



MUSIKHÖGSKOLAN I MALMÖ  
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# *THE QUENA AND THE SIKU*

**A comparison between Bolivian and Peruvian playing techniques**

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## ABSTRACT

What are the differences and similarities between the playing techniques of the siku and the quena in Peru and Bolivia, and in addition, the ways these techniques are taught?

This is an investigation into the differences and similarities concerning playing techniques of the quena (Andes end-blown flute) and the siku (Andes panpipes) between Bolivia and Peru, as it is used in the traditional music of the Andes. The background material consists of interviews with five important quena and siku players, two players are from Bolivia and three players from Peru.

The results illustrate the differences in playing techniques between the two countries. The main finding is mainly the national differences between players in each nation concerning the embouchure and articulation used for the quena and the siku.

Keywords: the Andes, playing technique, traditional music, quena, siku,

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## INTRODUCTION

In the 1960s and 70s, the Andes siku (pan pipes) and the quena (end-blown flute) became popular among Andes folk-music groups in South America, and accessible to the people of Latin America. It was a new fashion to hear these traditional instruments with groups like Jaivas, Intillimani, Kjarkas and Urubamba. The last group got the opportunity to record and perform concerts with Simon & Garfunkel, who made the melody *Condor Pasa* famous around the world. James Newton, jazz and classical flute player, also performed on the quena in one of his recordings in the 60's.

Peru and Bolivia are countries associated with the quena and siku in South America. Archaeological remains of these flutes were found in both countries. Andes music is traditionally played from memory. Nowadays, however, we have access to many examples of written traditional music at the music academies in Peru and Bolivia. Some of the most representative masters of Andes music including Ernesto Cavour from Bolivia and Alejandro Vivanco from Peru, have been working intensively over the last 30 years to contribute transcriptions of Andes music. Having had inspiration from their transcriptions, since 1990, I decided to make an investigation of playing techniques of the siku and the quena from both countries. At the same time, in my stay in Bolivia and Peru in the last years I pursued investigations in national cultural institutes, libraries, academies of music, focusing particularly on earlier research and findings of the similarities and differences of playing techniques between Bolivia and Peru. In this research I noticed both similarities and differences.

My parents live in a valley called Chaclacayo, which in the Quechua language means "in the feet of bamboos." Quechua is an old language that is still spoken by the people of the high mountains of the Andes. Chaclacayo is situated on 1000 meters above sea level, 40 km from Lima city. When I was five years old, my father bought me a small quena. Since that day I fell in love with this instrument, I was practicing every day and weekend my father climbed the mountain with me on his back. Each time we reached the top of the mountain, I used to play my quena with a huge echo that projected in the entire valley. In this way, for more than three years, my mind and body were impregnated with this sound. I learned to play the siku at the age of seven. In this way, I was self-educated with both instruments.

When I came to Denmark nine years ago, I decided to create modified versions of these two instruments so that they would be more able to play Western music. With the help of a Peruvian flute maker in Norway we constructed a chromatic siku, and a quena head joint possible to use on the common transverse flute (in the following called *De La Calle Quena Flute*). Together with Anders Ljungar-Chapelon, my flute teacher, we developed the techniques for playing my innovation at the Academy of Music in Malmö. I worked for three years, basing my techniques on those of the traditional quena from Bolivia and Peru

In 2007, I got the opportunity to introduce traditional Andes techniques from both countries (concerning the chromatic siku and the *De La Calle Quena flute*) to pupils at Kulturskolan in Malmö, Ystad, and at the Copenhagen Music School. We performed with these two instruments on several concerts playing Western music and music from Latin America with good results. I consider that more important than the pure technical work of the instrument is to find the role and character of the playing of Andes folk music. There is already a long

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tradition of playing these instruments, and since the 1920s; thousands of siku and quena players have performed Andes traditional music in Latin America.

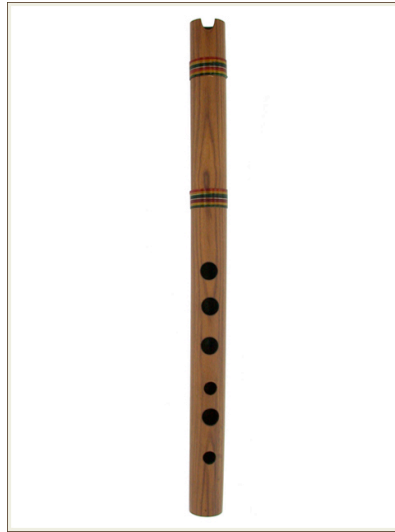


Figure 1. The Quena



Figure 2. The Siku

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### **Research question**

The aim of this study is to investigate techniques for the quena and siku flutes from Bolivia and Peru. The result is going to contribute to new options for the player and the teacher. Therefore I pose the question:

*What are the differences and similarities between the playing techniques of the siku and quena in Peru and Bolivia, and in addition, the ways these techniques are taught?*

### **Delimitations**

This study is about the traditional Andes flutes, the quena and the siku, and how they are played and taught today in Peru and Bolivia, in the context of traditional Andes music. My study is based on interviews with five performers and teachers of these instruments, within the scope of traditional Andes music. There is no discussion of countries beyond Peru and Bolivia.

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## **Short flute history**

### **SIKU (PAN-PIPES FROM THE ANDES)**

Siku plays a major role in the festival cycle in the Altiplano high plateau zone of Bolivia and Peru. Here the agricultural cycle and the cycle of saints' days determine the choice of musical instruments. The siku is commonly played in ensembles, rarely as solo instruments. String and wind instruments are rarely mixed. The siku of the Altiplano is generally performed in pairs sharing the melodic line; this practice of hocketing has been explained as necessitated by the impossibility of sustained playing at an altitude of 4000 metres (Groves, 2007). Puno in Peru and La Paz in Bolivia are the main cities for the siku situated in the altiplano.

The siku is about 3000 years old (Bolanos, 2007, p. 91). In the 1920's, its name was changed to *Zampona*. The siku appears in the Chiripa, Huancarani, the Tiahuanacota Culture, the Aymara Culture (in the Altiplane Zone), and outside the Altiplane zone "in the Nazca (1000 – 400 BC), Mochica (400 –1000 AD), Chimu (120 – 1460 AD) and Paracas culture (400 BC – 400 AD) with different amount of tubes depending the culture where it is coming from (Groves, 2007; Bolanos, 2007, p. 91). The instrument spread to nearly all parts of the Andes, and to the areas between the Andes and the west coast, and between the Andes and the Amazonas. It was made of condor bones, ceramics and bamboo. Originally it was pentatonic but nowadays it is diatonic. Inhabitants of the Altiplano consider this instrument, as they declared "a part of the cosmic connection between their towns", which means that they would like to integrate this instrument in all of the natural elements of their daily life.

It is the Aymara name of the Andes Panpipes in the Altiplano, which it has been played originally from the people in the fields mainly in religious activities. The siku in the quechua language is *antara* and in Spanish *zampoña* (Groves, 2007). Before the 60's and 70's the Siku have been played and taught mostly in a spontaneous way when they have used for example their breathing. But since then most people have been inspired by Western classical flute playing concerning breathing technique. This instrument has different sizes and ways of interpretation depending on the town where the player comes from (figure 3 below shows a map over the mentioned cultures).

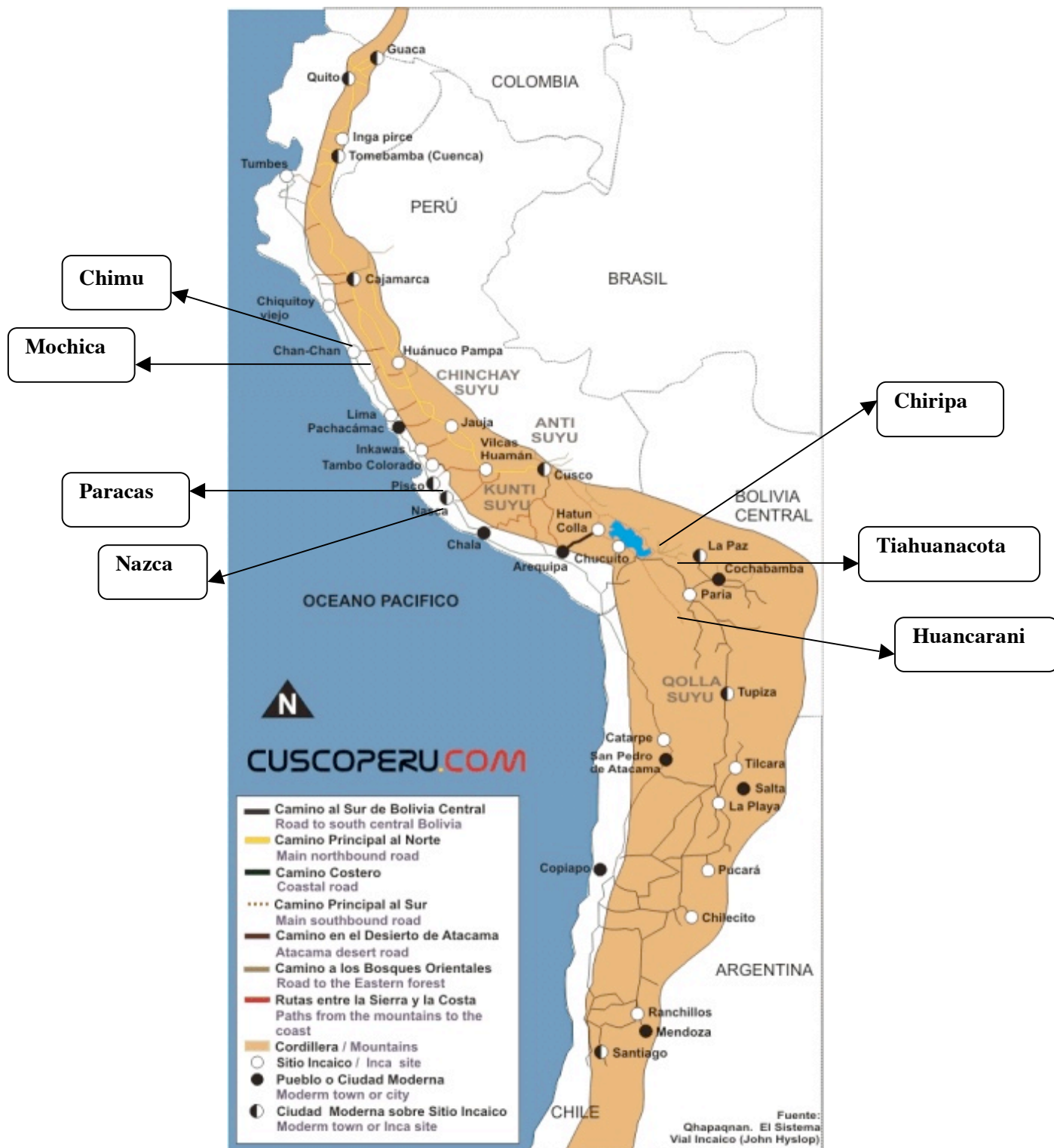


Figure 3. Map of the Inca culture with the respective mentioned cultures where the siku and the quena were used.

The siku originally is divided in two rows: The *arca* and the *ira*. The *arca* is situated at the superior row of canes and is counted as 0, 1, 2, 3, 4, 5, 6 and 7. The *ira* is situated at the lower

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row of canes and is counted as 0, 1, 2, 3, 4, 5 and 6. One person plays each row. Each person has different notes, which are represented by these numbers:

Arca	Ira
0= B	0= C
1= D	1= E
2= F#	2= G
3= A	3= B
4= C	4= D
5= E	5= F#
6= G	6= A
7= B	

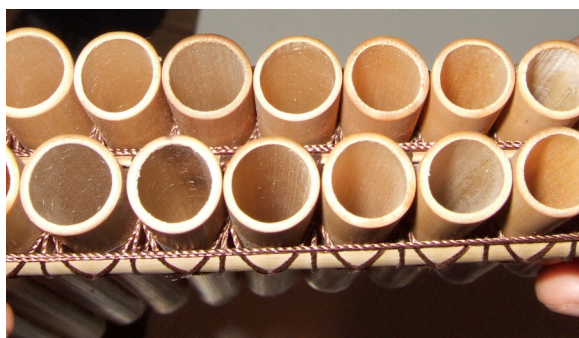


Figure 4. Overview over the number of canes and its notes of the Siku.

One or two persons play the siku normally in e-minor or a pentatonic scale, in the last case as a conversation. Ponce, an important siku player in Bolivia, plays jazz music that incorporates these ideas on the techniques of the instrument. He found the *songo* material in La Paz (Songo valley), which is a bamboo in South America, and allows this instrument to bring its unmistakable sound (which it is different from the European panpipes) and facilitates to make different dynamics.

### **QUENA (END-BLOWN FLUTE)**

The quena is a pre-Colombian instrument "An end-blown flute with morphology of a vertical type. It has a canal of air pipes to establish the sonority production and V- or U-shaped notch cut or burnt into its upper rim to facilitate tone production" (Pariona, 2006, p.10; Groves, 2007). It is said that the quena was born with the man in the Andes. This instrument was made and played in the pre-Colombian cultures, including the Nazca (200 BC - 600 AD) and Mochica (400 BC - 600 AD) cultures in Peru, and as well as other pre-Colombian cultures, as early as approximately 5000 years ago (De La Calle & Ljungar-Chapelon, 2005, p. 5). It was essential in the agrarian or cattle farm communities in the Ayllus "It has the essential unity of

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the human" with the characteristic formation of the person. It is the expression of cultivation. Since the 1960s the urban quena has surged in popularity in Andean and other Latin American cities; Many Latin American musicians play the instrument in Europe. As a result its playing technique has been developed incorporating many aspects of Western aesthetics. As a fully chromatic solo instrument, with a compass of some three octaves, it is often played with virtuosity and expressiveness (Groves, 2007). The word *quena* derives from the Quechua language and is related to the words *Q'uena-Q'uena*, which means a hole. (Poma de Ayala, 1615/2001, p. 315). Others researchers as Alwirtu Maki attributes a correlated conception originally coming from Quechua, which corresponds to *Huschku-Tujo*. *Tujo* is an opening in Spanish "window". *Uschku* is an orifice where all the impurities evacuate. According to Vivanco "The quena is a hole, in the sense of an opening where the soul gives the best of oneself; it is the opening or aperture of life" (1974, p. 11).

A quena is normally 30–40 cm long, with six finger holes in the front part, and one in the back part. The tuning is basically in A. In the pre-Colombians times the quena were originally made by feather of bones of the Condor and human bones, clay and stone (Pariona, 2006, p. 2, 28). The number of finger holes could vary, with models having two, three, four, five, six or seven holes (Pineda, Bolaños, García, Salazar, 1978, p. 181-183). Modern quenans are made of bamboo or wood and have seven finger holes, six on the front and one in the back for the thumb. The shape of the embouchure hole on the head joint can be circular, square or triangular (Pariona, 2006, p. 10). These instruments were also in use during the colonial period (1572-1824). In 1973, Encinas from Bolivia adjusted the quena to a more western scale. In the 1980s Vivanco from Peru contributed with a large traditional repertoire with compilations focusing on the sonority of the instrument. He created the tonal system for this instrument in a pentagram.

The following fingering chart for the quena refers to the international standard for the transverse flute, whereby the fingers of each hand are numbered in the following way: 1=thumb, 2=index finger, 3=middle finger, 4=ring finger, 5= little finger. Numbers to the left of the slash represent the left hand; numbers to the right of the slash represent the right hand.

G1: 1234/234	G2: 0/0	G3: 0/23
A1: 1234/23	A2: 1234/23	A3: 234/23
B1: 1234/2	B2: 1234/2	B3: 12/3
C2: 1234/0	C3: 1234/0	C4: 124/234
D2: 123/0	D3: 123/0	D4: 14/0
E2: 12/0	E3: 12/0	E4: 23/23
F#2: 1 /0	F#3: 1/0	

The other 3 fingers will be the 3 points of support for the quena. The first point of support is with the little finger of the right hand; the second support will be thumb finger of the same hand; the third support is with the little finger of the left hand. (See figure 7)

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## METHODOLOGY

I have chosen a hermeneutic approach to handle my subject. The word *hermeneutics* comes from the Greek *Herm/neutik* (the art of interpretation) and *herme/neua* (interpret, explain, outlay), (Nationalencyklopedin). Hermeneutic was used already 2000 years ago and in the Middle Ages, to interpret the scriptures of the Bible and texts of the law.

Vi påminner oss därvid den hermeneutisk regel, som säger att man måste förstå det hela ur det enskilda och det enskilda ur det hela... De rör sig i båda fallen om ett cirkulärt förhållande... Sålunda rör sig förståelsen ständigt från helhet till del och tillbaka till helhet. (Gadamer, 1997, p. 137)

It reminds us of the hermeneutic rule that states that one has to understand the whole from the part and the part from the whole... It moves in both cases in a circular relationship where understanding moves constantly from the whole to the part and back to the whole. (Trans. De La Calle)

The long and well-argued answers require a conscientious process of interpretation, for which the hermeneutic method is an adequate process. Kvale (1997) refers to different hermeneutic principles of interpretation. I chose the first principle because it enables me to compare and corroborate the general way that each musician described his approach (usually as either traditional or academic style of playing) with the various individual techniques I observed in each musician's actual playing. "I den hermeneutiske tradition opfattes denne cirkularitet ikke som en 'ond cirkel', men snarere som en *circulus fructuosus* eller spiral, de muliggør en stadig dybere forståelse af meningen" (Kvale, 1997, p. 58). In the hermeneutic tradition, this circularity is not understood as a "vicious cycle" but rather as a *circulus fructuosus*, or spiral, which makes it possible to obtain a continuously deeper understanding of the subject. (Trans. De La Calle)

This is the principle of interpretation of the hermeneutic, which is considered by Kvale to be important to ensure that the overall result is consistent with each of the various parts of the data set. I have considered the background and musical situation of each interviewee and compared his answer with those of each other interviewee and source. Each part of the interview has to be read separately to find out what the interviewee means and why he/she has chosen to say that. Sometimes there is a word that shows contradiction in the same answer, therefore demanding interpretation, while at other times it will be clear in the last part of the same answer or in the other answers. This has to be compared with the result and the same process of interpretation of the other parts. In this way a model will arise, which will show us the interviewee's playing techniques and his aesthetic considerations.

I have chosen the fifth principle because the pre-understanding was very important when it came to interpreting my results and it enabled me to understand quickly and respond immediately.

... den hermeneutiske udlægning af en tekst vedrører *viden om tekstens emne*. Det kræver en omfattende viden om emnet at gennemføre et kvalitativt forskningsinterview, således at interviewerens kan være lydhør over for de udtrykte betydningsnuancer og de forskellige kontekster, meningerne kan indgå. (Kvale, 1997, p. 59).



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... the hermeneutic interpretation of a text concerns knowledge of the subject at hand. An extensive knowledge about the subject is required in order to conduct a qualitative research interview so that the interviewer can be attentive towards the variety of declarations and the various contexts that are relevant for the stated opinions. (Trans. De La Calle)

## ***Interviews***

I have used structured interviews as my method of data collection, and decided when each topic had been adequately explored. Sometimes I needed to actively and politely interrupt long answers that were irrelevant to the research subject (Kvale, 1997, p.138). I posed specific questions and gave the interviewees considerable freedom to answering them, having in mind that a hermeneutic researcher should not attempt to show any kind of sympathy avoiding to manipulate the interviewee (Patel & Davidson, 2003). In this way I have tried to stay neutral so that they can answer from their own point of view. When the interviewee's answer was unclear, I had to use my pre-understanding and verify what was said in one part with the information given in other parts of the text.

Occasionally I used a free interview method when interviewees volunteered new and interesting perspectives that I had not previously considered. There were also questions concerning the interviewees as teachers, and how they deal with aspects in a teaching situation. Because of my musical background I could elaborate the questions and understand the answers concerning the siku and the quena.

I have used a video camera in Peru and Bolivia helped by an assistant taking care of the camera. The video film was used to transcribe and interpret the answers, providing a complete view and understanding of the constructions, sizes and the embouchure techniques of these instruments. Each of the interviewees brought their instruments and performed traditional Andes pieces. This is how I was able to see whether what they explained verbally was in accordance with their playing.

I have concentrated on the following points to develop the subject for playing techniques, and did choose them because they are the techniques that are being taught in a specific way as done within the framework of classical music and conservatory teaching. The following structure makes it easier for me to make the interviews and to analyze the results:

- 1) How to hold and the balance of the instrument.
- 2) Finger technique for the quena. -Techniques for the siku while playing scale patterns.
- 3) Breathing
- 4) Embouchure and tone
- 5) Articulation
- 6) Vibrato

## ***Interviewees***

The interviewees included five professional flautists who are also teachers, two from Bolivia and three from Peru. They have different backgrounds and work as musicians and teachers in

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traditional Andes music and Latin folk music. A part of each interview is concerned with each player's background. The representatives from Bolivia were chosen despite the fact that they do not teach in a music school or an academy, since Ponce was teaching me the siku techniques in La Paz. We became good friends and Encinas since I met him for first time in a concert in Malmö three years ago, it was on Ponce's recommendation, which I made the interview with him in La Paz. In Bolivia they are considered as the two most internationally known and significant performers with an innovative and open artistic personality.

I selected representatives from Peru: Pariona and Arias, because I have already been working with them while collecting data for a previous project (De La Calle & Ljungar-Chapelon, 2005). I chose Mamani because we knew each other since we were children playing together, and after 20 years I got the information that he continued not only as an intensive active performer, but also that he is the main Siku teacher at the music academy of folk music in Lima. Pariona and Arias are also quena teachers at the same academy of folk music in Lima and Cuzco.

Here follows a short biography of each interviewee.

### **IDEL MAMANI**

Mamani is from Puno, Peru. He was three years old when he heard the last Ayarachis, a siku dancing group. The legacy of the Ayarachis is that they were playing for the Inca before the conquest by Spain in the early 16<sup>th</sup> century. He says that the Ayarachis stamped the sound of the siku in his heart. When he was a child, he started to play a pinkillo, an Andes recorder, and the siku at the age of twelve. He is self-educated. He travelled regularly to Puno, the city of the masters of the siku in Peru. He states that he continued learning this hidden music knowledge in the villages in the Altiplano. Idel has been teaching the siku at the Academy of Folk Music in Lima for the last 15 years. He is working for the revival of the siku in the Peruvian society because this instrument has been marginalized and almost forgotten. For him it is fundamental to appreciate the traditional instruments in order to appreciate our customs, ideals, thoughts and identity: who they are, and where they came from. As a teacher he is currently involved in a project to create the first Peruvian orchestra consisting of traditional instruments.

### **CARLOS PONCE**

Ponce was born in La Paz, Bolivia and he has been playing the siku since he was eleven. He is a pioneer in Bolivia as a player of jazz music on the siku. He took part as a siku soloist in some of the best groups of Andes music in South America, including Wara, Rumillaqta, and Luz Del Ande. He has not had any teachers. When he was a child, he got inspired by listening to his brother Hernan Ponce, the pioneer of Andes percussion in Bolivia, Master Calderon and Fernando Jimenez, both masters of the siku, George Zamfir and Una Ramos, quena master player from Argentina. Carlos continues teaching his students the same music styles and music with his own adaptations and jazz improvisation for the advanced students. As a teacher he is leading the first Andes and Latin orchestra in Bolivia with children between nine and thirteen. As a musician he has been travelling intensively around the world and he was invited this year to the World Jazz Festival of Chucho Valdes in Havana.

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## **ROLANDO ENCINAS**

Encinas was born in La Paz, Bolivia. He has been playing the quena since he was nine. His studies are inspired by all the regions of the Andes in Bolivia and compilations from the Bolivian music from the 20<sup>th</sup> and 21<sup>st</sup> century. His famous international group "Musica de maestros" performs this music. When he was a child, he started playing a quena with only five holes, following the 60's way of playing belonging to a Bolivian group JAIRAS, a legendary group, and a milestone in Bolivian music. He was a student of Giber Fabre, a Swiss quena player, and Ricardo Mendoza, master of quena in Bolivia in the 60's. He studied the common transverse flute at the conservatory in Bolivia in the 60's, 70's and 90's, taking private lessons in harmony.

## **JAIME ARIAS**

Arias is from Cusco, Peru, the capital of the Incan Empire. He is currently the quena teacher at the Academy of Folk Music in Cusco and uses the common transverse flute as a second instrument performing pieces from flute classical western music. He is self educated and he started with the quena when he was fourteen. His first inspiration was Jaime Aleva, a master from Apurimac (an Andes city in central Peru). He learned music from central the Andes of Peru, with the purpose of accompanying a traditional dance group. Then, he was inspired by Raymond Thevenot, a Swiss quena player. As a musician he has many recordings with traditional music compilations and his own compositions. He works intensively with his students at the Folk Academy of Music in Cusco, master classes and workshop in Peru.

## **DAVID PARIONA**

Pariona was born in Lima, Peru. He is currently working as a quena teacher at the academy of folk music in Lima. At the age of five he started playing the recorder, piano and guitar in the children's program at the music conservatory of Lima. He took lessons with Alejandro Vivanco, Peruvian master quena player and Enrique Iturriaga, Peruvian composer. At the age of seven he started his studies with the quena having as his teacher Alejandro Vivanco. He was attracted to the quena because of the sound and its rich history. He has been studying this instrument at the same academy since he was seventeen discovering the different kinds of interpretations of different styles in Peru. Raymond Thevenot, Jorge Cumbo, Argentine quena player and the master Manuel Rios Pantoja, Peruvian quena player in the traditional Andes music, inspired him. He works as a composer performing his songs and he inspires his students to be active in projects, especially through recordings.

## ***Ethical considerations***

The interviewees were informed that the interview would be used for research purposes. The five interviewees agreed that their interviews would not be anonymous. All the information that the five interviewees provided was interesting and important and not controversial. My relation with them was always formal and the atmosphere remained professional throughout the private lessons. This helped to preserve the credibility of my results by avoiding overly personal perspectives.

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## RESULTS

This chapter will show the answers from the interviewees. I will discuss the quena and the siku separately to offer a better view for the analysis of these different subjects. The interviewees have used two concepts or definitions: The academic style of playing and the traditional style of playing, which for them means respectively the city style of playing and the village style of playing.

### *Siku*

#### POSITION AND BALANCE

##### *Mamani*

Mamani showed me the whole siku family classified in eight groups, which are coming from the Altiplano, including some parts of Bolivia. He started by describing the largest siku (1.80 m), the *Chirihuanos*, and he described progressively the largest to the smallest in the siku family, *Rondador*.

1) The *Chirihuanos* (One of the styles in Huancane) is the biggest siku. It is called *mama* and two persons play it. Each player holds the arca and the ira respectively. Normally the right hand is situated on the lower part of the instrument and the left hand on the upper part. It will be opposite for left handed players. Generally the position depends on how people in the villages feel comfortable holding the instrument.

2) The *ayarachis* (*Aya*/dead, *rachi*/celebration) is held only with the left hand on the upper part of the instrument, while the right hand is holding a percussion instrument, which accompanies the wind instrument. The *ayarachi* has various sizes. The most used of them is the second largest of the siku family, called *chaupi*. It will be also opposite for left handed players. (See track 1 of the DVD)

3) The *taquile* (a town in Puno) is played in the same way as the *ayarachis*, with a kind of drum called a *caja*. The *caja* hangs from the left shoulder of the player.

4) The *tablasikus* (siku/ panpipes denominated the Ayamara zone, *tabla*/ rectangular form) is held in the same position as the *chirihuanos*.

5) The *pucus* (panpipes denominated in the quechua zone) is played like the *ayarachis*. They have an extra row of bamboos which functions as multiphonics of the original row.

6) The *sikus* group includes Ponce's *malta*. The biggest is called *taica* and is played by two persons; the *malta* (middle or standard size) and *chili* (small size) are played by one person.

7) The *antara* (panpipes denominated in quechua language in Nazca and Cajamarca) comes from the north of Peru, Cajamarca, and is played like the *taquile*, with the *caja*.

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8) The *rondador* (panpipes originating in Ecuador) player blows two canes at the same time, producing a third, quarter or fifth interval.



Figure 5. The family of the siku. The longest sikus are the *chirihuanos*. The middle sikus are the *ayarachis* and the small siku is the *malta* used by Ponce.

### *Ponce*

Ponce showed me only one kind of siku, the *malta* (standard size), of the variety of the siku family. He affirms that the vertical position of the siku serves to increase the flow of air.

Ponce (Bolivia) and Mamani (Peru) use a similar balance and position of the siku. Both of them hold the instrument so that the fingers of both hands are parallel to each other. These players agree that the position also depends on which town you are coming from.

## **BREATHING**

### *Mamani*

Mamani uses traditional breathing only. He explained that the breathing that is used in the traditional music shares some similarities with the singing techniques of western classical music. The diaphragm is used in the traditional style. A good tone is reached by blowing with a high amount of energy all the time.

### *Ponce*

Ponce mentions two kinds of techniques that are related to breathing. The traditional breathing technique is used in the villages of the Andes. This technique is characterized by a

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strong use of the diaphragm. Playing is a conversation between two persons, with the arca and the ira. The second kind of breathing is the academic way, incorporating chest breathing. It is used for example in the G diatonic scale played by one player. Gradually the player will play two octaves with only one breath. (See track 2 of the DVD)

Mamani and Ponce uses a breathing technique that is similar to the traditional style. Mamani uses only traditional breathing. Ponce uses the same traditional technique as Mamani i.e. blowing strongly and using the arca and the ira. However, Ponce also uses chest breathing, applying what he labels as "academic" technique while performing pieces in any style other than that of the Andes traditional music.

## **EMBOUCHURE AND TONE**

### ***Mamani***

Mamani affirms that there are no specific rules, but also that one has to respect each of the different styles from the Altiplano. Otherwise the result can be judged as a bad sound with a wrong embouchure.

For example: for the chirihuanos and ayarachis, who come from villages in Puno and Sandia in the Altiplano, the embouchure with its big canes is placed between the chin and the lower lip, and the short canes at the edge of the lower lips. The sound should resemble that of a person who is tearing a sheet or as they said in Quechua *huajachi* (make it cry!). But if one uses the above embouchure with the largest siku (number 6), from Huancane, it will be considered a very bad sound. In the Huancane zone, there must only be a round sound. To get the round sound, some of the players place the cane on the edge of the lower lips depending on how they feel most comfortable. There is not a rule for it. The embouchure of the other groups of sikus will be the same, as is used to produce the round sound. Mamani is focused on the traditional embouchure, depending on which town in the Altiplano the music is coming from.

Mamani uses the traditional approach. He indicates that the student may instead follow the traditional embouchure; depending on which kind of sound is required by the zone where a given siku originates. He suggests selecting an embouchure following what the player finds comfortable.

### ***Ponce***

Ponce focuses the embouchure in the malta on the middle of the lower lip, placing it on the middle of the cane:

Una buena embocadura esta enfocada en el labio inferior, el cual tiene que buscar la posición correcta en el medio de la cana. El labio superior se enfocara hacia la cana y de esta manera buscara la posición correcta de cada una de ellas. Para conseguir un buen sonido, el labio superior debe vibrar ligeramente cuando el instrumentista esta interpretando el siku y tiene que estar un poco adelante en relación al labio inferior. Para tener el sonido apropiado del siku, es importante darse cuenta de la ligera sensación de

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vibración en el labio superior y entender el proceso del aire en las canas. El aire fluirá a la parte baja de la cana y hará contacto con la lado de la cana donde el labio inferior esta colocado. Cuando el aire regrese, saldrá por el otro de la cana. De esta manera producirá la resonancia única del instrumento, haciendo temblar y cosquillear el labio superior. Con una embocadura inapropiada el sonido será redondo o chillara.

A good embouchure is focused on the lower lip, which must search for the right position in the middle of the cane. The upper lip will focus the air towards the cane and in this way search for the right position of each cane. To get a good sound, the upper lip must vibrate lightly while the player is performing and has to be a little forward in relation to the lower lip. In order to get the right "siku" sound, it is important to notice the light sensation of vibration of the upper lip and to understand the process of the air in the canes. The air will flow to the bottom of the tube and make contact with the side of the cane where lower lip is placed. When the air comes back, it will come out from the other side of the cane. In this way it will produce the unique resonance of this instrument, quivering and tickling the upper lip. With a bad embouchure the sound will squeal or will be a round sound. (Trans. Berry/De La Calle)



Figure 6. The embouchure of the siku used by Ponce.

Ponce called this embouchure process "the academic style", because one can perform dynamics such as those known in western classical music. He uses the academic technique also for traditional music.

He uses a material to construct the siku, which is unique in the Andes, called *Songo*, which is found only in La Paz. This material is very thin and produces the unique resonance that makes the siku sound different compared with a European pan flute. Ponce adds that it is also important that the player chooses the bamboo for his/her own instrument and constructs it with the help of a flute maker; this will be useful for the adjustments of the player's embouchure to the cane. In this way the player will get a better connection with the sound of the instrument. Ponce affirms that having his own handmade instrument makes it easier to discover each cane, and to see how each is like a different flute or a different world. In the siku, each cane represents one note. Mamani and Ponce differ when they describe the techniques of the embouchure of the malta, which is the only siku described by Ponce. Mamani explains by providing examples and uses it in the traditional style, while Ponce is

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more theoretical, aiming to get the dynamics that are used in classical western music and jazz music.

## **ARTICULATION**

### ***Mamani***

Mamani uses only the simple tonguing, and the syllable TU, pronounced in Spanish. He gives an example with the word TULIPAN (tulip). Mamani mentions just this articulation without developing the subject even though I tried to ask him to go deeper into the subject plus to get information about double and triple articulation.

### ***Ponce***

Ponce use simple tonguing with the syllable TU, which also is pronounced in Spanish. He gives an example with the word TUCAN (toucan).

Ponce uses diatonic and pentatonic scales to make articulation exercises including all intervals. Ponce presents the option of exercises using a legato articulation with the same scales. Here I would like to describe the exercises of the simple articulation that Ponce was explaining through some exercises during his interview in La Paz:

- 1) First he played an exercise that begins with the low G of the ira as a basic note, and made different intervals from this note with all the notes of the arca. In this way the player trains simple articulation with different distances from the low C of the ira. The other exercise is the same but with legato. (See track 3 of the DVD)
- 2) The second exercise uses the same articulation exercise, but plays the intervals with all the notes of both rows (the arca and the ira), always beginning with the C of the arca.
- 3) Exercise with arpeggios of three notes from the major and minor triads.
- 4) Exercises with four-note major and minor arpeggios.

All the exercises also will be played legato.

Here I can see the same principle in the process of an improvisation, repeating many times the mentioned exercises so the brain registers automatically the distances between the canes in all the chords and arpeggios "Uno escucha las notas en el oido; un Sol en el tercer registro; de esta manera el instrumentista lo recuerda directamente y sera capaz de reproducirlos automaticamente en el siku", One hears the notes in the ear; a G in the third register or a third; in this way the player remembers it directly and will be capable of reproducing them automatically in the siku". This requires an extensive and meticulous practice process in order to make the technique automatic to the student.

Ponce adds an element, which in his words is the spiritual part "Existe un triangulo entre el instrumentista, el instrumento, y la parte espiritual donde las dos ultimas van muy juntas...



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There is a triangle between the player, the instrument and the spiritual part where the last two parts are going very close together" (Trans. De La Calle). Ponce is the only one among the interviewees who explains playing with a *spiritual attitude*. He affirms that by doing this the player better interprets the instrument and projects the sound. He makes no new age or religious implications in relation to this—instead he means that it is important to find the feeling of oneself with the instrument and to be fully present in the moment. In other words, he encourages us to feel the music while performing with the most sensible part of our being and let the audience feel our expression and feeling.

## **VIBRATO**

Mamani and Ponce share the opinion that the vibrato either is coming from the diaphragm or the throat, depending on the style that is performed. In traditional music, the two kinds of vibrato will also depend on the town where the music is coming from. Normally a combination of these two vibratos is used in traditional music. Ponce remarks that a good embouchure will bring a clear vibrato.

## **Quena**

### **POSITION AND BALANCE**

During my investigation of quena players Encinas (Bolivia), Pariona and this Arias (Peru), I noticed similarities concerning the balance and playing position. The position of the body is relaxed and so are fingers, elbows and arms. Arias and Pariona agree on the relation between the quena and the body of the player. They describe the four points of support. Encinas did not explain these four points, but in the video he uses the same four points.

The four points of support mentioned are:

- Little finger of the right hand.
- Thumb of the same hand.
- The little finger of the left hand.
- The gentle pressure of the embouchure towards the chin.

The balance between the weight of the instrument and the body is concentrated on the tip of the toe, with a straight back, and the arms placed neither high nor low.



Figure 7. Position and balance of the quena by Arias.

Pariona adds information about how to play the quena in a sitting position in an orchestra "feet together, sitting on the edge of the chair and with a straight back."

## **BREATHING**

The three interviewees explained the breathing techniques of the quena, Arias, Encinas and Pariona are using both diaphragm and chest breathing.

### ***Pariona***

Pariona classifies the diaphragm breathing as academic in three levels: low stomach, the distribution of the diaphragm and of the chest. The traditional way is according to him the diaphragm and the chest. He also instructs his students to practice exercises based on playing long notes of a G scale. This helps to develop diaphragm breathing. Concerning breathing practice he explains:

Ejercicios de respiración ayudan a relajar los músculos de los abdominales y de los dedos y traen la mayor cantidad posible de aire a la parte baja del diafragma. El aire viene de la parte baja del diafragma hacia arriba y relaja los músculos de la cara.

Breathing exercises help to relax the abdominal muscles and the fingers and bring as much air as possible to the bottom of the diaphragm. The air comes from the bottom of the diaphragm upwards and relaxes the face muscles. (Trans. De La Calle)

### ***Encinas***

Encinas did not classify breathing techniques as academic or traditional, even though he plays some tunes in the video, which are categorized in the mentioned two different ways. He instructs his students to practice exercises based on playing long notes of a G scale; this helps according to Encinas to develop diaphragm breathing. He adds that when he teaches chest breathing to his students, he asks them to play quick melodies where there is no space to inhale between the notes. In this way, he uses mainly chest breathing.

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## *Arias*

Arias use the academic breathing technique, which resembles singing technique of the classical western tradition, where diaphragm and chest breathing are involved. Arias describes the breathing of the people in the Andes:

El tradicional concepto de la técnica de la respiración es la técnica de la vida. El campesino quien interpreta la quena en los nevados, en el cultivo de la tierra y ganado lo hace de una manera muy natural. Ellos no piensan en ninguna técnica. Ellos siguen la naturalidad del tema y especialmente, el sonido de la voz humana

The traditional concept of the breathing technique is the technique of life. The peasant or countryman who plays on snow-covered fields or when cultivating the soil or managing his cattle plays in a very natural way. They do not think of any technique. They follow the naturalness of the tune and, especially, the sound of the human voice. (Trans. Berry/De La Calle)

I can see, as regards Arias, that traditional breathing often is an imitation of nature, imitating the human voice in a natural way without analyzing if it by using the diaphragm, the chest or a combination of both of them. Since the quena originally is played on a high altitude, the body naturally will use other parts of the body, as described in the next quotation:

The quena was originally played in the high mountains of the Andes, on altitudes such as 2500 to 4500 meters. At these very high altitudes, players sometimes used a special technique described by the traditional quena players as higher chest breathing. (De La Calle & Ljungar-Chapelon, 2005, p. 7)

When I speak of the traditional style, I speak of the villages located at over 2000 meters above sea level. If we go higher in altitude the oxygen becomes thinner. If the oxygen is thin, it takes a huge effort to use diaphragm-breathing techniques. So in natural traditional quena style, the breathing is mainly done by the chest. Arias uses exercises with long notes in the first register of the quena to develop diaphragm breathing employing a chromatic scale.

My conclusion is that Pariona, Encinas and Arias, use both diaphragm and chest breathing in the academic and traditional styles. Arias add, in relation to the above quote from Pariona, that this enables one to play different dynamics without affecting the intonation.

## **EMBOUCHURE AND TONE**

The embouchure of the quena incorporates the position at the edge of the instrument with the chin and the lips, where the lips influence the canal of air. The techniques used by Pariona and Encinas share slightly the same principle but differ from those of Arias.

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### ***Pariona***

Pariona describes the embouchure of the quena:

La embocadura será en el borde de la quena, donde esta situado el bisel. El quenista colocara la parte cilíndrica del instrumento contra el labio inferior; el quenista presionara la parte baja del borde de la quena suavemente hacia la barbilla. El bisel esta alineado con la nariz. Para esto necesitamos estirar los labios y hacer un pequeño agujero.

The embouchure will be at the edge of the quena, where the bevel is situated. The player will place the cylindrical part of the instrument against the lower lip; the player will press the lower part of the edge of the quena gently towards the chin. The bevel is aligned with the nose. For this we need to stretch the lips and to make a small hole. (Trans. Berry/De La Calle)

The video of Pariona shows that the stretching is moderate. He affirms that the stretching has to be in balance, not tense or too loose.

### ***Encinas***

Encinas recommend "stretching" and making the lips "tense" in order to have a good and clear sound. The proof is that when one sees Encinas's playing in the interview video, he uses a similar grade of stretching of his lips as Pariona. Encinas use the phrase "to tense the lips". He does not use an embouchure where the lips have to be tense in order to get a good and clean sound (natural sound of the instrument).

### ***Arias***

Arias affirm that in order to get a deep and clean sound, one has to relax the lips. He plays in a more relaxed style with his lips and his embouchure placed slightly away from the middle of the mouth, as we see in the video. Arias declare, "If one wants a metallic sound, one has to stretch the lips more." The only definitive and clear way to see Arias' grade of stretching, which is less than Encinas' and Pariona's, is by observing his playing in the video interview and compare it with Encinas' and Pariona's embouchure.



Figure 8: The embouchure of the quena by Arias

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## ARTICULATION

There are many possible ways to influence music using different articulation. The interviewees articulate differently in traditional and academic Andes folk music. Although Pariona and Arias use different syllables in the three kinds of tonguing (simple, double and triple), their articulation is similar and differs from Encinas who only uses the simple tonguing.

### *Pariona*

Pariona mention four ways of influencing the articulation, using:

- 1) The diaphragm, which is often used in traditional Andes music.
- 2) The fingers, which are also used in traditional Andes music.
- 3) The tongue, which is placed slightly between the lips,
- 4) The tongue, which goes up to the palate behind the teeth.

Pariona use an articulation where the tongue goes up to the palate behind the teeth. Pariona explains as follows "El ataque se dirige hacia el paladar, detrás de los dientes, el cual brindara una mejor dirección del aire y su distribución. Los labios no deben moverse"... "The attack goes to the palate, behind the teeth, which will bring a better direction of the air and its distribution. The lips may not move".

I can see that folk music academies in Lima and Cuzco are influenced by the articulation of techniques used for the classical transverse flute. Pariona adds the articulation of the traditional Andes music:

En la música tradicional de los andes, otro tipo de articulación es con los dedos. Esta articulación no será con la lengua sino con el diafragma y el vibrato con la garganta. Si la lengua será usada será como escupiendo, hacia los dientes. La combinación entre la articulación con los dedos y el diafragma produce una de las articulaciones mas usadas en el estilo tradicional en los andes.

In traditional Andes music, another type of articulation is made using the fingers. This articulation will not be with the tongue but with the diaphragm and the vibrato with the throat. If the tongue will be used it will be as spitting, towards the teeth. The combination between the finger and the diaphragm produces one of the most used articulations in the traditional style in the Andes. (Trans. De La Calle)

The finger articulation is produced by the tip of the fingers hitting the holes of the quena. This percussive contact creates a sound and is considered one form of articulation in the traditional style.

Pariona uses the simple tonguing which he creates using the syllable TA pronounced in Spanish. He gives an example with the word TAZA (cup). He uses the syllables TA-KA for double tonguing, and TA-KA-TA for triple tonguing. Pariona explains that the syllable TA gives his students more concentration of the sound and its structure in relation to vocalized phonemes. When his students use these phonemes, the intention is to prepare for a projecting, round sound. The soft articulation is made using the syllable DA. He gives an example with the word DADO (dice). Pariona uses the syllables DU-GUE-DU for the soft double tonguing.

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He gives examples with the word DUCHA (shower) and GUETO (ghetto).

### ***Encinas***

Encinas uses the traditional style of tonguing, where the tongue goes towards the bevel of the quena, between the lips. He uses only simple tonguing and the syllable TA, which is pronounced in Spanish. He gives an example with the word TAPA (the cover of a book). He does not use double and triple tonguing as used by Pariona and Arias. Encinas, who have students of all ages, uses an articulation phrasing exercise with eight notes "When there are quick melodies, I play each pair of notes with a legato phrasing, so the first one has the attack with the tongue and next one is with the legato. In this way, I let the notes fall." When I asked him what he meant with the word "fall", he answered that he has the feeling that the notes are falling one by one. The first eighth note is articulated with the second eighth note played legato. If we play many eighth notes in this way, it will show this feeling.

Encinas did not explain articulation like Pariona and Arias did who were more objective about their approach to teaching articulation. He just offered phrasing exercises related to the articulation.

### ***Arias***

Arias also use an articulation where the tip of the tongue goes up to the palate behind the teeth. He affirms:

Yo vario mi acercamiento de acuerdo al tema: rápido o suave. Cuando es un tema suave, uso la silaba DU y si yo quiero dar más responsabilidad a cada nota, las separare y usare la silaba TU. Cuando usas TU, la lengua siempre va arriba hacia el paladar en ambas silabas.

I vary my approach according to the tune: quick or soft. When it is a soft tune, I use the syllable DU and if I want to give more personality to each note, I will separate them and use the syllable TU. When you use DU, the tongue always goes up to the palate in both syllables. (Trans. Berry/De La Calle)

Regardless of soft or strong articulation, Arias uses the tongue towards the palate. Arias make simple tonguing using the syllable TU, which is pronounced in Spanish. He gave an example with the word TUNA, which means music group made up of university student minstrels. He uses the syllables TE-KA for double tonguing (See track 4 of the DVD), and TE-KA-TE for the triple one. He gives an example with the work TELON (curtain). Arias uses the syllable DU for the soft tonguing in the following explanation:

Si yo quiero separar las notas en una pieza suave, usare DU con un ligero acento, el cual dará más personalidad a la nota. Cada momento mis estudiantes tocan una nota, el tiene que estar seguro que la lengua no se quede en el paladar. Es cuando uno toca los tambores y la baqueta es sacada inmediatamente del tambor para crear resonancia. Si es no es sacada inmediatamente, no creara resonancia. Uno realiza el ataque con la lengua relajando los labios. De esta manera serán ejecutadas todas las dinámicas.

If I want to separate the notes in a soft tune, I will use DU with a light accent, which will give more personality to the note. Each time my student plays a note, he has to make sure

that the tongue does not remain on the palate. It is like when one plays the drums and the drumstick is removed immediately from the drum to create resonance. If it is not removed immediately, it will not create resonance. One attacks with the tongue while relaxing the lips. In this way all the dynamics will also be played. (Trans. De La Calle)

Arias finished by explaining that the syllables that will be used for the double and triple tonguing will depend on what are most comfortable for the student.

## VIBRATO

Encinas classified vibrato as being in neither the academic nor the traditional style. There are two kinds of vibrato used by Encinas and also by Pariona and Arias.

The two kind of vibrato are:

- 1) Vibrato from the diaphragm
- 2) Vibrato from the throat

Encinas use both of them, as required by the tune. Pariona and Arias use vibrato from the diaphragm for academic music and vibrato from the throat for traditional music.

The table below summarizes the similarities and differences between Bolivian and Peruvian playing techniques for the quena and siku, and is inspired by Ljungar-Chapelon (2008).

<b>SIKU</b>		
	<b>BOLIVIA</b>	<b>PERU</b>
<b>1. Position and balance</b>	<ul style="list-style-type: none"> <li>• Fingers of both hands are parallel with each other.</li> <li>• Playing position depends on which town the given type of siku comes from.</li> </ul>	<ul style="list-style-type: none"> <li>• Fingers of both hands are parallel with each other.</li> <li>• Playing position depends on which town the given type of siku comes from.</li> </ul>
<b>2. Breathing</b>	<ul style="list-style-type: none"> <li>• Diaphragm is used in the traditional style.</li> <li>• Academic style features interaction between the diaphragm and the chest.</li> </ul>	<ul style="list-style-type: none"> <li>• Diaphragm is used in the traditional style.</li> <li>• None academy style is used.</li> </ul>
<b>3. Embouchure and tone.</b>	<ul style="list-style-type: none"> <li>• Focuses on the middle of the lower lip, placing the lip on the middle of the cane.</li> </ul>	<ul style="list-style-type: none"> <li>• Focuses on the edge of the lower lip.</li> </ul>
<b>4. Articulation</b>	<ul style="list-style-type: none"> <li>• Simple tonguing TU</li> </ul>	<ul style="list-style-type: none"> <li>• Simple tonguing TU</li> </ul>
<b>5. Vibrato</b>	<ul style="list-style-type: none"> <li>• From the diaphragm, or the throat depending on the style.</li> </ul>	<ul style="list-style-type: none"> <li>• From the diaphragm or the throat depending on the style.</li> </ul>

<b>QUENA</b>		
	<b>BOLIVIA</b>	<b>PERU</b>
<b>1. Position and balance</b>	<ul style="list-style-type: none"> <li>• Body relaxed together with the fingers, elbows and arms.</li> <li>• Four points of support: Little finger of the right hand. Thumb of the same hand. The little finger of the left hand. Gentle pressure of the embouchure towards the chin.</li> <li>• Balance is concentrated on the tip of the toe, with a straight back, and the arms placed neither high nor low.</li> </ul>	<ul style="list-style-type: none"> <li>• Body relaxed together with the fingers, elbows and arms.</li> <li>• Four points of support: Little finger of the right hand. Thumb of the same hand. The little finger of the left hand. Gentle pressure of the embouchure towards the chin.</li> <li>• Balance is concentrated on the tip of the toe, with a straight back, and the arms placed neither high nor low.</li> </ul>
<b>2. Breathing</b>	<ul style="list-style-type: none"> <li>• Diaphragm and chest breathing for the traditional and the academic style.</li> <li>• The teaching approach employs long notes.</li> <li>• The teaching approach employs chest breathing to play quick melodies.</li> </ul>	<ul style="list-style-type: none"> <li>• Diaphragm and chest breathing for the traditional and the academic style.</li> <li>• The teaching approach employs long notes.</li> <li>• The teaching approach employs exercises to relax the abdominals muscles and the fingers and to bring air as much as possible to the bottom of the diaphragm.</li> </ul>
<b>3. Embouchure and tone.</b>	<ul style="list-style-type: none"> <li>• The bevel is situated at the edge of the quena, placing the cylindrical part of the quena against the lower lip and pressing the lower part of the edge towards the chin.</li> <li>• Stretch the lips.</li> </ul>	<ul style="list-style-type: none"> <li>• The bevel is situated at the edge of the quena, placing the cylindrical part of the quena against the lower lip and pressing the lower part of the edge towards the chin.</li> <li>• Relax the lips (Arias); stretch the lips (Pariona)</li> </ul>
<b>4. Articulation</b>	<ul style="list-style-type: none"> <li>• Tongue goes towards the bevel, between the lips.</li> <li>• Simple tonguing TA</li> </ul>	<ul style="list-style-type: none"> <li>• Tongue goes up to the palate behind the teeth.</li> <li>• Simple tonguing TA and TU</li> <li>• DU and DA for the soft tonguing</li> <li>• TA-KA and TE-KA for double tonguing</li> <li>• DU-GUE for soft double tonguing.</li> <li>• TE-KA-TE and TA-KA-TA for triple tonguing</li> </ul>
<b>5. Vibrato</b>	<ul style="list-style-type: none"> <li>• From the diaphragm and the throat; no classification as being either the academic or the traditional style.</li> </ul>	<ul style="list-style-type: none"> <li>• From the throat for traditional style, and from the diaphragm for the academic style.</li> </ul>



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## ANALYSIS

I received a wealth of information from the interviewees. Answers did not always match my questions, so I had to reconstruct some answers, collecting parts from different places of a given answer and, in some cases, from several different answers. I have divided this chapter in two parts: the siku and the quena.

### **Siku**

The siku from Bolivia (Ponce) and Peru (Mamani) have several similarities, especially in the balance and playing position, breathing, articulation and vibrato used when playing in the traditional way. Ponce develops the techniques for breathing and articulation slightly more since he plays jazz as his main present style. Siku players normally hold the instrument so that the fingers of each hand are parallel with each other. However, there are several ways of holding the instrument, stemming from different ways of playing, influenced by the customs of specific towns in the Altiplano, as explained by Mamani.

It is a pity that Ponce did not have instruments from different parts of Bolivia so that I could see the instruments from different zones of the Altiplano of Bolivia. In traditional music, Mamani and Ponce explain that the siku is played by two persons in a conversation with the arca and ira. This represents the conversation between the male and female. The meaning of their conversation represents the complete melody played simultaneously by the arca and ira. Both of them use the same breathing technique of traditional music, playing from the diaphragm and with a high amount of energy all the time. There are no dynamics in their music. The whole tune is played with the same intensity of volume.

Ponce adds that there is also a *city style* of breathing (referred to in Peru and Bolivia as the *academic style*), which uses the diaphragm and chest. Only one player needs to play a siku using the arca and the ira with a diatonic scale (in this case, G). But there is a difference in the embouchure and tone. Ponce uses the embouchure to create dynamics. His embouchure gives the siku sound with the help of the *songo bamboo*.

Personally, I was searching many years for a technique of the siku where I could perform the dynamics of classical or jazz music while keeping the same siku sound. I found it neither in Peru nor Bolivia. In Peru, for example, if we want to play *pianissimo*, *piano* or even *mezzo forte* on the siku, we will get a European pan flute sound (a round sound). The siku has a particular sound, and Ponce contributes with an embouchure where we can keep that sound at all dynamic levels.

Mamani is more empirical and conservative. He travels widely in the Andes, observing many players and is collecting the traditional techniques and styles that he finds. He combines these in his own playing, but sticks always to traditional roots. He recommends sticking to the traditional embouchure, of which there are several types from various towns in the Altiplano, and he gives the player the option of finding the most effective way by him. This embouchure gives the round sound (which is not the siku sound) and possibilities of adding dynamics to the siku. Both of them use exclusively simple tonguing. Ponce explains that the articulation in traditional music is limited because of the music structure. One has to play very strong all the time. In the academic style, Ponce shows several exercises that reflect the influence of jazz.

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Vibrato is made using the throat and the diaphragm for both of them. In traditional music, one of the two vibratos will be chosen based on the player's home town. In academic music, Ponce chooses the vibrato method that he considers best for the style of each given tune.

Ponce's contributions regarding embouchure and tone are essential. In addition he shows a more innovative aptitude than Mamani, who concentrates exclusively on the traditional way of playing. Ponce finds that an effective way for a student to learn this embouchure and tone is to make his own siku with the help of a siku maker. This helps to ensure that the canes are optimal for the individual student. The canes are found in the wilderness, where they grow naturally, and must be selected for a comfortable fit to the lips of the player. Once the instrument is assembled, the canes cannot be changed later (other than by applying some oils).

## **Quena**

The quena from Bolivia (Encinas) and Peru (Arias and Pariona) has some differences and similarities. Concerning the position and balance of the quena, Encinas gives the same information as Pariona and Arias "The position is to relax the arms, elbows and fingers while maintaining a natural position of the entire body." Pariona and Arias expand on this by explaining the four points of support for the quena:

- 1) Little finger of the right hand
- 2) Thumb of the same hand
- 3) The little finger of the left hand
- 4) The gentle pressure of the embouchure towards the chin.

I can see that the first two points of support are similar to the classical western flute, while the third and fourth points of support are characteristic of the quena. Pariona recommends that a quena player keep his body in a sitting position, just like a classical western instrumentalist in an orchestra.

Pariona classifies breathing technique and Arias as following either the traditional or academic style, while Encinas doesn't make this classification. All three of them use both diaphragm and chest breathing. When playing quick melodies in a tune, Encinas uses the chest breathing technique where he plays quick melodies, and when he does not have space to breathe with the diaphragm. Arias and Pariona use diaphragm and chest breathing in the academic style. Arias follow the technique of a classical singer. When using traditional breathing, Pariona uses the chest and diaphragm and Arias follows the naturalness of the tune, often basing his phrasing on the human voice. He does not consciously think about the technique.

The embouchure of the quena is classified in two different groups. Encinas and Pariona, who teach their students to stretch the lips and to hold the bevel of the instrument in a parallel line with the nose, use the first group. The second is used by Arias, who teaches students to relax lips in order to get a deep and clear sound. If we study the video of his embouchure, the bevel of his quena, even though he did not mention it, is not parallel with the line of his nose. The

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quena is held slightly off centre between the lips. Both ways are viable, and the choice depends on how the player has learnt to play and which method he considers most comfortable for the particular physiognomy of his mouth to produce a good sound.

Encinas used the words "to tense the lips", which is not really what can be seen on the video of the interview. Pariona uses the word "stretch", which is a better word. When we see the video, we can appreciate that Encinas and Pariona share the same grade of lip stretching. Personally, I have been playing the quena like Arias. He and I come from small towns in the Andes where we learned by ourselves without having personal contact with a master. Encinas and Pariona come from big cities, the capitals in Bolivia and Peru, where they had personal contact with the masters. Arias and I were just imitating the sound of the instrument from tapes and sometimes seeing some masters. In this way, we learned to play naturally, without stretching the lips in order to get a deep and clear sound. Also, we do not hold the bevel of the quena so that they are in the same parallel line as the nose.

Encinas' articulation differs from Pariona's and Arias'. Encinas use the traditional Andes technique, where the tongue goes between the teeth, but he does it in a more exaggerated way. Pariona and Arias use articulation as they affirm, "The attack goes to the palate, behind the teeth, which will bring a better direction of the air and its distribution. The lips may not move." This articulation has been very well adapted for the quena over the last 20 years. Using this technique, the quena sounds cleaner over the whole phrase of a tune when compared to the traditional Andes techniques, as used by Encinas. Pariona mentions two traditional ways of articulation for the quena:

- 1) The articulation with the fingers
- 2) The articulation with the diaphragm.

Encinas did not talk about using syllables for articulation. The syllables used for articulation are related to the grade of lip stretching applied by the player. Arias use the syllables TU, and DU for soft articulation because they are related to his relaxed lips. These syllables cannot be used if the player uses stretched lips because the phonetics of the syllables do not relate to the stretched position of the lips. For example, Pariona uses the syllable TA, which relates to his stretched lips; He states "The stretched lips position relates well with the vocalic phoneme TA." For a soft articulation, Pariona uses the DA syllable.

Arias uses double articulation with the syllables TE-KE or TU-KU and TE-KA-TE for the triple articulation, giving his students the option of using other syllables if they feel more comfortable with them. Pariona uses TA-KA for double articulation and TA-KA-TA for triple articulation. Pariona is not flexible when it comes to using other syllables. The soft double articulation for him is DU-GUE-DU. It is quite interesting to see that he is not flexible using the syllables since he prefers stretched lips and the related syllable TA. I think that conservatories in Lima and La Paz have inspired these articulations, since, as I mentioned before these instruments originally always have been played in an intuitive way.

There are two kinds of vibrato:

- 1) Vibrato from the diaphragm
- 2) Vibrato from the throat

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Encinas, Pariona and Arias use both vibratos. The slightly formal difference is that Encinas uses both of them freely when the tune requires them, while Pariona and Arias declare that they use vibrato from the diaphragm in academic music and vibrato from the throat in traditional Andes music. But when it comes to performing a tune, the vibrato will sound about the same with all three players since the tune itself will determine the type of vibrato that is required (academic or traditional).

Personally, I prefer a breathing technique that combines the diaphragm and chest. It gives me more air capacity. I use an embouchure similar to that of Arias, which features relaxed lips, since it gives a clean and deep sound. In the articulation the syllable TU is for the simple, TU-KU for the double and TU-KU-RU for the triple articulation. The reason is that the syllable TU is more comfortable for my lips (giving a somewhat relaxed feeling) than using stretch lips and the TA syllable. The syllable DU is suitable for the simple soft articulation and the syllables DU-GU for the double soft. Mostly I produce vibrato using the diaphragm, but some times I also use throat vibrato. I get a disturbing feeling if I play mostly using throat vibrato, though this is always used in traditional Andes music.

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## CONCLUSION

My study consists of interviews with five musicians; all of them have collaborated with an honest and generous attitude to share their experiences in this musical context.

Pariona and Arias collaborated in 2005 in the mentioned method book, so we knew each other already. We worked together in a relaxed atmosphere. It was the first time that I spoke with Encinas. The same hour I met him we began the interview. He was also in a good disposition. But not very open, not giving as complete answers as Pariona and Arias. I observed that he was careful not to give all the information perhaps because of a lack of confidence or because the national borders or a combination of these. Possibly, there could be other explanations. I emphasize this point because there is a rivalry between the quena and siku players in South America, especially between Peru and Bolivia. It is therefore unusual to have a personal interview, especially for me as a Peruvian in Bolivia. This investigation shows how playing techniques can be modified to achieve a bigger and richer performance. The questions in the interview about balance, embouchure, breathing, articulation and vibrato offer number different approaches. The interesting finding is that the data show results that are correlated with the Bolivian or Peruvian nationality of the player. There is only one subject (the embouchure of the quena), where Encinas (Bolivia) and Pariona (Peru) are similar and different from Arias (Peru).

On the quena, Encinas does not distinguish between a traditional and academic way of playing, while Pariona and Arias always classify their techniques as belonging to one of these two categories. I can see not only interesting similarities between Bolivia and Peru concerning techniques of the quena, but also similarities between the quena and the western classical flute (for example, in the breathing, vibrato and the articulation with the diaphragm and the fingers in traditional Andes music). There are differences between Encinas-Pariona and Arias from Peru concerning the embouchure of the quena and this will bring obvious differences in the articulation between them. There are similarities concerning the position and balance, breathing, articulation and vibrato in the traditional style of playing of the siku. Ponce gives extra information about the academic techniques for breathing and vibrato. The difference enters in the embouchure, which shows the influence of his actual music style, jazz.

I am unsatisfied with the Siku School of Peru, especially because it does not have a clear concept of the siku sound. Most of the siku players from Peru get a "round" sound, which is the same as the European pan flute. This is the contribution by Ponce from Bolivia, who identifies the "real" siku sound with the help of its unique material (songo). On the other hand, I am pleased with the development of the techniques of the quena in Peru, which I was not able to find Bolivia, even after several years of research.

In a teaching situation, all the interviewees are ready and willing to adjust their techniques to match the specific needs of their students. The aim of this study is to share and contribute technical knowledge of the siku and quena not only to the siku and quena players, but also to players of the western traditional classical flute and other kinds of flutes. According to this I have made two conclusions:

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1) For siku players, the information about embouchure and tone building from Ponce of Bolivia should be enlightening, especially with reference to the original sound of this instrument and its dynamics.

2) For quena players, the information about embouchure and articulation from Arias and Pariona, especially in their academic style of playing, should prove to be useful.

I have had the opportunity to discuss these subjects with siku players all over the world who were not aware of the embouchure and the right material for the siku and concerning balance, embouchure and articulation. They showed profound interest to develop their technique following, the mentioned above, aspects for a better performance.

The facts and opinions expressed by the five interviewees in this work generally match my own musical and life experiences and they confirm an interesting conclusion: the siku techniques in Bolivia are much more developed than in Peru, whereby the quena techniques are much more developed in Peru than in Bolivia. The one surprising discovery was that Encinas from Bolivia, one of the most important quena players in the world, confirmed that he *never* uses double or triple articulation, which shows a lack of information of the instrument that results in a missed opportunity to exploit these techniques.

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## **FUTURE RESEARCH**

As a result of my experiences from this study, I would like to continue to investigate the way these instruments are interpreted in the context of traditional Andes music. I am especially interested in ornamentation, which is one of the most fundamental elements. I would also like to explore further aspects such as the process of learning a tune, practicing technique and teaching methodology related to the subjects covered here, including various frameworks and technical exercises.

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## ***Interviews***

I have done research interviews with the following flautists:

David Pariona, 17 December 2006. Lima, Peru.

Jaime Arias, 4 January 2007. Cusco, Peru.

Idel Mamani, 6 January 2007. Puno, Peru.

Carlos Ponce, 8 January 2007. La Paz, Bolivia.

Rolando Encinas, 11 January 2007. La Paz, Bolivia.

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## **APPENDIX I: INTERVIEW QUESTIONS**

This appendix describes the questions that I used for the interviews concerning personal background and playing techniques.

### ***Personal background questions***

Why did you start to play?

How old you were when you started?

Which teachers did you have?

How did your teachers teach you?

Do you use the way you were taught in your own teaching?

How often do you listen to others masters, now and as a student?

Which are your expectations as a musician and a teacher in your future career?

### ***Playing techniques***

How do you hold the instrument with respect to balance and general posture and body position?

Which finger technique do you use for the quena?

Which technique do you use for the pan flute while playing scale patterns and such?

Which breathing technique do you use?

Which embouchure and lip techniques do you use?

Which types of articulation (such single-, double-tonguing (and which syllables (such as TU, KU, etc.) do you use?

How do you use dynamics, lip and air control?

When and how do you use vibrato and which techniques do you use to produce it?

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## APPENDIX II:

I am enclosing a DVD for the presentation of the different tracks, which will show several scenes in some of the paragraphs in my paper.

- 1) Idel Mamani. Demonstration of the ayarachi. Lima 2007.
- 2) Carlos Ponce. Breathing exercises of the Siku. La Paz 2007.
- 3) Carlos Ponce. Articulation exercises of the siku. La Paz 2007.
- 4) Jaime Arias. Double tonguing, short demonstration: Alla Turca (Mozart). Cusco 2007.
- 5) Cesar Espada. *Niña Campa*. Cochabamba, Bolivia. (Performed by Carlos Ponce)
- 6) Anonymous, traditional. *Cocakintucha*. Ayacucho, Peru. (Performed by Jaime Arias)