the size, density and growth of a population; the degree and nature of its contact with, or isolation from, other populations; and its relative socio-cultural or political power and/or prestige. It is important to reemphasise that these processes are external to language itself, and do not generally determine which precise language changes occur. They cannot confidently explain why English lost gender while German did not, or why German lost the distinct <th> pronunciations [θ] and [ð] while English did not. What these processes *did* determine was on a different level: whether and how any changes (whatever their precise linguistic nature) either came to be shared by all speakers of a language across a given region, or could develop independently in different regions. It was external processes, of the types listed above, that ensured that all West Germanic-speakers were not left together *in situ*, as a single linguistic population along the North Sea coast of continental Europe, and that

rather, some of them ‘migrated’ to England and thus broke the effective ‘speech community’ with those left behind. External processes framed the form and degree of independence of the speaker communities in each case, such that gender disappeared *throughout* the British Isles, while the [th] pronunciations did *throughout* the Germanic-speaking areas of continental Europe. The external contexts did not choose the precise language changes, but did mould how they came to *pattern* across languages: in this case, precisely how English and German came to relate to each other within the Germanic family. This is how language patterns come to be a reflection of how such real-world processes operated on given populations over time, and as such a valuable surviving record of that (pre)history. And it is precisely these same processes that archaeology seeks to track and explain through its own record of the past. It is here, then, that the link between the two disciplines really lies.

But just as that archaeological record is only partial and fragmented, so too is the linguistic one. Many language lineages have gone extinct without leaving any significant traces: Pictish, Etruscan, and countless ‘indigenous’ languages across most of the world. In the Andes, Puquina makes for a similarly frustrating case (Cerrón-Palomino, 2012). In seeking to correlate these two fragmentary records of our past, we can hope to use their respective strengths to mitigate the weaknesses of the other. For an example of how to go about this, we return to the two processes by which different languages can come to show correspondences, to set each in its corresponding real-world context. Language convergence reflects more or less intense *contacts* between what were originally separate population groups; divergence, meanwhile, of a single ancestor language into a language family, reflects a past *expansion* of what had once been just a single population group. The case of the Central Andes serves perfectly to illustrate these two different mechanisms.

The two main indigenous language families, Quechua and Aymara, survive today in their *current* distributions as mapped in Figure 1. Correspondences both *within* each of these families independently, and also *between* them, make for a rich mine of information about their pre-histories.

Those of the first type, that attest to processes of divergence, unfailingly tell us that each family goes back to its own separate single ancestor language, each originally spoken (necessarily) only in some narrowly circumscribed geographical area. From these respective homelands — wherever they were — each began to expand, such that in due course the two came to occupy their known ranges over large extents of the Andes. The stage of a language lineage at the point in time just before it first diverged is known as that family’s *proto-language*; stages long before divergence as the *pre-proto-language*.

There is no language divergence without geographical expansion. But the language families of the world vary greatly in both the degrees of divergence within them, and the geographical extents across which they are spoken. Furthermore, since language change and divergence tend to increase cumulatively with the passage of time, the degree of divergence across a family gives some indication of how much time has elapsed since the (stages of) geographical expansion that gave rise to it. Methods have even been proposed, including the so-called *glottochronology*, which try to derive from this approximate correlation a means of actually pinning hard dates on divergence time-depths. We discuss elsewhere the severe limitations on the precision and reliability of those methods (Heggarty 2007: 321-5, Heggarty & Beresford-Jones 2010: 165).

What matters for our purpose here is that while measures of intra-family diversity certainly do not produce ‘dates’ that can in any sense be regarded as absolute, comparisons between different language families do at least provide a useful guide to their *relative* time-depths. Such order-of-magnitude measures indicate that neither Quechua nor Aymara, despite their wide geographical extents, is a particularly deep family in time (see Heggarty & Beresford-Jones 2010). Each encompasses a degree of internal diversity that is distinctly limited by the standards of the six to nine millennia variously estimated for the Indo-European language family, for instance (Figure 2). Estimates for Quechua range from just 1200 to c. 2500 years of divergence, comparable with just the very ‘last generation’ of Indo-European, such as Slavic, Romance or Germanic (Figure 5). Even this time-depth, though, is more than enough to dismiss the widespread misconception that all of Quechua’s diversity and expansion can be attributed to the Inca Empire of c. 1450-1535. So to find what drove most of Quechua’s dispersal, we must look deeper into the archaeological record.

As regards the Aymara family, attempts to assess its internal diversity and time-depth are hampered by how little of its former diversity now survives outside its modern Altiplano heartland. Measures that

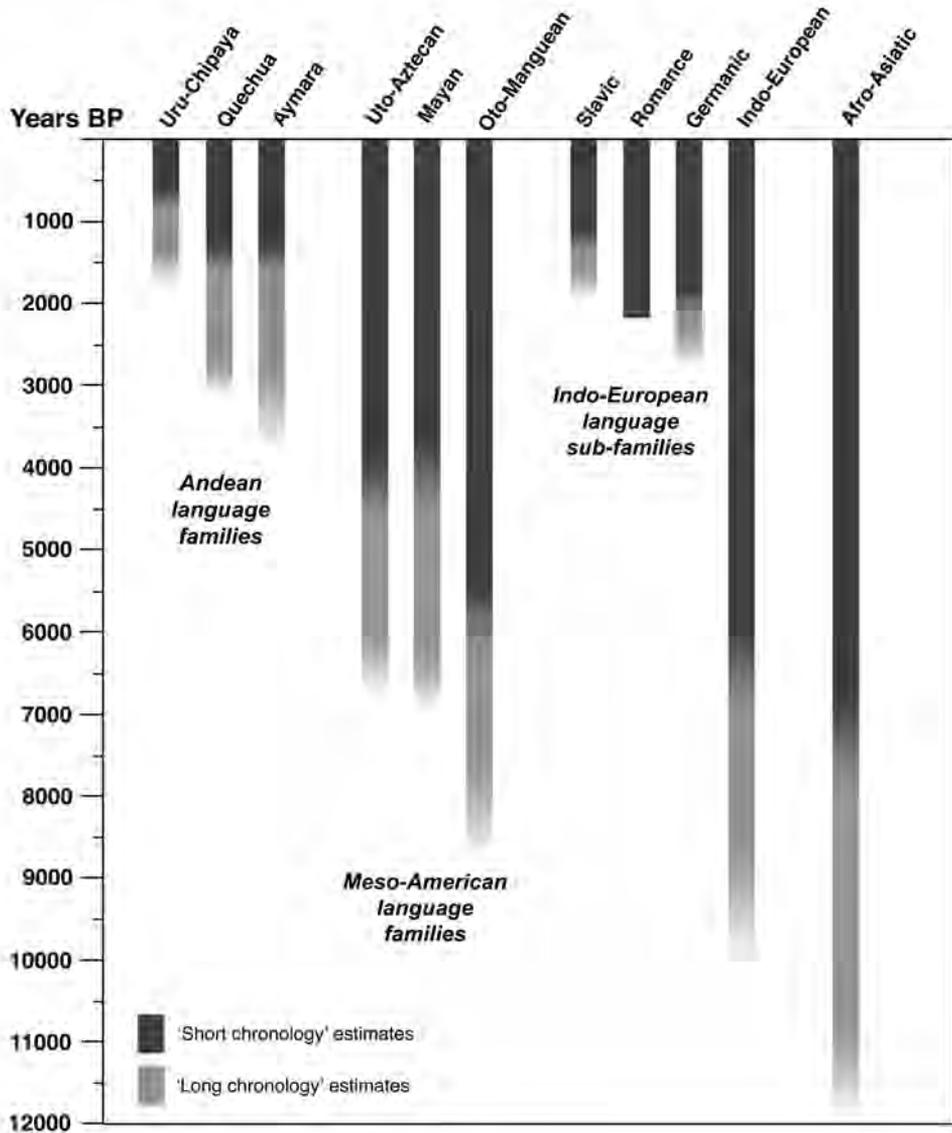


Figure 5. Time-depth estimates for the major Andean language families, by comparison with language families of Europe (figure prepared by David Beresford-Jones and Paul Heggarty).

include the ‘Central Aymara’ branch of the family surviving in the Central highlands of Peru (alias the Jaqaru/Kawki language), suggest a time-depth of an order similar to that of Quechua, if not rather greater. *Within* the Altiplano, meanwhile, Aymara exhibits such limited variation by geography that linguists can be confident that its expansion there is of relatively recent date (as already discussed in §1).

2.4. Language Areas, Contact and Convergence

With respect to one another, meanwhile, Quechua and Aymara are equally rich in data on the other level of correspondences between languages: of the type that indicate not common origin, but instead a (pre)history

of convergence, out of separate starting points. For Quechua and Aymara show a host of striking structural parallels, and share a great deal of vocabulary (estimated at as much as 30% for certain of their dialects in closest contact with each other: Cerrón-Palomino (2003: 311). In the heyday of earlier, now long discredited approaches in linguistics (glottochronology and ‘multilateral comparison’), their advocates blurred the distinction between opposing signals of divergence and convergence. The inter-family correspondences were interpreted by some (Büttner 1983, Greenberg 1987) as suggesting that Quechua and Aymara’s proto-languages in turn go back ultimately to a single common ancestor, i.e. that they are related, and that the correspondences between them are survivals from divergence at some great remove. This so-called ‘Quechumaran’ hypothesis is still occasionally entertained among Americanist linguists who do not specialise in the languages of the Andes, but among those who do, not one signs up to it: see for instance Hardman (1985: 627), Adelaar (1992: 303), Torero (2002: 154), Adelaar with Muysken (2004: 35) and Heggarty (2005, 2008, 2010, 2011). As Mannheim (1985: 646) clearly puts it: “There is good language evidence which actually precludes the ... hypothesis”. For all practical purposes, Quechua and Aymara can safely be taken as *not* related.

Rather, the remarkable correspondences between them are of the opposite type: those that attest to the all but diametrically opposed process of convergence. More widely through the Andes, in fact, a number of languages gradually came to share in a limited set of general, abstract, structural characteristics, though without any one language recognisable as the source. Torero (2002: 518-541) lists these correspondences and shows how they vaguely define an area of language convergence that includes Mochica and Cholón in the north, for instance, and Puquina to the south. Such *language areas*, as they are simply termed, are common around the world, and usually show a diffuse core-and-periphery pattern, as the Andean case also reflects.

Language areas do not denote exclusive expansions of an individual language, which as we have seen leave quite the opposite linguistic signal, of divergence into a language family. Rather, correspondences of this type distributed in language area patterns denote only regional proximity and more or less intense contacts, not relatedness (Heggarty & Renfrew forthcoming a: §1.3.2). They are precisely the expected linguistic reflex of extensive chains of ‘down-the-line’ localised interactions and rolling patterns of bilingualism, across extensive territories and over prolonged time-scales, between small-scale neighbouring groups speaking a mosaic of different languages; see Heggarty & Renfrew (forthcoming a: §4.2.2). The Andean language area in fact transitions into a second, even wider area that spans countless languages across Amazonia (Dixon & Aikhenvald 1999: 7-10; Heggarty & Renfrew forthcoming b: §1.5).

Above and beyond this ‘background’ language area in the Andes, though, Quechua and Aymara stand out in attesting to much closer and specifically bilateral interaction. Torero’s (2002: 539) data and calculations make this abundantly clear, and Cerrón-Palomino (2008a) demonstrates it in rich detail in an entire volume. So while most languages of the Andes share in a few broad structural characteristics, the parallels between Quechua and Aymara go far beyond that, and extend to a host of identifiable borrowings and detailed structural ‘calques’. These hold throughout both families, evidence that their intense interaction necessarily goes back to early stages of their lineages, as or before they first began to expand and diverge. Interpretations of which scenarios in prehistory might account for this vary, although Pieter Muysken (2012) provides an especially insightful examination of general principles to follow in the Andean case. Adelaar (this volume) hypothesises one particular scenario, Beresford-Jones and Heggarty (this volume) another.

This intimacy between the two families dictates that any satisfactory explanation of the history of the one must be coherent with the history of the other, and incorporate a scenario conducive to intense contact between them from the earliest stages of their dispersal(s) — see for instance Cerrón-Palomino (2000: 337, 2001: 140). Failing to include such a scenario has been a weakness common to previous attempts by Andean archaeologists to synthesise language prehistory into their interpretations, not least Browman (1994). Yet even among linguists, their traditional model accounts for this convergence only by vague recourse to supposed ‘adjacent homelands’: (Proto-)Aymara on the south coast around Nazca; and (Proto-)Quechua either on the central coast around Lima (Torero), or further inland in the central northern highlands (Cerrón-Palomino 2003: 22). This particular infelicity in the traditional model is one we shall return to in §4. below.

2.5. Summary: What Andean Languages Say About the Past

Otherwise, on the level of divergence, the basic datum is the very existence of Quechua and Aymara as families at all. Put most simply, what historical linguistics says is not that there *may* have been one or more language expansions at given times over given extents of territory, provided that we can find signals in the archaeological record that could account for them. On the contrary, it tells us that language expansions certainly *did* happen. And these are linguistic facts that need to be accounted for by expansive processes underway in Andean prehistory — facts of significance to all disciplines with a stake in that field, not least archaeology.

In the Andes specifically, linguistics establishes that at some stages during a time-frame from the Middle Horizon back perhaps as far as the Early Horizon, out of some points within the Central Andes, two languages dispersed across wide and overlapping territorial extents: Proto-Aymara and Proto-Quechua (most likely in that order). Their expansions were spectacular, their driving force(s) very real.

It is not a question, then, of *whether* any expansive process *might* have existed, and have conveniently left such perfectly clear and matching signals in the archaeological record as to satisfy even the most sophisticated sceptic, so that we might dare entertain any language-archaeology association. Rather, the burden of proof lies far more heavily on the over-cautious sceptic to explain the irrefutable language dispersal, while denying any real-world expansive processes to drive it. Of course, material culture (at least in pre-literate societies) cannot of itself identify for us who spoke which language when. But that is beside the basic point. Let us stress once more: the task is not to work out whether some expansive forces in human demography and society propelled particular language expansions, but only *which* of those processes that we can already discern in the archaeological record are such as to account *most plausibly* for the basic linguistic facts that are also long established.

Or, in terms of general cross-disciplinary methodology, our task is to establish how that plausibility might be judged. We have sketched out our own approach in §1 above, which moreover underpins our proposal set out in Beresford-Jones & Heggarty (this volume). To recap: the link between our disciplines lies in the cause-and-effect relationship between real-world processes, and the linguistic outcomes they shape; in particular, language *families* reflect *expansive processes*. We need to establish direct, strong correspondences between the disciplines on the independent levels of geography, chronology and causation. And we must respect a principle of commensurate scale between real-world cause and linguistic effect.

3. Linking Archaeology and Linguistics in the Andes: The Traditional Model

What, then, is the traditional model for associating the linguistic and archaeological records in the Andes, and how does it fare against our proposed criteria for linking the two? We shall review it here and draw attention to certain infelicities in the associations it proposes.

There is some consensus that the homelands of the respective separate ancestor languages of the Quechua and Aymara families both lay somewhere in Central Peru, although considerable uncertainty remains as to more precisely where within this rather broadly defined region. Proposals from the two key authorities in the field — Alfredo Torero, generally seconded by Rodolfo Cerrón-Palomino — have long held the status of at least the most convincing expounded so far.

For Aymara, this ‘traditional model’ argues for a homeland in the Nazca region on the south-central coast, whence the family’s ancestral Proto-Aymara form is imagined to have expanded, during the Early Intermediate Period, into Nazca’s highland hinterlands, including the Ayacucho region (see Figure 4, and Cerrón-Palomino 2000: 378). Some time later, that region was to become the heartland of the Wari Middle Horizon, to which both authors then attribute the dispersal of Aymara more widely across southern Peru, including to the Cuzco region. Finally, during the Late Intermediate, Aymara spread further south into the Altiplano, perhaps as the language of the so-called ‘Aymara Kingdoms’ such as the Lupaqa and Qulla (although as Cerrón-Palomino (2012) points out, originally some of these, like their predecessor Tiyawanaku, may not in fact have spoken Aymara at all, but Puquina). This expansion of Altiplano Aymara at the expense of Puquina and Uru continued through the Inca and colonial periods, and beyond, and it is of course here that Aymara survives most strongly today.

The two main authorities differ, however, as to the likely location of the Quechua homeland. Torero places it on the central coast, immediately to the north of his Aymara homeland, while Cerrón-Palomino (2003: 22; this volume) now prefers to set it inland, in the central highlands. Torero (2002: 42) even entertains the suggestion that much earlier, during the Late Pre-Ceramic period, i.e. millennia before its expansion, a long *pre*-proto stage of the Quechua lineage may have been spoken in the Norte Chico area (see Figure 2), but this is generally regarded as extremely speculative (Cerrón-Palomino 2003: 22, Heggarty & Beresford-Jones 2010: 179).

In the traditional view, the details of the earliest Quechua expansions remain rather unclear. What the linguistic data do show unequivocally is that *certain* of Quechua's expansions date to the relatively recent past — the Inca Late Horizon and Spanish colonial periods (Heggarty 2007, 2008). These account for the Quechua of southern Bolivia, of north-west Argentina (DeMarrais, 2012) and arguably of Ecuador too (Hocquenghem 2012). Once these secondary expansions are 'peeled back', the picture left, as in Figure 3, shows that long before them, Quechua had *already* come to be spoken across a great swathe of Peru: the *Continuous Zone* (Figure 1) from Ancash to Cuzco, and formerly also on the central and southern coasts. It is also clear that the greatest degree of divergence within Quechua is between the northernmost and southernmost extremes of this broad territory of its earlier expansion. The traditional model would have this divergence explained by a series of vaguely defined migratory expansion stages, not least a first radical split into two separate branches. These are the QI and QII of Torero (1964), who envisages them also as the results of various separate expansion stages from the Early through to the Late Intermediate.

Whichever homeland Proto-Quechua started out from, the first stage is seen as an expansion which left Quechua spoken on the central coast and through the north-central highlands of Peru, from Ancash south to Huánuco (but in the traditional view, not yet as far south as the Ayacucho region, which is associated at the time with Aymara instead). This expansion is taken to have given rise to the 'Central Quechua' or QI branch. The remaining QII or 'North-South Quechua' branch, meanwhile, is taken to have formed out of a later expansion to the southern coast and highlands of Peru.

What is unclear in the traditional model, however, is exactly which particular expansive processes in the archaeological record — in demography, trade, conquest, culture, and so forth — might account for this initial major dispersal. Torero (2002: 124) identifies no particular driver for the first stage at all, though he imagines the split into central (QI) and north-south (QII) subgroups to have begun with an expansion of QII-speakers southwards, culminating in the foundation of the city of Cajamarquilla, at the southern extremity of his proposed Proto-Quechua homeland in the Lima Valley, around the fourth century AD (Torero 2002: 127). QII is imagined to spread further south first during the Middle Horizon, along the south-central coast and its immediate highland hinterland, an expansion attributed to the cult and trading influences of the great oracle of Pachacámac in the Lurín Valley near Lima.

Next, from here and driven by the Chíncha culture that flourished on the south coast during the Late Intermediate Period, Torero (2002: 127) posits that QII encroached into the highlands of the south (overwriting the Aymara imagined to have been spread there earlier by Wari). This relatively late spread of Quechua (specifically QII) into the southern highlands is invoked to explain the linguistic evidence that until quite late in prehistory the Cuzco region spoke not just (nor even predominantly) Quechua, as popular perception would have it, but Aymara. For as Cerrón-Palomino (1999) explains, strong evidence for this emerges from a number of linguistic and Spanish documentary sources. Certainly, as Quechua spread southwards it picked up increasingly heavy influences from specifically Southern Aymara, especially by the stage that it eventually reached into the Cuzco region, which for the traditional model would have been as late as the dawn of Inca expansion — see Cerrón-Palomino (1999: 142; 2003: 336, 342), and Torero (2002: 51, 127-138), though the latter's precise chronological framework is somewhat vague and self-contradictory. Also attributed to Chíncha within the traditional model is the spread of Quechua to Ecuador, by supposed maritime trade — a hypothesis directly challenged, however, by Hocquenghem (2012).

How does this traditional model meet our criteria for establishing correspondences with archaeology, on the three levels of geography, chronology and causation? Firstly, on the level of **chronology**, there are at least some linguistic indications that Aymara began its expansion before Quechua, including Torero's own lexicostatistical measures of the degrees of divergence within the respective families (Torero 2002:

88, Cerrón-Palomino 2000: 287, 2003: 333-4). The traditional model does not account for this; indeed Torero effectively discards this inconvenient datum entirely (see Cerrón-Palomino 2003: 331), to see both families first spreading at around the same time, in the Early Intermediate Period. Yet advocates of the traditional hypothesis repeatedly and explicitly identify Aymara as a prior, *substrate* language (i.e. present earlier in a given territory) to the present-day Quechua in areas such as north-central Peru. This inverts the relative chronology of their own model, by which Aymara could only impact on Ancash, for instance, with the Wari Middle Horizon, yet Quechua had supposedly reached Ancash long before...

Torero's (2002: 124) chronology of the various migratory expansions behind Quechua's initial and greatest expansion is defined in particularly vague terms in any case. On one point he is fairly clear, however: in attributing the expansions of Quechua into the far southern highlands, and into Ecuador by sea, to the Chíncha polity and to the Late Intermediate Period. And yet this is incompatible with his own classification within the QII branch, for his division into QIIb (Ecuador and Chíncha Quechuas) vs. QIIc (South Highland Quechua) by definition entails that this QIIb-QIIc split must have occurred significantly *before* the split within QIIb itself, into its Ecuador and Chíncha sub-branches. Linguistically, Chíncha Quechua cannot be the source of both Ecuador and Southern Highland Quechua at the *same* period. The very changes that indicate that Ecuador Quechua derived from Chíncha Quechua are innovations that they share from before they diverged from each other. Yet these are conspicuously *not* inherited by Southern Highland Quechua (and not of a type that it could somehow have reversed). Southern Highland Quechua must therefore have begun diverging from Chíncha Quechua significantly before the latter did from Ecuador Quechua. In short, for Torero to set *both* to the Late Intermediate Period is tantamount to denying his own classification of how all his QII dialects relate to each other. We shall return to the weaknesses in the chronology of the traditional model shortly in §4.

On the level of **geography** too, the traditional model is uncomfortable on a number of counts. It posits Ayacucho as the source of Aymara's most significant expansion during the Middle Horizon; but today Ayacucho is the heartland of Quechua, not Aymara. On the map, for instance, in Adelaar with Muysken (2004: 260), which shades those areas where a former presence of Aymara is attested, the Ayacucho region proper appears as a conspicuous blank. More curiously still, of Southern Quechua's regional varieties today, that of Ayacucho is the one that shows the *least* specific influence from Aymara (no aspirates, no ejectives) and particularly Southern Aymara (no frication of syllable-final stops). Furthermore, Torero's model locates the original, pre-expansion homelands for both Quechua and Aymara on the coast. Yet the entire prehistory of the Central Andes seems to present *no* instances of coastal societies expanding to dominate their highland hinterlands over any significant territory. As Julio C. Tello (1923a, 1923b) long since observed, each of the greatest expansions clearly visible in the archaeological record proceeded the other way around, spreading *out of* the highlands.

But it is on the third level for linking archaeology to linguistics — that of **causation** — that we find the most serious objections of all to the traditional model, especially in failing to respect commensurate scale between real-world cause and linguistic effect. For it imputes major stages of the language family expansions not to the Horizons but to the smaller-scale polities of the so-called 'Intermediate' Periods: Nazca, Cajamarquilla and Chíncha. Torero's model is particularly implausible on the driving forces invoked for the main expansions of Quechua — so far as one can understand his often vague and inconsistent presentation.

Torero locates the starting point of Quechua expansion on the central coast, in the closely-spaced valleys between Chancay and Lurín. These were indeed densely populated during the Early Intermediate, with a major urban centre at Cajamarquilla in the Rímac Valley. But the archaeological record for this period shows nothing here that might correspond with a major *expansion*, particularly in the direction Torero envisages, into the north-central highlands as far as Ancash (Torero 2002: 124). In fact, Torero never offers clear explanation for this expansion of his QI, Central Quechua. He does, however, invoke a period of intense commercial interaction between Cajamarquilla and a number of other, independent regional polities during the sixth and seventh centuries AD (Torero 2002: 48). In this he follows an interpretation of the archaeological record for this period which effectively disputes its characterisation as a Middle 'Horizon' at all (see Shady & Ruiz 1979, Shady 1982, 1989). The widespread dissemination of a material culture

style at the time, which led to this 'Middle Horizon' being identified in the first place, is for Shady just the result of a trading network, and Torero invokes this to account for intense early contact between Quechua and Aymara speakers. But few of the 'urban centres' Torero lists show any coherence with the geography he claims for Quechua's expansion at this stage. Moreover, no sooner did the Wari Middle Horizon first extend into the Rímac Valley but Cajamarquilla was abruptly abandoned (Shady 1989, Mogrovejo & Segura 2001).

Torero is clearer in setting out his explanation of the driving forces for the southward expansion of his QII, *viz.* Pachacámac and Chíncha. These, however, turn out to be even less compatible with any evidence presented by the archaeological record. Pachacámac was founded early in the first epoch of the Middle Horizon. So similar is its material culture style to that of Wari that it was precisely this that prompted Uhle's very recognition of a Middle Horizon in the first place (even if the precise relationship underlying those styles is still debated: see Isbell 1988, Schreiber 1992, Kaulicke 2001). During the Middle Horizon the Pachacámac style became widely distributed along the coast as far south as Nazca, and into its immediate highland hinterland to Huancayo (Menzel 1964: 151). But over the subsequent Late Intermediate Period the extent of this influence collapsed, back to just the immediate vicinity of the oracle itself. There is no archaeological evidence for major population movements into the Wari heartland following its demise, as required by Torero's model to bring Quechua to replace the supposed earlier Aymara there (Torero 2002: 51, 127). Nor is there any archaeological evidence that the influence of the rich Chíncha society of the Late Intermediate Period extended much into its highland hinterlands — certainly not as far as the Cuzco region, as Torero's model also requires to take Quechua there. On the contrary, in the south this was a time of intense, small-scale conflict and tension, and a breakdown of pre-existing networks into "an almost unbelievable number of small political units", as Rowe (1946: 185) put it. We argue that what forces the traditional model into these serpentine and unhappy pastiches with the archaeological record is a flawed model also of the divergence relationships within the Quechua language family (see Beresford-Jones & Heggarty this volume: §3).

There remains one final weakness of the traditional model to put on record here. As we have set out in §2.1, there are *two* processes that give rise to patterns of correspondences between languages. So far in this section we have considered those by which each family in its own right has been diverging though time out of its respective ancestor language, *viz.* Proto-Quechua and Proto-Aymara. But quite aside from that, there is also the exceptionally high degree of convergence between them to account for, and at early stages in their respective lineages. The traditional model's hypothesis of simply adjacent homelands seems to us too weak an explanation. Moreover, Torero's archaeologically dubious commercial interactions of Cajamarquilla at around the time of the Middle Horizon are too late, for he has already sent significant branches of both families far off in opposing directions. Any contacts here, then, would not impact upon and be inherited by all members of both families. It is true that simple contiguity, repeated through chains of localised interaction, might plausibly explain the widespread background characteristics of the general Andean language area, and thus the various overlaps in common structural traits between Quechua, Cholón and Uru, for example. But if such contiguity were all that defined the relationship between Quechua and Aymara too, then why should their linguistic interpenetration should have gone so much further? The structural parallels between Quechua and Aymara are so strong, down to such a level of detail, that they imply no mere convergence of neighbours, but no less than the wholesale 're-modelling' of one of these language lineages on the other, precisely as Muysken (2012) explains (and see also Adelaar this volume). The language data indicate that the populations who spoke these two lineages interacted with one another much more intensely than they did with others. (A further perspective on this comes from certain human genetic markers, in which Andean populations who speak Quechua or Aymara are effectively indistinguishable from each other, while formerly Uru-speaking populations, for instance, are much more distinct; see Barbieri *et al.* (2010).)

Torero's model of Quechua-Aymara contiguity along the Peruvian coast as a putative explanation seems questionable on other grounds, too. The river valleys of the Peruvian coast are of course separated from each other by stretches of desert, obstacles to easy movement along it. Nor, as Hocquenghem (2012) argues, would movement by sea have been at all as easy as might be supposed at first sight. So while some

degree of interaction might be expected between Torero's two putative coastal homelands, environment and simple logistics would seem to set limits on how intense it would have been. Between coast and highlands, meanwhile (to follow Cerrón-Palomino's latest suggestion for the Quechua homeland), interactions are far better attested in the archaeological record, in the form of goods and materials exchanged since earliest times. Yet they would still seem to offer a poor explanation for wholesale re-modelling of their languages, so long as such exchanges remained at the level of relatively balanced interactions between neighbours and relative equals: which is precisely what the archaeology reflects during the Intermediate Periods. And in any case, Cerrón-Palomino's latest proposal in this volume would have the Quechua homeland in distant highland Chavín, so hardly 'adjacent' to Nazca at all.

Just as Muysken (2012) and Adelaar (this volume) both argue, we feel that the degree of interpenetration between Quechua and Aymara calls for a much stronger and more explicit scenario of interaction between their speakers. Our proposal is that the most plausible account for such a re-modelling would be to see speakers of a first expansive language (Aymara), closely associated with cultural prestige and a degree of socio-economic utility and demographic growth (the Chavín Early Horizon?), spreading into the homeland region of the other (Quechua), and impacting heavily upon it there as a 'superstrate' language (Beresford-Jones & Heggarty, this volume). Many centuries later, the population speaking that second, now re-modelled language would itself come to the fore in Andean prehistory, as the Wari Middle Horizon. This order fits with the tentative conclusion that Adelaar with Muysken (2004: 36) draw from comparing the different degrees of structural homogeneity within the two families: linguistic grounds for assuming that of the two possibilities for which language remodelled towards which other, "Aymaran would be the best candidate for having provided such a model" for Quechua to adjust towards, rather than vice versa. Again, we posit that it is only the Horizons in the archaeological record of Peru that offer cogent vehicles for this unique combination, of convergence as well as divergence, in the linguistic record of the Andean past.

4. Overall Models for Andean Prehistory: Progress and the New State of the Art

So if the traditional model is problematic in so many ways, what alternative might make for a more convincing new overall framework for a cross-disciplinary Andean prehistory? We set out our own proposal in our other contribution to this volume. To characterise rather simply the most significant differences between these two, as overall frameworks, we might also identify the traditional Torero model as 'Wari as Aymara; no role for Chavín'; and the overturning of it under our own alternative proposal as 'Chavín as Aymara, Wari as Quechua'. To be more specific, then, by an 'overall framework' we refer to a hypothesis that would account together for the first main expansion phase(s) of Aymara, and of Quechua across its Continuous Zone, as an alternative to the traditional Torero model.

There are of course a number of individual burning questions of Andean prehistory that are not necessarily dependent on one particular overall framework and can be taken somewhat separately in their own right. The expansions of Quechua to the antipodes of its great spread, in Ecuador and in north-west Argentina, are on many linguistic criteria clearly distinct, secondary movements that post-date the initial spread across the Continuous Zone. Even the question of how and when Aymara spread into and across its present-day heartland in the Altiplano represents — at least for *linguists* of the Andes — a phase separate from and later than its main earlier spread across at least the southern half of highland and coastal Peru. And what, indeed, of the linguistic origins of the Incas? Various of the participants in our symposia, and contributors to the volumes that emerged from them, chose to target more self-contained, individual issues of this nature. Those contributions we have surveyed separately in Heggarty & Beresford-Jones (2012: §2), so we shall not go into them further here, where our purview remains a wider one, of overall frameworks for the core period of Andean language prehistory.

Also largely independent of any given framework for the main expansion phase(s) of Aymara and Quechua is the quite separate issue at the other, much earlier end of the chronological scale. For an even more fundamental prior question is how it came to be in the first place that the Andes, unlike most other regions of the world, do not host any identifiable wider language families whose expansions go back much

earlier in time than the relatively shallow families that are Aymara and Quechua. There is of course one highly controversial hypothesis that would see the expansions of a number of great, deep-time language families around the world as having been driven essentially by the spread of farming. Particularly from that perspective, though, the distinctively shallow time-depths of the great Andean language families would seem strange, given the region's status as one of precious few independent hearths of agriculture worldwide. And the earliest origins of farming here lie as far back in time here as they do in the Old World; yet great language families of remotely commensurate time-depth are conspicuously lacking. We have set out elsewhere (Heggarty & Beresford-Jones 2010), and summarised also in our other contribution here (Beresford-Jones & Heggarty this volume: §2.3), our own proposal for how a number of important idiosyncrasies in the Andean context led agriculture to develop here in ways very different to the Old World, and may thus explain why the linguistic story here also looks so different. The Andes make for an exception, certainly, to the Old World pattern, but in some senses one that more proves the rule of the farming/language dispersal hypothesis than refutes it. That stands, however, only provided that certain qualifications and refinements are recognised, which are the lessons that the particularities of the Andean context hold out for the hypothesis worldwide.

To return to the core period that is our focus in this paper, and to judge from our two symposia and these proceedings volumes, our challenge to the traditional Torero framework does at least seem to have served its primary purpose: to provoke reflection, reaction, and debate. Many contributors recognised that our objections were well-founded, but were not fully satisfied by our alternative proposal either. In response, they advanced a number of parallel or counter-proposals of their own, as set out or at least touched upon by their respective advocates in the discussions in Cambridge, their presentations in Lima, and the various chapters in this volume and in Heggarty & Beresford-Jones (2012).

To identify the main new hypotheses, we first outline them along the same simple lines as used above to describe our own framework as 'Chavín as Aymara, Wari as Quechua' — admittedly a rather blunt characterisation, but with the virtue of being self-explanatory. Rodolfo Cerrón-Palomino has hypothesised instead, then, a framework of 'Chavín as Quechua, Wari as Aymara', effectively mounting a defence of the traditional model, albeit revised by setting the homeland of the Quechua lineage not on the coast of central Peru, but firmly inland, and indeed specifically identifying Chavín with 'Pre-Proto-Quechua', i.e. in principle a pre-expansion phase of that lineage. Discussions also entertained an alternative framework of 'both Chavín and Wari as Quechua', i.e. as two separate waves of expansion, to account also for the traditional QI vs. QII branching within the family. Finally, Gary Urton in particular hypothesised 'Wari as both Quechua and Aymara', an idea taken up and set out in most detail by Willem Adelaar (this volume), and by Urton (2012) within the context of the well-known Andean institutions of complementarity dyadism.

These are the main proposals that have now crystallised and garnered some support in the debates in our symposia, as alternatives or part-complements either to the traditional hypothesis, or to the challenge to it in our own framework. So to close this chapter we shall summarise, compare, contrast and assess each of these other new hypotheses that we are glad to have helped provoke, and which now vie alongside our own. For it is above all the debate between them that constitutes the new 'state of the art' in Andean cross-disciplinary prehistory. Indeed, given developments since the symposia and since the chapters in the proceedings volumes were first written, in our survey that follows we take the liberty of summarising the latest elaborations and refinements advanced, so as to ensure that we bring this survey of current thinking fully up to date.

4.1. Chavín as Aymara, Wari as Quechua? Judgements of Our Hypothesis

As for our own hypothesis, a number of our colleagues have either engaged with or criticised it in various ways, not least in their chapters here and in Heggarty & Beresford-Jones ([eds.] 2012). We summarise their views and objections, and provide our own brief response to them, in our concluding chapter to that volume (i.e. Heggarty & Beresford-Jones 2012: §4). We shall not repeat those discussions here, for in any case we seek to anticipate many of them in our other chapter here setting out our hypothesis.

4.2. A 'Revised Traditional' Model: Chavín as Quechua, Wari as Aymara?

In his paper to the Lima conference, and now in his contribution to this volume, Rodolfo Cerrón-Palomino has mounted a robust defence of the traditional model across the board — save for certain revisions to address some of the criticisms that we in particular have levelled against it. So we may speak now of a 'revised traditional model', of which he is the leading and eloquent advocate. Not surprisingly, among the new overall hypotheses for a cross-disciplinary Andean prehistory that we review in this section, this revised traditional model remains that least coincident with our own; above all in that it maintains that the language spread by the Wari Middle Horizon was Aymara, not Quechua.

We term it 'revised' because Cerrón-Palomino certainly does introduce some adjustments to the model that seek to strengthen its case in response to our objections. We call above all for a principle of commensurate scale to be respected, and thus for recognition that it is the Horizons rather than Intermediate Periods that make for more plausible candidates for driving the major language expansions in the Andes. Perhaps this helped prompt Cerrón-Palomino to return to his earlier hints in favour of the Central Andean highlands as the most plausible homeland for Quechua: "today I feel that the central coast does not appear to have been precisely the context where Quechua could have originated, since it is there that I consider Aymara to have been established beforehand, before being displaced by one of the first diverging branches of Quechua, arriving out of the central-northern highlands" (Cerrón-Palomino 2003: 22)³, a statement that he now reinforces into a more explicit hypothesis. For in his contribution to this volume, Cerrón-Palomino specifically identifies the Chavín Early Horizon with the Quechua lineage — or to be more precise, with what he terms its "Pre-Proto-Quechua" stage. His revised traditional model, then, now makes for an even fuller reversal of our own proposal: for Cerrón-Palomino, Wari spoke Aymara, while Chavín spoke a stage of the Quechua lineage. In the latter case, though, while it is not made explicit to what extent Chavín is taken to have been responsible for any significant dispersal and thus divergence of Quechua, the "Pre-Proto-Quechua" stage by definition preceded any such divergence. In effect, then, the mention of Chavín does not in fact imply any suggested link in scale on the level of causation, for he attributes no particularly significant linguistic impact to this expansive 'Horizon' period.

Cerrón-Palomino's revision does recognise certain of our objections to the incoherence of the traditional model, though. For on the one hand that model claimed that in Central Peru, Aymara represents a "substrate" to *later* Quechua expansion into Ancash (Cerrón-Palomino 2003: 333). Yet on the other hand, it attributed Aymara impact there to the Middle Horizon, and that of Quechua to the *preceding* Early Intermediate (Torero 1984, 2002: 49); or, in this revision, to Chavín being the "Pre-Proto-Quechua" homeland in the Early Horizon). Cerrón-Palomino's solution to the incoherence is a simple one: to reverse his previous position (and that of Torero), and argue now that the Aymara traces in regions of Central Peru such as Ancash are not in fact earlier substrate but later *superstrate* influences. We remain uncomfortable with this *volte-face* for the traditional model, which seems suspiciously convenient. Certainly it usefully illustrates how some language data, just like those of archaeology, may be open to multiple interpretations. At all events, it is of course the language data that must have the final say on whether the Aymara influence on Central Quechua is more plausibly of a substrate or superstrate nature: more research is clearly needed on this (and see also Muysken 2012). In particular, a comprehensive toponymic survey of the Central Andes would be invaluable, especially now that computational tools offer such powerful opportunities for quantitative data analysis and mapping.

Islands of Aymara are well known to have survived into early colonial times across much of the southern highlands of Peru, and do to this day as far north as Yauyos, in a sea of what was otherwise Quechua. These make for a pattern typical of last remnants of an earlier language spread (the Aymara surviving now only in the enclaves), upon which the current matrix language (Quechua) intruded more recently. The rival models interlock the two language lineages very differently with the sequence of expansive processes that might account for them, however, and their respective absolute chronologies. For the revised traditional model, Aymara spreads into the Yauyos and Ayacucho regions with Nazca in the Early Intermediate Period, and then through the southern highlands with the Wari Middle Horizon. Quechua spreads to the south-central coast towards the end of the 800s AD, and thence also across the southern highlands, now as specifically Quechua IIB/c, during the Late Intermediate Period thanks to Chíncha and ultimately also

the Chancas. We see our model as far more economical: just one main expansion of Aymara (Chavín), then one of Quechua (Wari). Moreover, we would argue that it also shows far more coherence with the archaeological record.

Cerrón-Palomino (this volume) objects that if the language of Wari had been Quechua, as we propose, then enclaves of Aymara could not have survived in the vicinity of the Ayacucho region into early colonial times. Yet linguistic (pre)history is full of just such minority enclave survivals, and for time-spans even longer. Just as Basque has survived against Latin and Romance ever since the Roman Empire, so have Celtic enclaves against English. And in the Andes, in Cerrón-Palomino's own hypothesis Puquina survived for almost a millennium after Tiyanaku's collapse, in the face of both Inca and Spanish conquests, as Uro did, and Chipaya continues to do to this day.

If any proposal about resisting the tide of Wari linguistic impact is incongruous, we submit that it is on the contrary Cerrón-Palomino's. For while positing Aymara as the language of Wari, he simultaneously argues that in the very period of Wari's greatest impact (the late 800s AD), and in a region where that impact was especially strongly felt — the south-central coast of Peru — Wari's own Aymara was mysteriously replaced by an intruder language, from elsewhere within the Wari sphere. And that intruder was none other than the very Quechua that Cerrón-Palomino sees as so dominated at the time by Wari's Aymara as to be undergoing a full-scale grammatical remoulding in Aymara's image. And in order to account for this, he is forced to assume some unidentified expansive movement south-westwards out of central highland Peru, for which there is no archaeological evidence. This not only ignores the principle of commensurate scale in linking our disciplines: it reverses it. We do of course agree that Quechua was expanding at Aymara's expense during the Wari period — but precisely because the former, not the latter, was the language of Wari.

For adherents to the traditional model, though, envisaging *two* Quechua expansions holds out the attraction of providing at least a part-explanation of the traditional branching-tree classification of the family. For that vision sees above all a sharp bifurcation into 'Quechua I' (alias 'Central Quechua', from Ancash to Huancayo) and 'Quechua II' (everywhere else) — see §3 above and Beresford-Jones & Heggarty (this volume: §3). On one interpretation, this QI-QII contrast would represent the linguistic outcome of the time-gap between Quechua's various expansion phases. In his revision of the traditional model, however, this time-gap seems reduced in any case, if Cerrón-Palomino's proposal is read as suggesting that the split happened at the moment of the supposed south-westward spread of Proto-QII to the Chíncha coastal region in the late 800s AD, leaving QI behind in the highlands to the north.

Others, however, like ourselves, consider the supposed deep bifurcation between discrete QI-QII 'branches' to be something of a chimera, and the reality more that of a dialect continuum, part of which has since been masked. From that perspective, to see Quechua's expansion history in terms of two discrete phases in time seems out of step with the relatively continuous pattern of diversity across the family, especially through the intermediate Yauyos region. (For more on this case against QI-QII, see Pearce & Heggarty [2011].) In any case, even if one does wish to keep to the vision of a QI-QII split, such dialect frontiers can just as well arise from what were effectively single, progressive language expansions over just one period (Wari, in our model), as explained in Beresford-Jones & Heggarty (this volume).

Furthermore, Cerrón-Palomino's revised traditional model still sees the (former) language distributions across southern Peru, i.e. of Aymara enclaves within a Quechua matrix, as the result of a Late Intermediate Period spread of Quechua, driven by Chíncha (ostensibly by trade and military expeditions) and then somehow taken up also by the Chancas, so as to overwrite an earlier Wari Middle Horizon expansion of Aymara. This, to our minds, still falls foul of the principle of commensurate scale between real-world cause and linguistic effect. For it attributes to Chíncha and the Chancas far greater linguistic impact — the overwhelming expansion of Quechua (QIIc) into and across the southern highlands, all but completely overwriting the Aymara substrate there — than the archaeological evidence entitles us to expect for the Late Intermediate Period here. Effectively, the revised traditional model proposed here by Cerrón-Palomino seems to be giving up any ambition to synthesise the linguistic evidence with that from *archaeology*.

Under the chronology implicit in the traditional model, the only other sufficiently powerful candidate for this south-eastward spread of Quechua (QII) would be Inca rule itself. Yet it seems exaggerated to see Quechua presence here as so very recent, and would moreover implausibly require the *expansive* Inca

Empire to be the agent by which an outside language was brought into its own heartland and swiftly propelled to dominance there. Plenty of terms of Aymara or perhaps even Puquina origin do or did exist in the Cuzco region, certainly; but they are remarkable above all as surviving exceptions to the rule of Quechua as the dominant background. However revealing those exceptions may be, one should beware overstating the case: for already by Inca times the toponymy and institutional vocabulary of the Cuzco region were nonetheless overwhelmingly Quechua.

One of the reasons why Cerrón-Palomino feels it necessary to hold to the traditional model is his reading of the Incas' mytho-history of the Cuzco region, as reported through the Spanish chronicles; in particular, the accounts of their bitter conflict with Chanca society, ultimately resolved by Inca victory. For a number of these accounts hint at Aymara etymologies for Chanca names, and, to judge at least from his presentation at the Lima conference, Cerrón-Palomino reads them as also suggesting the Chancas to be vestiges of the Wari Empire, with a homeland near Ayacucho. His latest hypothesis in this volume, however, also considers them agents of the spread of southern *Quechua*, alongside Chinchá (from whom they had recently somehow acquired it). Many historians, though, would place the Chanca much closer to Cuzco, in Andahuaylas. In the archaeological record, meanwhile, the Chanca have proved remarkably difficult to distinguish from the early Incas or any of the other petty local chiefdoms that characterised the Late Intermediate in the Cuzco region (see for instance Bauer *et al.* 2010). In short, any putative association of Chanca with Wari, or indeed with Chinchá, remains highly tenuous, certainly from the archaeologist's viewpoint.

From our perspective, effectively Cerrón-Palomino continues to assign more credence to his interpretation of chronicles on the Incas' mytho-history in the Cuzco region than to the archaeological record. Above all, that record offers no support for any Chinchá influence sufficient to account for the expansion of Quechua into the Cuzco region during the Late Intermediate, nor for the idea that the Chancas of mytho-history were much to do with the Wari Empire. That said, both records are of course subject to interpretation (see Urton 2012) for an explication of the term 'mytho-history', and it will remain for our peers to help us towards a consensus.

At all events, it would seem that our new proposal has served well to prompt Rodolfo Cerrón-Palomino to reconsider, adjust and more explicitly define the traditional model which he played such a part in first establishing. Certainly, there is no-one better qualified to make the continued case for it, and a better defence of it than his own at the Lima conference, and in his paper in this volume, could hardly be mounted. This reaffirmation and reinforcement of the traditional model in response to our challenge can be but salutary for all who have ventured into this continuing debate, advocates and opponents alike.

4.3. Did Chavín and Wari Both Spread Quechua?

In discussions at the Lima conference, one alternative hypothesis was also entertained, founded even more explicitly on Torero's family tree classification of the Quechua family — a fundamental two-way QI-QII split associated with two main expansion phases — but which otherwise departs more radically from the traditional model than does Rodolfo Cerrón-Palomino's revision. In a way this would keep a foot in both camps, subscribing to certain parts of Cerrón-Palomino's revision to the traditional model, but also to much of our own. That is, might the Chavín Early Horizon *and* the Wari Middle Horizon both have spread Quechua, but different phases of its overall expansion? Or to look at things the other way around, this model would disagree significantly with both Cerrón-Palomino's and ours, and must be established as a third in its own right.

The key differences with our proposal are that Chavín would be seen as spreading Quechua, not Aymara; and Wari as responsible only for QII, not the whole of the Quechua family. The key differences with Cerrón-Palomino's revised traditional model, meanwhile, are that Wari would have spoken Quechua, not Aymara, and that Wari, not Chinchá, was responsible for the spread of QII specifically.

In several respects we do see attractions in this model. Certainly it respects the principles of commensurate scale: that the Horizons are the more likely drivers of major language expansions. For it removes the need to attribute exaggerated linguistic impact (the spread of Quechua across much of southern Peru)

to Late Intermediate Chincha, by assigning it, as we do, to the more powerful driving force of the Wari Middle Horizon.

For some linguists there may be a further attraction, in that dividing the responsibility for the spread of the Quechua family across two Horizons offers a real-world scenario to account for the QI-QII split (as with Cerrón-Palomino's revised traditional model, but with a more powerful and earlier driver for the QII divergence phase: Wari rather than Chincha). For in this vision, the Chavín Early Horizon would account for a first expansion of Quechua, while the QII branch alone would then have been spread specifically by the later Wari Middle Horizon. By this stage, QII had had time to become significantly differentiated from the QI that had continued developing apart from it, back in the Quechua homeland regions to the north. That is, the chronological gap between the two expansion phases (Early and Middle Horizons, in this case) is again seen as an attraction in explaining the QI-QII branching classification. That attraction only holds, though, for those who consider that the distinction between distinct QI and QII 'units' was ever historically real in the first place. Our view is quite the opposite: this model still sticks uncomfortably close to a QI-QII branching tree classification that we feel is unjustified. Indeed, to ensure the time-depth gap that this approach looks for in order to establish the QI-QII contrast, this proposal, like Cerrón-Palomino's, takes Quechua divergence as a whole back to a time-depth in the Early Horizon, some three to two millennia ago. Again, to our mind this seems exaggerated for so relatively shallow and compact a family as Quechua.

Above all, however, this model of 'Chavín and Wari both spreading Quechua' leaves one of the two main questions of Andean linguistic prehistory unanswered: what, then, might explain the spread of the *Aymara* family? Furthermore, it also leaves largely unanswered the reasons for the particularly intimate convergence *between* the Quechua and Aymara families.

4.4. Did Wari Spread Both Quechua and Aymara?

A possible answer to both questions emerges from yet another of the hypotheses much discussed at Cambridge, at the suggestion of Gary Urton, and somewhat elaborated in Urton (2012) in our companion volume. In anthropology, ethnohistory and archaeology alike, much has been made of the various 'institutions of complementarity' that seem to have long characterised Andean societies (see for instance Salomon 1985). What of their potential linguistic impact? Could they not make for a highly plausible explanation for why the Quechua and Aymara families show such an exceptionally high degree of convergence with each other, as discussed in §2 above? Might the Wari Middle Horizon not have been a 'bilingual' affair, responsible for spreading in tandem both Aymara and Quechua, or indeed Aymara and specifically Quechua II (see Adelaar this volume)? Certainly, this might help explain why the distributions of the two families overlap so closely with each other, and with the extent of Wari itself, across much of Peru. Others have ventured as much before, most notably Torero himself, on some readings (see Hiltunen 1999: 259), and Isbell (1984). But Urton goes further, to identify a specific mechanism by which the both languages might have spread together: the 'wari-lláqwash' relationship of complementarity. In this, the different altitude levels in the Andes, and their associated ecological/subsistence regimes, crystallise into two societies intimately bound up with each other: a mid-altitude population cultivating maize, and a high-elevation population cultivating tubers and practising camelid pastoralism. Might not their languages have also been of different origins, but likewise laced with influences from each other, just as Quechua and Aymara are?

The possibility is certainly an appealing one, and on the basic question of which group would likely have spoken which language we would agree with Urton's suggestion: the higher-altitude lláqwash as Aymara-speakers, the mid-altitude wari as Quechua-speakers. This certainly seems plausible, especially given that Aymara enclaves in southern Peru tended to survive longest in high-altitude areas, not to mention the obvious fact that Aymara remains nowhere more entrenched to this day than in the Altiplano itself. If so, however, then the traditional model's association of Wari spreading principally Aymara would seem all the more counter-intuitive. For the Wari phenomenon seems to be predominantly a mid-altitude one, characterised as it was by significant expansions in terracing and maize production, and emanating out of a capital at Wari itself at an altitude of 'just' 2770 m — a quintessentially 'qhichwa' or 'wari' maize-cultivating altitude, and far lower than typical 'lláqwash' camelid-herding climes.

But to return to Urton's specific proposal, it is equally possible to foresee an alternative interpretation for the apparently altitude-based distribution of the Aymara enclaves across Southern Peru. For the same pattern might just as well be accounted for within a proposal of Wari spreading Quechua alone, and that it was more just the greater remoteness of the highest altitude areas that allowed Aymara to hold out there rather longer against the rising tide of Quechua expansion. Indeed, notwithstanding all the forms of complementarity observable in the Andes, there is no secure evidence that they were such as to 'rewrite the rules' by which, ever since the advent of complex societies, these have tended to result in greater language polarisation and homogenisation, and to spread but a single language, not two in tandem.

One putative precedent for the model of a bilingual Wari Empire, invoked by Isbell (1984) and taken up by several participants at our conferences, is that of an ostensibly 'bilingual' Roman Empire (with both Latin and Greek in co-official roles). Yet to our minds the Roman case turns out on closer inspection to be far more of a counter-example to any idea that an Empire might spread two languages *together*, for Rome clearly did not. Latin was unambiguously the language of the west, Greek of the east (and that thanks to centuries of Greek influence and power culminating with Alexander the Great, far more than to the caesars). Indeed, the clarity of this split in the archaeological record is marked by the so-called Jireček Line through the southern Balkans (Kaimio 1979: 87). Yes, Latin had its administrative uses in the east, and Greek its cultural prestige in the west, but neither language established itself, let alone survived, as native speech in the other half of the Empire. (See also the discussion in Beresford-Jones and Heggarty this volume: §4).

To return to the Andes, Southern Peru and the Altiplano duly provide ample evidence of their own that is in fact very much in line with the linguistic experience of other regions of the world, namely that situations of bilingualism do tend to resolve in the long run by 'fixation' in favour of just one of the two languages (see Heggarty & Beresford-Jones 2012: §4.1). Some very particular socio-cultural situations may represent long-term exceptions (see for example Aikhenvald 1999 on parts of Amazonia), but not even the institutions of complementarity in the Andes seem to have such linguistic impact. In the long run all Aymara enclaves reported for southern Peru were duly subsumed by Quechua, just as Puquina and most Uru in the Altiplano have yielded to Quechua and Aymara, and now increasingly to Spanish. It is of course true that bilingualism is very frequent worldwide, more so than many realise, but from a long-term perspective it nonetheless equally often represents a temporary phase of transition from monolingualism in one language eventually to monolingualism in another. There is no clearer example than in the Andes themselves today, where the proportion of the population monolingual in Spanish continues to rise inexorably. The various borders between Quechua- and Aymara-speaking regions are characterised by bilingualism, but in the long run have been shifting considerably, not least as Quechua continued its southward advance towards Titicaca. Behind this rolling bilingual frontier, former Aymara-speaking regions of southern Peru now speak only Quechua (or Spanish). In southern Bolivia too, a similar process has seen Quechua expand at the expense of Aymara, through intervening phases of bilingualism (Cerrón-Palomino 2005).

So for all the significance of Andean institutions of complementarity in other domains, it remains far from clear whether they can reliably be assumed to have the linguistic impact attributed to them by a 'Wari as both Quechua and Aymara' model. For these and all the other reasons we invoke here, we still feel that a hypothesis of the Wari Middle Horizon as spreading primarily Quechua alone provides a more economical and convincing account of the language prehistory of the Andes.

Nonetheless, we would credit Urton's vision with some force in explaining Quechua-Aymara convergence, if he might be persuaded to set specific limits on precisely where and when it may have applied. Certainly, any model that seeks to generalise a vision of wari-lláqwash bilingualism throughout the Wari realm seems powerless to explain why there are significant geographical *contrasts* in the degree of Quechua-interaction from one part of the southern highlands to the next — and not only by altitude, but by simple geography. These contrasts are defined, moreover, precisely by the degree of impact upon the local Quechua that can be specifically attributed to Aymara influence (especially clear in the sound system). Such impact is palpable and far-reaching in the Quechua of Cuzco, and all regions from the Apurímac department southwards; yet conspicuously absent in and around Ayacucho itself. How could this be, if Wari itself were so quintessentially bilingual? The linguistic contrast maps primarily onto geography rather than

altitude, then, and specifically implies an expansion of Quechua out of an origin point to the north-west (Ayacucho?), heading south-eastwards into regions earlier inhabited by speakers of Aymara (Cuzco). The latter did ultimately switch to Quechua, but not without imbuing it with traces of their native Aymara sound system, and ever more strongly the further south-eastwards Quechua penetrated. (We refer particularly to the presence of aspirate and ejective stops, and the realisation of syllable-final stops as fricatives: phenomena all found in Southern Aymara and in Cuzco Quechua, but not in the Quechua of Ayacucho or areas further north.)

Furthermore, it is a moot point quite how far back in time we may safely project any analogy derived from ethnology. Urton (2012) invokes the archaeological study by Parsons *et al.* (1997) to argue for the existence of wari-lláqwash dyadism in the distant past. But what precisely does that archaeological example tell us? Firstly, it attests to this moiety structure only in one region: Tarama-Chinchaycocha. Secondly, it makes this interpretation of the archaeological record explicitly for the Late Intermediate Period, and pointedly *contrasts* it against the preceding Middle Horizon. Urton acknowledges this but is a little vague about where and when he proposes that the wari-lláqwash dyadism emerged: either “during” or “no earlier than around the break-up of the Wari state at the end of the Middle Horizon”. It seems to us that, just as Parsons *et al.*'s archaeological evidence supports the thesis that a wari-lláqwash dyadism might account for the particularly intense degree of interaction between the southernmost varieties of Aymara and Quechua during the Late Intermediate, so it contradicts any supposition that it would account for correspondences arising before that time, under Wari.

Altogether, then, we have in mind that Urton's presentation might usefully be grafted onto our own model, but only to account for the later interactions that arose during the Late Intermediate, after Wari had already collapsed, and were limited to the southernmost forms of the two language families, thus explaining also why they never affected the Quechua in Ayacucho itself. Such a model would help account for the persistence of pockets of Aymara amid the increasingly dominant Quechua, specifically across the southern highlands.

In Urton's model, moreover, the two moieties are engaged in a relationship of relative balance and stasis. Our own view, however, sees the Horizons as abetted by new developments in agriculture, intensified in a virtuous circle of positive feedback that came with what one might call a general '*pax horizontica*' (see Beresford-Jones & Heggarty this volume). In particular their new, larger-scale socio-political institutions were able to command significant labour forces for public works that would raise agricultural productivity (terracing, irrigation, even the road network). These would have tilted the demographic balance ever more in favour of the mid-altitude Quechua-speakers. As the Wari Middle Horizon eventually collapsed, the balance would swing back less heavily against the camelid pastoralists, albeit still steadily ratcheting up through time in favour of the increasingly dominant Quechua by the pressure for 'fixation'. Where any effects of this 'linguistic ratchet' would be felt last and least powerfully would naturally be in the southernmost highlands of Peru and beyond into Bolivia, where topography generally dictates less potential for inter-montane agriculture and more for agro-pastoralist lifeways. On the great Altiplano — the widest single expanse of camelid pasture in the Andes — this would indeed maintain the balance positively in favour of the lláqwash pastoralists speaking Aymara, their great opportunity here perhaps opening up during the Late Intermediate, following the collapse of a Puquina-speaking Tiyawanaku polity. On this level too, we see at least general coherence between our vision and the analysis in Sillar (2012).

Finally, Adelaar's proposal (this volume) also ostensibly invokes Wari as spreading both Aymara and Quechua — or rather, at least parts of those families. He ventures a scenario and chronological framework for various stages of interaction between the Quechua and Aymara language lineages, and for the expansions of the branches within the traditional QI-QII classification, a vision of the Quechua family that he seeks to defend. Yet his chronology seems to us disconcertingly precise. While the overall time-frame is not implausible, nor is there anything in the language data that could positively support any of the precise dates he cites; very large margins of error and imprecision are inherent in any attempt to infer dates from linguistic data.

Above all, much is left unexplained on the level of causation. For Adelaar's adherence to the traditional branching vision of Quechua also leads him to continue insisting, like Torero, on a sequence of individual

expansions, with significant time-separations between them. This immediately loses the force of the association with the key expansive period and process that was the Wari Middle Horizon. Indeed Adelaar's text and his final chronology seem somewhat contradictory. QI is attributed only to the very "start of Wari at the latest" — raising the question of what else could have caused this major spread and split any earlier. On the other hand, the penetration into the southern Andes of both Quechua IIc, and — departing here even from the traditional view — also Aymara, is in fact attributed to as late as "1000–1500 AD", i.e. not the Wari Middle Horizon at all, but after its collapse. Yet it is Wari impact in the Cuzco region that is immeasurably more palpable than that of Chinch'a in the Late Intermediate Period; so it is Wari that remains, much the more natural candidate for spreading Quechua (and indeed Aymara) there so powerfully.

In our view, then, Adelaar's proposal seems counter-intuitive on the crucial level of *causation*. It fails to answer convincingly the fundamental question in Andean prehistory, and in general methodology for associating the linguistic and archaeological records of the past: that, of how and why great language families came to be at all, i.e. by somehow spreading vastly at the expense of others.

5. Envoi

To be sure, the greatest questions in the prehistory of the Andes remain far from resolved. All the more need, then, to bring back together the various disciplines that each have their stake in that prehistory, and their own partial window on it; hence our Cambridge and Lima symposia. Staring across the inter-disciplinary rift that has opened over recent decades, our task was at least to re-launch genuine interaction, so as to lay firmer foundations for a much deeper understanding between archaeologists and linguists. As Andean prehistorians of our respective stripes, this is our collective duty. Naturally, it requires of us an understanding of the tenets and principal findings by which each of our fellow disciplines came to its own consensus, and a modicum of respect for that consensus. The call is but to return, of course, to the best traditions that marked Andean prehistory from its foundation; only now from our latest perspectives, after the great strides that each discipline has made since. As Uhle and Tello well understood, the more perspectives and datasets we can bring to bear on the enigmas of the Andean past, the stronger our interpretations will be.

To sum up on the various competing frameworks that now constitute the new state of the interdisciplinary art in Andean prehistory, certain aspects of each still leave us unconvinced. That said, it is well to put this in perspective. We are delighted to note how far we have already come. For where once we had but the one 'traditional' model, all but unknown to archaeologists, we now have an embarrassment of riches. Several new hypotheses now lie before us, thanks to so many of our colleagues having engaged so constructively with the search for a more coherent vision for archaeology and language in the Andes.

Moreover, we feel that all three of the new alternatives just discussed here are already considerably more plausible than the unreconstructed traditional model. For all of them, even if some more than others, move towards the recognition that it is the Horizons of Andean prehistory, rather than the Intermediate Periods, that offer the more plausible candidates for dispersing Aymara and Quechua. For only the Horizons represent phenomena specifically *expansive* and commensurate in scale with these great language spreads through so much of the Central Andes. And they explain them over precisely the corresponding time-scales when civilisation here was enjoying among its finest flowerings and expressions of complexity and power.

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Notes

¹ We prefer this spelling as closer to the original indigenous pronunciation, restoring the second syllable *-ya-* suggested both by etymology and by the original Hispanicised version *Tiahuanaco* (but omitted from the popular modern *Tiwanaku*).

² “lingüísticamente hablando, insostenible”.

³ “... hoy pensamos que la costa central no parece haber sido precisamente el escenario donde pudo haberse originado el quechua, pues creemos que allí estuvo emplazado previamente el aimara, que sería desplazado posteriormente por una de las primeras ramas desprendidas del quechua, procedente de la sierra centro-norteña.”

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