Measuring the Passage of Time in Inca and Early Spanish Peru

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Abstract: In legal proceedings from 16th century viceroyalty of Peru, indigenous witnesses identified themselves according to the convention of Spanish judicial system by name, place of residence and age. This last category often proved to be difficult. Witnesses claimed that they did not know their age or gave an approximate age using rounded decimal numbers. At the moment of the Spanish invasion, people in the Andes followed the progress of time during the year by observing the course of the sun and the lunar cycle, but they were not interested in measuring time spans beyond the year. The opposite is true for the Spanish invaders. The documents where the witnesses testified were dated precisely using counting years from a date in the distant past, the birth year of the founder of the Christian religion. But this precision in the written record perhaps distorts the reality of everyday Spanish practices. In daily life, Spaniards often measured time in a reference system similar to that used by the Andeans, dividing the past in relation to public events like a war or personal turning points like the birth of a child. In the administrative and legal area, official Spanish dating prevailed, and Andean people were forced to adapt to this novel practice. This paper intends to contrast the Andean and Spanish ways of measuring the past, but will also focus on the possible areas of overlap between both practices. Finally, it will be asked how Andeans reacted to and interacted with Spanish dating and time measuring.

Keywords: Inca, early colonial period, time, dating, Peru, 16th century.

Resumen: En los procedimientos judiciales del Virreinato del Perú en el siglo XVI, los testigos indígenas debían identificarse de acuerdo con la convención de la Justicia española: declarando su nombre, lugar de residencia y edad. Con frecuencia esta última categoría era difícil de establecer. Los testigos afirmaban no saber su edad, o declaraban una edad aproximada utilizando números redondeados. En el momento de la invasión española, los habitantes de los Andes seguían el progreso del tiempo durante el año observando el curso del sol y el ciclo lunar, pero no estaban interesados en medir intervalos de tiempo más allá del año. La relación de los invasores españoles respecto al tiempo era la opuesta. Los documentos en los que éstos testificaban se fechaban con precisión, contando los años a partir de una fecha en el pasado lejano: el año del nacimiento del fundador de la religión cristiana. Sin embargo, es posible que esta precisión en el registro escrito en parte distorsione la realidad de las prácticas diarias españolas. En la vida cotidiana, los españoles solían medir el tiempo según un sistema de referencia que en efecto era similar a aquel utilizado por los andinos, ya que dividía el pasado según eventos públicos como una guerra, o según puntos de inflexión personales, como el nacimiento de un niño. En el ámbito administrativo y legal prevaleció la datación oficial española, obligando a los andinos a adaptarse a esta nueva práctica. Este artículo pretende contrastar las costumbres andinas y las costumbres españolas de medir el pasado, a la vez que se centra también en las coincidencias entre ambas prácticas. Por último, pregunta cómo los andinos reaccionaron e interactuaron con la datación y la medición del tiempo española.

Palabras clave: Inca, época colonial temprana, determinación de tiempo, Perú, siglo XVI.

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In the 15th and 16th century Andes, the remembrance of the past and the creation of a collective memory took place without a reference to numbers and calculations, and systems for a longer reckoning of time do not seem to have been used. Neither was it important how many years before the present an event took place, nor does there seem to have existed an interest in an exact calculation of how long an episode in the past lasted. Of the three categories of potential chronological information about the past,[1] Andean people were not interested in duration or in an absolute chronology, but rather in sequence. Yearly calendars were in use to regulate rituals and the cycle of agricultural work, and the Inca state had developed a calendar counting months on the basis of solar and lunar observations which can be reconstructed fairly well,[2] but no long-term chronology was used.

Events in the past were remembered and sequenced, but not dated, as the 17th century writer Bernabé Cobo noted:[3]

> Porque no contaban por años sus edades ni la duración de sus hechos, ni tenían algún tiempo de punto señalado para medir por él los sucesos, como contamos nosotros desde el Nacimiento de Nuestro Señor Jesucristo, ni jamás hubo indio, ni apenas se halla hoy, que sepa los años que tiene, ni menos los que han pasado desde algún memorable acaecimiento acá (1964: 142).

Everything, Cobo adds, that took place more than four or five years ago was said to have happened in the past (*ñaupapacha)*, without making any distinction between these events and those which happened twenty or a hundred years ago. Only the very distant past, probably the time of origins, was indicated "con cierto tonillo y ponderación de palabras" (1964: 143).[4]

This does not mean that history was not important. The configurations of socio-political units as well as land rights and religious practices were all organized in a framework of myths and historical tales which often revolved around stories of conquest, dispossession and subsequent accommodation between groups of different origins.[5] The Inca for example told a story about the past of their capital Cuzco, which had been inhabited by three groups of original settlers and three groups of immigrants before

1 The philosopher Karen Gloy writes that modern historiography using a linear concept of time can locate "acts and events as well as conditions" ("Handlungen und Ereignisse sowie Zustände", my translation) by an "exact point in time (the date), the distance between them (duration) as well as their order (one after the other or at the same time)" ("exakte Zeitstelle (Datum), ihren Abstand zueinander (Dauer) sowie ihre Ordnung (Nacheinander oder Zugleichsein)") (2006: 91).

2 For the calendar, see the discussion and reconstructions by Ziólkowski 1989 and Bauer & Dearborn 1995: 54-66.

3 For this and other authors consult Pillsbury 2008.

4 See Rostworowski & Morris 1999: 776.

5 Gose 2008: 164-173. Other examples in Duviols 1973, Salomon 1991, Rostworowski 1983.

the founders of the Inca dynasty arrived.[6] While some of the groups they encountered were expelled, others remained and were integrated into Inca social organization and ritual practices, ensuring that the past was always present and before the eyes of Cuzco's inhabitants.[7] Events in the past were regularly referred to, but they were not associated with numbers, counting, and calculation. Only sequencing was of interest, as for example when the rights of contemporary kinship groups (*ayllu*) were explained and allocated according to the birth order of their mythical ancestors, who are often depicted as a group of siblings.[8]

Genealogies played a crucial role in the justification of political rule in the Andes, but in the surviving accounts usually not more than four or five generations of ancestors were remembered, and life spans and length of rule were not recounted.[9] Only the elites from states like the Chimu and the Inca themselves were able to provide longer genealogies.[10] But it was apparently of no interest to preserve information about the number of years since a venerated ancestor died or the duration of a reign.

The case of Inca chronology

As a result, a list of rulers can be reconstructed from the oral traditions of the Inca elite preserved by Spanish authors, but this dynastic sequence usually contains no dates.[11]

Exceptions are the seemingly precise information about the length of rule or the overall duration of the Inca dynasty provided by Felipe Guaman Poma de Ayala, a native author, and the anonymous *Relación de los quipucamayos*.[12] Two Inca histories, written by

6 Sarmiento 1906: ch. 9: 30, ch. 11: 34, ch. 13: 39-41, ch. 14: 41; Julien 2000: 238-240.

7 Festivals integrated into the Inca calendar are mentioned by Molina "Al mes de septiembre llamavan Omacrayma. Llamávanle así porque los yndios de Omo, que es dos leguas del Cuzco, hacía la fiesta de Guarachillo [sic, Guarachico]" (1989: 97) and "mes de octubre [...] Ayarmacaraymi [...] los yndios del pueblo Ayarmaca hacían las fiestas del Guarachico" (1989: 97). For integration of pre-Inca huacas into the Incaic cult system, see Julien 2000: 281-286.

8 Huarochirí manuscript 1991: ch. 11: 79; ch. 12: 82; ch. 31: 143; Salomon 1991: 19-21.

9 For example Memoria genealógica dictada por ... don Pedro Ocxahuaman 1992: 231, 232; Probanza de don Fernando Ayra de Ariutu 2006.

10 See for example the Naymlap genealogy for the North Coast in Cabello Valboa (1951: bk. 3, ch. 17: 327-329) and Julien (2000: 49-90) for the Inca genealogical genre and its reflection in various source accounts. Doubts about the accounts of the Inca dynasty as given by the Spaniards have been voiced by R. Tom Zuidema since the 1960s, see Nowack 1998: 133-143. An offshot of this discussion is the hypothesis of two contemporary dynasties, see Duviols 1979, Rostworowski's discussion 1983, Rowe's refutation 1993-1994, and a summary and variant by Pärssinen 1992: 200-227. A modern view of these problems is found for example in McEwan 2006: 68-79.

11 See for example D'Altroy 2002: 4, tab. 1.1.

12 Guaman Poma 1987: 87-114; Relación de los quipucamayos 1974: 30-43. The Relación is thought to be a reading of Inca *quipus* or knot records by several of their official keepers (see Brokaw 2003).

Pedro Sarmiento de Gamboa and Miguel Cabello Valboa, even include dates in the Christian calendar for the year of the rulers' death.[13]

However, the origins of all this chronological information are unclear, and there are serious problems with it. For example, Guaman Poma and Sarmiento attribute an age to many of the Inca rulers which is beyond the usual human life span. In Guaman Poma's account nearly all the Inca rulers were more than a hundred years old when they died (1987: 87-114). Monica Barnes found dates similar to those of Guaman Poma on a series of portraits of the Inca rulers from the 18th century in the Gilcrease collection. She suggests that these dates go back to a common source retracing Inca origins to the beginning of the Christian era:

> Both Guaman Poma de Ayala and the Gilcrease artist place the birth of Jesus in the reign of Sinchiroca, the second Inca emperor, possibly to mirror the birth of Jesus in the reign of Caesar Augustus, the second Roman emperor (Barnes 1994: 234).

The rulers in Sarmiento's history also reached unusually high ages ranging between 80 and 132 years,[14] and thus he comments at the end of his book:

> Y no se ha admiración vivir estos ingas tan largo time, porque en aquella edad era naturaleza más fuerte y robusta que agora, y demás desto en aquellos tiempos no se casaban los hombres hasta pasados de treinta años, y así llegaban á la edad constante con sustancia entera y no desminuída y por esto se conservaban muchos más años que agora. Y la tierra, donde ellos viviían es de enjutos mantenimientos é incorruptos aires (Sarmiento 1906: ch. 70: 129).[15]

In spite of these affirmations, Sarmiento probably attributed these great ages to the Inca rulers because for some reason he began Inca history in the year 565 A.D. when, according to him, the mythical founder of the dynasty reached Cuzco (ch. 14: 42). To fill the gap between this early date and the 16th century, Sarmiento only had a list of ten Inca rulers, which is why he gave them such exaggerated life spans. Cabello Valboa, the other author who made a correlation to the Christian calendar, put Manco Capac's death in the year 1006 (1951: ch. 10: 264, 265, 270-271), but the origins of his information are as undetermined as in the case of Sarmiento. Both chronologies are probably founded on a scheme intending to integrate local histories into a universal Christian history (Julien 2000: 225).[16]

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13 Sarmiento 1906: ch. 14-68: 42-125; Cabello Valboa 1951: ch. 10-24: 264-392. See also Julien 2000: 223-225, especially tables 5.1, 5.2, 5.3.

14 Guaman Poma 1987: 87-114; Sarmiento 1906: ch. 15-62: 44-111 (leaving out the mythical founder of the dynasty, Manco Capac, and the last ruler Guascar).

15 This paragraph is a neat compilation of 16th century thought about prior ages, the human constitution, and the origins of diseases.

16 Cabello Valboa's dates for the reigns of the last three rulers are commonly regarded as more or less plausible, following a suggestion by John H. Rowe (1944-1945). See Rostworowski & Morris 1999: 776 and the criticism by Wedin (1963).

A Spanish official discussing Inca administration, Polo de Ondegardo, provides a more realistic estimate about the length of Inca rule. He states that the Inca ruled for 350 to 400 years, judging from the number of rulers and the lengths of their reigns (1916: 49, 50). Although he mentions that every province had its registers containing information about the past (1916: 51), it is doubtful that he had access to some type of information medium with specific dates. Probably, Polo's statement is a personal calculation from the oral traditions. A similar calculation can be made today on the basis of Juan de Betanzos' *Suma y narración de los Incas* (2004), if only for the last three Inca rulers. Betanzos collected oral traditions and personal memories from the Inca elite, and repeatedly mentions a ruler's and his nearest relatives' ages at certain events, as well as the duration of building projects, political measures, military campaigns, and periods of recreation. Attempts to reconstruct a chronology from these accounts show that the information about ages and duration of events do not match exactly; yet, they still provide a useful temporal framework of the last hundred years of Inca rule.[17]

Quipu histories

Polo mentions registers, a possible reference to Inca knot records, or *quipu*. In 1571, two members of the highest Inca nobility, don Diego Cayo and don Alonso Tito Atauche, enquired about the duration of the last rulers' reigns, recount information taken from boards and *quipu*:

> [u]na tabla y quipos donde estaban sentadas las edades que hubieron los dichos Pachacuti Ynga y Topa Inga Yupangui su hijo, y Guayna Capac, [...] que vivió Pachacuti Inga Yupangui cien años, y Topa Inga Yupangui hasta cincuenta y ocho o sesenta años y Guayna Capac hasta setenta años (Informaciones de Toledo 1940: 173 (from 6 September 1571)).

The boards are probably those objects depicting Inca history which were made on order of the Inca ruler Pachacuti and which, as it can be assumed from the two nobles' statement, had been continued to the time of his grandson Guayna Capac.[18] As a second source of information, Diego Cayo and Alonso Tito Atauche refer to *quipu*, theoretically an ideal medium for the preservation of chronologies because they consisted of strings and knots primarily serving to keep numerical information. One case is documented where historical information was apparently read from a *quipu* into a Spanish document

17 This text is based on the oral life histories of rulers, a genre in an epic format for performances during feasts and important state occasions (Julien 2000: 91-165). For reconstructed chronologies, compare Rowe 2009 and Niles 1999: 85-120.

18 Sarmiento 1906: ch. 9: 31. See also Molina 1989: 49, 50 and Julien 2000: 56-58.

containing a list of the conquests of the ruler Tupac Inca.[19] But the enumeration of Tupac Inca's military successes follows the subdivisions of the Inca empire, the four quarters (*suyu*) which make up the *Tahuantinsuyu* ("The four parts together"), and is not ordered according to the temporal sequence of these campaigns.[20]

Another document transcribes information from a *quipu* containing a long list of people and goods provided to the Spaniards during the first decades of their rule. It was presented to the Spanish crown by the lords of the Guanca, an ethnic group in central highland Peru. From the beginning, the Guanca sided with the Spaniards, and an endless stream of people and goods went to the Spanish troops marching through their province. The *quipu* recorded what was given and the related historical event, read from its cords and knots and perhaps supplemented by oral information. Nearly 50 single occasions between 1533 and 1550 are recalled, mostly related to Spanish military activities against the Inca, but also to conflicts between indigenous groups and wars among the Spanish.[21] The sequencing of the events allows the reconstruction of a detailed relative chronology for the area, although this was never the intention of this *quipu*.

In other words, colonial documentation shows that there existed *quipu* with historical information, but not structured in a temporal sequence, and other *quipu* structured in a temporal sequence, but only to provide information about goods and people delivered to the Spaniards. The Guanca *quipu* gives an idea of how these knot records could have preserved chronologies, but evidence for the actual use of a *quipu* for this purpose has not come to light.

Individual memories: Sequencing by life stages and events

Turning from the collective memories of the past to the individual reckoning of memories, witnesses in Spanish legal proceedings organized their recollections referring to their own stages of life and to general events or events relevant for the case discussed. In a 1558 land trial, a witness declares:

> [Q]ue es de hedad de muchos años pero que no los a contado e que como dho tiene se acuerda de Guaynacaba señor que fue destos rreynos e le syrbio este dicho t[estig]o e fue con el a Quito (Tierras y chacaras de coca del valle de Quivi 1988: 185).

19 16th and 17th century Spanish authors sometimes claimed that *quipu* were able to transmit data nearly in the same way as their own alphabetic script, and *quipu* readings found in Spanish documents indicate that *quipu* were able to record names, of persons and places, although the means by which this was achieved are not yet understood.

20 Rowe 1985: 197. However, due to Andean geography, spatial sequencing closely resembles the chronological order of Tupac Inca's conquest.

21 Memoria de los indios 1972: 202-210.

And like the Guanca *quipu*, the witnesses present a rather fine chronology of the past. Their testimonies advance from a man who only remembers the Spanish conquest, to those who remember the Inca ruler Guayna Capac, those who served him, meaning they were already married adults, and finally to a man who even remembered Guayna Capac's father:

> no save ny se acuerda de los Yngas pero que se acuerda de quando entro el marques [Francisco Pizarro] en esta tierra (1988: 206)
>
> se acuerda quando entraron los españoles en esta tierra porque era ya buen mochacho (1988: 144)
>
> que syrbio a Guascaringa e le tributo (1988: 147)
>
> se acuerda un poco de Guaynacapa (1988: 196)
>
> se acuerda de Guaynacaba e de Guascaringa porque este to hera su criado y contador (1988: 155)
>
> se acuerda de Guaynacaba y le sirvyo e fue su soldado (1988: 60)
>
> se acuerda muy bien de Topa Ynga Yupangue e que tyene hijos e nietos que son ya viejos (1988: 164).

It also appears that past events and life stages are related, because the stage of life determines to what extent a man was already involved in the world beyond his family. As young unmarried adults "ya buen mochacho", they became aware of outside events because soon they would be full members of their community. After their marriage, they were subject to tribute service and conscription as a warrior, and these activities in the outer world determine their life stage. Finally, the old man refers to his children and grandchildren to put himself in the category of the elderly, no longer much involved in the wider world.

Categories for younger people can be found for example in a 1565 land trial between an indigenous group and a Spaniard from the northern highlands of Ecuador, where witnesses describe themselves as children and teenagers in relation to an event probably fifteen to twenty years before the Spanish conquest. One man states "quando vino Guaynacagua a esta tierra era muchacho pequeño" (Visita ... del valle de los Chillos 1990: 284), another says he was a "mozo grande" (1990: 285), a third explains having been a "muchacho grande" (1990: 287).

In the next example, individual recollections are structured by family history. In this 1571 trial between the Spanish crown and Hernando and Francisca Pizarro,[22] a witness states "al tiempo que vinieron los españoles a estos reinos ya este testigo era hombre

22 Hernando and Francisca were the half-brother and the daughter of Francisco Pizarro, married in 1550 to keep the family fortune together (Lockhart 1972: 164).

que tenía hijos" (Probanza en el pleito contra ... doña Francisca Pizarro y don Hernando Pizarro 1974: 114),[23] a second one "era ya hombre soldado que tenía hijo e hijas ya mancebas" (1974: 38), a third one had "cuatro hijos mancebos que servían" (1974: 41), a fourth "tres o cuatro hijos mancebos que trabajaban" (1974: 49), a fifth "hijos casados y soldados " (1974: 106), a sixth "hijos soldados y tenía nietos ya mancebos" (1974: 101) and another "ya tenía bisnietos y que [hoy] no tiene fuerza para ninguna cosa" (1974: 57). Again, a sequence of fine distinctions can be detected between men who had children, those whose children were already older, children who in addition could serve the Inca, those with married children, those with grandchildren, or even great-grandchildren. In this case, life stages were defined not by a person's activities, but by the generational depth of his (or her) descendants.

Demographic records and life stages among the Inca

From these accounts, it can be assumed that individual life stages constituted a universal reference system for personal recollections which was then associated with outside events. The Inca took the flexible accounting by life stages and developed from them the categories for their censuses. Able-bodied married men were taxed to provide labour service for the Inca state, and the Inca collected demographic information about the inhabitants of their subject provinces, classifying them by life stage, sex, and physical capability.[24] Spanish sources contain two different descriptions of this demographic classification, one encompassing twelve classes, the second ten.[25] The version with ten life stage classes is provided by Martín de Murúa, a Spanish Mercedarian friar, and by Guaman Poma.[26] Guaman Poma cooperated with Murúa, and their information on the life stage classes is very similar because they probably took it from a common source (Nowack 2009). The group they mention first are the married adult men and women, best suited to provide labour for the Inca state, followed by two groups of older persons, the groups of ill and disabled, young adults, teens and finally children.

All groups were defined by their abilities, as Cobo explains:

23 This witness was don Diego Cayo Inga, a member of the highest Inca nobility, a descendant of Pachacuti (Informaciones de Toledo 1940: 168) who among other things had served as an informant for Pedro de Cieza de León (1985: cap. 6: 41) and gave the testimony cited above about the length of the Inca rulers' reigns.

24 For this and the following discussion see especially Rowe's article from 1958; for a more recent version D'Altroy 2002: 182-186.

25 To the first group belongs the account written by Cristóbal de Castro and Diego de Ortega Morejón which was later copied by Hernando Santillán and a second anonymous work (Rowe 1958).

26 Guaman Poma 1987: 194-234; Murúa 1987: bk. 2, ch. 20: 397-400. For a summary of Guaman Poma's information, see D'Altroy 2002: 182, 184, 185, 186, fig. 8.1, tab. 8.2, fig. 8.2.

> En el número de tributarios entraban solamente los varones de la gente común desde veintecinco hasta cincuenta años, poco más o menos, porque, como entre ellos no se contaban por años los edades ni sabía ninguno los que tenía, sólo por el sujeto y disposición de cada uno se gobernaban para este efecto (1964: bk. 12, ch. 24: 112).

And he adds:

> Y así, en la lengua general llaman a la muchacha que no ha llegado a edad de casarse, tasque, y desde que entra en ella hasta que se casa, sipas; y suelen llamar con esta nombre a mujeres de muy diferentes edades, como sean por casar, desde los quince años hasta que pasan de los treinta (1964: bk. 12, ch. 24: 112).

In contradiction to these statements by Cobo, Guaman Poma and Murúa associate each life stage with a certain age group. According to Murúa, men in the prime of life, suitable to fight as warriors, were 25 to 50 years old, older men no longer requested for military service 50 to 60 years, and the group of very old men no longer fit for any work of 60 years and older (1987: bk. 2, ch. 20: 396-400). The indigenous author Guaman Poma has more erratic numbers. The men of the warrior class are 33 years old or between 25 and 50, the older men more than 60 years (leaving a gap of 10 years) or 78 years, and the members of the oldest groups are "de edad de ochenta años hasta de cien años o ciento y cinquenta años" (1987: f. 197, 199, f. 201). As Cobo has indicated, the life stages of Inca demographics were probably developed from an everyday Andean taxonomy of age. The association with years was a later addition made by Spanish authors. When Guaman Poma copied this information from his source, it made little sense to him, which probably explains the variability of his information about ages. Although the sources claim otherwise, the Inca probably did not associate life stages with certain ages because this made little sense in a world where age was not measured by numbers.

Colonial time keeping

In the Spanish world, chronology was more precise and available in abundance. Bureaucratic practices dominated the public and private sphere, and produced an apparently endless amount of dated documentation. However, everyday historical memory most commonly worked by sequence, not by precise dates. Personal recollections of the kind written by Juan Ruiz de Arce and Diego de Trujillo of the initial Spanish conquest or those written by an anonymous author and by Pedro Pizarro about the Inca siege of Cuzco in 1536 contain few dates.[27] Narratives are structured in a simple temporal sequence, and no great difference can be seen between these accounts and for example the recollections dictated by one Inca author, Titu Cusi Yupangui (1992).

27 Ruiz de Arce 2002; Trujillo 1988; Relacion del Sitio 1934; Pizarro 1978: caps. 19, 20: 121-155.

Spanish histories like the one written by Agustin de Zárate provide a tighter chronological framework, but usually are content to simply date the more important events.[28] Spanish attitude towards dates could be rather casual, as when Pedro de Cieza de León dates the foundation of Trujillo and Lima to the year of 1530, two years before the Spanish conquest of the Andes began.[29] In everyday usage, people calculated loosely by life stages and outside events, and middle and lower class members of Spanish society were often not able to say how old they were.[30] The prevalence of this type of rather simple chronologies in personal recollections and everyday collective memories is perhaps the reason why Spaniards did not comment negatively about the lack of a long-term absolute chronology in the Andes and, except for Bernabé Cobo, hardly ever noted the complete disinterest in personal ages.

Sources make it difficult to say to what extent the new Spanish practice of counting years by the Christian era became known or was accepted among the indigenous population, but it can be assumed it was mostly ignored. For example, published letters by indigenous authors in Quechua or Spanish where the writers give a date and the weekday are not synchronized according to the perpetual calendar.[31] Most Andeans only came across Spanish dating practices when they became involved in legal proceedings, especially when they served as witnesses and were asked about their age.

How they dealt with this new requirement is another question. In the documentation consulted, only one witness alludes to his problems with the Spanish counting of years when he answers the question about his age: "según la cuenta de los españoles tiene setenta y tres años antes más que menos" (Información ... de ... doña María Manrrique coya 1970: 172). Don Garcia perhaps had become aware of the Spanish way of time reckoning and that it differed from accustomed practices in the Andes because he already served as a witness in 1558 in a dispute over land between the monastery of La Merced in Cuzco and an indigenous leader. At that time, he declared his age was 68 (Autos ... Convento ... de la Merced ... contra D. Francisco Moyontopa 1963: 16, 17). Comparing this with his later statement, don Garcia apparently at least tried to keep track of his age according to the alien Spanish system.

28 Zárate 1995.

29 Cieza de León 1984: cap. 69: 280; cap. 71: 285. This indicates that the arrival of Pizarro in the central Andes might be a watershed event from a modern historian's viewpoint, inseparably linked to the year 1532, but not for Cieza, perhaps because he spent over a decade exploring modern Colombia where the Spaniards had arrived earlier.

30 See for example the biographies in Lockhart 1972.

31 Carta de Luis Quilo [1 febrero 1598] 2009: 169 ("Oy lunes, día de Nuestra Señora"); Carta de los caciques ... [31 enero 1598] 2009: 171 ("domingo y de henero postrero de 98 años") and the Quechua letters of don Cristóbal Castillo, Carta de don Cristóbal (traducción) [1 marzo 1616] 1991 ("hoy domingo 1ª de marzo de 1616"). For checking the dates and corresponding weekdays, I used Grotefend 1991.

Like don Garcia, Inca and local nobles in Cuzco and its neighbourhood gave testimonies on various occasions which makes it possible to compare statements about their ages.[32] The reaction to the Spanish questioning was threefold. Some witnesses did not care at all what the Spaniards were asking about. Diego Cayo Gualpa who in July 1571 stated his age was 81, in February 1572, when testifying for the correctness of Sarmiento's history, stated he was 70 years old.[33] A second strategy was to keep in mind what was said at one point and repeat it later, as for example Lope Martyn Condemayta (Martyn Cuntimayvta) who was 60 years old during the inquiries of viceroy Francisco de Toledo in 1571 and again in a lawsuit from 1574.[34] Then there were witnesses like Garcia Quispeguara who remembered the age given during their last testimony. A witness who testified for the descendants of the Inca ruler Tupac Inca in May 1569, Martin Nadpe (or Natipe) Yupangui claimed to be 86 years old in that year – and in July 1571 when questioned by Toledo's notaries answered "ser de más edad de ochenta y seis años".[35] Altogether, colonial notaries, for all their apparent accuracy, were not much concerned about the identification of their indigenous witnesses by age. A remark like the following from the 1574 questioning "dijo ser de edad de ochenta años, pero por su aspecto pareció más de setenta" was highly unusual (Auto seguidos ... por Martín García de Loyola 1970: 136).

This is also true for the second category of sources where age plays an important role, the tribute inspections, or *visitas*. For many *visitas*, the Spanish inspectors listed the local population household by household, either by individually visiting the houses or perhaps also by assembling the population and asking for the information. They noted the names, the relationships, and the ages of the household members.[36] When Noble D. Cook analysed inspection reports for his demographic studies of the 16th century Peruvian population, he noted that ages tended to group in rounded numbers like 20, 25, or 30, indicating that people did not know their exact age, similar to witnesses in legal proceedings. Cook also found a preference for numbers related to the purpose of

32 Witnesses were questioned about the Inca past on the basis of questionnaires for viceroy Francisco de Toledo (Informaciones de Toledo 1940). The viceroy also charged Pedro Sarmiento de Gamboa with writing an Inca history which at the end was read to and confirmed by Inca nobles (1906: Ffee de la prouança, 131, 132). The two other documents consulted are lawsuits for land and *yanacona* by members of the Inca nobility (Prouança de los yngas 1985; Autos seguidos ... por Martín García de Loyola 1970).

33 Informaciones de Toledo 1940: 161; Sarmiento 1906: 131. Another example: Don Francisco Andigualpa was said to be 80 years old in March 1571, and 89 years in February 1572 (Informaciones de Toledo 1940: 65; Sarmiento 1906: 132).

34 Informaciones de Toledo 1940: 71; Autos seguidos ... por Martín García de Loyola 1970: 133. Compare Gonçalo Guacangui who stayed 70 years old between his two testimonies in March 1571 and February 1572 (Informaciones de Toledo 1940: 85; Sarmiento 1906: 132).

35 Prouança de los yngas 1985: 230; Informaciones de Toledo 1940: 159.

36 Guevara Gil & Salomon 1996; Cook 2008.

the visitations: An above-average number of men was recorded to be 18 or 48 years old, so that as many men as possible fell into the category of tribute payers, which the Spanish legal system defined as men between 18 and 50 years.[37]

These examples remind us that age was not a neutral category, and that, for all their details, *visita* documents mostly fail to explain how the inspectors proceeded during their visits.[38] In one of the few (published) cases where a *visita* was contested, the results of a second inspection (*revisita*) indicate a good deal of arbitrariness in the inspectors' recording. In Songo, a province on the eastern slopes of the Bolivian Andes, the first *visita* was in 1568 and the second inspection 16 months later in 1570. During the two inspections, people were recorded with the same age, became younger, or significantly older, and sometimes aged a more or less correct number of years.

Especially astonishing is the degree of variability within a family. In the valley of Chacapa, for example, the local cacique Alonso Llulla Estaca was said to be 40 years old in 1568, and 45 years in 1570. His wife doña Maria Tahacany was recorded to be seven years older at the time of the second visit. On the other hand, two of their children were given ages consistent with the time passed from the first visit, but two others were recorded with a younger age than in 1568. The cacique had two servants, the first one, Pedro Ayla, was attributed an age ten years younger during the second visit, while the age recorded for his wife and son stayed the same. The second servant, Pedro Piraco, became younger as well (Visita de Songo 1991: 138-141, 444, 445, 454).[39]

What exactly was going on during these inspections? Were the family members asked about their age, and an estimate given only when the answer was negative? Or were all ages estimates? During the 1568 inspection, the entry for Ambrosio Coieque's third son reads "un niño tambien su hijo Alonso Coore que sera de 13 digo 8 años", and in the next entry Alonso Huri is 26 years old, his wife Lucia Taicho has the "misma edad", and then the text lists "un niño su hijo Juan que sera de la misma edad digo de un año" (Visita de Songo 1991: 143). These two entries with their corrections point to a tired inspector, dictating the information to the notary and estimating ages, as shown by the use of 'will be' ("será"). In the Songo *visita* and *revisita*, information about Andean ages is partly guesswork, and the numbers given can be deceptive in their precision.

37 Cook 1981: 186-188, 219, 220, 231-234, referring to the Chupachos (or Huanuco) *visita* from 1562, Pedro Gutiérrez Flores' inspection in the Yucay valley 1571, and a 1591 visit in Collaguas.

38 See the early Instrucción sobre la doctrina ... por ... Jerónimo de Loaiza (1943: 140): "y los que asi baptizaren los asienten por memoria en un libro, que para esto ternan, astendano el dia mes y año y de que pueblo y parcialidad, y, de que cacique es, y, quien son los padrinos y todo lo firmara el que asi los baptizare".

39 The *cacique*'s two servants were listed with his household in 1568, and separately in 1570. Independent households were subject to tribute payments, while dependents (*yanacona*) continued to serve only their masters. Since the purpose of the second *visita* was to find hidden assets, the inspector included both men into the tribute paying category.

Visitadores could have consulted baptismal records, since Spanish priests were ordered by the church to keep such records, especially books of baptisms, even before it became a universal practice in the Catholic church after the Council of Trent (Groebner 2004: 143, 144). Spanish inspectors of Toledo's *visita general* were instructed to consult baptismal records, but since hardly any parish records survived from the 16th century, it cannot even be said if the priests followed instructions and kept such books.[40]

When in 1613 the indigenous inhabitants of Lima were counted, there were still those who had no idea how old they were.[41] At times the inspector doubted the answers given to him: "será de veinticinco años y parecía de más edad" was noted for Andre de Cardenal Daula, a married tailor from Guayaquil, and Francisco Mua from Surco near Lima, a cobbler by trade, "dijo ser de treinta años, parecía de más de cuarenta por su aspecto" (Padrón ... de Lima 1968: 201, 206). A silversmith from Conchucos, Pedro Pumaguanca, "será de diecinueve años porque ha un año que paga tasa" (1968: 200). Pedro Pumaguanca, it can be assumed, started to pay *tasa* because somebody took him to be eighteen years old, and based on the fact that he paid tribute and tribute payers had to be eighteen years old, a year later a Spanish official concluded him to be nineteen years old. Ages of indigenous people in the Andes continued to be elusive, even in the viceregal capital.

Origins of chronologies and the notion of cyclical time

Discussions of Inca history and chronology often assume that the Inca and Andean people had a cyclical view of time:

> Inka view of the past [is seen] as cyclical, rhythmic, repetitive, and patterned. Such discourse is hard, maybe impossible, to render into 'history' as a series of unique events. Because of the cyclical view in which the Inka regarded their past, assigning dates before the European invasion is risky (Rostworowski & Morris 1999: 776).

The cyclical worldview sees the world renewing itself in an eternal cycle, while a linear conception interprets the world (and time) running a course from a beginning to an end.[42] People in the Andes are thought to have had a cyclical worldview which prevented them from developing an interest in a historical chronology, since events eternally repeated themselves.

The notion of cyclicity is based on the information provided by Guaman Poma and Murúa about the existence of several prior ages of humankind.[43] In modern interpretations, the prior ages of humanity are linked to the concept of *pachacuti*, a cataclysmic

40 See Instrucción general para los visitadores 1986: 14; Cook 2008: 137, 138.
41 See for example Padrón ... de Lima 1968: 109, 139, 164, 198, 199, 204, 230, 306, 315, 333, 423.
42 The anthropological view of cyclical time is summarized by Müller 2005: 28-40.
43 Guaman Poma 1987: 48-78, f. 911; Murúa 1987: 100, 101.

world-changing event. It is suggested that Andeans believed in successive ages which ended with a *pachacuti* event, for example the destruction of the world by a flood.[44] For several reasons, it can be doubted that this hypothesis of an Andean cyclical worldview is correct. The successive ages of Guaman Poma and Murúa are probably inspired by European sources,[45] and Andean myths about past transformations refer to one or two such episodes after the world's beginning (Nowack in press). Myth and religious practices also reflect the possibility of a future destruction, but all this does not amount to cyclicity, and does not imply that after several stages there will be a return to the start (or the first age).

A cyclical worldview or view of time and history also often implies that people negated the existence of change. Their present culture is the same as the past culture was, continuing unaltered into the future. But as Gell has noted (1992: 36), people might think everything stays the same and nothing changes, or they might see themselves in a constant process of innovation and change, still this view of the world does not immediately touch upon their recognition that time moves on. A truly cyclical view of time would make it difficult to recognize any movement of time at all. If the same sequence of events repeats itself again and again, how could it be known that it is the same, since there are not past events to compare it with? The events would always be new and their cyclicity could not be perceived.

A reference to a cyclical view of time does not explain why Andean people at the time of the Spanish conquest were so little interested in exact chronologies. Looking at the development of chronologies in other parts of the world, they seem to have diverse origins, such as for example, an interest in astronomy and divination based on the calendar as in the case of Mesoamerica and Mesopotamia as well;economic record-keeping, as it seems to be the case in Egypt, together with an interest in long-term recording of events like the yearly flooding of the Nile (Assmann 2005: 130; Maul 2013: 237-275), at least in Egypt and in China; and a religious ethic that holds the conduct of the rulers responsible for the welfare of their subjects, and therefore demands precise records of their deeds,[46] political and social reasons, for example the recording of the term of office of a city state's officials in ancient Mediterranean world.[47]

In the pre-Hispanic Andes, divination was not related to a calendar and thus astronomical observations; knowledge about the future was gained through the consultation of

44 MacCormack 1998; Urton 1999: 40-44.

45 Guaman Poma took his information from Hierónimo de Chaués *Chronographia*, a compendium on chronology and calendars published in 1584 (Chauéz 1584: f. 54-57; Plas 1996). Murúa's source was Francisco López de Gómara's account of the conquest of Mexico (Rowe 1987). See also Salomon 1999: 46-48.

46 Assmann 2005: 132; Völkel 2006: 165.

47 Rüpke 2006: 92-99; Walter 2006: 47, 48.

ancestors and oracles. Astronomical observations were mostly restricted to the movement of the sun and moon within a year. Although Inca rulers were expected to participate in rituals like the first planting to ensure a good harvest, religious accountability was not a reason to develop a chronology. In the economy, market exchanges, merchants, and a medium of exchange were of little importance, and the hiring of labourers and the renting of land were unknown. It was not necessary to follow investments or the obligations of a contract for a longer period of time. Rule was mostly hereditary, and the reigns of past rulers were invoked with the help of mummified ancestors and with oral traditions memorizing their deeds.[48]

Even the expansion of the Inca state did not change this, although the people found their lives increasingly defined by its demands. Commoners served the Inca state as soldiers, workers, or settlers, and this might, for example, have generated an interest in records about past services to prevent excessive contributions. Local elites had to keep track of their arrangements with the Inca state to preserve their positions, and the descent groups of Inca elite competed and fought for pre-eminence referring to the deeds of their respective ancestors. Ultimately, in the complex Inca world, people had to keep track of more and more details about the past which might have given rise to a greater chronological precision.

A case in point is the innovations in 16th century Spanish chronological practices. As already mentioned, it was one of the provisions of the Council of Trent to keep records of baptisms, marriages, and deaths. In the religiously more diverse world after the Reformation, it became necessary to define more clearly who was Catholic and who was not, and this was achieved by more detailed record keeping.[49] Structuring the past by temporal markers could contribute to group and individual identities.

It remains astonishing that Andean state formations like the Inca or Chimu were apparently not even interested in the measurement of duration, for example, in the case of state activities in distant provinces. An illustrative case is an agricultural state project of Guayna Capac in Bolivia. The land of the Cochabamba valley was appropriated and distributed among highland ethnic groups for maize cultivation. These groups had to send 14,000 workers, most of them taking turns during the labour-intensive periods of planting and harvest, while a smaller number permanently settled in the valley to tend

48 See D'Altroy 2002 and Murra 1989.

49 In 1596, a Swiss Protestant visiting Barcelona noted that the Inquisition in the city asked foreigners if they were Catholics, and if they affirmed this, demanded to know the place where they were baptized or had taken the last communion, writing to these locations to have the statements confirmed. This was, however, mostly a theoretical procedure, and in practice, the visitor moved around quite freely, using papers which claimed that he was a Catholic (Groebner 2004: 146, 147).

to the fields and guard the granaries.[50] The realization of this project must have taken several years, but the performance of the state officials apparently underlay no temporal requirements. This lack of monitoring contrasts with the precise recording on *quipu*, for example, of the amount of produce delivered to the warehouses as the result of this state project. In a similar manner, the demographic data necessary to recruit workers for such a project was probably very precise. Especially the detailed records about children show that the Inca state was interested to know which workforces would be available in the future, an indication of long-term planning.

Still, Inca and other Andeans up to the arrival of the Spanish recognized no need for chronological record keeping, and knowledge about Spanish practices did not change their view. Spanish long-term recording of time did not influence Andean collective memories nor was it used for the individual reckoning of time. This probably put Andeans at a disadvantage in certain situations, as the manipulations of the ages of tribute payers show. But since Andeans adapted other Spanish practices rapidly and successfully, as for example their legal system, it has to be assumed that Spanish ways of counting time mostly were of no practical benefit for them.

For modern historians, this means that information about historical chronology, duration of events, and ages of people in the pre-Hispanic past in Spanish narrative texts, the so-called chronicles, should be treated very carefully. In the documentation about the colonial period, ages given for indigenous people have to be read more often than not as a kind of code describing a life stage, and not as credible information about the age of the individuals recorded.

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