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Lexical similarities between Uru-Chipaya and Pano-Takanan languages: Genetic relationship or areal diffusion?

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Abstract

This study traces the geographical distribution of some words in the Pano-Takanan and Uru-Chipaya language families (Peru and Bolivia). The method applied has been fruitfully (though not exclusively) used in the fields of Uralic and Indo-European diachronic studies. Our research has been influenced by the studies by Bereczki (1983), Hajdú (1981), Hajdú & Domokos (1987), Häkkinen (1983) and Joki (1973). This kind of studies are a prerequisite to any attempt to investigate into the kind of problematic relationships involved between language groups, showing either that (1) the languages in question, at least in the course of the time section under study, were not in direct contact (or had only sporadic contacts) or that (2) the languages were indeed in contact. The latter possibility offers us the opportunity to further examine whether we are dealing with areal affinity or genetic relationship. When no contact can be shown, there can be no genetic connection for the period under scrutiny. The next step, phonological and morphological comparison either proving or discarding genetic relationship, is not attempted here. We try to disclose layer after layer, as far back in the past as feasible, the former distribution of the ancestors of these languages, thus reconstructing some of the movements of these peoples and/or languages.

Mainly by inspecting the geographical distribution of cognate words, we have tried to disentangle different chronological stages of the languages, in relative time. A hypothesis of six chronological stages, each reflecting a particular geographical configuration of the ancestor languages, is proposed.

Key words: Uru-Chipaya, Pano-Takanan, genetic vs areal relationship.

Semejanzas léxicas entre lenguas uru-chipaya y pano-tacana: ¿relación genética o difusión de área?

Resumen

Este estudio rastrea la distribución geográfica de algunas palabras de las familias lingüísticas pano-takanan y uru-chipaya (Perú y Bolivia). El método aplicado se ha usado fructífera, pero no exclusivamente, en los campos de los estudios diacrónicos urálicos e indo-europeos. Nuestra investigación ha sido influida por los estudios de Berezcki (1983), Hajdú (1981), Hajdú & Domokos (1987), Häkkinen (1983) y Joki (1973). Este tipo de estudios constituye un prerrequisito para cualquier intento de investigar el tipo de relaciones problemáticas que se dan entre grupos de lenguas, mostrando que: (1) las lenguas en cuestión, al menos en el curso de la sección estudiada, no estaban en contacto directo (o tenían sólo contactos esporádicos) o que (2) las lenguas ciertamente estaban en contacto. Esta última posibilidad ofrece la oportunidad de examinar ulteriormente si nos enfrentamos con una afinidad de área o con una relación genética. Cuando no se puede demostrar contacto, no puede haber conexión genética para el período examinado. El próximo paso, la comparación fonológica y morfológica que prueba o rechaza la relación genética, no se intenta aquí. Intentamos revelar capa tras capa, tan remotamente en el pasado como sea posible, la anterior distribución de los ancestros de estas lenguas, reconstruyendo así algunos de los movimientos de estos pueblos y/o lenguas. Principalmente mediante la inspección de la distribución geográfica de palabras cognadas, hemos tratado de desenmarañar diferentes estadios cronológicos de estas lenguas en tiempo relativo. Se propone así una hipótesis de seis estadios

cronológicos, cada uno reflejando una configuración geográfica particular de la lengua ancestro.

Palabras claves: uru-chipaya, pano-tacana, relación genética o de área.

INTRODUCTION

The aim of this paper is to trace the geographical distribution of some words in two families of languages, **Pano-Takanan** and **Uru-Chipaya**, spoken in the border region between Peru and Bolivia. I will try to disclose layer after layer, as far back in the past as feasible, the former distribution of the ancestors of the languages in question. Layer after layer means that we can hope reconstruct some of the movements of these peoples and/or languages. I shall propose as a hypothesis six chronological stages, each reflecting a particular geographical configuration of the ancestor languages. This hypothesis will be found in the conclusion of this paper. The method applied is of course not new, and has been fruitfully used, though by no means exclusively, in the fields of Uralic and Indo-European diachronic studies. Some interesting discussions can be found for example in the studies by Berezcki (1983), Hajdú (1981), Hajdú & Domokos (1987), Häkkinen (1983) and Joki (1973), which have in many ways influenced my work. This kind of studies are, I believe, a prerequisite to any attempt to investigate into the kind of problematic relationships involved between language groups. It can show either that (1) the languages in question, at least in the course of the time section under study, were not in direct contact (or had only sporadic, perhaps inceptant contacts) or that (2) the languages were indeed in contact. The latter possibility offers us the opportunity to further examine whether we are dealing with areal affinity or genetic relationship, although it seems usually impossible to distinguish, after much time has elapsed, between a "genuine" genetic relationship and the daughter languages of a creole. This is obviously because it can be said that any creole is a language in its own right, subject to the same splitting into daughters as any language. When no contact can be shown, there can be no genetic connection for the period under scrutiny. The next step, phonological comparison aiming at finding regular sound correlations, as well as morphological comparison, either proving or discarding genetic relationship, will not be attempted here and will the subject of a

further paper which will require more substantial data, both lexical and morphological, on Uru-Chipaya than I have now at my disposal, and would probe back in time, beyond hypothetical stage one.

1. URU AND CHIPAYA

Uru, whose modern descendants speak only Aymara, except perhaps at Iru-Itu, a location near Andrés de Machaca on the Southern tip of Lake Titicaca, was once spoken in different places, mostly along the Western shores of the same lake as well as in the zone that has been called the "Aquatic Axis" of the Bolivian Altiplano, along the river Desagüero south to Lake Poopo. Around Lake Poopo are still to be found their descendants, called Murato, which have for a long time been native speakers of Aymara. Chipaya is nowadays the only thriving variety of this close-knit linguistic unit, which has been known under the name Uru-Chipaya. It is spoken by an estimate of one thousand eight hundred persons, mostly in the village of Santa Ana de Chipaya (1,200 inhabitants), on the northern shore of the Salar de Copasa, some five hours driving southwest of Oruro, in the Provincia de Atahualpa.¹ Most Chipaya are trilingual, speaking as second languages both Aymara and Spanish, except for some elderly people, who may speak no Spanish. In the literature, there has been some confusion between an extinct language called Pukina, also spoken in the Titicaca region, and Uru-Chipaya, incidentally also called Pukina by some authors and apparently also by the speakers themselves (Wachtel 1990). This confusion has been widely spread by the studies of Créqui-Montfort & Rivet (1921; 1925; 1926; 1927), an issue that has recently been clarified by Torero (1987), who has shown that Callaway, still used as a secret language by herbalists around Charazani, is a descendant of Pukina, although the native lan-

1 A further 500 Chipaya live in the neighbouring cantón de Ayparavi (Plaza & Carvajal 1985), and a few have according to Montañón Aragón (1992) established themselves in Isluga, immediately West of the Border between Chile and Bolivia, among Aymara residents there. As a result of demographic growth and pressure on lands, the Chipaya have also sent forty colonizers in the lowland area of Chapare, Northeast of the city of Cochabamba (Zerda Ghatti 1993).

guage of Callaway doctors and their families is nowadays Quechua and/or Aymara. As Torero has shown, Callaway and Pukina exhibit around 41% lexical cognates, the percentage of exclusive cognates between these two languages amounting to 23.19%, whereas exclusive cognates between Pukina and Aymara amount to 3.04%, and between Chipaya and Pukina to only 0.7% (Torero 1987: 363). To make things worse, names of ethnical groups living in the Altiplano and around Lake Titikaka, such as Aymara, Quechua, Uru(quilla) and Pukina have been shown by Bouysse Cassagne (1987) to be used often ambiguously in colonial sources, independently of the language they actually spoke. Her table on page 127 is especially revealing: as an ethnic group, the Uru used to speak according to the place they lived Uruquilla, Pukina, Aymara or Quechua; the Aymara, as an ethnic group, used to speak either Aymara or Quechua or Pukina; Pukina was spoken by members of three different ethnic groups: Uru, Pukina and Aymara. We are far even from the neat division between Aymara and Quechua which prevails today.

So far, published and trustworthy materials on Uru-Chipaya are not abundant. Phonology has been covered by Olson (1967) and Portier-Gutiérrez (1990), and a basic vocabulary of 121 Chipaya and 87 Uru items has been published by the first of these investigators (1964; 1965). Some folkloric texts collected by Portier-Gutiérrez (1990) have been edited posthumously by Howard-Malverde. Morphology and syntax have not been dealt with, except what can be extracted from Vellard (1949; 1951 and 1967) for Uru, and from Olson (1967) and Portier-Gutiérrez (1990) for Chipaya. Most material on Uru was collected during the first half of this century by Vellard (1949; 1950; 1951; 1967) and Lehmann (1929), the latter only in manuscript form. These older materials are of uneven quality, and not always easy to interpret, especially on many points of phonology and morphology. Idiolectal variation seemed particularly noticeable in Uru, which is not surprising in a language on the verge of extinction. For a good review of older sources, see Créqui-Montfort & Rivet (1921; 1925; 1926; 1927), although the authors are constantly mixing Uru-Chipaya with Pukina, and treat them as if they were one and the same language.

2. PANO-TAKANAN

I assume the studies by Girard (1971) and Key (1968) are right in considering that Panoan and Takanan languages are related, forming the

so-called Pano-Takanan genetic group. Older authors disagree, some speaking of two unrelated groups or stocks, Panoan and Takanan, others tending to think that the Takana group detached itself originally from Arawakan, and as it came gradually into contact with Panoan languages, was "panoized" by the latter. This opinion appears for instance in Mason (1950), Rivet & Loukotka (1952), and Loukotka (1968), although the latter prudently adds "Tacana: language with many relationships with the Arawak and Pano languages". Still other researchers maintain the independence of both groups (Brinton 1891; McQuown 1955; Tovar & Larrucea de Tovar 1984).

The Takanan family is spoken roughly within a triangle beginning South of Rurrenabaque, on the río Beni, northwestern Bolivia, following this river on its northern course to Riberalta and then bending South-West along the río Madre de Dios, entering Peru and reaching almost until Puerto Maldonado. The Takanan family is composed of two branches, A and B (A with three languages: Takana, Reyesano and Araona; B with two languages: Cavineño and Ese'ejja). Until the beginning of this century, the southwest neighbours of the Takana belonged to the southwestern group of Panoan languages (along the ríos Marcapata, Tambovata and their tributaries). This Panoan group having disappeared², the nearest neighbours in that direction are now Harakmbet (Wachipaire), which make up an independent isolated language (Lyons 1975),

2 I have some doubts about the existence of this so called *southwestern* Panoan group (consisting of Arawa and Atsahuaca plus its subgroup Yamiaca). It could as well be a purely geographical name for displaced Central Ucayali (and/or) other Panoan groups. In this case, the modern presence of displaced Panoan groups (like Shipibo-Conibo) in this zone of the Madre de Dios would indicate that in fact, this spurious *Southwestern* (probably Panoan refugees from the Ucayali and/or Juruá-Purus Basin) is in fact not extinct, but now known under its "real" name. Be as it may, this particular zone is well known for its multilingualism. As Lyons (1975) has shown, the name *Arawa/Arawa* has been used for groups speaking a Panoan language, Takana or Hâte (Harakmbet). In the same way, what different authors called Atsahuaca has been shown by Lyons to be, according to the vocabularies, either Panoan or Takanan. I investigate further this problem in an unpublished paper (Fabre 1994).

with which the Takanan have few or no contacts due to the distance separating them. Towards the South, the Takanan adjoin the northern Bolivian Quechua dialects centered around Apolo. According to van Wynen (1962), Takana groups were living much further South than now, reaching Atén, Mapiri y Guanay. Quechua as the native language around Apolo is a latecomer. It is obvious that before the spreading of Quechua there, Aymara, itself an imported language, used to be spoken in the neighbourhood of Takanan languages, which would explain the Aymara loanwords in Takanan languages. Following Torero (1974; 1987), I will assume here that the ancestors of the Aymara began spreading into the Bolivian Altiplano around the XIIIth century, whereas Quechua entered the same region later, mostly between the XVth and XVIth centuries. Many authors have been prone to underline the influence of Quechua on Takanan, but an analysis of the loanwords in question reveals a more ancient Aymara influence (see footnotes 5 and 12). Towards the north-east, their neighbours belong to the eastern group of Panoan languages (Chácobo y Pacahuara). Expanding Takana-speaking groups seem to have driven Panoan populations toward the northeast. Créqui-Montfort & Rivet (1913) mentioned that the mission of Santiago de Pacahuara, midway between Cavinas and Ixiamas, was founded for the needs of the then local Pacahuara (Panoan) population, now in Takana territory.

The Panoan family consists of two geographically widely separated main groups, Central Panoan and South-Eastern Panoan, the two being separated by a wedge of Takanan speakers. South-East Panoan consists of at least three languages: (1) Chácobo, province of Vaca Díez, departamento del Beni, (2) Pacahuara, province of Federico Román, extreme northeast of the department of Pando, near the Brazilian border, and (3) Karipúna of the state of Rondônia, Brazil, spoken according to Rodrigues (1986) along the rivers Juru, Jamery, Uruapá, Cabeceiras and Candeiras. The small southwestern Panoan group mentioned above should be added to the picture. There appears to be little agreement concerning the internal grouping of Panoan languages. The best approximation can be found in Shell (1975), but the material available by the time of her doctoral dissertation (1965), of which Shell (1975) is the Spanish translation, allowed her to classify only seven languages out of some twenty belonging to the family. Good surveys of Panoan languages can be found in Shell (1975), Kensinger (1985), Ribeiro & Wise (1978), Rodrigues (1986), Plaza & Carvajal (1985) and Key & Key (1967).

3. PROPOSED GENETIC LINKS

Distant relationships have been proposed both for Uru-Chipaya and Pano-Takanan by previous researchers, although to my knowledge nobody has yet suggested that these two groups of languages should be more tightly related to each other inside the superordinate phylum supposedly including them.

Swadesh (1959: 18) lists five subdivisions within his *first order group*, called by him Quechuachón: Quechua-Aymara, Uru, Pano-Takanan, Moseño and Chon. A genetical bond between Pano-Takanan and Moseño has been later postulated by Suárez (1969). In 1978, Key published an important paper in which she proposed that Mapuche, Qawasgar (Alakaluf), Moseño and the Chon languages of Fuego-Patagonia are genetically related to Pano-Takanan. Although many of her presented cognates may seem suspicious, at least some items do appear quite convincing, although I do not assume the mere presence of cognates in different languages need necessarily reflect genetical relationship. Pano-Takana, Moseño and Proto Chon-Alakaluf are presented as parallel groups dominated by a further divergent node between Mapuche and Yuracaré. Uru-Chipaya is not considered a member of this phylum, neither are Quechua and/or Aymara. For Greenberg (1960), Ge-Pano-Carib comprises six divisions (in addition to Macro-Panoan: Macro-Ge, Nambicuará, Huarpe, Macro-Carib and Taruma). Macro-Panoan is subdivided into eight subgroups: Takana-Pano, Moseño, Mataco, Lule, Vilela, Mascoy, Charrúa and Guaycuru-Opáie. As for Uru-Chipaya, it is classified under Andean-Equatorial (a division of the same level than Ge-Pano-Carib), in the Arawak group of the Equatorial subgroup. In his new book, Greenberg (1987) retains the same position for Pano-Takanan within Ge-Pano-Carib. His former Andean-Equatorial is divided in two divisions of the same level, Andean and Equatorial-Tucanoan. Uru-Chipaya's position within Arawakan is retained, with one additional refinement: Uru has been separated from Maipuran. Greenberg has been so careless in the collection of his data, his knowledge about the languages he intends to classify and his disregard for modern classifications, that it is only unfortunate that he has found such a wide audience outside the circle of linguists specialized in Amerindian languages. His classification of Andean languages appears as bad as that of other groups (Fabre 1991). The older belief of a separate classification for Panoan on the one hand, and Takanan on the other, has already been mentioned, and I shall from

now on assume that Pano-Takanan is indeed a viable stock. Recently, Wistand-Robinson (1991) pointed toward a genetical connection between Uto-Aztecan and Panoan. According to her glottochronological counts, Uto-Aztecan and Panoan would have separated only about 1,650 years ago, which sounds hardly credible in view of what we know about the cultural history and wanderings of these peoples.

Although Uru-Chipaya has often been considered an independent stock, for instance by Loukotka (1968) and Tovar & Larrucea de Tovar (1984), efforts to link Uru-Chipaya to other South American language families have been exceptionally numerous. If Créqui-Montfort & Rivet (1921; 1926; 1927) considered it related to Arawakan, it was based on the fact that the authors missed the difference between two languages, Uru (with Chipaya) and Pukina, and treated them as if they were only one, a fact which has been recently proven wrong by Torero (1987). Both Noble (1965) and Greenberg (1960) followed the same error as Créqui-Montfort and Rivet. If Pukina, together with its descendant Callawaya, can be linked with a certain degree of confidence to the Arawakan stock, the same cannot be said of Uru-Chipaya proper. In two articles, Olson (1964; 1965) pointed out the similarity between 121 Chipaya lexical items and their correspondents in Mayan languages, and concluded Uru-Chipaya and Mayan to be genetically related. In a critical review of Olson's papers, Campbell (1973) found at most fourteen items that could stand serious comparison. One year before, Stark (1972), taking up an old idea of Uhle (1896), had proposed a new pairing between Maya languages, Yunga of the northern Peruvian coast, and Chipaya. In her paper, Stark presented twelve words she suspected to be common to the three members of her new phylum, plus six lexical items shared by Yunga and Uru, but not present in Mayan languages. From these twelve forms, at least four look suspect to me. Stark claims that of her Yunga total corpus, "a little less than 15% appears to be cognate with Ch'ol" (1972: 129). As Stark's paper probably presents the best of her evidence, and even this contains a high percentage of doubtful cognates, one is left rather unconvinced by her arguments. On the other hand, it might not be unreasonable to compare Uru-Chipaya with Yunga. Stark's lexical comparison between Chipaya and Yunga fare on the whole much better than her Maya connection. In addition, I found some fourteen plausible cognates between Chipaya and Yunga which are not included in her paper (Fabre 1991b).

4. LANGUAGE MOVEMENTS

A previous word of caution is in order here: as Renfrew (1987) has shown, for languages to expand geographically, there need not be any massive *population movements*, although these are of course known to happen. This is why I prefer, as the subtitle for this section, the term *language movements* to the more usual *population movements*. All historical sources refers to Uru-Chipaya as the oldest inhabitants of the area where their remnants are still living. There are no hints of any ancient wanderings in their own traditions, and Wachtel (1990) tells us that they can remember no more than three or four generations back in time. Nor is archaeology of great help in this matter. Although it is possible to follow some prehistoric population movements in the Altiplano, these cannot be shown to be linked with the ancestors of the Uru-Chipaya. All we know is that by the time of Spanish invasion, at least four languages were spoken around Lake Titicaca and the adjacent Altiplano: Aymara, Quechua, Uru-Chipaya (o Uruquilla), and Pukina. According to Torero (1974; 1983; 1987), the Aru (or Jaqi) peoples, ancestors of the modern Aymara as well as the Jaqaru and Kawki of the mountains of the department of Lima, Peru, originate from the Peruvian region between Chincha and Nazca and the neighbouring sierra. Their northern neighbours were the Proto-Quechua, whose arrival on the present territory of Bolivia is generally agreed to have happened from the XVth to the XVIth century, that is to say later than Aymara. Toward the beginning of our era, the Proto-Aru peoples began their expansion to the East and Southeast, reaching the Bolivian Altiplano mostly from the XIIIth century on, and slowly began supplanting Pukina and Uru-Chipaya. If Pukina, as the language of the builders of Tiwanaku culture, is indeed of Arawak extraction, it must also be a rather late comer to the region, although of course older than Aymara. So are left with Proto-Uru-Chipaya as the oldest known spoken language on the Bolivian Altiplano.

Relying on archaeological evidence, Lathrap (1970) assumes that the Panoan and Takanan speaking tribes have their origin South-East of the Ucayali river, in the core area of present-day Takanan and Eastern-Panoan speakers, in North-West Bolivia, say between the río Beni to the East, the Madre de Dios, Abuná and tributaries to the North and Northwest, and the Yungas of La Paz to the South. As we saw before, Takanan languages were spoken farther South than at present, so that we can

suppose that at some time in the past, the ancestors of the present Uru-Chipaya and Takanan (or Pano-Takanan) were if not directly neighbours, at least had contacts with each other. We should not disregard either the smaller ethnic groups of the Yungas, such as the Leco, Mosesten-Chimane and Yuracare, which may, also have been theoretically in contact with the ancestors of the Uru-Chipaya and Pano-Takanan, even if the previous extension of those small groups has never been known to cover very extensive regions. I shall take up the issue of the relevance of these ethnical groups later, in 5.1.

5. DATA-BASE FOR THIS STUDY

The limitations of my analysis are a clear reflect of the paucity of published lexical information. Probably the best dictionary available to me is for Cashinahua (Montag 1981), having an estimate of 4,000 Cashinahua-Spanish entries. Pittman (1981) has some 2,500 Araona entries, and van Wynen around 1,250 for Takana. These are exceptions, however. Olson (1964; 1965) published a basic vocabulary of 121 Chipaya words, although he claims to have collected some 3,000 words. For my basic counts, I have only been able to use a modified Swadesh list of 109 glosses, allowing for some synonyms (distinguished by lower case numbers). To this, a further 26 glosses have been added, all belonging to basic vocabulary. The results are now presented.

5.1. Languages with no relevance at this point

I have discarded the following languages, spoken in the same general area, from further comparison: (1) Mosesten-Chimane (Bibolotti 1917), which showed on the basis of the longer list of 135 glosses only one possible exclusive cognate between Uru-Chipaya and Mosesten (0.74% of total), with one further doubtful item³ (from now on I shall give the glosses in the footnotes, while the actual data are to be found in the appendix. The number of all plausible cognates between the two languages (exclusively as well as not exclusively) amounts to eight (5.93% of total) plus possibly one unsure case⁴. I have not here taken

3 SUN and possibly HEART.

4 BONE, HEAD, MAN₁, RAIN, HEART, STONE, SUN, and perhaps EAR.

up the issue of a possible relationship between Pano-Takanan and Mosesten; (2) Leco: only two words, plus one further possible⁵ had a plausible cognate on the smaller list of 109 items (the total amount of Leco glosses I was able to use for this comparison was only twenty nine). This item is shared by Uru-Chipaya and Panoan. It must be said that my only source for Leco is both fragmentary and unreliable (Lafone Quevedo 1905); (3) Callaway, with only three exclusively shared items with Uru-Chipaya on the smaller list (2.75% of total)⁶, and otherwise nine (maybe eleven)⁷ plausible cognates (8.26%), to which a further two dubious could be added⁸. A more precise word count, performed by Torero (1987) yielded only 0.7% cognates between Chipaya and Pukina, the presumed ancestor of Callaway; (4) Arawakan (Maipuran) languages: on my shorter list, none of the glosses was shared exclusively by Proto Maipuran as in Payne (1991) and Uru-Chipaya, although nine

5 (1) I: Chipaya wer, Leco ira; (2) THAT Chipaya nil, feminine naa, Leco <jino> 'él, aquel'; (3) possibly also BIG₃. Some so-called "Quechua loans" (by Lafone Quevedo 1905: 49 and other writers) in Leco appear in fact to be borrowings from Aymara: <yatic> 'to know' < Aymara yat- (the Aymara word may be borrowed itself from Quechua, but the latter has yat-); the Leco word for BLOOD, <bile> looks Aymara to me (wlla, with the same meaning); although Leco <lanka> 'trabajar' may look more Quechua (lank'a-/llamka) than the usual Aymara word (lura-, incidentally akin to Quechua rura-/ruwa-), the root is well attested in Aymara too (llamay-pacha 'harvest-time'; llamay- 'to harvest roots'; llamkha- 'hurgar, manosear, palpar'. But as Quechua expanded in the region where Leco was spoken, it would be somewhat unexpected that this fact would not be reflected in borrowings. Because of the later prestige enjoyed by Quechua, it has often been thought that it had to be the source of borrowings, even when it can be shown that Aymara was in fact the giving party. This problem also faces whoever wants to investigate central Andean influence on Mapuche, like in the word pataka '100', which is often said to be a borrowing from Quechua. Whatever the ultimate origin of the word, be it Quechua or Aymara, Quechua has pacaq where Aymara has pataqa with a dental plosive like in the Mapuche word instead of a palatal affricate.

6 BELLY.MAN₂ and ROPE.

7 BELLY, BONE, COLD, EYE, MAN₂, MOUTH, ONE, ROPE, and (TO) TIE/KNOT.

8 BIG₃ and NIGHT.

(8.26% of the 109 glosses) had possible cognates with both Uru-Chipaya and Pano-Takanan⁹. The Apolista language, known to be Arawakan, can thus also be discarded; (5) Yuracare, for which only 42 glosses could be compared. Of these, only one¹⁰ is exclusively shared with Uru-Chipaya, of a total of eight (plus one unsure) plausible cognates¹¹.

5.2. Data analysis

"Southern" Takanan languages, i.e. those presumably influenced by Aymara, display some obvious loanwords from this language, apart from a still later layer of Quechua loans, with which they have often been confounded¹². I will not be concerned with these at present. Having also set aside the small languages which seem irrelevant for a global comparison between Uru-Chipaya and Pano-Takanan, I shall proceed on my analysis exclusively with Aymara, Uru-Chipaya and Pano-Takanan languages. Out of my shorter list of 109 Uru-Chipaya glosses, 40 items are without possible cognates in Pano-Takanan (36.69%). Fifty one glosses have a plausible cognate in Panoan, Takanan, or both (46.78%). Out of his unpublished list of 3000 Chipaya words, Olson (1964) says that 19% are Aymara loans, 5% are Quechua loans, 3% can be ascribed either to Aymara or Quechua, and a further 6% are Spanish loanwords.

9 BIG₂, EYE, FOOT, GIVE, MAN₁, MOON, RAIN, STONE and TOOTH.

10 SAND.

11 CHILD, HAIR, MAN₁, SAND, STONE, THAT, WET, FINGERNAIL, and possibly? YOU.

12 An obvious Aymara loanword would be for instance Cavineña and Takanan mara, Araona mala (the word does not seem to exist in Ese'eja), from Aymara mara, id. More difficult is to choose between Aymara and Quechua as the loan source for Cavineña kirika (or kllika), Takanan kirika, and Araona hillka 'paper' (Aymara and Quechua have qllqa/qillqa); Takanan chulu 'gorro' (Bolivian Quechua has ch'ulu and Aymara the metathesized form lluch'u with the same meaning); Takanan rutu 'barro' can likewise be compared either with Aymara llutu 'fofo, blando, esponjoso', or with the metathesized Quechua form t'uru 'barro'. There seem to be many such words in the "southern" Takanan languages (Takanan, Reyesano, Cavineña; I use the word "southern" in a purely geographical sense, probably reflecting an older stage), some of which have even reached Araona. Ese'eja has apparently escaped this influence.

I shall not be concerned by the latter. On my own word counts, I could ascertain that out of my longer wordlist of 135 Chipaya glosses, sixteen (11.85%) are exclusively shared between Uru-Chipaya and Aymara¹³, out of 45 (33.33%) when adding glosses with possible cognates in Pano-Takanan¹⁴. Obviously, the first group comprises Aymara loanwords in Chipaya, and I will not discuss it further. Exclusively shared items between Uru-Chipaya and Panoan are 19 (14.07%)¹⁵ out of 63 (46.67%) shared also with Takanan and/or Aymara. Exclusively shared items between Uru-Chipaya and Takanan languages amount to 11 (8.15%)¹⁶, out of 46 (34.07%) shared also with Panoan and/or Aymara. Taking pairs of languages, I found the following distribution of plausible cognates for Uru-Chipaya: Pano-Takanan plus Aymara: 17 items (12.59%)¹⁷; Pano plus Takanan, but not Aymara: 15 items (11.11%)¹⁸; Aymara plus Panoan, but not Takanan: 7 items (5.19%)¹⁹; Aymara plus Takanan, without Panoan: 2 items (1.48%)²⁰. This is shown on the following table:

Exclusively shared cognates between Uru-Chipaya and

Panoan:	19 (14.07%)
Aymara:	16 (11.85%)
Takanan:	11 (8.15%)

13	COLD, DIE, DIRTY, EAT, FIGHT, FISH ₂ , MANY ₂ , MANY ₄ , MOUNTAIN, NOT, OLD, SNAKE, (TO) TIE/KNOT, TONGUE, WIND, WOMAN ₂ .
14	BIG ₁ , BIG ₂ , BITE, BONE, CHILD, NAIL, COLD, COME, DIE, DIRTY, EAT, FIGHT, FISH ₁ , FISH ₂ , FOOT, HAIR, HIT, HOT, MANY ₁ , MANY ₂ , MANY ₄ , MOUNTAIN, MOUTH, NEW, NOSE, NOT, OLD, RAIN, RIVER, SMALL, SNAKE, (TO) TIE/KNOT, TONGUE, TOOTH, WALK, WIND, WOMAN ₂ , ALSO, CHEW, DOOR, FATHER, FOOT ₁ , ILL, SPEAK and WET.
15	BIG ₃ , BIRD, EGG, MANY ₃ , NECK, ONE, SAY, SEE, SKIN, THAT, THIS ₂ , THIS ₃ , WOMAN ₁ , BRIDGE, DANCE, FIREWOOD, IN-LOCATIVE, LIGHT/FIRE, NEAR.
16	HERE, PATH, THIS ₁ , WE, WHEN, CLOUD/DARK, LEFT SIDE, NAVEL, POT, RIGHT SIDE, SHOULDER.
17	BIG ₁ , BIG ₂ , BITE, BONE, NAIL, FISH ₁ , FOOT, HOT, NEW, RAIN, RIVER, SMALL, TOOTH, CHEW, DOOR, SPEAK and WET.
18	DAY, DOG, DRINK, EAR, HEAD, NIGHT, STONE, TWO ₂ , WITH, CLOTHES, CUT, NAIL, FLUTE, HOT ₁ , THIN.
19	COME, HIT, MANY ₁ , MOUTH, ALSO, FATHER, ILL.
20	HAIR and WALK.

Panoan and Takanan:	15 (11.11%)
Aymara and Pano-Takanan:	17 (12.59%)
Aymara and Panoan:	7 (5.19%)
Aymara and Takanan:	2 (1.48%)

Although the figures computed are probably skewed by the scarcity of the available lexical data for comparison, two observations can be made: (1) there are more exclusively shared cognates between Uru-Chipaya and Panoan (19/14.07%) than between Uru-Chipaya and Takanan (11/8.15%). This may seem strange on the grounds of what we know about the southward extension of the Takanan languages during historical times; (2) there are more exclusively shared cognates between Uru-Chipaya, Aymara and Panoan (7/5.19%) than between Uru-Chipaya, Aymara and Takanan (2/1.48%), a fact in line with the first observation, but for the moment just as puzzling.

Abstracting from the division between the Panoan and Takanan families of languages, there can in theory be at least six different explanations for the presence of Aymara cognates with both Uru-Chipaya and Pano-Takanan: (1) Aymara has been the lending language in both directions; (2) the protospeakers of Uru-Chipaya and Pano-Takanan shared some vocabulary that has been borrowed into Aymara. A careful check of the lexicon of Jaqaru and Kawki, sister languages of Aymara spoken much farther North, in the Lima highlands, could help choose between (1) and (2): if the items can be traced to proto-Aru, then it should be clear that Aymara was the source language. Conversely, if the item is unknown in Jaqaru/Kawki, the word could have originated in Pano-Takanan and penetrated into Aymara²¹. The distribution of the cognates

21 Some Aymara words have been borrowed separately into Uru-Chipaya and Takanan. I will only cite two cases here: (1) five Uru *peška* [Vellard 1967] versus Cavineña, Reyesano and Takanan *piška*. This item could as well be a loan from Quechua (*p^hisqa*) as this word is identical in Aymara. However, it is better explained as an Aymara loanword for the following two reasons: first, some Takanan words for higher numbers are unambiguously loans from Aymara (Cavineña, Takanan and Reyesano *posi* '4' Aymara *pusi*; Quechua has *tawa* or in some Central Peruvian varieties the

within the Pano-Takanan stock might shed further light. Unfortunately, what has been published on Jaqaru/Kawki lexicon is insufficient for reconstructing proto-Aru (I was unable to get hold of Belleza's Jaqaru

etymologically unrelated item *čusku*; Cavineña *pakaroko* '7' Aymara *pä-qallqu*; Quechua has *pusaj* for this item; Cavineña *kimisakaroko* Aymara *kimsa-qallqu*, although the first part may be etymologically Quechua; the latter has *pusaj*. The second reason is that we have the testimony of comparative sound evolution, as with the Takana word for '10', *tunka*, and its corresponding Cavineña *tonka* < Aymara *tunka*, which may in turn be originally Quechua, which has *čunka*. An older *č yields č in Southern Quechua and t in Aymara. It is difficult to believe that a language would have borrowed the higher numerals *before* it had loaned the lower ones (Cavineña, Reyesano, Takana and Araona *kimiša* '3'; Cavineña, Reyesano and Takana *poši*, *piška* and *šokota* for '4', '5' and '6'). These words are admittedly rather late loans in Takanan (with Aymara making an earlier appearance than Quechua), and are thus difficult to differentiate, as they have changed very little and are so alike. It should be remarked that, independently, Shipibo-Conibo (as some other Central Ucayali Panoan languages) has borrowed some of the same words from Central Peruvian Quechua (Shipibo-Conibo *kimiša*, *piška*, *sokota* and *čonka* for '3', '5', '6' and '10'). In fact, central Ucayali Panoan brings us, with central Quechua, the same kind of evidence that we used for Takanan with Aymara (and southern Quechua). It is more natural to explain the presence of those same words in Takanan and Panoan on the basis of borrowing from different directions (and from different languages) than on the grounds of Pano-Takanan retention (or borrowing from the same source). There are also good reasons to believe that Panoan has independently borrowed from central Peruvian Quechua. Apart from the numerous and obvious loans, the Shipibo-Conibo words for '4' (*čosko*), '7' (*kančis*), '8' (*posaka*) and '9' (*iskon*) are immediately recognized as (central Peruvian) Quechua borrowings. Incidentally, Jaqaru has borrowed from some variety of an ancestor of central Quechua the numbers 5 (*piška*), 6 (*suhta*), 7 (*qančisl*), 8 (*pusaqa*), 9 (*isquña*) and 10 (*čunka*). (2) TEN: Uru *kālu*, *kālo* (Vellard 1951), Uru (Chimu) *khāru*, (Jancoaqui) *kalo* (Lehmann 1929), represents the old Aymara *qallqu*, meaning however '5', and still present in compounds (*pä-qallqu* '7' [i.e. 2+5], *kimsa-qallqu* '8' [i.e. 3+5]). I conjecture it might have been borrowed as a rather

vocabulary). For this reason, the burden of evidence, outside very basic vocabulary, has to come from Aymara, the only language of the family for which we have fairly extensive vocabularies from Bertonio (1612) to De Lucca (1983), plus the inexhaustible native knowledge of almost three millions of modern speakers. Hardman (1966; 1983) presents some 350 roots of Jaqaru, including loans from Quechua and Spanish; the same can be said about many Pano-Takanan languages, so that any conclusion based exclusively on the protollexicons of these language groups is bound to be unreliable; (3) some words could have passed from Pano-Takanan languages to Uru-Chipaya (and vice versa) through Aymara. These should of course have no correspondent in Jaqaru or Kawki, and here too, the relevance of the latter two languages depends much on the vocabularies available for them; (4) there is a genetic connection between Uru-Chipaya, the Aru family and Pano-Takanan. Torero's theory of a northwestern origin for the Aru languages does not support it, nor does Lathrap's on the southern origin of the Pano-Takanan stock. If there ever was a genetical connection, it must be of such antiquity that we cannot retrieve it at this stage. For this reason, I believe it is wiser to explore first other possibilities; (5) a genetical connection exists between Uru-Chipaya and Pano-Takanan; (6) the ancestors of the present Uru-Chipaya and Pano-Takanan peoples were once neighbours (a possibility also implied in (5)), but the cognates are due to areal diffusion. The last two possibilities are well worth exploring. At this stage, I favour the areal hypothesis. To raise the issue of genetical relationship between Uru-Chipaya and the Pano-Takanan stock, we would need to have more materials on the morphology of Uru-Chipaya as well as on its lexicon. Even

unprecise quantity word, or else the ancient loan for FIVE was "promoted" to the meaning for TEN when the later FIVE entered Uru either from Quechua or from Aymara (it is in any case a borrowing from Quechua into Aymara). The same kind of doublet may be perceived in the Chipaya words for TWO (*piška*, also known in Uru) and *puk*, the former strangely resembling the later Quechua/Aymara word for *five*, maybe strengthened also by the fact that Quechua has *iskay/iskay* for TWO. It may also be reminded that, although Quechua has disappeared from this zone of the Altiplano, we have numerous colonial sources attesting that it was well represented in former times.

comparing the morphology of Takanan and Panoan still raises many unanswered questions (Key 1968; Girard 1971). It is a possibility that after all, Proto-Takanan and Proto-Panoan were once different languages that through contact emerged first as a new creole language before separating into a Proto-Takanan and a Proto-Panoan branch. If on the other hand, it could be shown that Uru-Chipayay and Pano-Takan were genetically related, this would be on a much older historical horizon than the hypothetical stage one suggested above.

6. CONCLUSION

Mainly by inspecting the geographical distribution of cognate words, I have tried to disentangle different chronological stages of the languages, in relative time. This can be shown schematically in six hypothetical stages: (1) Proto-Uru-Chipaya and Proto-Pano-Takanan were in contact; the geographical distribution of cognates points to tighter contacts with the ancestors of the Panoan than with the ancestors of the Takanan, (2) Arawak groups began pushing South, either through or skirting Proto-Pano-Takanan territory and reaching eventually the Titicaca region (Pukina), perhaps leaving behind the ancestors of the Apolista. If this language could be shown to have more affinities to Pukina than to other Arawakan languages, this could give us a clue about the origin of Pukina (and presumably of the founders of Tiwanaku culture). Unfortunately, lexical data are meager: a few words collected by Erlend Nordenskiöld and published by Créqui-Montfort & Rivet (1913), the study by Torero (1987) on Pukina and Callawayaya. For modern Callawayaya, we have Oblitas Poblete (1968), but as it is used as a secret language, its vocabulary is probably of very mixed origin; (3) arrival of Aru-speaking groups, ancestors of the modern Aymara, first on the Altiplano and then spreading down to the Yungas region of Bolivia. The geographical distribution of cognate words appears to show that the Aru speakers had more contacts with the ancestors of the Takanan than with the ancestors of the Panoan speaking groups. This should be however tested by independent comparison between Aymara and Pano-Takanan; (4) the ancestors of some Takanan groups began pushing south, ousting some Panoan groups; (5) Appearance of Quechua on the Altiplano and in the zone of Apolo, supplanting Arawakan Apolista, Leco (maybe also some other small languages), some Takanan

(maybe Panoan as well). As a prestige language, Quechua spread rapidly in this zone as elsewhere in Bolivia²²; (6) the final stage is the modern geographical configuration.

ABBREVIATIONS:

Am(ahuaca); Ar(aona); Ay(mara); Call(awayaya); Cash(inawa); Cashb = Cashibo; Cav(ineña); Chac(obo); Chip(aya); Es(e'ejja); Jaq(aru); Mos(etén); PM = Proto-Maipuran (Arawak, Payne 1991); PP = Proto-Panoan (Shell 1975); PT = Proto-Takanan (Girard 1971); Qu(echua); Rey(esano); SC = Shipibo-Conibo; Tac(ana); Yur(acare);

The original orthography used by older authors has been retained and is shown within angled brackets.

1. Exclusive cognates Uru-Chipaya/Moseten: 1 (0.74% of total):

SUN Chip /thuñi/; Mos <tzin; itzuñ>;

2. Not exclusive cognates Uru-Chipaya/Moseten: 8 (5.93% of total):

HEART and SUN (see under 1); TOOTH (see under 5);

BONE Chip /e^hlh/; Uru khoči; Mos <cosc> (<c> = /k/); Jaq /c'aka/;

Ay /č'akha/; Call čuku; Cash /ša u/; Tac /e-caol/;

EAR Chip /k^huñi/; Mos <čoñ>; PT * iča-xa; Rey /e-šakwena/;

HEAD Chip /ača/; Mos (h)uči; Cav /e-čoa/; Ar /e-šoa/; ? PP * boškata;

MAN₁ /šoñi/; Mos <soñi>; PP * oni; PM * ahšeni; Yur <suñe>;

RAIN Chip /čihñi/; Mos <ojñi> 'water'; PM * uni; PP * iní 'water';

PT * ena 'water; river'; Ay /č^hihč^hi/ 'granizo'; Qu /čihči/ 'granizo';

Qu (Cuzco) /unu/ 'water' (probably an Arawakan borrowing in Cuzco

and Puno Quechua, as other varieties have /yaku/);

STONE Chip /maš/; Uru /maši/; Mos <mij>; PP * mašas; PT * maxana;

PM * mahpi; Yur <asi>;

22 It is a well known fact that Quechua replaced Aymara in many places on the Bolivian Altiplano and valleys like Cochabamba. On the other hand, in the northern part of the Bolivian Altiplano, and around the southern shores of Lake Titicaca east from the city of Puno, once strongholds of Aymara chiefdoms, Quechua has now completely disappeared, and Aymara is now universally spoken.

3. Exclusive cognates Uru-Chipaya/Callawaya: 3 (2.75% of total):

BELLY Chip /čiri/; Call <pitikeri>;
 MAN₂ Chip /luk-taqa; luk-wawa/; Call <laja> (<j> = /h/);
 ROPE Chip /qohč/; Call <kotka>;

4. Not exclusive cognates Uru-Chipaya/Callawaya:

BELLY, MAN₂, ROPE (see under 3); BONE (see under 2);
 COLD Chip /t'uus/; Call <tutas>; Ay /č'unta/;
 EYE Chip /č^huhki/; Call <chej(ni)>; cheje>; PM * [l]uk^hi/e; PT * -to-xa;
 Cash /huš/; Yunga hoč(kik);
 MOUTH Chip /ata/; Call <ata> 'preguntar'; Ay (Chucuito and Sabaya)
 /ata-ma-/ 'dar noticia'; Cash /hantu/ 'boca deformé' (/hana/ 'tongue');
 PP * ana 'tongue';
 NIGHT Chip /ween/; Uru <wiyani>; Call <thamin> 'dark'; PP * yam^h;
 * βa'kiši 'dark; black; night; Am /yam/; Chac /βa'kiši/ 'dark; night';
 PT * sewe 'dark'; Tac /deme-deme; deme-na/;
 ONE Chip /č^hii/; Call <ujšilla> (<j> = /h/); PP * βisti^ha; Cash /βi^hsa; βističai/;
 Am /sti/; Chac /wistita/;
 (TO)TEKNOT Chip /moq/; Call <moko>; Ay /muqu/ 'a knot'; /muqu-ča-/
 'to tie';

? TO DRINK Uru <likič>; Call <ta^hjchi, chisi>; PT * iči; Tac /di/;

Es /iši-nahe/; Am /x^ha-/;

Two further dubious cases:

BIG₃ Chip /nuk(ta)/; Call <k'atu> (metathesis?); Cash /nati/;
 WALK Chip /ohq/; Call <khočaica>; PT * aše-; Tac /ase-/; Ar,
 Cav /ahe/; ? Ay /luhu-/ 'walk rapidly';

5. Not exclusive cognates Uru-Chipaya/Pano-Takanan: 9 (8.26% of total):

EYE (see under 4); MAN₁, RAIN and STONE (see under 2);
 TOOTH Chip /iš(ñi)/; PT * e-ce; PP * šita; Chac /šita/ 'diente, pico';
 PM * ahee; Ay /č^hita/ 'sarta; varias cosas metidas en un hilo';
 FOOT Chip /qxohča/; PP * kiši 'thigh'; Am, Chac /kiši/; Cash /huta-iki
 'sacudir los pies'; /hušapi 'pie flaco o descarnado'; PT * e-wač;
 Es /e-heoxi/; Kunza k'učir 'pie'; Ay /hut^ha/ 'venir'; PM * kihi^h(ba)
 'pie';
 GIVE Chip /thaa/; PT * tia; Cav, Tac /tya/; ? PP * tana- 'probar, examinar,
 medir, catar'; Chac /tana-/ 'probar, examinar'; PM * da;
 MOON Chip /hiš/; Chac /išeki/ 'month'; Cash /ošo/ 'blanco, luna';
 /uši/ 'moon, month'; PM * kah^hihi; Apolista <asi>; ? PT * paša- 'white';
 Tac /passa-ne/ 'white'; ? Ay /p^haxsi/ 'moon';

6. Exclusive cognate Uru-Chipaya/Yuracare: 1:

SAND Chip /phila/; Yur <lubulo, lupulo>;

7. Not exclusive cognates Uru-Chipaya/Yuracare: 8 (plus one unsure case):

SAND (see under 6); MAN₁, STONE (see under 2);
 CHILD Uru <suwasi>; Yur <sebebotono> 'joven; varón'; PP * βaki;
 Chac /βaki/; PT * bakwa; Ar /bakwa/; ? Ay /iñ/ 'niño lactante';
 HAIR Chip /čara, šara/; Yur <dalá>; PT * -cafo; Rey /e-caol; Cav /e-carol;
 ? Ay /t'arwa, t'awra/ (with or without metathesis) 'wool';
 THAT Chip /naa/ (feminine); Yur <naa> 'él, aquél'; PP * aa 'él, ella, éso;
 Cash /na, čenē/; SC /ni-/ 'this';
 WET Chip /č'aran/ 'mojar con orina' <echapaniba; ichapani> 'urinate';
 PM * isa[phaj] 'wet'; Qu /č'aran/ 'wet'; /hisp'a/ 'urinate'; PT * ča
 'mojar'; Tac /caia/ id.; PP * mi^hča 'mojar'; Cash /čaba/ 'wet'; Ay /č'a-
 ran-ha/ 'empapar la lluvia, mojar'; Harakmbet (Wachipaure) /saβig/
 'wet'. There seem to be two different words involved in this item;
 NAIL Chip /iš(ñi)/; Yur <dichicha>; Rey /-tiši/; Ar /me-tezi/ ('hand + nail');
 SC /mün-cis/ ('hand + nail'); Mos <pači>;
 ? YOU Chip /am/; Yur <mee, atama>;

8. Exclusive cognates²³ Uru-Chipaya/Aymara: 16 (11.85% of total):

COLD and (TO)TEKNOT (see under 4);
 DIE Chip /tik/; Ay /t'aqisi/ 'sufrir mucho, estar atormentado';
 DIRTY Uru <kanu>; Ay /q'añu/;
 EAT Chip /u(h)/; Uru <luli, lux> 'food'; Jaq /palu/; Ay /pulu-ča/ 'comer
 los invitados';
 FIGHT Chip /khat/; Ay /katu/ 'agarrar, asir';
 FISH₂ Chip /kiri^hmi, keril/; Ay /qhisil/ (pez) boga'; /qiričil/ 'pez muy esca-
 moso con mucha espina';
 MANY₂ Chip /suma/; Ay /suma/ 'excellent; good; very';
 MANY₄ Chip /walha(ni)/; Ay /walha/;
 MOUNTAIN Chip /pata/; Ay (and Qu) /pata/;
 NOT Chip /ana/; Ay /hani/;
 OLD Uru <čača>; Ay /ačači/ 'old man';

23 By exclusive cognate I mean from now on exclusive cognate between X
 and Y disregarding Mosetén, Leco, Callawaya, Maipuran-Arawak,
 and Yuracare. This was done somewhat arbitrarily because I feel that
 there are so few cognates between those languages and Uru-Chipaya, that
 they may be disregarded at this point.

SNAKE Chip /šqora/; Ay (Yungas) /saqapa, saqapero/ 'rattlesnake';
TONGUE Chip /las/; Ay /laxra/;
WIND Chip /thami/; ? Ay /thaya/ 'wind'; /thama/ 'andar rápidamente entre muchos sin objetivo fijo' (may correlate with Qu /tamyā/ 'rain');
WOMAN₂ Chip /urku/; Ay /urku/ 'saya o traje negro que usan las mujeres';

9. Not exclusive cognates Uru-Chipaya/Aymara: 45 (33.33% of total):
BONE, RAIN (see under 2); MOUTH, (TO)TE/KNOT (see under 4); SPEAK (see under 4); WALK, FOOT (see foot under 5); CHILD, NAIL, HAIR, WET (see under 7); DIE, DIRTY, EAT, FIGHT, FISH₂, MANY₂, MOUNTAIN, NOT, OLD, SNAKE, TONGUE, WIND, WOMAN (see under 8);
BIG₁ Chip /čakwa/; /čaw/ 'old man'; Ay /ačachi(da)/ id.; Jaq /ačaka/ id.; PP * išca; Chac /čara-ma/ 'small, few' ("big" + negative morpheme); SC /iča/ 'many'; Es /čil/ 'old man';
BIG₂ Chip /lahč(a)/ (metathesized borrowing from Aymara?); Ay /hač'a/; Jaq /ahc'a/; ? Cashb /čāškī/; ? PM * anta(thi); PT * aŋi(da); Tac /aida/;
BITE Chip /thup/; Ay /ačunta-, ač^ha-/; PP * natšša; Chac /tiša-/; Tac /tsol-/;
COME Chip /thon/; Ay /hut^h/a-/; PP * o-; Chac /ho-/ id.; Cash /hu-/ id.;
FISH₁ Chip /č'is/; ? Ay /suč'i/ (pez) suche; PP * caca 'kind of fish'; Cav /čibare/;
HIT Chip /čahk-/ 'to hit, to throw'; Ay /č'aku-/ 'to punch'; PP * čaka- 'to hit'; Chac, SC /čaka-/ id.;
HOT Chip /qut-/ 'to heat'; Uru <k'ut, qhaq>; ? Ay /hunt'u/ 'hot'; ? Cash /ku-/ 'to be very hot'; ? Es /ka-ki(yo)/ 'hot';
MANY₁ Chip /ač'a/; Ay (and Qu) /ač'a/; Cash /čain/ (Shell reconstructed PP as * išca);
NEW Chip /ewu/; ? Ay /yaqha/ 'different, other'; PP * e-yaka; Tac /ečakwa/; Chac /e-yakwa/; Ar /šakwa/;
NOSE Chip /oša/; Ay /nasa/; Chac /ri-šaki/ (but Shell reconstructed PP * ri for 'nose');
RIVER Chip /wiwi/; Ay /hawira/; PP * wia 'brook'; Cash /kwēcin/; SC /fiā/ 'brook'; Ar /eowi/ 'water'; Tac /yašil/;
SMALL Chip /čuht(u)/; Ay /č'iti/; Qu /huč'uy/ (metathesized form?); Cash /čukuma/; Tac /wai-čidi/;
ALSO Chip /-saqas/(morpheme verbal); Jaq /-ska-, -skha; Cash /šunska/;
CHEW Chip /muk/ 'to chew for making chicha'; Ay /muk'u-/ id.; Tac /nako-/; SC /naka/;
DOOR Chip /čahwks/; Ay /suxu/ 'hole, cavity'; /t'uqu/ 'agujero, bache, alacena hecha en la pared'; /t'uxu/ 'hueco, ventana, alacena en la pared'; Qu /t'uqu/ 'agujero'; Kunza /toqor/ 'hondo, quebrada'; PT * çekwe 'hueco, ventana'; Cav /e-cekwe/; Es /e-sekwe/; PP * štikwi id.; Cash /šui/

'hueco, hoyo, ventana, puerta' (probably a "wandering word", cf. also Proto Tupi-Guaraní * kwar 'agujero' as reconstructed by Lemle 1971);
FATHER Chip /ehp/; Uru /hep/; Ay (and Qu) /ipa/ 'aunt on father's side';
Cash /hpa/ 'father; uncle on father's side'; Yunga ef 'father'; Harakmbet (Wachipaite) /apag/;
ILL Uru <haši, asini>; Ay /usu-si-/ id.; /usu-naqa-/ 'ser enfermizo';
Cash /isin-/ 'enfermar'; ? Guarani /hasiva/;

10. Exclusive cognates Uru-Chipaya/Panoan: 19 (14.07% of total):
BIG₃, ONE (see under 4); THAT (see under 7);
BIRD Chip /wešla/; PP * i'saka; Cash /isa/ id.; Chac /isaka/ id.;
EGG Chip /šini/; PP * šašci; Chac, Cash /šači/ id.;
MANY₅ Chip /yuske/; PP * išca;
NECK Chip /qaši/; PP * ka'ti 'shoulder';
SAY Chip /khi/; PP * kwina- 'convocar, llamar, nombrar'; Chac /kina/ 'to call'; Cash /ki-, ka-/;
SEE Chip /č'er/; /čekšna/ 'mirar'; Cash /čikex-/ 'mirar de reojo';
SKIN Chip /šqiši/; PP * šakata- SC /šaká/ 'skin, bark'; PP * šoka- SC /šoka/ 'pelar';
THIS₂ Chip /ni/; SC /ni-/;
THIS₃ Uru <hat>; PP * aa; Chac /haa/;
WOMAN₁ Chip /šon/; PP * šano; Cash /šano/ 'esposa, mujer' (and probably also /šontako/ 'young lady';
BRIDGE Uru <kuas-pukha> (first part meaning 'water'); Am /hün-ša pókita/ (first part also meaning 'water');
DANCE Chip /cati/; Cash /čidin/ 'bailar cierto baile ceremonial en el que se emplean las plumas del gavián';
FIREWOOD Chip /qalu/; Cash /kadu/; Am /karo/;
IN/LOCATIVE Chip /-kis/; Uru <-ki>; Cash /-ki/ (but also PM * -ki);
LIGHT/FIRE Chip /čiki/ 'luz, brillo, alumbrar'; SC /čit' / fire'; Chac /čit' / id.;
Cash /čit' / id.; /čit'-keya/ 'estar alto el sol' (with /keya/ 'alto el sol');
NEAR Chip /kešu/; Cash /kaču/ id.;
11. Exclusive cognates Uru-Chipaya/Takanan: 11 (8.15% of total):
HERE Uru <kiwak>; Cav /re-wa/;
PATH Chip /hiks/; Uru <lyikš>; PT * ediči; Ar /dizi/; Rey /endzihi/;
Cav /e-dih/; Es /e-xioxi/;
THIS₁ Chip /tila/; Ar /dya/;
WE Chip /učum/; Tac /ecia/;
CLOUD/DARK Chip /ziri/; Ar /mózizi-bade/ (/mózizi/ 'to be dark' + /bade/ 'estar colgado', cf. /baepa mózizi/ 'cielo nublado');

LEFT SIDE Uru <čar>; Tac /d'ani/ id.; Es /šani/ id.; Ar /zánia (bene)/ 'left (side)';

NAVEL Chip /toñi/; Cav /so'o/; Tac /co/ id.;

POT Chip <tuh>; Ar /ho)to)waha/ id.;

RIGHT SIDE Uru <čeu>; Ar /mé-wi čoi (benehe)/ 'right (side);

SHOULDER Chip /tah/; Es /eha taxa/ 'back of body';

12. Cognates Uru-Chipaya/Aymara/Pano-Takanan: 17 (12.59 % of total):
 BONE, RAIN (see under 2); SPEAK (see MOUTH under 4); FOOT, TOOTH (see under 5);

WET (see under 6); NAIL (see under 7); BIG₁, BIG₂, CHEW, DOOR, HOT, FISH₁,
 RIVER, SMALL, NEW AND BITE (see under 9);

13. Exclusive cognates Uru-Chipaya/Pano-Takanan: 15 (11.11 % of total):
 DRINK, NIGHT (see under 4); NAIL (see under 7); HOT (see under 9);

DAY Chip <tonhe>; Ar /tseñe/; Tac /tsine/;

DOG Chip /paqu/; Rey /pako/; Cash /kapa/ 'squirrel' (metathesized form?);

EAR Chip /k^h uñi/; PP * k^w a'i- 'to hear'; Cash /k^w a-/ id.; Chac /ka 'i-/ 'to
 know'; PT * iča-xa; Rey /e-šakwena/;

TWO₂ Chip /puk/; ? PP * rašita; SC /rašiv/; PT * beta; Es /beka/; Tac /beta/
 (this item must probably be ruled out. Es /k/ < /t/ is a regular change in
 that language);

WITH Uru <taniki>; PT * nexa; Tac /-nehe/; SC /nin/;

CLOTHES Chip /skiti/; Ship /sawit-/; Es /daki/ (< * dati);

CUT Uru <skworp>; Cash /sinki/; Ar /kwe/; Cav /hikwi/; Tac /siki-/;

FLUTE Chip /čeri/; SC /riwi/; Cash /diwi/; Es /dewe/;

THIN Chip /qooc/i/; SC /'oši/; Chac /ošo/; Tac /ošori/;

14. Exclusive cognates Uru-Chipaya/Aymara/Panoan: 7 (5.19 % of total):
 MOUTH (see under 4); COME (see 9 and FOOT under 5); ALSO, FATHER, ILL,
 HIT, and MANY₁ (see under 9);

15. Exclusive cognates Uru-Chipaya/Aymara/Takanan: 2 (1.48 % of total):
 WALK (see under 4); HAIR (see under 7);

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