

LOST BATUCADA

The Art of Deixa Falar, Portela, and Mestre Oscar Bigode

OLLI REIJONEN

Musicology / Ethnomusicology
Department of Philosophy, History, Culture and Art Studies
University of Helsinki
Helsinki, Finland

Academic dissertation to be publicly discussed,
by due permission of the Faculty of Arts at the University of Helsinki
in auditorium XII (in lecture room PIII),
on the 24th of February, 2017 at 12 o'clock.

Supervisors:
Professor Eero Tarasti
Musicology
Department of Philosophy, History, Culture and Art Studies
University of Helsinki

University lecturer Alfonso Padilla
Musicology
Department of Philosophy, History, Culture and Art Studies
University of Helsinki

Pre-examiners:
Professor Wim van der Meer
Universiteit van Amsterdam

Professor Paulo de Tarso Camargo Cambraia Salles
Universidade de São Paulo

Opponent:
Professor Paulo de Tarso Camargo Cambraia Salles
Universidade de São Paulo

Custos:
Professor Pirkko Moisala
Musicology
Department of Philosophy, History, Culture and Art Studies
University of Helsinki

ISBN 978-951-51-2974-1 (nid)
ISBN 978-951-51-2975-8 (PDF)
<http://ethesis.helsinki.fi>

Unigrafia Oy
Helsinki 2017

ABSTRACT

This doctoral dissertation covers the *batucada* and it focuses on *Os 27 Amigos bateria* and Oscar Pereira de Souza's, its director's, perceptions of the *batucada*. He was the last active master of Rio de Janeiro's oldest *Deixa Falar – Portela* tradition.

The central questions are: How did *batucada* develop and how are the *baterias* organized? What are the instruments, rhythms, and functions of *batucada*? What are the elements of *batucada*? How is the quality of *batucada* estimated, and what are the criteria? How can the rhythm of *batucada* be analyzed? What is the harmony of *batucada* and how it is created?

The first section covers the history of the *batucada* and the organization of *baterias*, as well as the instruments' rhythmic functions and the *bateria's* structural elements. The qualitative criteria of the *batucada* are examined at the end of this section.

The early *batucada* rhythm is reconstructed based on Silva's Bum bum vocalization. The rhythmic is analyzed based on the theory of a basic rhythm – diminished rhythm – music level. *Os 27 Amigos* and their contemporary *batucadas'* rhythmic characteristics are compared.

In the last section, we examine the harmony of the *baterias* from the 2002-2003 period. After that, we examine de Souza's perceptions of harmony as a driving factor in the way a *bateria* plays. In the end is a study on the harmonic structure of *Os 27 Amigos bateria* and what it is based on.

The central methods of this work are the teacher – student method, field work, the paradigmatic method, electronic methods, notations, deduction, experimental work and the three-tiered rhythm analysis.

Based on the results, it can be said that the *batucada* has a very developed musical grammar and terminology. The *batucada's* development is heavily based on the development of the *surdos*, which is grounded, in turn, on a much older concept of music, based on the *African cuicas*. Two different rhythmic paradigms, an older harmonic one and a newer, anharmonic one, have developed from this. The *batucada* is based on multiple clave and marker rhythms. This structure and the divisive form of the *batucada* can be shown clearly.

This work is the first one to delve deep into the musical structure of the *batucada* and the concepts and terms related to it. It documents the oldest *batucada* tradition and forms a starting point for further study on the *batucada* and a wider study of the samba. Its results also shed light on the central structures of Afro-Brazilian, African, and other similar styles of music and thus enables a deeper than previously possible analysis of them, as long as all the relevant musico-cultural conventions are observed.

ACKNOWLEDGEMENTS

First, I want to thank Ana Cristina Lima. She was always there and interpreted our discussion with Mr. de Souza at the Museu do Carnaval. Without her help, the results of our discussion, and thus this work, would be punier. My next thanks are directed at my wife, Eila Reijonen, who painstakingly worked with me. She remains one of the Finns with the most knowledge on the topic. My thanks go also to the Rio based family of Jussi and Isabel Virkki, who offered their friendship, a safe home base and all their assistance on all my trips. Similarly, I would like to thank the family of "Janne" and Liisa Paré for their friendship and the help they gave me on my final trips.

From the University, I would like to give my thanks to Professor Erkki Pekkilä who took me under his wing and guided my first steps in musicology. Similarly, I want to thank Docent and University Lecturer Alfonso Padilla, who has always supported and advised me, corrected my work, and ensured its continuation. Likewise, my thanks go to Professor Eero Tarasti, whose presence in this work has been more limited, but whose support, teachings, cheering on and advice have been worth their weight in gold. I would also like to thank the Department's Teaching Assistant, Irma Vierimaa, who always made things go incredibly smoothly. Professor Pirkko Moisala, who has helped me over many a threshold in these last phases, also deserves my thanks.

I thank Professor Samuel Araújo of the Universidade Federal do Rio de Janeiro (UFRJ). His influence on the quality of this work has been considerable. Similarly, I would like to thank LIESA and its cultural coordinator, Doutor Hiram Araújo, who assisted my work in many ways. Thanks go also to the Ambassador of Brazil to Finland, Luiz Henrique Pereira da Fonseca, whose recommendations smoothed my path in Brazil. I am also thankful to the Helsinki office of the VARIG airline, which sponsored the 2002-2003 trip.

I would also like to thank my students at the Academia Pombo de Ouro in Lahti. Their interest in, and assistance with the study of batucada has been indispensable.

I will, doubtlessly, be unable to remember everyone who supported this work or helped in it somehow. If, and when, you read this, please accept my warm thoughts and thanks and I hope you have happy memories of our journey together, no matter how short.

The Finnish Cultural Foundation funded my 2002-2003 field work trip and the work period which followed. I offer my thanks for this remarkable support that I received.

TABLE OF CONTENTS

FOREWORD

1. INTRODUCTION	1
1.1. Background	1
1.2. The subject	6
1.3. Framing the question	8
1.4. Theories and methods	10
1.5. Earlier research	12
1.6. Reading of the study	16
2. RESEARCH AND METHODOLOGY	18
2.1. Oscar Pereira de Souza	18
2.2. The role of mestre de bateria	21
2.3. Approach	22
2.4. Study of written material	23
2.5. Fieldwork	23
2.6. Master-novice method	25
2.7. Working table work	27
2.7.1. Paradigmatic analysis	27
2.7.2. Electronic methods	29
2.7.3. Batucada notations	32
2.7.4. Study of rhyme	37
2.7.5. Study of rhythm	37
2.7.6. The nature of batucada	38
2.7.7. Studies of harmony	38
2.8. Experimental work	39
2.9. Working process	40
3. HISTORY AND BATERIA ORGANIZATIONS	44
3.1. What did Deixa Falar invent?	46
3.2. Instruments and rhythms of Deixa Falar	47
3.3. How batucada got planted in Portela	50
3.4. Bateria organizations	52
3.4.1. Portela tradition	54
3.4.2. Viradouro tradition	55
3.4.3. Mangueira tradition	57
3.4.4. Mocidade development	58
3.4.5. Os 27 Amigos	59
4. BATERIA AND BATUCADA	62
4.1. Instruments, rhythms and functions	62
4.1.1. Couros pesados	63
4.1.2. Surdos	63
4.1.3. Surdos de primeira and segunda marcação	65
4.1.4. Surdos de terceira marcação	66

4.1.5. Surdo de quarta marcação	68
4.1.6. Surdos de repicar, repiques	69
4.1.7. Caixas	72
4.1.8. Tarol	73
4.1.9. Caixa de guerra	76
4.1.10. Tumbadora and conga	77
4.1.11. Miudezas	79
4.1.12. Cuica	79
4.1.13. Tamborim	80
4.1.14. Pandeiro	82
4.1.15. Chucalhos	83
4.1.16. Reco-reco	83
4.1.17. Piano de agogô	85
4.1.18. Summary	87
4.2. Elements of batucada	89
4.2.1. Batucada	90
4.2.2. Conjunto	90
4.2.3. Variações do conjunto	91
4.2.4. Marcas	92
4.2.5. Cortar	93
4.2.6. Floriados	95
4.2.7. Ripicas	95
4.2.8. Intermediárias	97
4.2.9. Sequimentos agudos	99
4.2.10. Variedades de sequimentos	100
4.2.11. Complementos	101
4.2.12. Summary	102
4.3. Quality of batucada	106
4.3.1. Poor / good batucada	106
4.3.2. Desafinação de sons	107
4.3.3. Desharmonia	107
4.3.4. Desafinado	108
4.3.5. Semitonado	108
4.3.6. Ritmo atravessado	109
4.3.7. Individualismo na bateria	109
4.3.8. Harmonia	109
4.3.9. Suavidade	110
4.3.10. Sonoridade do estilo / Concordância agradável dos sons	110
4.3.11. Summary	110
4.4. Development of batucada	112
4.5. Summary	123
5. ANALYSIS OF BATUCADA	125
5.1. Analysis of the batucada vocalization of Ismael Silva	125
5.1.1. Summary	135
5.2. Analysis of the rhythm	136
5.2.1. Studies of African and Afro-Brazilian rhythm	136
5.2.2. Analysis of batucada	142

5.2.3. System of claves in batucada	144
5.2.4. The rhythm analysis of the batucada of Os 27 Amigos	150
5.2.5. The basic rhythms and diminutions	171
5.2.6. The structural properties of batucada	177
5.2.7. Summary	183
5.3. The nature of batucada	186
5.3.1. Os 27 Amigos	187
5.3.2. Comparison between baterias	189
5.3.3. Summary	191
6. HARMONY OF BATUCADA	192
6.1. Contemporary baterias	194
6.2. Importance of harmony	199
6.3. Summary	203
6.4. Harmony of Os 27 Amigos	206
6.4.1. The first take	209
6.4.2. The second take	211
6.4.3. The third take	213
6.4.4. Surdos de marcação section, the first take	214
6.4.5. Surdos de repicar section, the first take	215
6.4.6. Caixa section, all takes	216
6.4.7. Tumbadora and conga, the third take	216
6.4.8. Cuicas, all takes	217
6.4.9. Tamborims, the first take	217
6.4.10. Basic tunings	218
6.4.11. Summary	220
7. CONCLUSIONS	224
7.1. Organization of bateria, rhythms and functions	224
7.2. Elements of batucada	224
7.3. Quality of batucada	225
7.4. Development of batucada	226
7.5. Rhythm analysis	227
7.6. Rhyme analysis	227
7.7. Nature of batucada	228
7.8. Harmony of batucada	229
7.9. Oscar Pereira de Souza	231
7.10. Advantage and new knowledge	231
7.11. Success of the study	234
7.12. Limitations of the corpus and the methods	235
7.13. Generalizability and adaptability of the results	236
7.14. Further studies and challenges	237
REFERENCES	239

1. Brief vocabulary and instruments
2. Batucada terminology
3. Storyboards of the takes
4. Notations
 - Os 27 Amigos
 - Academicos da Rocinha 1990
 - Beija-Flor 1991
 - Caprichosos de Pilares 1990
 - Estácio de Sá 1990
 - Ilha do Governador 1990
 - Imperatriz Leopoldinenses 1990
 - Império Serrano 1990
 - Portela 1990
 - Tradição 1991
5. Brief batucada transcription, beginning of the first take
6. Os 27 Amigos CD

FOREWORD

At the end of 1990, I moved with my future wife to Brazil for six months to get familiar with Brazilian samba schools and to learn more about Brazilian customs and organizations. Shortly thereafter, at the Museum of Samba, I met the central person of this study, Oscar Pereira de Souza. In the beginning, de Souza just answered the simple questions of the researcher who was studying files at the museum. Soon our relationship changed and he started to tell me things about playing samba. My interest grew deeper, and he, for reasons that I did not understand at the time, started to teach me the concepts of *batucada*. We never played any instruments, but he wanted me to understand the concepts and ideas of *batucada*. This process took about five months -the rest of the trip.

Today, 27 years later, after two more trips to Brazil, lots of studying of the samba schools and *baterias* in Rio de Janeiro, and after studies of ethnomusicology at Helsinki University, the reason is becoming clear. De Souza was the last chain in the tradition of *batucada*, which had its birth at *Deixa Falar*: the first samba school in Rio de Janeiro. *Batucada* was invented at *Deixa Falar* at the end of the 1920s, and it was taught directly to the corps of the *Portela* samba school. *Portela* was a steady platform, and during the next forty years, only three long term *Mestres de Bateria*, (drum ensemble conductors), cherished and cultivated the original seed, and brought the *batucada* to the height of its glory. These *mestres* were Adalberto dos Santos, known as *Betinho*, Otacilio Carvalho da Silva, known as *Ximbute*, and Oscar Pereira de Souza, known as *Oscar Bigode*.

De Souza had said that the new *Mestres de Bateria* have not been able to learn *harmonia*, nor were they pleased that the *bateria* could only keep time. At that time, I did not understand this, but just wrote it down. Today, I understand what he meant. De Souza's statement was not self-assertion, but just a fact. The art of *batucada* created by the former *mestres* of *Portela* has mostly disappeared, even in *Portela*. Times have changed, and new, simpler approaches and styles of playing *batucada* in enormous *baterias* are dominant now. Only very little of the original art is left. The majority of it possibly remains with *Mestre Mug* in *Vila Isabel*, whose tradition differs from the one in *Portela*.

Luckily, there have been new and promising developments. A driving force today in the development of *batucada* is undoubtedly *Mestre Jorjão*, originally from the *Mocidade Independente* samba school. His art, however, is also in danger. His style is unmatched, but it seems that nobody else has been able to benefit from it so far.

De Souza saw the dire situation, and his effort can be understood from this basis. He wanted to save the knowledge and preserve it for future generations: Another possibility would be to expose the art form to audiences outside of Brazil. A *mestre* lives only as long as his art form. This can also explain why he sent his personal achieve to me in Finland just a little before his death in 1993. When I received it he was already with his ancestors.

The teachings of de Souza have proven to be a timeless treasury, which time and again bring new inspirations. The unifying key for this all has been ethnomusicology, whose methodological tools and logical, scientific work have helped to overcome many obstacles and expose new insights in this material. I have also been lucky enough to have had the chance to teach and study this music at the Samba School, *Força Natural*, at the *Academia Bananeira* in Helsinki, and later at the *Academia Pombo de Ouro* in Lahti: I now teach *batucada* at this institution in Lahti, and have a group of capable pupils in the *bateria*. All these experiences have enabled and supported me in this study.

During these years, I have visited many samba schools, met many presidents and *mestres*, samba school personnel, or *sambistas*. They are all *mestres*. This study is born out of the love of samba. I want to dedicate this study to all samba schools, and to especially acknowledge, with many thanks, the following institutions: LIESA, *Acadêmicos de Santa Cruz*, *Beija Flor*, *Caprichosos de Pilares*, *Estácio de Sá*, *Grande Rio*, *Imperatriz Leopoldinense*, *Império Serrano*, *Mangueira*, *Mocidade independente de Padre Miguel*, *Paraíso do Tuiuti*, *Portela*, *Porto da Pedra*, *Preto Velho* (Olinda), *Salgueiro*, *São Clemente*, *Tradição*, *Tupiniquim da Penha Circular*, *União da Ilha do Governador*, *Unidos da Tijuca*, *Unidos de Vila Isabel*, and *Unidos do Viradouro*.

1. INTRODUCTION

1.1. Background

I first got involved in samba school activities in the autumn of 1982, when I started attending practice sessions at the Hesperia samba school in Helsinki. To begin with, I was only interested in the dance and, given time, I joined the school's performance troupe. After this, I continued in number of different groups and slowly familiarized myself with the playing of some of the instruments. Between 1984 and 1989, I was, for all intents and purposes, a professional dancer and teacher. This was handy for me, as I was easily able to support myself during my studies with my earnings from performances and teaching. In 1989, I founded the Helsinki based samba school, *Império do Papagaio*, with some friends. Today, it is the country's largest samba school. At the same time, I was involved in founding the Association of Samba Schools in Finland. The Association's aim was to start producing a samba school street carnival, based on the one in Rio. The Helsinki Samba Carnival is the fruit of the Association's labours. Like all newly formed associations, *Papagaio* was penniless at the beginning, so I had to construct most of the instruments in the *bateria* myself. This was directly based on my previous activities of building *cavaquinhos* and classical acoustic guitars. I sold *cavaquinhos* to Finnish samba schools and groups, as the connections to Brazil were limited at the time.

In the October of 1989, I moved to Rio de Janeiro in Brazil for half a year with my wife. The corpus of this study was gathered during this time period. We lived on the Copacabana, at Rua Santa Clara 91. Brazil was a very different place in the late 1980s than it is today. There were several areas within Rio, which tourists were meant to avoid. I can still remember the maps where these areas were marked. They were mostly *favelas* and that is exactly where many of the samba schools were located. The greatest problem, at the beginning, was to blend into the local environment. This meant having a decent tan, assuming generalized norms of behaviour and appearing as local as possible in general. All jewellery, watches and other valuables had to be kept out of sight. I remember a few instances where earrings were stolen by ripping them out of the owner's ears in a bus queue and then fleeing the scene. Things would happen to those

tourists who could not, or would not, blend into the hustle and bustle. Some of the people I knew were the victims of armed robbery three times within a single week on the Copacabana. During this 6-month period, I witnessed two armed incidents in person and during the carnival I heard prolonged sub-machine gun fire from a *favela* close to the Samba stadium. I did not pay it any particular attention at the time, but I later read in the newspaper that the gun fire had hit the crowd in the stadium about 10 meters from where I was sitting. An audience member was injured, when a bullet hit her in the eye.

One of the customs related to the generalized atmosphere in Rio de Janeiro at the time was highly frustrating: everybody cheated everywhere. This was not limited to tourists, but was an everyday norm in shops, restaurants and bars everywhere. This improved my mental arithmetic and as a result of assuming this custom, I would estimate that I was able to remain well abreast the *cariocas* around me. The generalized level of unsafety forced us to take lots of precautions. Because almost all of the samba schools were located in difficult sites, the preliminary investigation was vital. And because being inconspicuous was vital, all trips were done using public transport. Finding the exact location of the samba school came first, followed by figuring out the journey there on public transport. Because looking like a tourist was inadvisable, memorising the route down to the names of important street and intersections was vital. This was due to the fact that it was necessary to know the route well, even if one was inside a moving bus regardless of the availability of street lights to assist on in figuring out where one was. To this day, I can still remember Rio de Janeiro's main streets, districts and their relative locations by heart. The only thing I could take along was a small note sheet. Knowing the city by heart was necessary, as the trains would not run sometimes, or the busses would go on strike while we were in Portela or Nilópolis. In these situations, we had to know what the route back to Copacabana was, and how we could get there.

When it came to some of the venues that were particularly far away, or hard to get to, like *Imperatriz Leopoldinense*, we had to go there during the day to familiarize ourselves with the locality. Samba school practices began at around 10 or 11 at night and were often in full swing after midnight, except during some weekend days. This meant that trips to the various schools began at Copacabana at around 10 p.m. We had

to change busses at Praça Quinze or on Avenida Vargas and the journey normally took at least an hour and sometimes it took up to two hours each way.

The samba schools themselves were trouble-free, as they had good security and there were no problems there. That said, one's self-confidence and humility had to be on point. I can recall some instances of failure to blend into the environment, due to the fact that we were the only white people present. In the beginning, I felt like I stuck out like a sore thumb, but as it is with people everywhere, curiosity and friendliness always won out. Taking notes at the samba schools was impossible, as it would have been too apparent. Taking cameras or other apparatus along was also impossible. We simply had to memorize the *batucada* by heart. However, this was not a terrible difficult task, as by this time I was already able to play some of the instruments fairly proficiently. In addition to this, we had to memorize the *bateria's* construction, as well as the number and sizes of the individual instruments. We split this task with my wife, so that she would focus on, for example, the small instruments and I focused on the heavy leathers, that is, big instruments.

Leaving a samba school was often an operation in and of itself. We would attract attention in any case and some people might have been interested in us as a way of enriching themselves. Our exit had to be done inconspicuously and we had to be vigilant that no one started to follow us. If we were followed, we had to shake me off before we could catch our bus. Our return journeys were normally uneventful, but the stops at Centro and Avenida Vargas, where we changed busses, were often somewhat restless in the small hours of the morning, so they required inconspicuous and determined action. The intervals for the busses were longer at that time of day, so our waiting time at these changing points could be fairly long. In the early hours of the morning, suspicious characters on public transport didn't seem very promising, so we blended in perfectly well. We were usually back at the apartment around two or three a.m. After our return, we needed to write down all the information, while it was still fresh in our minds, as well as completing the notation of the *bateria*. When we had finished everything, it was usually around four in the morning, when we were finally able to go to sleep. If some of our information was incomplete, we had to repeat the excursion. All in all, we undertook 41 trips to 19 samba schools and *blocos* around the turn of the year 1989-90, before the beginning of the carnival.

By the time we undertook our next trip, in the 2002-03 period, Rio de Janeiro had been totally transformed. It was hard to believe at first, but a generalized increase in prosperity was visible everywhere. People were wearing watches and jewellery and carrying mobile phones in public. The continuous bamboozling had also totally disappeared, to the detriment of my mental arithmetic. We undertook this trip while I was a researcher at the University of Helsinki and my wife was my assistant. In preparation for this trip, I had acquired references from the Brazilian Ambassador to Finland, Luiz Henrique Pereira da Fonseca, and Professor Eero Tarasti, of the Department of Musicology at the University of Helsinki. LIESA, the association of Rio de Janeiro's major samba schools, had shown an interest in my work, and their cultural coordinator, Doutor Hiram Araújo, was particularly helpful and shared his contacts and references when we visited the various samba schools.

We travelled to the samba schools as we had done before, using public transport. As during our previous trip, there was a certain level of tension related to travelling at night, and there were still areas that weren't safe for anyone, under any circumstances. However, this time we were able to carry a camera, video camera and recording device with us. The recording device was hidden into my belt, underneath my shirt and the microphone was inside my shirt, on my chest. The recording device could be turned on with a slight movement, and the man leaning against the wall turned into a recording apparatus. I used my body as the microphone's directional device. The video camera was an excellent aid in recording the *baterias*. We would occasionally also bring a tuning gauge, a measuring tape and a note book.

We had no trouble working with the samba schools. Each evening, we would come to an agreement with the harmony section of the samba school about recording and videoing them. In the same vein, we would come to an agreement with the *bateria* leaders about taking measurements of the instrument and taking photos / videos among the *bateria*. We were often informed of special events, so that we could prepare for them. I particularly remember an event at *Vila Isabel* samba school, where we were spending the evening at a samba school with Finnish friends. We had asked for permission to shoot, just in case, even though the main recording session had been carried out earlier on. Before the beginning of the evening's events, the *harmonia* came to tell me that I would be able to film soon. I, of course, thanked them for this. Then

while I was still chatting at our table, I was approached and told, somewhat forcefully, that now would be a good time for me to film. I was then ushered to the area of the dance floor that was cordoned off for the performers. I spent the next 50 minutes there, amongst the performers, with my video camera, filming the whole protocol related to the visit of the *mestre-sala* and *porta-pandeira*, or flag bearer couple, from a neighbouring samba school. It goes without saying that the material, shot at close range, was absolutely spectacular.

We also had several interesting discussions with the musicians, as well as the *mestres* of the orchestras. They were particularly interested in all of the instrument measurements, as I would measure the sizes of all the instruments and their tunes before rehearsals began. The measuring raised interest and I was often asked why I was doing it? I told them that I was measuring the instruments' tunes so that I could notate the *balanço*. This often cleared it up. The tuning gauge was the subject of particular interest, "does it really work and is it accurate; how could we use it to tune the instruments in the *bateria*," were fairly normal questions. During a visit to the *Tradição* samba school, I helped to specify the *surdo* section's tuning after I had first measure the original tunes, at their request.

During the 2002-03 trip, we visited 21 *baterias* and samba schools during a total of 57 rehearsals before the carnival. We measured all the possible *bateria* instruments' sizes, their tune and described the rhythm of the *bateria*, one instrument at a time. The gathered data is so accurate, that it allows for the complete recreation of each examined *bateria*'s *batucada*. In addition to this, I recorded all of the *Grupo Especial* samba schools' carnival *baterias*, at their pageants during the 2003 carnival.

The premise of this study is notably related to the research carried out on African music by A.M. Jones, where he carefully transcribed a bunch of African music, with the aid of a master musician and using a device he had developed.¹ The equipment has evolved since Jones' days, which has facilitated the notation of the instruments' rhythms in this study. In his own study, Jones was not looking to carry out an analysis of the music's grammar or rhythmic. He sees his role as being one of careful recording and says that his results include everything, so that other researchers could make

¹ Jones, A.M. 1971 (orig. 1959). *Studies in African Music*. London: Oxford University Press. ISBN: 0 19 713512 9.

analyses based on his material. In this study, my aim has also been to express things as clearly as possible in a graphical way. However, my point of view on the *batucada* differs from Jones' regarding his own material. I am a researcher by education. This is most visible in my analyses. I am also a musician and conductor.

My basic point of view is close to the music and I am viewing it from within. Due to my education and activities I am also a part of the subject being studied. This is unavoidable in this study. At the same time, it is a strength, as without this information and practice beneath my belt, I would be an outsider and my understanding of the *batucada* would, at its best, be lacking. It may be that several of the things that I have analyzed have become everyday practices for me a long time ago, but the analysis and the methodology have enabled me to review the material thoroughly and thus to present these results.

Unlike Jones, I am also analyzing the music's structure. In this case, I am analyzing the rhythmic of the *batucada*. To begin with, these analyses have not been based on any methodologies to be found in the field of musicology. Their baseline is an intuitive understanding of the structures of rhythms. This ability to see rhythms developed over time as I was learning and studying the *batucada*. In my mind I see them as a kind of two-dimensional matrix pattern, where the relationships of the rhythms are visible. As I understand it, this resembles some people's ability of seeing or experiencing music synergistically. The greatest challenge has been to translate a personal and internal vision into the language used in musicology and ethnomusicology, and ultimately to find the means to lead the reader to at least a rudimentary understanding of the deeper structure of the *batucada* through these means. Due to my insufficient explanation skills this may require a level of patience from the reader, but I hope that the result is satisfying.

1.2. The subject

In this study, all translations from Portuguese to English are made by the researcher, as well as the translations of the researcher's notes, which were originally written in Finnish. The most of Portuguese texts are as they were written in their original form.

Their spellings vary, depending on the source, and I have kept to the sources' original spellings. I have not standardized them, but rather kept to their emic form. Typical variations can be found, for example, in the words *ritmo* / *ritimo* or *repica* / *ripica*.

The focus of this study is *batucada*. In this context *batucada* is the drum beaten samba, created in the first samba school of Rio de Janeiro, and is today played in most samba schools. In a wider frame of reference, pure *batucada* is one style of Brazilian samba. Commonly, it is called carnival samba, but this is incorrect because there are many styles of samba played in the carnival and they are not all *batucada*. *Batucada* is originally Afro-Brazilian music, so this study belongs to the field of Afro-Brazilian ethnomusicology.

The first samba school was called *Deixa Falar*, (Let them talk), and it was founded in 1928.² The musicians of the school created a new music style that was named *batucada*. In the beginning, it was rejected by the traditionalists, but soon it conquered the carnival of Rio de Janeiro. The musicians gathered their primitive samba group and created an organization called samba school or *escola de samba*. In this context, the Portuguese word, *escola*, means “organized in classes”, thus *escola de samba* means a samba pageant, which is organized in classes / subgroups, instead of being random. Both innovations became increasingly popular, and since the carnival of 1929, the samba schools and *batucada* have expanded throughout the world.³

Today, samba schools are associations that produce a samba pageant for the annual carnival. The pageant is a performance, often called the opera of the street. It is based on a theme, or *enredo*, which the samba school presents through music, *fantasias*, (carnival costumes), and allegorically decorated parade floats. The pageants can have thousands of participants. In 2003, there were at least 71 registered samba schools in Rio de Janeiro.⁴

Today, Brazilian samba is popular all over the world. The Carnival of Rio de Janeiro and the overflowing, colorful pageants of samba schools with their massive percussion ensembles, are such bright images that they eclipse almost all other cultural

² Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 48.

³ Cabral, Sérgio 1974. *As Escolas de Samba, o quê, quem, como, quando e por quê*. Rio de Janeiro: Editora Fontana Ltda. p. 28.

⁴ Araújo, Hiram 2003. *Carnaval – Seis Milênios de História*. 2. ed. Rio de Janeiro: Gryphus. pp. 497-574.

presentations in Brazilian. They are so magnetic that samba schools -home-made and imported by Brazilian immigrants -have spread almost all over the world. In other countries of South America, North America, Europe, Israel, and Australia, there are about 250 different samba schools and groups. Even in Japan there are at least 25.⁵

Despite this, the music played in the carnival and in the samba schools is poorly studied. In 1992, Samuel Araújo wrote about this: “Only marginal attention has been paid so far to the musical organization of the *bateria* in writings of any standard”⁶. It is even more surprising that basic appreciation of the Brazilian samba is so incomplete, that most of the non-Brazilian music researchers can not distinguish between samba and *maxixe*, or even between samba and other Brazilian music genres. The reason for this situation is quite evident. Brazilian ethnomusicology has been primarily concerned with other aspects of musical culture than the music itself. Before the third millennium, there were very few studies on samba as music. Luckily today, the focus of Brazilian scholars has turned to the musical aspects of samba, and many interesting studies have been published. Unfortunately, the history of the first 70 years -the time when *batucada* was far different from today - has been almost completely lost. In this work, we shall study one of the last traditional *batucadas* of that era. It has its roots in the first samba school of Rio de Janeiro and it died in the beginning of 1990s when the last *mestres* of the *Deixa Falar-Portela* tradition passed away.

1.3. Framing of the question

This study concentrates on *batucada* played in 1987 in the *bateria* called *Os 27 Amigos*. This *bateria* was a direct successor in the chain of tradition that started in the first samba school of Rio de Janeiro.

Os 27 Amigos was founded to play in the film *Natal da Portela*. Its conductor, or *mestre de bateria*, was the former conductor of the *bateria* of the *G.R.E.S. Portela* samba school, Oscar Pereira de Souza, known as *Mestre Oscar Bigode*. After filming, the *bateria* resumed independently and rehearsed a percussion show that it offered to

⁵ www.academiadosamba.com.br/escolasmundo.htm (generated 25.11.2015)

⁶ Araújo, Samuel 1992. *Acoustic Labor in the Timing of Everyday life: a Critical Contribution to the History of Samba in Rio de Janeiro*. Illinois Phd: Urbana. p. 155.

perform on various occasions. We shall examine *batucada* as it appears in the private recording made in the rehearsal of that show.

A very important part of this work is the study of de Souza's emic concepts. A *mestre de bateria* is a master musician who knows all aspects of his *bateria* and the *batucada* tradition. It can be assumed that this kind of experienced person can give us better and more detailed information about *batucada* than an average player. The information is bound to a certain tradition, which helps to limit the field of study. A study concentrating on one person and his musical world can give us detailed and profound information about one case, but can also enlighten the whole field.

There are two guidelines for this study: The first excludes Araujo's previous comment, and the other one is Ekwueme's request:⁷

“More should be done, however, to find out also the original theories behind African traditional musical organization, before those theories are completely swept away from contemporary practice by forces of change [...] discover and explain what the African does musically instead, merely, of why he does it.”

This is the situation with *batucada* also. It is continuously changing. The *batucada* of today clearly differs from the *batucada* of the beginning of the 90s. The revolution and the demarcation between traditional and modern phenomena is everyday action. Sometimes this can even be read in the newspaper, but the real expertise does not reach the common awareness. Musical evolution occurs gradually, and only continuous observation and comparison brings them into focus. This process from traditional to modern can be seen clear in this study. The old knowledge is disintegrating and disappearing. Based on this, due to the researcher's approach, the main questions in the order of succession of this study are:

1. How did *batucada* develop and how are the *baterias* organized?
2. What are the instruments, rhythms, and functions of *batucada*?
3. What are the elements of *batucada*?
4. How is the quality of *batucada* estimated, and what are the criteria?

⁷ Ekwueme, Laz E.N. 1975/6. African musicological investigation in a culture conscious era. *African Music*. Vol 5. Number 4. p 5.

5. How can the rhythm of *batucada* be analyzed?
6. What is the harmony of *batucada* and how it is created?

1.4. Theories and methods

The very first method of this study is the novice-master method. It is used to receive de Souza's ideas about *batucada* and its composition in a *bateria*. This case differs from the basic theoretical situation in a number of ways. First, because in this particular case the element to be learned is not musical execution but an understanding of the conductor's way to compose *batucada* in the *bateria*. The process itself was the same as being educated to play by a master. Secondly, departing from pure oral teaching, de Souza had also written material about *batucada*. He had been teaching carnival judges for *Riotur* and had written material where he explained some of the basics of *batucada*.⁸ Some of the latter material that was sent, dealing with the functions and composition of *batucada*, was probably intended only for the researcher, and was dictated to be written up.

Paradigmatic analysis was the key to enable all further studies of grammar and relative materials. The starting point for this study, along with an understanding of *batucada* and its tradition, is the underlying means of musical communication within the whole of samba. The basis of the theory is the text. This refers to two things: the musical text and the spoken text. The musical text is the music that the musicians learn, remember, and transfer to others. Spoken text conveys the communication of music: The expressions, words, and phrases that the musicians use when they talk about music. The text mirrors the musical cognition. This way of studying is also seen as the study of emic acuteness instead of the study of things from the foundation of the researcher as an extraneous observer.⁹

⁸ Author's archive. Curriculum Vitae of de Souza.

⁹ Pike, Kenneth L. 1971 (orig. 1967). *Language in relation to a unified theory of the structure of human behavior*. The Netherlands, Hague: Mouton & Co. pp. 37–72.

In the beginning, electronic methods were only used to clean the original footage according to methods used in Brazil.¹⁰ Later on, they were used to assist notation and to study harmony. The methods resemble those known to empirical musicology.¹¹

The experimental work was important in testing and verifying the rhythms of different instruments. It was then necessary to recreate the complex section compositions and to test tunings and harmonies. This was not possible without proper instruments corresponding to those used in the *Portela* tradition. Instruments had to be recreated and tested according to existing information. Some instruments were rebuilt multiple times to get the correct sound. This is similar to the practises of recreating ancient and old musical instruments to restore older music.

Analyzing the rhythm of the *batucada* is based on the perception of rhythmicity being a three level structure. Ekwueme has, for example, sketched out a similar structure in the context of African rhythm.¹² The main idea of this study is that of the directive nature of *clave* rhythms as the basis of music. This understanding of *claves* is fairly common, but as of yet, we have been unable to indicate a proper code or a clear structural similarity between *claves* and other rhythms. This study begins with the thought that both European and *batucada* rhythmicities are based on the same humane way of perception and therefore, that they share a divisive basic structure that goes beyond that that Sachs has begun to outline.¹³

The reconstruction of early samba is based on the analysis of the vocalizations of samba. The ideas that the vocalizations are precise in both their rhythmic and phonetic descriptions. When these elements are classified and analyzed both individually and together, it is possible to reconstruct the rhythm or arrangement that they depict. One of the pivotal points of this kind of analysis of oral musical media is the background work on the object, which allows for the understanding of the relationship between the vocalization and the practices and musical culture of its time.

¹⁰ Azevedo José Eduardo, Piccino Evaldo. *O restauro e Digitalização dos registros sonoros do Acervo Histórico da Discoteca Oneyda Alvarenga do CCSP[...]* I Encontro Nacional da Abet, Recife de 19 a 22 de Novembro de 2002. Sessão Temática 2A.

¹¹ McAdams Stephen, Depalle Philippe, Clarke Eric. Analyzing Musical Sound. In *Empirical Musicology*. Edited by Clarke Eric, Cook Nicholas: Oxford University Press 2004. ISSN 0-19-516749-X. pp. 157-196.

¹² Ekwueme, Laz E.N. 1975/6. Structural Levels of Rhythm and Form in African Music. *African Music* 5:4: 27-35.

¹³ Sachs, Kurt 1953. Rhythm and Tempo. *A Study in Music History*. New York, Guilford, Surrey. Columbia University Press Morningside Edition. p. 24-25.

A good understanding of the musical genre under observation is, at the very least, equally important.

1.5. Earlier research

The study of samba as popular music or folk music within samba schools has always been limited. This does not only constitute Brazilian research, but all research made abroad also.¹⁴ The number of studies where some features of the music are mentioned, where instruments are described, and some rhythmic patterns are transcribed, is only a little more prevalent. Unfortunately, there is a strong possibility that there are an unknown number of studies that are not published, but can be found around the world in local university libraries or department libraries.

According to Samuel Araújo,¹⁵ Mario de Andrade's *Ensaio sobre música brasileira* is still considered as the principal study of Brazilian music.¹⁶ It was published originally in 1928, but can still be found in book shops around Brazil. At that time, Andrade was the only folklorist concentrating on music. He played piano and was inspired by the idea that the basis of erudite music is in folk music. In addition to his studies of folk music, he also had lots of other works; he produced primary material for musicians. The particular value of Andrade's study is that he defines the main problems of studying Brazilian music, and thus establishes the direction for further studies. The focus on Brazilian rhythm, which is so essential for us, is established here, and is perpetuated by other scholars.

¹⁴ Béhaque, Gerard 1993. Latin America. In *The New Grove Handbooks in Music: Ethnomusicology. Historical and Regional Studies*. Edited by Helen Myers. New York: W.W, Norton Company, Inc. ISBN 0-333-44444-2. p. 484.

- Livingston, Tamara E. 2000. *Ethnomusicology*, Fall 2000. Vol. 44 no. 3: 523-524.

¹⁵ Araújo Samuel 2002. Lesson in UFRJ 5.11. at 9.00-11.00.

¹⁶ Andrade, Mario de 1928. *Ensaio sobre música brasileira*. São Paulo: J.Chiato & Cia.

¹⁷ Andrade, Mário de 1969?. O Samba Rural Paulista. In *Aspectos da música brasileira*. Obras de Mário de Andrade XI. São Paulo: Livraria Martins Editôra. pp. 190-232. Originally published at 1941 in *Revista do Arquivo Municipal*, no.XLI, São Paulo, Departamento de Cultura.

One of the best known studies of samba is probably Andrade's work: "*O Samba Rural Paulista*"¹⁷. This work is based on the observations of three carnival occasions in 1931, 1933, and 1934 in São Paulo, and on one occasion in August 1937 in Pirapora. Andrade carefully described what took place there. He described choreographies and all instruments, but only the rhythm of the *bumbo* (bass drum) was transcribed at a general level. The real essence of this work is words, melodies, and the structure that he describes and analyses.

The real treasure of all samba studies is the Egídio de Castro Silva's brief work of 1939.¹⁸ As in Andrade's work, the description of the historical event is central, but the study also includes the earliest published transcription of a samba school orchestra.

The last work of the first phase of Brazilian studies that emphasizes samba is Oneyda Alvarenga's *Música popular brasileira*.¹⁹ Alvarenga's system of classifying different music styles according to the choreographies is interesting. He does not write about musical styles like *batuque* and samba, but about dances used in *batuque* and samba.

The first study that deals solely with the samba school orchestra, the *bateria*, was made by Daniel Sabanovich in 1986.²⁰ The perspective differs from other studies of Brazilian music. Unlike Brazilians, Sabanovich focuses completely on the technical aspects of playing the instruments of a *bateria*. He describes every one of them and their playing techniques. The study is based on field recordings made in Brazil, on interviews of Brazilian percussionists, and on material from commercial recordings. The strength of this study is in its practical approach and for the first time there is a lot of information about the instruments and the techniques required to play them.

The next Brazilian study is Samuel Araujo's 1992 thesis.²¹ Samba's change of status over the years is reflected in Araujo's methods of observation where he draws a parallel between wider social questions and the production of songs with the workings

¹⁸ Silva, Egídio de Castro e 1939. O samba carioca. *Revista Brasileira da Música* 6: 45–50.

¹⁹ Alvarenga, Oneyda 1950. *Música popular brasileira*. Rio de Janeiro–Porto Alegre–São Paulo: Editora Globo.

²⁰ Sabanovich, Daniel 1986. *Escola de Samba techniques, instruments and rhythms: A Performance Manual*. The Faculty of the Department of Music, San Jose University. In Partial Fulfillment of the Requirements for the Degree Master of Arts.

²¹ Araújo, Samuel 1992. *Acoustic Labor in the Timing of Everyday life: a Critical Contribution to the History of Samba in Rio de Janeiro*. Illinois Phd: Urbana.

of the *bateria* of a samba school. Araujo introduced a complete rhythmic ensemble and what became the standardized representation of contemporary *bateria* in a Brazilian samba school. In addition he brought a lot of background information about the practices of a *bateria*.

In addition, there are two studies that do not focus exactly on *batucada* of the samba schools, but on forms that are quite close to it. The first one was written by Larry Crook.²² He studied Bahian carnival music called *samba reggae*. The first point of relation to *batucada* is that the same type of rhythmic ensemble -the *bateria* -is also used in *samba reggae*. The music is not the same as in samba schools, but *batucada* and *samba reggae* have a very close relationship.

Closer to our subject is Philip Galinsky's article from 1996 on *pagode* samba movement in Rio.²³ In this article, Galinsky makes a presentation of the samba type called *pagode*. He shows its relationship with early and contemporary *batucada* and offers credible transcriptions of all the basic rhythmical elements of *pagode*. Galinsky also drew a line between Central-African and Afro-Brazilian music, and showed the distinct equality of these two musical worlds. The article was apparently written from the premise of Galinsky's master's thesis at Wesleyan University.²⁴

Carlos Sandroni published three works concerning the same subject: His PhD dissertation, an article, and one book.²⁵ Sandroni navigates through the history of Brazilian popular music, which antecedes samba. He gave a critical and interesting image of the processes that led to the appearance of samba in popular culture at the beginning of the 20th century. He focused on an especially interesting period in the history of samba. During the years 1917–33, the urban samba became popular, and a great transformation happened in the genre. Sandroni studied the transformation of the

²² Crook, Larry N. 1993. Black Consciousness, Samba Reggae, and the Re-Africanization of Bahian Carnival Music in Brazil. *The World of Music* 35(2): 90–108.

²³ Galinsky, Philip 1996. Co-Option, Cultural Resistance and Afro-Brazilian Identity –A History of the Bagode Samba Movement in Rio de Janeiro article. *Latin American Music Review*. vol. 17. no. 2: 120–149.

²⁴ Galinsky, Philip 1995. *Co-option and Cultural Resistance in Brazilian Popular Music: The Pagode Samba Movement in Historical Context*. Masters Thesis. Wesleyan University.

²⁵ Sandroni, Carlos 1997. *Transformations de la samba à Rio de Janeiro, 1917–1933*. PhD. Universidade François Rabelais de Tours.

-Sandroni, Carlos 1996. Mudanças de padrão rítmico no samba carioca, 1917–1937. *Transcultural Music Review*. November 1996.

-Sandroni, Carlos 2001. *Feitiço Decente. Transformações do samba no Rio de Janeiro (1917–1933)*. Rio de Janeiro. Jorge Zahar Editor / Editora UFRJ.

genre within popular samba: How the samba that was distributed by the record industry had changed. The old samba type of “Pelo Telefone” had lost its popularity, disappeared from the public eye, and was replaced by a new type of samba.

The new phase of studying samba had started in this millennium. It had already produced many interesting works especially concerning the *baterias* and the music played in them. The first one, composed in 2002, can be seen as the inaugural work of the new studies. It was the Cardoso de Oliveira’s etnografia of the *bateria* of the *Império Serrano* Samba School.²⁶ The work had been difficult to acquire because it was originally published on paper. Thanks to the UNI RIO library, it is now scanned and available internationally. In this work, the author had transcribed the performance of the *bateria* and analyzed it. The document provides a good comprehension of the *bateria* music. It was a score of one performance. It also gave a good baseline to the comparison of the *batucada* of the corpus with more contemporary *batucada*, because the *Império Serrano* and the *Portela* Samba Schools are close neighbours in the Madureira suburb. The astonishing transformation of *batucada* during the last 20 years is very visible here.

Marianna Zeh wrote a short study on the history of the development of *tamborim* playing terminology.²⁷ Despite its limited length, it gave a nice and interesting image of the development of one instrument in a *bateria*.

Julio Faria’s book could be called the complete handbook of the *bateria* leader.²⁸ It presents a samba school *bateria* approach to: the instruments, organization, and the leading practices. This book shows that the *bateria* organizations have changed since the time of this study at the beginning of the 1990s. Together with the Cardoso de Oliveira’s study, it documents the contemporary *batucada* and *bateria* standards.

In Lino Amorim’s thesis, the focus is on the impact of the rules of the carnival competition on *bateria* standards.²⁹ The *batucadas* of the different *baterias* are presented in an all-encompassing way. The *Salgueiro tamborim* composition of the 2013 *enredo* is more detailed, along with the compositions: *bossas*, *paradinhas*,

²⁶ Cardoso de Oliveira, Rodolfo 2002. *O Império do Samba: Uma etnografia da bateria do Grêmio Recreativo Escola de Samba Império Serrano*. Universidade de Rio de Janeiro. Programa de Pós-Graduação, Mestrado e Doutorado em Música.

²⁷ Zeh, Marianna 2006. *O criador na tradição oral: a linguagem do tamborim na escola de samba*. XVI Congresso de Associação Nacional de Pesquisa e Pós-graduação em Música (ANPPOM) Brasília – 2006.

²⁸ Farias, Julio Cesar 2010. *Bateria: O coração da escola de samba*. Editora Litteris.

²⁹ Amorim, Lino Camenietzki 2014. *As baterias das escolas de samba do grupo especial*. Trabalho acústico e os impactos do concurso sobre o seu caráter humanizador. Universidade federal do Rio de Janeiro, Centro de letras e artes. Programa de Pós-Graduação em música, Mestrado em Musicologia.

viradas, and *bregues*, which are used to enrich the contemporary *batucada*. What are particularly interesting for this study are the instrumentation tables that emphasized the differences between the *baterias*. The detailed tables clearly showed how the instrumentation and indeed the *batucada* itself has changed from previous decades.

1.6. Reading of the study

The study is divided in seven main sections:

Chapter 1 and chapter 2 introduce the subject and present the methodological basis of this study.

Chapter 3 is composed of two studies that reveal *batucada* gradually. The introductory literary history illuminates the invention of *batucada* at the end of the 1920s and describes how *batucada* became established in the *Portela* samba school. In the latter part, the reader becomes familiar with the percussion orchestras that play *batucada*. The four main traditions of different organizations are presented before the study shifts its focus onto the *bateria Os 27 Amigos*, whose conductor was Oscar Pereira de Souza.

Chapter 4 contains the studies based on de Souza's emic terminology. In the first part, the organization of *bateria*, instruments and their musical functions are presented. The second part concentrates on the construction of *batucada* and music terminology. The third part presents the criteria for assessing the quality of *batucada*. In the last part, the information gained is used to deduce the guidelines in the development of *batucada*.

Chapter 5 focuses on the rhythmic structure of *batucada*. The first analysis studies early *batucada* from the basis of emic rhythmic vocalisation. The second study is a rhythmic analysis derived from the emic terminology of *batucada*. It is based on the three level structure of music and on the function of so called *clave* rhythms. In the third study, the rhythmic nature, structure, and balance of *Os 27 Amigos* is compared with other *baterias*.

Chapter 6 contains the studies of the harmony in *batucada*. Contemporary *baterias* are examined in the light of the 2002–03 fieldwork measurements. The *bateria Os 27 Amigos* is then studied separately in detail, and the basics of the system is presented.

Chapter 7 presents the results of the studies from the methodological bases and from the general point of view.

2. RESEARCH AND METHODOLOGY

2.1. Oscar Pereira de Souza



Image 1: Oscar Pereira de Souza at the turn of 1990-91. Photo: Eila Reijonen.

Oscar Pereira de Souza was born in Brazil in Salvador da Bahia on the 26th of August 1924.¹ His earlier years and family background are unknown. There is no information on his education either. His civil profession was “inspetor de máquinas na Marinha Mercante,” or inspector of machines in the Merchant Navy.² His first known musical activities were from the beginning of the 1950s when he became one of the conductors, *mestre de bateria*, of the *Portela* samba school in Rio de Janeiro. De Souza also became known by his artistic name, *Oscar Bigode*, meaning Oscar Moustache. According to a newspaper clipping at the turn of 1966–67, he had already been the *mestre de bateria* of *Portela* for 15 years.³ This establishes the beginning of his career as having started in 1952. His career in *Portela* lasted for 20 years until 1972. According to his curriculum vitae, he had the card of an independent professional musician, and was also registered as a musician. His activities with the famous *A Voz do morro*, (The Voice of the Hill), and other bands, emphasizes his various musical activities.

During de Souza’s tenure, *Portela* was the most successful samba school in Rio de Janeiro. It gained the first prize of the carnival nine times during the 1952–72

¹ Author’s archive. Curriculum Vitae of de Souza.

² Author’s archive. Rêgo, José Carlos 1961–1962. Clipping of an unknown newspaper from Rio de Janeiro.

³ Author’s archive. Anonym. *O samba mais puro da bateria*. Clipping of an unknown newspaper from Rio de Janeiro: “[...] Mr. Oscar Bigode, director of the bateria of the Portela Samba School, who made more than 200 tamborims from the cat’s skin in his 15 years of director of the bateria.”

period.⁴ The carnival jury estimated the *bateria* of *Portela* to be worth the full ten points 19 times, and only once did it get nine points. The *Portela* samba school and de Souza were also the bearers of the *Tamborim de ouro*, (Golden Tamborim), trophy for three years. In the 1960s, he also received a number of honourable mentions. Amongst them are the trophies of the best *mestre de bateria* in 1963 and 1964.

At this phase of his career, de Souza also founded the *A Voz do morro* band, which was comprised of famous sambistas of different samba schools in Rio de Janeiro. The band released three LPs: *A Voz do morro I* and *II* in 1965, and *Roda de samba* in 1966. All of them were under the Musidisc label. The other members of the band were Anescarzinho do Salgueiro, Élton Medeiros, Jair do Cavaquinho, Néelson Sargento, Paulinho da Viola, José Cruz, and Zé Keti.

In addition to these activities, de Souza was also the *Supervisor de Bateria* of the *Vila Isabel* samba school in 1963, the *Diretor de Bateria* of the *Coracão das Meninas da Saúde* carnival block in 1967, and the judge of *baterias* for the class one carnival blocks at the Avenida Antônio Carlos in 1970. The years after the *Portela* samba school in the 1970s are unknown. The next annotation is from the year 1979 when he got the carnival win in Minas Gerais as the *Diretor de Bateria* of the carnival block called *Três Corações*, (Three Hearts).

In the 1980s he continued in Rio de Janeiro with three different samba schools. From 1980–82, he was the vice president of the *bateria* of the *União de Jacarepaqua* samba school. The most successful samba school that he participated in during that time was the *Beija-Flor de Nilópolis*, (Hummingbird of Nilópolis). According to his curriculum vitae, which is dated on the 12th of January 1985, he was at that time, or had been, the *Supervisor de Bateria* of that school. The exact period of this activity is not known, but it lasted for three years.⁵ It is possible that this period was from 1983–85, after the period of the *União de Jacarepaqua*. In 1986, he started as the *Diretor de Bateria* of the *Unidos de Ponte* samba school.⁶ Two years later, in 1988, he was the *Diretor Geral da Escola*, (General Director of the school).⁷ According to de Souza's CV, he was for three years total the *Diretor de Bateria* of that samba school. The

⁴ Riotur 1991. *Memória do carnaval*. Rio de Janeiro: Oficina do Livro. p. 287.

⁵ Author's archive. Oscar Bigode paper.

⁶ Author's archive. Anonym. *Agora Rio* 1986. Newspaper clipping 30/11–6/12/86. p. 6.

⁷ Author's archive. G.R.E.S. Unidos da Ponte paper.

performing *bateria* called *Os 27 Amigos*, whose show rehearsal tape recording is the musical corpus of this study, was apparently founded in 1987 during the period of *Unidos da Ponte*.⁸

In the 1980s, de Souza was also active with the carnival organization. He acted with Riotur, which was a tourist office and the organizer of the carnival, and tutored and schooled carnival judges from 1981–1985. He was personally one of the *bateria* judges in 1982 and 1983 on the carnival street of Rio Branco. He received two honorable mentions from Riotur in 1981 and 1984 for this work. There is also a notice that he was the president of the judges in the city of Rezende some 120 kilometers away from Rio. The year is unknown.

In addition to these activities, de Souza was a member of the *Dez mais do samba* and *Os Originais do samba* groups. The performing tours in American and European countries mentioned in his CV were probably done with the last group that was formed in the 60s by the samba school musicians. The group performed with many famous Brazilian artists like Elis Regina and Baden Powell in later years. It is not known in which years de Souza participated in this group.

According to this material, de Souza was first of all a conductor -*mestre de bateria*, and a musician. He had his most significant musical activities with the *baterias* of different samba schools. His 20 year period as one of the leaders of the *Portela* samba school *bateria* is long, and his total conducting experience with samba school *baterias* is almost 30 years. He was also a developer of *bateria* instrumentation. During his career, he introduced into *baterias* multibell *agogôs* (bells), *lira* (lyre of the march bands), metal *reco-reco* (scraper), and timpani, among others. According to his own accounts, his favourite instrument was the *piano de agogô*, a bell set tuned to a musical scale.

By 1990, de Souza had already retired from musical activities and worked at the Carnival Museum at *Passarela do Samba*, which was the samba stadium of Rua Marquês de Sapucaí in Rio de Janeiro. Oscar Pereira de Souza died on the 30th of December, 1993 at the age of 69.⁹

⁸ Author's archive. Explicação paper.

⁹ Araújo, Hiram. História do Carnaval. Internet: *liesa.globo.com* (generated 9.9.2015)

2.2. The role of mestre de bateria

The *mestre de bateria* is a master musician who has great knowledge of all aspects of *batucada*, knows all instruments, and is capable of creating and controlling a *bateria*. A *mestre* is normally from some samba school. As a novice, he had first learned to play, and then been educated in the samba school system. In this way, he can thoroughly learn the tradition. The earlier *mestres* seemed to be bound with their tradition and their samba school. Today, *mestres* do change samba schools and *baterias* easily. Players also change *baterias* and some players can play in as many as eight *baterias* during the carnival contest in *Sambódromo*.

The first and most important task of a *mestre* is to create and uphold the standards of discipline in the *bateria*. The former *Mestre André* from the *Mocidade Independente* samba school was famous for his “stick and knife” approach. Today, this would be an exaggeration, however, strong authority is needed. Undisciplined *baterias* can not play properly.

The second important task is to tune the instruments of the *bateria*. Samba schools own the main instruments and they are to be tuned before playing. Good *batucada* can only be played with properly tuned *baterias*. Each *mestre* has his own approach to this. The tuning of a *bateria* also depends on the place. Tuning on the street is different from that in an exercise hall. Even with very large *baterias*, there are differences in tuning. The work of some *mestres* can still be easily recognized, even though the majority of the *baterias* do not differ notably from each other. If a *mestre* himself does not tune the instruments, he has a trustworthy tuner or tuners who are in charge of this work.

The third important task is to create musical standards in the *bateria*. The primary way of doing this is to test players, and to accept or reject them. In this way, the *mestre* chooses players who are capable of playing the rhythms in the way he wants. The most common system seems to be that a *mestre* does not teach players, but rather chooses the ones who he thinks are capable in executing his musical desires. This is understandable in a situation where the supply of candidates is abundant.

When these factors are in order, a *mestre* can create *batucada*. He chooses the instruments and plans the *bateria* according to his intentions or according to the given

standards. The *bateria* must be trained, and, depending on the level of the *bateria* and players, *batucada* has to be created and *breques* must be composed. The *bateria* is the heart of a samba school. Without a *bateria* and its music, nothing happens. The spirit is created and maintained by the *bateria* and the *mestre* in charge of it.

2.3. Approach

Over the years, I have examined de Souza's teachings from many different viewpoints. Only after a comprehensive study of de Souza's philosophies and approach to music making, did the material start to become comprehensible. This required accepting the fact that the music studied had only little or nothing to do with the Western ways of understanding music. It is completely different, and is based on ideas of foreign origin and foreign history. Because of this, the final result is an interpretation between two cultures. By working this way, I have simultaneously been a visitor and a resident in two worlds that speak at least different dialects.

An important part of this study is to determine what de Souza did when he created *batucada*. This is actually consistent with Merriam's postulate that an ethnomusicologist must be able to notate the music, analyze it in terms of its component parts, and understand how these parts fit together to form a coherent and cohesive entity.¹⁰ This process is essential. It necessitates a deep, detailed orientation and knowledge of the overall field of *batucada*, with a simultaneous desire to study the very core and the general picture of the music.

There are four main phases in this study. They are the literary study and deduction, the field work, analytical study, and the experimental work. Field work leads to analytical studies that create new questions, which in turn leads back to fieldwork. Luckily, it was possible to make three fieldwork trips, all together more than 15 months, to get all the necessary materials needed. The third phase, the experimental work, constitutes the testing and playing of the studied *batucada*. It started from questions such as: How can this rhythm be played, and what is the technique? Soon, it became obvious that to get this information, instruments that did not exist anymore had to be

¹⁰ Merriam, Alan P. 1964. *The Anthropology of Music*. Evanston IL: Northwestern University Press. pp. 14-15.

recreated. Then, naturally, to solve more ample questions, such as tunings, rhythmic interactions, and section compositions, a band was needed to test the hypothesis. This phase led back to the working table on the form of corrected and verified results.

2.4. Study of written material

The literary study was very limited due to an emphasis on the musical aspects of *batucada*. This limited material provided interesting clues about the main points of the development of *batucada*. The main realization was that there is no longer anyone alive who can be asked how things have developed. I realized that if I wanted to know how *batucada* had developed, I should study the information and the material that I already have. The final result was deduced when combining the information of rhythmic functions and the information of rhythmic relations with the literary materials. The written materials provided the main historical outlines and the structure that put the pieces together to form a coherent picture.

2.5. Fieldwork

The first fieldwork from 1990–91 took six months. De Souza's materials, as well as those of his *bateria Os 27 Amigos*, were collected during this period in Rio de Janeiro. In addition to the diary and other notes, it included a recording of the performance rehearsal of the *bateria Os 27 Amigos*, and copies of two teaching papers: *Armação da bateria dos anos anteriores para filmagens* and *Desafinação de sons*.

Other materials collected on this trip were the *batucada* rhythmic notations of 18 *baterias* and 16 *bateria* plans. They were the product of 42 samba schools and other visited sites. These materials included the list of *batucada* terminology and explanations. It comprised a 95 page file. These documents reflected de Souza's teaching process. The discussions with him necessitated the need to better know *batucada* and the samba school *bateria* standards.

De Souza himself sent the materials about his career and *batucada* process. The parcel was received in Helsinki in April 1994. In addition to his Curriculum Vitae, it included seven newspaper and book clippings and copies that mention *Oscar Bigode / de Souza*. There was also his *União de Jacarepaguá* samba school membership card with a few samba school papers, a couple of personal letters of his correspondence with Riotur, a few handwritten notes about samba and *bateria*, and finally the offer and the advertisement of the *Os 27 Amigos* show. Obviously, these were his personal files.

The second trip from 2002–03 was funded by the Finnish Cultural Foundation, and took eight months. It differed from the first one because of the focus placed on the *batucada* of the samba schools. The objective was to document the *batucada* of that time as best as possible. The equipment was also better, and included a video camera, a mini-disc recorder, APS and system cameras, and a tuning gauge. The development of personal electronics made it possible to use compact recording equipment. Therefore, the main information was fully recorded, and the notations were produced from this footage. All instrument tunings were measured with a tuning gauge. Instrument dimensions were also measured, and the diary was written manually.

All the data was collected from 60 visits to samba schools and other locations. It included a complete recording of 14 samba school *baterias* and 38 field recordings from the carnival. Data from each samba school *bateria* was comprised of a field recording of the *bateria* made at the samba school, a video recording of the individual instruments and rhythms of the *bateria*, measurements of the instrument dimensions, measurements of the instrument tunings, and documentation of the organization. All together there were about 35 hours of audio recording and 20 hours of video.

The third part of the material is complementary to the previous one. It was collected during a five week period from February–March 2004. Minor parts of missing data were collected on this trip, resulting in the full acquisition of field material.

The full collection documents *batucada* from 1990 to 2004. It constitutes a comprehensive understanding of the different traditions and changes in *batucada* during these decades. In this study, where the focus is limited to the *Deixa Falar–Portela* tradition, only a fraction of this information was selected to be used as comparison material. The material on whole is wider than this study. Due to the narrow parameters, the data yielded a realistic background for this study.

2.6. Master-novice method

The novice-master method was used to obtain de Souza's ideas about *bateria* and *batucada*. The method is excellent when collecting data from an oral tradition. It enables a natural learning environment where the teacher can control the situation from his part and where he can transfer information with methods familiar to him. It allows for active interaction between persons, and thereby enables more ample and profound reception of data than is possible in a limited interview. The method also eliminates misunderstandings, to some extent, and facilitates a better understanding of the context. Information can be ascertained during the learning process, and new findings are based on former data. In addition to collecting pure data, the method also allows the development of ample comprehension about the object researched.

The disadvantages of the novice-master method are apparent. The missing data of the teacher's speech is scientifically the most problematic. With this method, there is far too much speech and data to be completely recorded. Only excerpts of the transferred or audible data can be written down, while no other proofs of it exist. The researcher transfers data that is not completely documented, and the background understanding that is developed during the process. This guides the researcher during the interpretation, but can never be completely transferred. The learning process is also long and often irrational. Teachings do not follow each other in logical order, and many steps are repeated at random, depending on how the novice learns and how the learning situation progresses. External incidents related to the situations can also influence the process.

This case differs from the basic theoretical situation in some instances. Departing from pure oral tradition, de Souza had also written material where he explained some aspects, like the functions of the instruments. Some of the papers might have been a guideline for more extensive work. In conversation, it became apparent that de Souza had ideas on how to save the information and tradition that he thought was almost lost.

Because of the teaching material, *batucada*, even though it is based on oral tradition and is clearly folk music, is also recorded to some degree. It approximates the literal tradition. One of the reasons for this might be the carnival competition, which

requires relevant information to be used as the basis for the judges' evaluation and leads towards the written tradition. The judgement criteria is not on de Souza's level of specifications, but is considerably more universal.

The dialogue with de Souza first started when the researcher was studying the history of samba schools at the Carnival Museum in Rio de Janeiro. The researcher posed some simple questions about *bateria* instruments to the personnel, but nobody could provide an answer. At that moment, de Souza entered and provided the answers. Very soon, the situation changed, and de Souza, who was also working in the museum, started to teach *bateria* systems and the ideas behind them. This continued 1–2 times a week during the following five months, with only a couple of breaks due to other activities and the carnival. Every session lasted 2–3 hours and often ended when the researcher could not concentrate anymore. Almost always, Ana Cristina Lima, who was an official at the museum, was present in these sessions and interpreted the conversation between Portuguese and English. This helped a lot in a situation where new terms had to be learned. It also created the possibility of receiving the same information in two languages, which helped the process of understanding.

The first phase of this method took about two months. The beginning was difficult because de Souza's speech seemed to be chaotic, even though the researcher had prior knowledge of the subject. At first, the researcher neither recognized nor understood the specific terms that de Souza used, because many of them had multiple meanings. The terminology also differed from the Western musical terminology. When the basic nomenclature was moderately grasped, a more effective means of communication took place. These conversations continued until the researcher's return to Finland. At the end of the period of our discussions, we started to repeat the questions from the beginning, and used the last two weeks to clarify already discussed matters. It was obvious that the main points were covered. The conversations led to the study of the samba school *baterias* that were mentioned earlier. These visits generated further conversations about the systems and principles of *baterias*.

De Souza was a good and keen teacher. He was able to explain concepts from many points of views to help clarify his ideas and to ensure that everything was understood correctly. Because of the conversational nature of the novice-master method, only the main theories and terminologies of these conversations were written down. All

together there were four pages of short, fragmented notes, and three pages of terminology definitions.

2.7. Working table work

Every single fieldwork trip to a samba school led back to the study room. The material had to be organized and often analyzed in raw form to lead to a subsequent course of action. The major organizing and analyzing was done after the return to Finland. In many ways, this phase was like a reversed and confused study of musicology. We had created a *batucada* notation, but did not have the rules that could be used to analyse the paper. Conversely, we have paper and other material to extract the rules of the music studied. Only after that can we return to musicology, but with completely new rules of music.

2.7.1. Paradigmatic analysis

This study is based on the theory of Erkki Pekkilä.¹¹ The method was developed to study the relations between spoken expressions and music. The idea was to find how these aspects of music culture can be studied together, and how the individual members of certain musical cultures formulate the musical phenomena. From our point of view, one of the most important aspects of this method is that it is developed for studying the musical world and musical cognition of an individual, instead of a more ample group.

In this method, the spoken and written texts were organized into taxonomic hierarchies according to their mutual relationships. We believe that the impressions he used form a conceptual system, and not only a vocabulary. This method is used in three cases. The first is to analyze how de Souza formulates the fundamentals of *batucada* in *bateria*. What are the necessary parts required to build up a composition called *batucada*. The second is to study how he had organized the *bateria* and constituent

¹¹ Pekkilä, Erkki 1988. *Musiikki tekstinä. Kuulonvaraisen musiikkikulttuurin analyysiteoria ja -metodi*. Suomen Musiikkitieteellinen seura. Acta Musicologica Fennica. Jyväskylä: Gummerus. ISBN 951-95336-1-3.

parts. The third is to assist in the analysis of the aesthetics and evaluation of the quality of *batucada*.

The results achieved by this method are dependent on the point of view used as the basis of analysis. The same text can produce different results depending on the understanding of the relations of the terms. An extended processing time helps in finding the most harmonious balance for them. The results presented here have gone through at least three cycles of the analysis. The outcome is always based on interpretation, but it will hopefully align with the objective. This method enabled further studies, including the interpretation of the notations. With this approach, the emic point of view is extremely valuable because it places de Souza's musical concepts in focus.¹²

This may all seem difficult in light of earlier studies, which was conducted by scholars at the end of 1970s and the beginning of 1980s, who studied folk music communication, concepts, and grammars.^{13,14,15} Regardless of the belief that emic communication has great value, the outcome suggests that it is possible to analyze and create principles that folk musicians can understand through musical communication. This can be done despite a lack of awareness regarding the structural properties of the music.

This case differs from earlier studies. *Batucada* is more than just folk band music, even though it is based on an oral tradition. It is learned traditionally, but it is also sophisticated orchestral music that is led by a conductor who has to know a lot about practices and traditions. These conductors are specialists who create and develop

¹² Pike, Kenneth L. 1971 (orig. 1967). *Language in relation to a unified theory of the structure of human behavior*. The Netherlands, Hague: Mouton & Co. pp. 37–72.

¹³ Feld, Steven 1984. Communication, Music, and Speech about Music. *Yearbook for Traditional Music* vol. 16.

–Keil, Charles 1979. *Tiv Song*. The University of Chicago Press.

–Powers, William K. 1980. Ogala Song terminology. *Selected Reports in Ethnomusicology* 3 (2).

–Rice, Timothy 1980. Aspects of Bulgarian Music Thought. *Yearbook of the International Folk Music Council* vol. 12.

–Stone, Ruth 1982. *Let the Inside be Sweet. An Interpretation of Music Event among the Kpelle of Liberia*. Bloomington: Indiana University Press.

¹⁴ Stone, Ruth M. 1981. Toward a Kpelle Conceptualization of Music Performance. *Journal of American Folklore*, Vol 94, No. 372. pp. 188-206.

–List, George 1976. Musical Concepts in Traditional Cultures. *Folklore today*. Edited by Lindha Dégh. Bloomington, Indiana University. pp. 335–346.

¹⁵ Zemp, Hugo 1979. Aspects of 'Are Are' Musical Theory. *Ethnomusicology* vol. 23. no. 1: 5-48.

–Becker Judith; Becker, Alton 1979. A Grammar of the Musical Genre Srepegan. *Journal of Music Theory* 23.

batucada. The modification and development, which requires a lot of knowledge when defining the music, is enchanted by the annual carnival competition.

Another advantage is knowing that the researcher would not have been able to approach the subject in this way, had he not been a part of the samba school system for over 35 years. This did not only create an opportunity to play *batucada*, but to also acquire an understanding of the different standpoints in the field of samba.¹⁶ More importantly, it provided a comprehension of those cultural collisions that happen continuously when two different cultures meet, which in this case, are European and Afro-Brazilian. This perception and ability to interpret these two cultures, even in a limited way, is an essential tool that has enabled the researcher to see and understand the communication in the Brazilian world of samba.

In this study, unlike that of Hugo Zemp, the musical terminology was taught on purpose to the researcher.¹⁷ From the very beginning, it was obvious that the person whose comprehension we study here, had a highly detailed conception of the music he was talking about. He offered and taught that to his student, the researcher. It was equally obvious that he did not engineer those terms and systems in situ, but had devised the material years before. De Souza knew what he was teaching, but the researcher had to use analytical tools to understand what he was really talking about, and to conceive of the whole beauty of the musical system.

2.7.2. Electronic methods

Electronic methods led to new and important ways of studying the original C-tape footage. The Music Cleaning Lab 3.0 program was itself crucial, and was intended for cleaning old recordings. At first, it was used only to clean the original footage according to methods used in Brazil in order to restore early music.¹⁸ Soon, it was discovered that the program's equalizing and editing tools were also capable of other actions needed to find and determine rhythmic structures. It became possible to peel away extra layers,

¹⁶ Hood, Mantle 1971. *The Ethnomusicologist*. USA: McGraw-Hill Book Company. pp. 34–35.

¹⁷ Zemp, Hugo 1979. Aspects of 'Are Are' Musical Theory. *Ethnomusicology* vol. 23. no. 1: 34.

¹⁸ Azevedo José Eduardo, Piccino Evaldo. *O restauro e Digitalização dos registros sonoros do Acervo Histórico da Discoteca Oneyda Alvarenga do CCSP...* I Encontro Nacional da Abet, Recife de 19 a 22 de Novembro de 2002. Sessão Temática 2A.

and to filter and amplify hidden and low intensity actions on the tape. For example, the problematic *sequimentos agudos* were found and transcribed that way from the tape.

Another important advantage was that the tunings could be now measured, and that it was possible to study the harmony of *Os 27 Amigos* in detail. The method resembled those known in empirical musicology.¹⁹ The method was based on Oscillogram, a graphic representation of the sound wave that has been recorded by the microphone, and that the program emphasized.

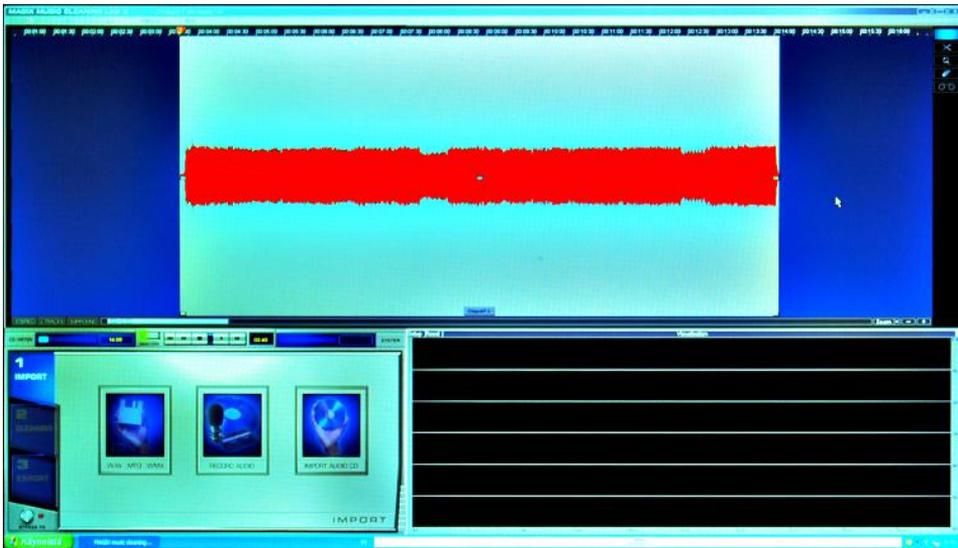


Image 2: Oscillogram of the third take.

The objective of the first task was to find a clear and uncovered rhythmic pattern sample from the footage. This was done by scaling the time axis.

The best sample is extracted when there are no other instruments playing simultaneously. Most of the samples are from the instrument presentations or from the introductions. The first and second takes were the best sources, because the complexity of the composition grew take by take. This is also why the tuning measurements of the third take are not complete.

¹⁹ McAdams Stephen, Depalle Philippe, Clarke Eric 2004. Analyzing Musical Sound. *Empirical Musicology*, edited by Clarke Eric, Cook Nicholas. Oxford University Press. ISSN 0–19–516749–X. pp. 157–196.

The next three rhythmic patterns were separated from the take. Starting from the left, they are the high tuned *surdo de repicar*, the middle tuned *surdo de repicar*, and the *caixa de guerra*. Each stroke can easily be recognized. The rhythms are also nicely exposed.

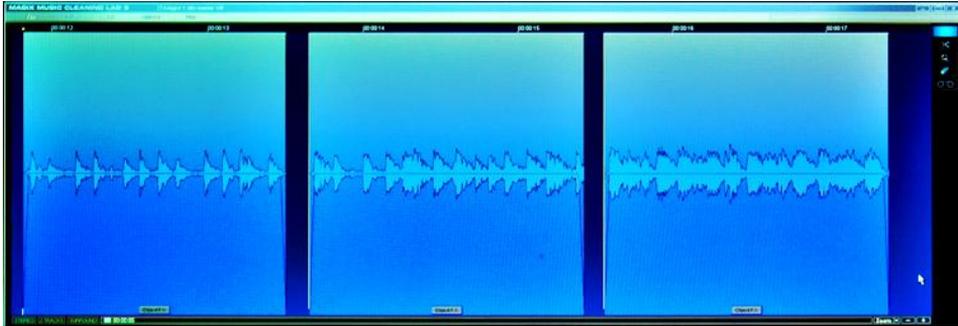


Image 3: Rhythms of the high tuned *surdo de repicar*, low tuned *surdo de repicar*, and *caixa de guerra*.

This is a good source to verify the notation, and to see in detail possible tendencies of various playing techniques.

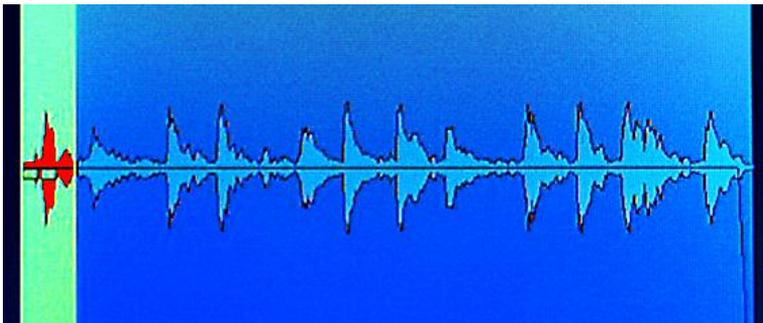


Image 4: High tuned *surdo de repicar* oscillogram.

Oscillogram could be scaled to see the individual sound waves, but there was no tool to determine the frequency. The solution was to use the same tuning gauge, Cort E410 auto chromatic tuner, as in the field to measure instrument tunings. This was done from the loudspeaker sound. Because of this, after determining the rhythmic pattern, its lowest tone was separated and multiplied to an approximately two second long series of strokes.

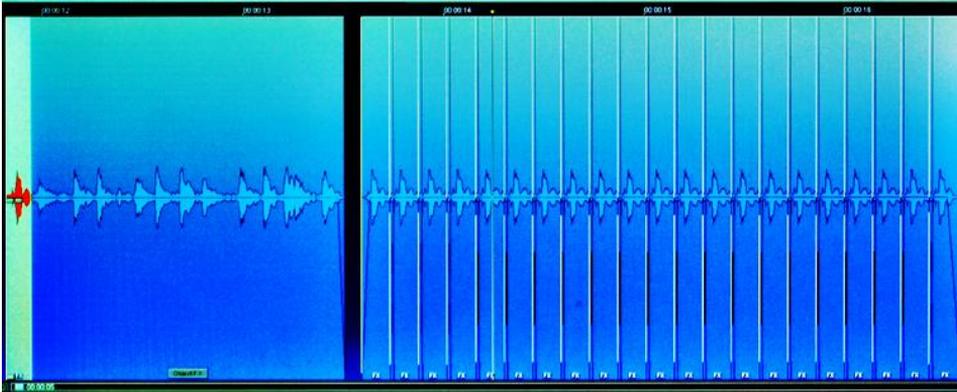


Image 5: The lowest tone copied and multiplied to a series.

This was long enough for the tuning gauge to measure the pitch. This way, it was also possible to avoid errors in the graphic presentation. The software was not intended to analyze sound in detail, so it could be expected that its graphics are not the best quality. By measuring the multiplied original footage sample, this possible error could be avoided. Knowledge of the favourable instrument tunings helped to estimate the results. Compared with the measurements made in the field, those from the speakers were more stable, presumably because of the weakened and distorted overtone spectra of the sound.

The most complicated of all processes was the notation of the *cuica* section in the third take. The pattern was divided in 1/16 strokes. Each one was multiplied, measured, and had the pitch marked on the staff. The notation was then produced from this melody. Even then, live extra samples were needed to justify the result completely, because the result was in disharmony with the literal material. The findings from a live situation in 2002 made it possible to verify and adjust the results in the final form.

2.7.3. Batucada notations

Batucada notations are the central material of this study. The notation of non-European musical cultures often raises questions, which have been widely discussed in the field of ethnomusicology. I will only take part in this discussion with a brief comment, which

includes the reasoning behind the notation I have used, as well the entirety of the study itself.

When speaking about notation, it is about using a limited medium to transfer musical data. The medium itself is mainly neutral, but the cultural practices, presumptions and constructs related to it make both the writing and data analysis problematic, particularly when the message crosses cultural boundaries. I see the basis of notation as neutral as alphabets that are in general usage. They can be used to write languages that are disparate from one another and transfer their information with reasonable success. The pronunciation of languages and their notation through the use of alphabets can vary from one another noticeably. For example, there are considerable differences between my own language and English. Languages belong to different families, their grammars are different, as are the ways they are pronounced and some of the ideas behind expressions differ between languages. Despite this, the alphabet works well for writing both languages. In order to be able to write or interpret both of these languages, or to transfer information between them, one must know both languages. Reading, pronouncing or understanding Finnish will not work based only on English, but when one also knows the Finnish language, there are very few problems.

I see music notes as a similar medium. They can be used to describe a variety of musical languages whose background, grammar, pronunciation and thinking differ from one another. In order for us to be able to transfer information over linguistic borders into another culture's domain, we need to know the source language, the notation system and the target language or the medium will not work. Learning jazz, Argentinean tango or baroque music is not possible, if one were to do it based on musical notes alone. The information contained in the notes is not correctly accessible, until we understand the music. This is true of all music that has been notated. Afro-Brazilian is written in Afro-Brazilian and if the notation is interpreted according to European grammar and convention, the end result is distorted. If Afro-Brazilian is written in European, the result becomes even more distorted.

As a medium, musical notation needs the support of music, at least in some form. Additionally, an understanding of the culture, musical grammar and its conventions help to deepen understanding. These are the essence of this study: Grammar, terminology, notations and a musical recording and none of them must be

interpreted according to European interpretations of music. *Batucada* is not European music and it is disparate from European music in every way, even though they do share some common and apparently common traits. Regardless of all this, they are both based on the same humane perception and thus are universally understandable and experienceable.

Based on the above, I will use the typical fractions based notation. It shares a common perception base with Afro-Brazilian music, where the dividing of a beat's duration into smaller parts is called cutting, or *cortar*. In addition to that, I will be writing the *batucada*'s notations as grammarless as possible. To begin with, the piece's meter is omitted. Modern *batucada* can be written in the 4/4 meter and the older *batucada* is written in the 2/4 meter. Both kinds of music are, however, based on marker and clave rhythms and neither type of rhythm includes a rhythmical grammar and they aren't meters. I write the notations either based on the marker rhythm or on the clave's division. The system of stressed accents in both differs from the European norm, so the notations should not be interpreted based on the European conventions of musical rhythms, even though the marker rhythm based notation might make it feel tempting.

Secondarily, the rhythm's basic notation does not include a clef or a key signature. We are talking about drum music, where the differences between sounds are relative. Instead of a clef, the corpus notations might include performance notes "with tonal movement", or *com balanço*. However, this is a basic assumption with the musical genre being studied, so I do not mark it separately. When I do use a clef, it is to indicate that the instrument's basic, which is lowest, tone has been specified and has been noted on the staff in a corresponding way. The other tones are based on the instrument's specifications and the tones used, and are therefore in relation to the lowest tone used. The "com balanço" further supports this notation. In this kind of system, there are naturally no keys. The only time when I study the topic loosely from the key point of view is when I study the harmonies of *Os 27 Amigos bateria*. The equal temperament bells are the exception to what is described above.

I mark the notes either on a single line of staff when I want to emphasize that no music level is involved and that it just a rhythm notation. This is purely an analytical notation method in this study. When I do use the pentagram, it is to study the music level, its complete, musically voiced phrase. The bars divide the staff's *clave* and mark

rhythms, or *marcas*, in a way that the *clave*'s beginning and the mark rhythm's second *marcação*'s fixing point is always the first beat in the bar. This follows the *batucada*'s structure and its cadensation. It is also reminiscent of the European way of notation and thus easily perceivable. In addition to these starting points, I use other additional marking methods, which I usually use to clarify things related to the playing technique. In each case, I will explain these markings on a case by case basis.

The notation of *Os 27 Amigos bateria* starts from individual instruments, then the sections, and eventually the whole *bateria* is described. Unfortunately, because of the limits of this thesis, only the basic notations can be presented here. All other parts of *batucada*, introductions, endings, and other musical structures, have to be left to a book of its own. Only a short, very basic transcription is presented in the appendix. This study only covers the rhythm of *batucada*.

The notations are generated from C-cassette footage. The tape was filtered to amplify and clarify the rhythm of each instrument. If necessary, patterns were separated, multiplied, and looped to repeat. Short notations, like the variation of *segmentos agudos* and the cadenzas of the *surdos de terceira marcação*, are the result of repeating and progressing bar by bar.

The *batucada* notations from 1990–91 were all manually written according to the live situations. At that time, it was not advisable to write notes or transcriptions in samba schools if you did not want to be identified as an outsider. This could have led to trouble after rehearsal when travelling back home. Visiting samba schools, not only the remote ones, was risky at that time. You had to study and learn the rhythms by memorization. Due to their big size and complexity, some *baterias* were visited a few times to verify and adjust the notation. The result was a basic rhythmic notation where each instrument or instrument group was presented.

Different methods led to two kinds of notations. The first type is just basic rhythmic notation without a key. The second one, which is based on the measured tunings, also exposes the tonality, and provides a clue about the total harmony. These notations always have a key.

When we talk about rhythms and rhythmic patterns generally, and when the tuning levels of the instrument are not measured or are not essential, we use a pentagram without a key, like in the next example.



Image 6: Notation example.

The different tones that a drum skin produces are marked here on different levels. Number one (1) is the basic tone of the drum. It is the lowest tone. If a drum is played by a beater or a stick, this sound is produced by beating the middle of the skin. The highest tone, marked by number three (3), is produced by beating the skin near the edge. The interval between these two tones varies generally from a minor to a major third, depending on the tuning of the drum. The tone marked by number two (2) is beaten about half way between the middle and the edge of the skin, with its pitch level between these two. The idea of this marking is to emphasize the relative pitches of the sounds and the tonal movement, which is essential here.

The x-note marked by number four (4) is a high tone, left hand stroke. The level on the staff expresses the relative pitch the same way as with beats one, two, and three. All kinds of *surdos* are played with one stick or a beater and with a bare hand. This x-marking is essential with all *surdos* to differentiate between the stick and the hand strokes.

With the *caixas*, or resonator drums, the same marking expresses the left hand stick strokes. When playing them, the right hand normally leads, and the left hand is complementary. The left hand stick may also be shorter than the right hand stick. This is why the sounds of the left hand strokes are essentially different.

With the Cuban *tumbadora*, which is also found in the corpus, the strokes are not separated this way, because in practice, there is no difference between the left and right hand tones.

When the pitch of an instrument is measured or determined, the staff has a key. The lowest sound is then measured and located on the right level on the staff. Other sounds are then located in relation to this one. In the next example, an introduction played by a *surdo de repicar* is notated.



Image 7: Notation with key.

The tuning level of the instrument is in D. The rim shots beaten with a stick are marked by a square head. In this example, the phrase begins by a roll of two rim shots and a near-the-edge hand stoke between them. Then comes the lowest basic tone of the drum, played by a stick. All non-analytic notations in this study follow these principles. If there are exceptions, they are indicated.

2.7.4. Study of rhyme

Both of the methods of studying rhythm used in this study have been developed from scratch, so to say, vis à vis the established methodologies in ethnomusicology. They have clear links to the area's views and methods, but they are, initially, thoughts that are based on the musician's intuition, born completely without ethnomusicology's influence. The first method that I'm using to analyze the vocalizations in samba is based on two simple questions, which can be used to strip the vocalizations into their basic components. The first question is: Which instruments and beats do the sounds describe? The second question is: what is rhythm? An excellent knowledge of the studied subject, as well as thorough background work, is essential in the use of this methodology. Without a good knowledge of the context, it is very hard to localize or combine the vocalization with music. I apply this method to the analysis of probably the most famous vocalization in samba, Ismael Silva's Bum bum paticumbumprugurundum.

2.7.5. Study of rhythm

The second method, used to analyze the corpus' rhythm, is based on the understanding that music structure with multiple layers, which grow, like a logical matrix, from a base

I call basic rhythms. The basic rhythms reflect throughout the entire structure and because the structure is, according to this viewpoint, solid as far as the fundamental parts are concerned, the basic rhythms can be isolated from the music's components. The question here is not one of the grammar, or the tangential structures, of *batucada* or samba, but one of the fundamental similarity of both European and African based rhythmic. This point of view holds that they both share a joint humane perception base and that their structures are based on the same conformities. They are separated only by the forms related to musical culture. I analyzed the rhythms of all the instruments in the corpus using this method and I am producing the rhythmic genealogy of *Os 27 Amigos bateria*, which is also its rhythmic grammar.

2.7.6. The nature of *batucada*

The analysis of the *batucada*'s rhythmic character is based on the measuring of the balance between the emic rhythm paradigms in *batucada*. The most important rhythmic paradigms that describe the *batucada*'s character are the perfect time *marcar* and the *ripicar*, which is based on clave rhythms. The role of the *cortar* paradigm is not as noted in the analysis. When the *marcar* paradigm is emphasized, the *batucada*'s character converges with European rhythmic. In a similar fashion, when the *ripica* paradigm is emphasized, the *batucada* appear very African. The comparison is carried out mathematically and the results are presented graphically, as well as in numerical table form. The used method describes the difference of the various types of *batucadas*, as well as the change in *batucada* in the early 1990s well.

2.7.7. Studies of harmony

The studies of harmony in *batucada* are directly based on de Souza's comprehension of the importance of harmony. His understanding of harmony was holistic, and he saw it as a central ingredient of the rhythm of *batucada*, as well as a practical tool used to control the playing of a *bateria*. These perceptions are examined in four different studies.

The first study concerns the discussion about the quality of *batucada*. Here we talk about de Souza's overall comprehension, which is studied with the paradigmatic method. The core purpose is to qualify de Souza's understanding and criteria for good and poor *batucada*.

The next part discusses de Souza's grasp of harmony as a practical tool for controlling the playing of a *bateria*. It is based on a conversation about the case of *bateria* of *Unidos do Viradouro* in 1991. This part is also studied experimentally by cross-referencing de Souza's statements with the *bateria* of the samba school *Força Natural*. The third study of harmony is the tabulation of tunings of the samba school *baterias* from 2002 -03. It is based on the measurements made in the field.

The study of harmony of *Os 27 Amigos bateria* is the last part. According to the measurements made from 2002-03, there is no noteworthy tonal harmony in the contemporary *baterias* of the samba schools in Rio de Janeiro. The tunings of the *baterias* are clearly based on other principles. Therefore, the case of *Os 27 Amigos* is studied separately. This study is based on the measurements made from the tape of *Os 27 Amigos*. The tuning of every possible instrument in different takes is measured or determined by interval comparison. The tunings of each take are then tabulated, and the pitch of each possible instrument is placed on a scale. The scale is compared with different keys and fitted into the most adaptive one. The basic intervals of the tunings between the instruments are also tabulated to see which ones are most favoured.

2.8. Experimental work

The need for experimental work arose from the need to study the playing technique of some instruments. Later, it became necessary to verify notations of section tunings. Afterwards, there was only a small step required to study harmony and its influence on the sound of the *bateria*. There was also a need to clarify the inherent confusion surrounding the control of the *bateria*. In the first two cases, the work was mainly assisting and helping to verify the results. But an understanding of the holistic control within the *bateria* and *batucada* was not possible without the experiments.

When studying the section compositions and tunings, it became necessary to recreate some archaic instruments. For example, the outdated *lata de manteiga surdo* and all three *surdos de repicar* had to be reconstructed according to the fragments of information derived from de Souza and other sources. The instruments were then adjusted according to the testing and comparison of the sound with the tape.

This procedure may seem unnecessary -implying that notations were enough - and it was certainly controversial. Recreating and testing was important to understand the real action in live situations. The influence of tunings and harmony, and how complicated the relations really are, was easy to study in this way. From the basis of notations, it is impossible to perceive the real balance between instruments, and to distinguish the delicate rhythm and tonal bendings that are necessary to fine-tune the music. Only this experience enables an accurate understanding of the results. After testing, the results were corrected, as was common. Good examples of this are the *surdo de marcação* tunings, which were measured before, but corrected after testing. The influence on the final result, on paper, was minor, but the result of the live music was central. Now we know the specific and authentic character of the music studied. The experimental work also led to some very essential but unexpected results.

De Souza's approach to the control of *bateria* was well hidden in the details of tuning the sections and in organizing the relations between sections. Sectional harmony supports the *bateria's* timing and the serenity of rhythm, and enables better and more stable playing. To find these relations and influences without experimental work would have been impossible. Abstract theories had to be made real in order to be studied.

2.9. Working process

After the first fieldwork trip and material collection, the two established structures of this excursion were the studies of de Souza's terminologies, and the notations made from the recordings of *Os 27 Amigos*. The study of terminologies started by collecting all of de Souza's specific expressions from his papers and from the files of the researcher. These terms were then grouped according to the field that they describe. After this grouping they were analyzed.

The production of the notations started by segmenting all the takes in the recording of *Os 27 Amigos*. This information can be found in the appendix storyboards of the takes. Every minute of every take is listed and fitted with time taggings. In the solos, all instruments were recognized and marked on the list to help the identification of the each part of the music. The notations of individual instruments were then produced from the most recognizable and clear parts of the recording. The overall basic notation of the *bateria* was produced from this material, taking into account the differences between the different takes.

When the studies of the functions and the compositions progressed, and new aspects of the music emerged, the notations of all levels were adjusted. For example, the importance of the harmony and the tonal movement called *balanço*, which proved to be central for de Souza, notably affected the notations, and required the development of new standards. The process continued through the entire work. The last form of the notations was produced after the analysis of the harmony, when the method to measure and compare the tuning levels of the instruments was of a sufficient standard.

The harmonic analysis of *Os 27 Amigos*'s *batucada* style was the next phase of study. Due to the different aspects of de Souza's thinking, it was divided into four separate studies that explain the subject more comprehensively. The preliminary study was done at the beginning when the basic notations were produced. However, the final study was not possible until the whole musical picture started to come together, and the methods of studying sounds with a computer were sufficiently grasped. This study was the most accurate of all, and it affected the whole study, requiring the researcher to examine and harmonize all parts of the work once again.

The analysis regarding *batucada* development and the rhythm analyses are the second to last stage of this study. They are largely based on information acquired from previous analyses and therefore also reflect the deepening of understanding. The analysis on *batucada* development is based on facts related to historical instruments and the development of the *bateria*. The conclusions expressed therein would not, however, have been possible without prior study into *batucada* grammar and the opinions formed during that process.

The analysis of *Deixa Falar*'s *batucada*'s Bum bum vocalization is, in its turn, based on the analysis of the instruments' functions and clues from *Os 27 Amigos*

bateria's performance. Other important starting points for this analysis include the notation of the instruments' rhythms, the thorough knowledge of these rhythms and the background work on the context. The final result would not have been possible without play-based tests carried out in the *bateria*.

The analysis on the *batucada*'s rhythmic, based on the three leveled matrix structure is originally founded on musician's intuition, which was born far before any familiarization with ethnomusicology and its methods. I am applying this outlook on the sheet music material produced in this study. I generate its deepest *clave* base rhythm level system by combining the basic rhythms I found in the study of African music and the common basic rhythms in samba that are based on my own experiences. I finish up the three levelled structure based on Ekwueme's outlook on the structure of African music.

The analyses on the rhythmic and the development of *batucada* brought forth further information that supplemented the information found through previous analyses, so the final phase of this study was to go through all the previous phases and to harmonize and possibly correct the results received from them. For example, in the analysis on *batucada* development, I had originally assumed that the *surdo de primeira marcação* has been the ancestor of all *surdos* and the starting point of their development. However, the analysis of the Bum bum vocalization clearly showed that in *Os 27 Amigos bateria*, the *contra surdo de repicar* corresponds to the original *surdo* and that one of its rhythmical variations is the approximation of the original *surdo* rhythm. Based on this, it appears that the developments of *surdos* seems to have begun from the *ripica* rhythm, rather than the *marca* rhythm, meaning that the previous analyses could be further defined on those points.

All in all, gathering the material and the study has been a very long process. Things that have come up in the analyses and deficiencies in the material have necessitated two further field work trip in 2002-03 and 2004. When one considers the time of the gathering of the original corpus in 1990-91 and the time between the beginning and finishing of the actual work, 2000-16, it goes without saying that different parts of this work have been written at different times. This will, undoubtedly, affect the structure of the work and cause some parts of the work to be partially detached from the other parts. It is as if it was a work based on articles. Questions,

which go unanswered in the texts of the early parts of the work, become answered as the work develops based on new analysis results. The long duration of this work has also had other notable advantages, such as enabling profound familiarization on the topic, as well as the maturation and polishing of ideas. The fermentation of this work has been a very rewarding phase for me and it is far from over. I hope that despite its flaws, the work is also accessible for the reader.

3. HISTORY AND BATERIA ORGANIZATIONS

In earlier literature, the Brazilian samba is often divided into two different genres: rural samba and urban samba. The rural samba as a concept comprises various forms of folk tradition that were practiced widely in Brazil. In the beginning of the 20th century, the urbanization in Rio de Janeiro led to the appearance of new urban forms of samba. One of the forms became popular in 1917 when a *samba carnavalesco* called *Pelo Telefone* was recorded by *Donga*, (Ernesto dos Santos), and released by the local record industry. The rhythm of this samba is written in 2/4 meter. This type of samba was popular until the mid 1930s when another form of urban samba, introduced by the composers of the first samba school in Rio de Janeiro, *Deixa Falar*, displaced it. This new samba has a different rhythm pattern and is written in 4/4 meter. This samba gave birth to the *batucada* of samba schools.

In the beginning of the 20th century urban samba emerged in two distinctively different forms: melodic popular samba, which was recorded and released by the record industry, and the percussive *samba de morro*, which was played in low income suburbs and in the samba schools of Rio de Janeiro.¹ *Samba de morro* is folk music, which is rarely recorded or published. Its melodies were often stolen but were also bought by artists who recomposed, recorded, and published them as popular music.

The beginning of popular samba, like the *Pelo Telefone* in the society of *Tia Ciata*, is well known.² However, not all different types of less popular antecedent sambas and their relatives are known as music. Detailed information about them does not exist. In the literature, there only exists a collection of melodies and casual descriptions of rituals and some instruments. The situation is the same with the roots of the new samba developed in *Deixa Falar*. There is no published information about the music played in samba schools or about its predecessors. Like the older style, this samba also existed as *samba de morro* and as recorded popular music. As a result, we know many of its melodies, but have very little information on how it was played by solely percussion instruments. In fact, on a musical level, we do not know how these

¹ Alvarenga, Oneyda 1950. *Música popular brasileira*. Rio de Janeiro–Porto Alegre– São Paulo: Editora Globo. pp. 293, 297.

² Sandroni, Carlos 2001. *Feitiço Decente. Transformações do samba no Rio de Janeiro (1917–1933)*. Rio de Janeiro: Jorge Zahar Editor / Editora UFRJ. pp. 101-117.

two types of popular sambas were developed. Inexplicably, samba melodies and rhythms just emerged from the darkness and were recorded and published.

The birth of samba school samba as we know it today, coincides with the appearance of the first samba school in Rio de Janeiro: *Deixa Falar*. The gestation of this formation was fairly short. It was founded in the suburb of Estácio at the 12th of August, 1928.³ It started as a *bloco* –a carnival block or group –and was introduced as an organization that was called samba school, or *escola de samba*: This occurred at the 1929 carnival, but it eventually classified itself as a *rancho* before it disappeared following the carnival in 1932.

The new style of *samba de morro*, introduced by *Deixa Falar* and played in the carnival parades, soon acquired the name *batucada*. According to the Portuguese dictionary, *batucada* means an act of *batucar*; *batuque*; rhythm of *batuque*; a song which accompanies *batuque*; popular amusement with percussion instruments, dancing, and singing.⁴ According to the same source, *batuque* is a generic name for various Afro-Brazilian dances and activities.

From the point of view of *sambistas*, the term has a more precise meaning and a very different atmosphere. In an interview with Ismael Silva,⁵ (who was one of the central characters in *Deixa Falar*), and other *sambistas*⁶ like Carlos Cachaca,⁷ the word refers to a sometimes violent samba game, whose enactment was called *batucada*. This tradition was known and carried on in Rio de Janeiro in the primitive samba groups before the samba schools emerged. Generally, *batucada* was only for men, but, as was written in *Fala Mangueira*, women were also seen in these occasions.⁸ Candeia and

³ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 48.

⁴ Dicionário eletrônico Houaiss da língua portuguesa 1.0.5: *batucada*.

⁵ Série Depoimentos 2002. *Bicho Novo, Carlos Cachaca, Ismael Silva, Pioneiros do Samba*. Museu da Imagem e do Som. Rio de Janeiro: MIS Editorial. p. 179.

⁶ Silva, Marília Trindade Barbosa da; Cachaca, Carlos; Filho, Oliveira; Arthur, L. de 1980. *Speak Mangueira –Fala Mangueira*. Rio de Janeiro: José Olympico. pp. 31-32.

⁷ Série Depoimentos 2002. *Bicho Novo, Carlos Cachaca, Ismael Silva, Pioneiros do Samba*. Museu da Imagem e do Som. Rio de Janeiro: MIS Editorial. p. 105.

⁸ Silva, Marília Trindade Barbosa da; Cachaca, Carlos; Filho, Oliveira; Arthur, L. de 1980. *Speak Mangueira –Fala Mangueira*. Rio de Janeiro: José Olympico. pp. 31–32.

Isnard also associate *batucada* with the term *samba-duro*, or hard samba, and describe the music as being one form of *samba partido alto*.⁹

In an interview, Ismael Silva explains what *batucada* actually is. He does not directly say that the music *Deixa Falar* developed should not be called *batucada*, but rather samba. It seems that he does not want to associate the music of *Deixa Falar* with that term. Regardless, *batucada* has today become established as the name of the music developed in Estácio and adopted by many samba schools. It is noteworthy that *batucada* especially refers to the type of samba developed in Estácio by *Deixa Falar* and its derivatives, but not other types. For example, the type of samba transcribed by Silva in 1939 at the *Mangueira* samba school is not *batucada*, even though it is played in a samba school.¹⁰ It has earlier influences and a completely different sense of rhythm.¹¹ De Souza had also confirmed this.

Contemporary *batucada* is mainly played in the rehearsals of samba schools, in various performances, and naturally in the carnival parades of the samba schools. Unlike other forms of samba, pure *batucada* is very seldom recorded and there are only a few commercial recordings of it. Nevertheless, the best way to experience *batucada*, in our time, is to go to a samba school rehearsal or to the carnival.

3.1. What did Deixa Falar invent?

It is said that *Deixa Falar* introduced a new rhythm to samba. Unfortunately, there is very little information about this rhythm. Presumably, the best known description of the early rhythm is in the interview with Ismael Silva made by Sergio Cabral.¹² This verbalized description, “bum bum paticumbumprugurundum,” as Sandroni states, is apparently an accidental creation of Cabral, who did not understand the rhythm of

⁹ Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC: p. 57.

¹⁰ Silva, Egídio de Castro e 1939. O samba carioca. *Revista Brasileira da Música* 6: 45–50.

¹¹ Cunha, Mariana Carneiro da 2001. *Transmissão de saberes na bateria da escola de samba Mocidade independente de Padre Miguel*. Universidade do Rio de Janeiro. Programa de pós-graduação em música mestrado e doutorado. pp. 101-102.

¹² Cabral, Sérgio 1974. *As escolas de samba: o quê, quem, como, quando e por quê*. Rio de Janeiro: Editora Fontana Ltda. p. 28.

Silva's expression, and thus created this famous rhyming.¹³ On the other hand, it is possible that Cabral was precise. It is, however, difficult to see how that is possible. These kinds of verbalized rhythms can be quite tricky when they are taken from their original context and analyzed from a different approach. We will return to this problem later.

This rhythmic pattern is today synonymous with the rhythm of samba. Sandroni called it, "O paradigma do Estácio", or paradigm of Estácio, which was a part of the new rhythmic composition of *Deixa Falar*.¹⁴



Image 8: "O paradigma do Estácio."

Sandroni states that this pattern emerged in the popular sambas by the composers of Estácio. One of the most remarkable sambas of the new style was *Se Você Jurar*, composed by Ismael Silva and released in 1931.¹⁵ It was the same one that Silva used as an example of the new style.¹⁶ It is plausible that this pattern was also used in the percussive samba of *Deixa Falar*. There does not exist any direct evidence of that in the literature. There is only Silva's statement, but nothing that directly connects the "paradigma do Estácio" to "bum bum paticumbumprugurundum."

3.2. Instruments and rhythms of *Deixa Falar*

Nelson da Nobrega Fernandes emphasizes that the instrumentation of the *bateria* of the first samba school was "tamborins, latas de manteiga encouradas (o surdo), cuícas,

¹³ Sandroni, Carlos 2001. *Feitiço Decente. Transformações do samba no Rio de Janeiro (1917–1933)*. Rio de Janeiro: Jorge Zahar Editor / Editora UFRJ. pp. 218–219.

¹⁴ Sandroni, Carlos 2001. *Feitiço Decente. Transformações do samba no Rio de Janeiro (1917–1933)*. Rio de Janeiro: Jorge Zahar Editor / Editora UFRJ. p. 32.

¹⁵ *Se você Jurar*. Francisco Alves/Mario Reis. Orchestra Copacabana. Odeon 10747–B. In the collection CD *Samba, Batuque–Partido Alto–Samba-canção 1917–1947*. FA 159, Frémeaux et Associates. Groupe Frémeaux Colombini SA 1998.

¹⁶ Cabral, Sérgio 1974. *As escolas de samba: o quê, quem, como, quando e por quê*. Rio de Janeiro: Fontana. pp. 21–22.

pandeiros e reco-recos [...]”¹⁷ The description corresponds with other *bateria* descriptions of that era.¹⁸ From that point of view, it can be quite precise.

The real novelty among traditional instruments was the *surdo* (bass drum), which was constructed from a butter barrel with the Bantu style:¹⁹ The drumheads were nailed to the barrel. The function of this new instrument in a carnival parade was clear. The sambas of earlier times had two parts. The first part had fixed words, and was sung by *puxadores* (principal singers), along with the choir of the school. The second part was an improvisation sung by soloists. The beats marking the end of a solo part and the beginning of a choir part were played by the *surdo*. It helped to mark and synchronize the turn of the choir.²⁰ Apparently, the designation, which is still used in association with big *surdos* -*surdos de marcação*, (surdo of the mark / marking surdo) -refers also to this function.

Moreover, it is not evident at all why the first *surdo* was constructed. At that time, *bumbo*, the bass drum of brass bands, was often used in carnival occasions, even with lower social classes.²¹ *Bumbo* would have fulfilled the same function. Was the reason just a joy of invention, an idea of something new, or just a lack of money? It is not known. The potential for that new instrument was probably not foreseen. Whatever the reason was, the invention was fortuitous and led to the development of a new family of instruments and to new ways of playing. It is said that the Jamaican steel drum is the only new non-electronic instrument to have been invented in the 20th century: The *surdo*, however, is also such an instrument. It paved the way for the *bateria* standards of today.

¹⁷ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 51.

¹⁸ Silva, Egídio de Castro e 1939. O samba carioca. *Revista Brasileira da Música* 6: 45-50.
- Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. p. 43.

¹⁹ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 62.

²⁰ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 51.

²¹ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 51.

Fernandes maintains that *Deixa Falar* introduced *cuica*, or the friction drum, to samba.²² There is no information regarding the rhythm that the first samba school had developed. Neither do we know whether somebody used *cuica* and its rhythm in earlier samba. It was not used in recorded sambas of the older style, and it might have been a new instrument in popular sambas and in carnival parades. It remains unclear, however, whether it really was a new instrument in samba and the rhythm utilized in Estácio.

The other instruments mentioned in the *bateria* of *Deixa Falar* are the *tamborim*, *pandeiro*, and *reco-reco*. In the literature, these instruments do not receive the same kind of attention as the *surdo* and *cuica*. They fall in the category of traditional instruments of early samba. Due to insufficient information, it is hard to determine how the modern *batucada* developed in the very early stages. Was the change radical or did the transformation happen gradually? Further studies are required to discern the origins of *batucada*.

The earliest traces of the *batucada*'s rhythm refer to Africa. All instruments in the *bateria* of *Deixa Falar*, except the *surdo*, are Afro-Brazilian instruments mentioned in sources examining the roots of samba schools and Afro-Brazilian activities.²³ It is noteworthy that in the description of the *bateria* of *Deixa Falar*, there is no *atabaque*, or relating heavier instrument, typical of the Afro-Brazilian heritage. Instead, there is the new *surdo*, which is easier to control and play when carried.

It is said that *Deixa Falar* developed *batucada*. In fact, it is plausible that the composers just started to utilize an old African rhythm that was a part of their cultural heritage. The relationship of the rhythms in *batucada* with African rhythms is acknowledged by so many scholars, that there is no reason to doubt it.²⁴ It is not plausible to imagine that African slave descendants in Brazil re-invented a rhythm that was common in Africa also. The composers of Estácio challenged the popular samba of that time and raised this old rhythm to the level of Brazilian popular culture. The first real transformation of this rhythm most likely occurred in *Deixa Falar* when a new

²² Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 53.

²³ Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. p. 42.

²⁴ Araújo, Samuel 1992. *Acoustic Labor in the Timing of Everyday life: a Critical Contribution to the History of Samba in Rio de Janeiro*. Illinois: PhD Urbana. pp. 129-130.

- Mukuna, Kazadi wa 1979. *A contribuição bantu na música popular brasileira*. São Paulo: Global.

instrument, the *surdo*, was utilized. In time, this led to the use of other instruments, and to the development of *batucada* as it is know today.

3.3. How batucada got planted in Portela

In the beginning of the 20th century, the area of Osvaldo Cruz, where the *Portela* samba school was born, was a distant suburb of Rio de Janeiro.²⁵ The social life of the area was active and other suburbs enjoyed equal prosperity because they were able to travel out easily from the central hub of Rio.

Even though different carnival activities were practiced in Osvaldo Cruz,²⁶ samba as a carnival practice was unknown, as several members of the *Portela* old guard, the *velha guarda* attested.²⁷ When the samba school started to develop near the centre, *Portela* immediately became aware and used its connections to familiarize people with the new development. According to the statements of Nozinho, Claudio Bernardo, and Caetano, the new samba of *Deixa Falar* was directly taught to the sambistas of *Portela*. These *sambistas* enjoyed the sambas of *Deixa Falar*. They did not mimic anything that they had seen or heard, but nevertheless received first hand information and direct training from the inventors of the new style. The interest to learn was strong, and the leaders and composers of *Deixa Falar* were called for a long visit to the house of Mr. Napoleão, José do Nascimento. With this direct connection, the seeds of a samba school and *batucada* were planted into the fertile soil of Portela. Caetano and Cláudio Bernardo also mention that there was no [carnival] samba in *Portela* before that. Thus, the sambistas of *Portela* did not have an earlier carnival samba tradition that they could have combined with the new one. It is then quite possible that early *batucada* emigrated to *Portela* in a relatively original form, and that the later tradition had been developed from this base.

²⁵ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. pp. 64-70.

²⁶ Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. pp. 9-11.

²⁷ Vargens, João Baptista M.; Monte, Carlos 2001. *A Velha Guarda da Portela*. Rio De Janeiro: Manati. ISBN 85-86218-10-3. p. 40. (orig: Silva, M.T.B., Santos, L 1979. *Paulo da Portela: traço de união entre duas culturas*. Rio de Janeiro: Funarte. pp. 46-47)

From the very beginning of the new samba, the sambistas of *Portela* were successful in samba contests. On the 20th of January 1929, in the pre-carnival contest organized by *Zé Espingela* (José Gomes da Costa), *Portela* defeated *Estácio*.²⁸ The organization of *Portela* was strong. Paulo da *Portela*'s²⁹ efforts contributed to a strongly organized samba school, which in 1936 received the name *Grêmio Recreativo Escola de Samba Portela*.³⁰

In the beginning, the first conductor, or mestre de *bateria*, of the *Portela* samba school was Adalberto dos Santos, otherwise known as *Betinho*. He established the qualitative foundations of *bateria*. His notably long career lasted until the beginning of 70s.³¹ This should not suggest that he was an active conductor all that time. He was rather one of the organization board members. His reputation as the founder of *Tabajara da Portela*, the *bateria* of the *Portela* samba school, ensured *bateria*'s quality and maintained the ensemble's tradition. The second mestre was Otacílio Carvalho da Silva, otherwise known as *Ximbuté*, and the third was *Oscar Bigode*, known as Oscar Pereira de Souza.³² The period of these three mestres lasted for more than forty years from the end of 1920s until the 70s. This enabled stable progression of *bateria* standards and strengthening the tradition. Each mestre had time and worked with persistence. The information and skills taught by *Deixa Falar* was valuable to the growth of the *Portela* samba school.

At the end of this period, things started to change. A new generation of *mestres* was no longer interested in the tradition. As de Souza described: Harmony was attempted to be taught to the new conductors, but nobody learned nor understood it: There was a complete lack of interest in studying it. Maintaining *bateria*'s tempo and the timing of rhythm was enough.³³

In 1972, the old *mestres* made room for *Mestre Cinco*, who was brought in from the *Unidos de Padre Miguel* samba school. This instigated the beginning of the end for

²⁸ Araújo, Hiram 2003. *Carnaval – Seis Milênios de História*. 2. ed. Rio de Janeiro: Gryphus. pp. 227–229.

²⁹ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85–88530–03–1. pp. 68.

³⁰ Cabral, Sérgio 1974. *As escolas de samba: o quê, quem, como, quando e por quê*. Rio de Janeiro: Fontana. p. 62.

³¹ www.portelaweb.com.br/outro.php Ouros Carnavais –33 a 75 (generated 24.9.2015)

³² Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. p. 42–43.

³³ Author's Archive. Notes 1990–91. p. 92.

the of *Deixa Falar–Portela batucada* tradition, and led to decades of many changing *mestres*.³⁴ Oscar Pereira de Souza died on 30.12.1993. But the death of *Mestre Marçal*, Nilton Delfino Marçal, the last of de Souza’s Brazilian pupils, on the 9th of April 1994, brought the end of the tradition.³⁵ All *mestres* who had developed knowledge during the previous four decades, and knew the original *batucada* tradition, were gone. At the beginning of the 1990s, very little was left at *Portela*. The situation was the same at the *Tradição* samba school, which was founded in 1984 by a traditionalist group who left the *Portela* samba school.³⁶ Some minor practices of the past remained at the *Beija-Flor* samba school in Nilópolis, but none of the past remains now.

3.4. Bateria organizations

A *bateria* is organized like any other big orchestra. It is divided into parts, sections, and subsections to ease control and to enable musical cohesion. The sizes of the instruments define the traditional main parts of *bateria*. *Couros pesados*, or heavy leathers, are the core of *bateria*. They define the tempo and the *cadência* of rhythm. They also lay the basis of *batucada* to which the *miudezas*, or small instruments, add colour. *Couros pesados* are together in one part, while *miudezas* are in one or two parts, either in front of *couros pesados* or in front and behind, depending on the intentions of the *mestre*. *Miudezas* are placed in such a way that the core rhythms can be heard clearly, and that the musical balance with the *couros pesados* is ensured.

³⁴ www.portelaweb.com.br/escola.php?codico=11&cod_cat=3 A Escola > bateria (generated 24.9.2015)

³⁵ Araújo, Hiram 2003. *Carnaval –Seis Milênios de História*. 2. ed. Rio de Janeiro: Gryphus. p. XLV.

³⁶ Araújo, Hiram 2003. *Carnaval –Seis Milênios de História*. 2. ed. Rio de Janeiro: Gryphus. p. 545.



Image 9: *Couros pesados* of a *bateria*. *Mocidade Independente* in 2003. Photo taken by the author.

The organization of a *bateria* depends on two factors: The tradition, and the size of the *bateria*. A very small *bateria* can be just a group of players. When the size grows, however organization is needed. Often, the instruments and the sections are organized in simple rows. *Couros pesados* are at the back and *miudezas* in the front. This organization is sufficient when there are a few dozen players. When the number of players grows to one hundred or more, the organization becomes vital. The audibility and the physical and musical communication must be organized in a reliable way. In all organizations, *miudezas* are in rows near the *couros pesados*, but the organization of the *couros pesados* varies.

There are three older ways to organize the *couros pesados* and the core actions of a *bateria*. The *Portela* tradition, which de Souza and his *bateria* represented, is just one of them. The organization which, for example, *Viradouro* used from 1990–91, is another one. The third is the organization of *Mangueira*, which is almost the opposite of the previous ones. In addition to these three, there is a more modern development of *Mestre Jorgão*, (Jorge de Oliveira). It was used in the *Mocidade Independente* Samba School at the beginning of the 1990s and to some degree in 2002–03. All the following examples are from the same season before the 1991 carnival. The *bateria* sizes are smaller than in the carnival except in the case of the *Viradouro* samba school: However, the basic organization does not change. In the carnival, there will typically be more rows of players.

The core actions that these different organizations reflect are tempo, marking, and cadence, -referring to the polarity of the rhythm, and its accuracy. The most important instruments in these actions are the *surdos de marcação*. The medium and high tone sounds of all other instruments are directed in a limited sound cone from the face of the skin. Bass sounds are unidirectional, and spread in all directions equally so they can be heard in the whole *bateria*.

3.4.1. Portela tradition

The base of the *Portela* organization is depicted in the following plan.

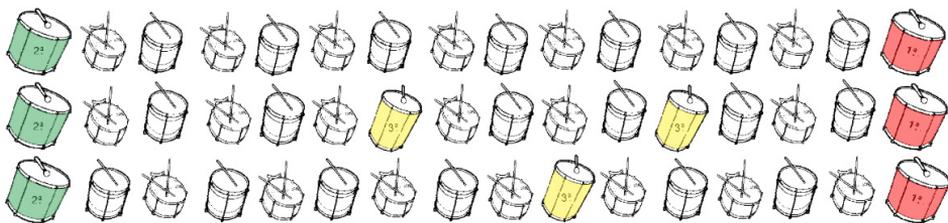


Image10: *Couros pesados* of the *Portela bateria* in December 1990. *Quadra* of *Portela*.

The *surdos* of the first (red) and the second (green) *marcação* are placed on different sides of the *couros pesados*. In this organization, it is easy to hear which *marcação* is played, even though the tuning of the *surdos de marcação* would be inferior. The sound swings clearly from one side to another. The *surdos de terceira marcação* (yellow) between them, define the polarity of rhythm and cadence for the *bateria*. The *caixas* (two sticks) and the *surdos de repinicar* (one stick), which complement the rhythm weaving, are placed alternately in lines between the main *surdos*.

In this kind of organization, the precision of timing is limited by the distance between the farthest heavy leather players. Therefore, proper tuning of the instruments and overall *harmonia*, or harmony, are vital to crystallize the rhythm, the sound, and to hide the unavoidable inaccuracy. When the *harmonia* is correct, inaccuracy does not stand out, and only slightly lengthens the sound of the beats. *Harmonia* also prevents the undulation of the tempo and the rhythm.

3.4.2. Viradouro tradition

The second organization of *couros pesados* is from the *Viradouro* Samba School. Within this setup, the big marking *surdos de primeira* and the *segunda marcação* are organized alternately in rows on the sides of the *bateria*. The *surdos de terceira marcação* are blended between them with *caixas* and *surdos de repinicar*, known as *repiniques*. As with the previous setup, *caixas* and *surdos de repinicar* are also organized alternately in lines. This enables the most intimate contact with the players and different rhythms like in a small band. However, the advantages of section playing will now be lost.

The most critical element of this organization is the audibility of other instruments and rhythms. A side row *surdo* player can easily hear the nearest *surdos* in the same row, but the *surdos de terceira* in the middle and especially the *surdos* on the other side, are difficult to hear. This problem of distinctiveness can be overcome by proper tuning and good harmony. However, the issue is more difficult here compared with the *Portela* style organization, because there is no swing of *marcações* between the sides. The problem is the same with *caixas* and *surdos de repinicar*. A player can only hear the nearest instruments, but cannot unify his rhythm with the rest of his section. The *surdo* organization works well in small *baterias*, but problems begin to occur when the size and the side rows start growing. This also happened for *Viradouro* in the rehearsal of *Sambódromo*. The different sides of the *bateria* lost aural connection, and the *bateria* split in two units of different tempi and timing. There was much confusion in the middle with the *surdos de terceira*, *caixas*, and *surdos de repinicar*. An organization that enabled a great definition and clarity in a small *bateria*, turned out to be disastrous on a larger scale.

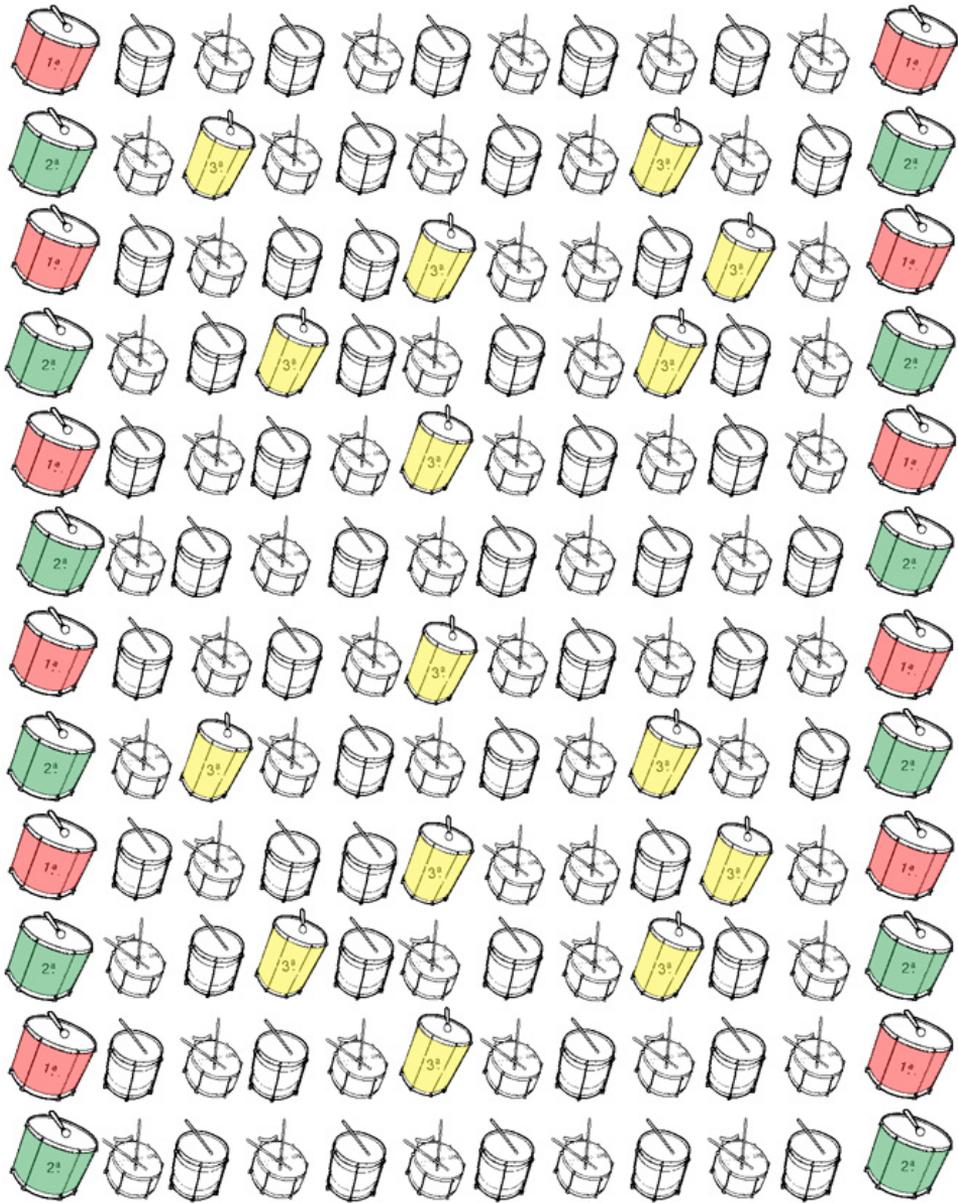


Image 11: The organization of the *Viradouro bateria* at January 1991, *Sambóbromo*.

3.4.3. Mangueira tradition

The third traditional organization is used in the *Mangueira* samba school. It is like a small band that is multiplied randomly. According to the previous example, this could be disastrous, but it works. The reason is the different rhythm, which is not synonymous with *batucada*.

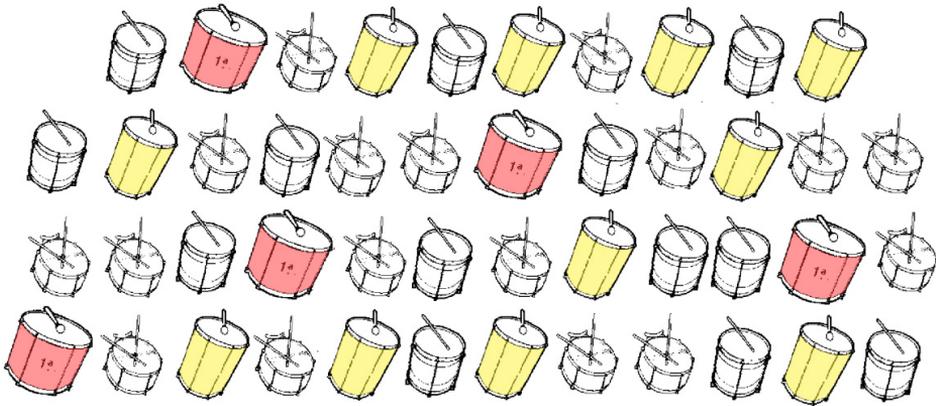


Image 12: The basic organization of *Mangueira* in November 1990, *Quadra of Mangueira*.

The core rhythm is composed from only four elements, which all have different pitches and timbres. They are distinctively different and could easily be recognized even if there was no tuning or harmony in the *bateria*. There is only the *surdo de primeira marcação*, which gives the basic pulse. It does not have *resposta*, or the *second marcação*. This single pulse is cut by a smaller *surdo* called *mor* (yellow in the image). The rhythm of a *mor* is the same as the cutting rhythm of the *Portela* style. In addition to these, there are *surdos de repinicar*, and *caixas*, which play rhythms of their own. This simplicity creates what seems like disorganization. Four different rhythms with distinctively different sounds are interlocked together to produce the main rhythm. In practice, the *couros pesados* part is formed from cells of four interlocking instrument: *Surdo*, *mor*, *repinique*, and *caixa*. The cells are multiplied randomly to form the core section of *bateria*. The composition itself is very tight, but the lack of interlocking beats in the rhythm elements demands great skill for it to be played properly in time.

3.4.4. Mocidade development

The last organization was used at the turn of the 80s and 90s at the *Mocidade Independente* Samba School. *Mestre Jorgão* developed it after *Mestre André's* death. He also developed the rhythm to be distinctively different from the rhythm of *Mestre André*. The result was extremely tight with a solid *bateria* sound and rhythm. This development lasted in its complete form for only a few years. It disappeared when *Mestre Jorgão* left *Mocidade*, although some features are still in use.

In this organization, the *batucada's* rhythm is modernized. The *terceira marcação* is played without *cadência*, and with very little variation. All other *couros pesados* play their own strict rhythms with no variation. All 91 *couros pesados* are very precisely tuned. The process of tuning and cross checking is very time consuming.³⁷

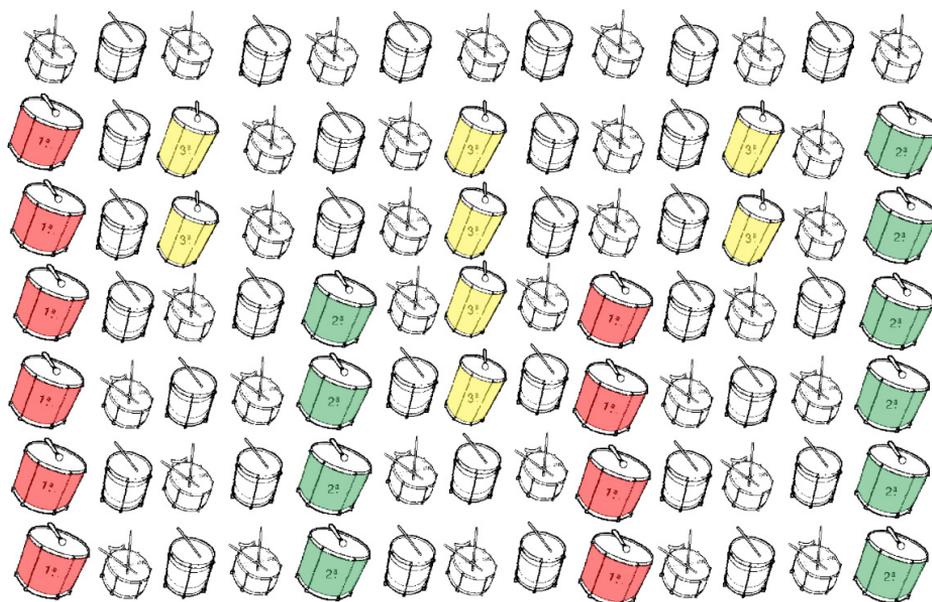


Image 13: The *Couros pesados* of the *Mocidade Independente* carnival *bateria* in October 1990, Campo do Bangú.

The first and the second *marcação* are played by four rows of surdos. On the first four lines, there are three parallel *baterias* of minimum distance between the sides.

³⁷ Personal communication with *Mestre Jorgão* in Kokkola, Finland in 26.8.2006

Each of them is composed of four basic cells of two *surdos de marcação*, and in total, there are three *caixas* and *repiniques*. The big *surdos* in the middle are common with the neighbouring cell. The next three lines are organized quite traditionally. The whole unit is composed of four small *baterias* that interact together. In many ways, this organization resembles the system of *Mangureira*, but it is more thoroughly organized and the tuning is tight. As with *Mangureira*, the rhythm is also simple: The *terceira marcação* is simplified and there is no variation in the rhythm. Five basic rhythms are woven together, with the advantage being the rhythm of *Manguira*, *Mocidade* has good interlocking rhythms. It is easy to play in time. A notable feature of the rhythm was that the *terceira marcação* was played in triplets.

3.4.5. Os 27 Amigos

De Souza's *bateria*, *Os 27 Amigos*, was originally founded to play in the film *Natal da Portela* (Christmas of Portela). *Natal da Portela* was the nickname of Natalino José do Nascimento, who was the ex-honorary president of the *Portela* samba school.³⁸ After filming, this old style *bateria* was reorganized into a more modern formation, and it started to perform independently. The following plan was given by de Souza. It was the plan of the original *bateria* in the filming; *bateria* of the old times, (*bateria dos anos anteriores*).

³⁸ Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. p. 15.

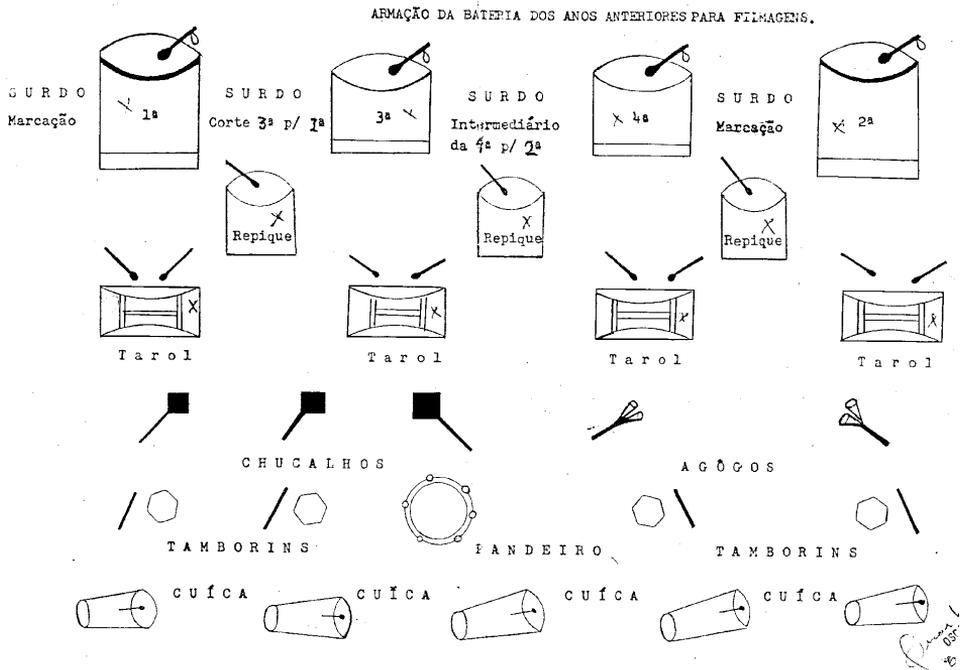


Image 14: De Souza's basic plan of the *bateria*.³⁹

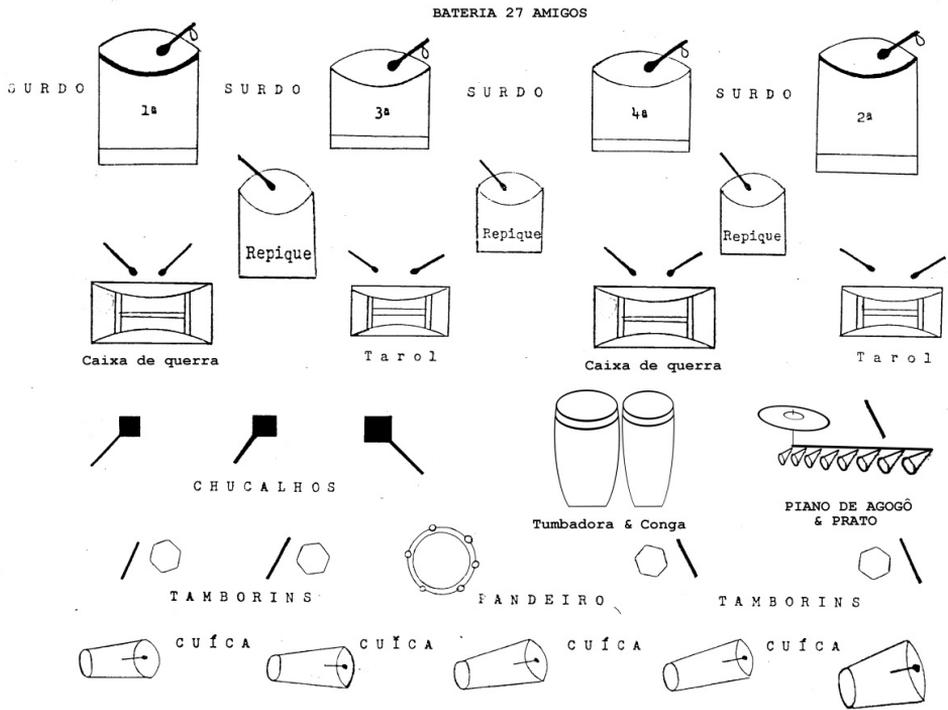
This plan shows the traditional organization of the *bateria*. The heavy leathers, known as *couros pesados*, are behind, and the small instruments, or *miudezas*, are in the front. De Souza marked the *couros pesados* with a small cross.

For the sake of appearance, de Souza modernized the *bateria*. The *tarol* section and the *agogô* sections have changed. At least one of the *tarols*, but probably two, are substituted by larger *caixas de guerra*, or war drums. These can clearly be heard in the recording. De Souza preferred this practice with bigger *baterias*. This practise was still seen in 1991 in *Beija-Flor*, where Souza had conducted.⁴⁰

The traditional two bell *agogô* section was changed in favour of the *piano de agogô*, and set of Cuban *congas* and *tumbadoras*. In the recording, it can be heard that the *tumbadora* is not alone, but also has a smaller counterpart that is probably the *conga*. The following plan shows the final form of the *bateria*. The exact locations of the instruments are not known.

³⁹ Author's archive. Armação da bateria dos anos anteriores paper.

⁴⁰ Author's archive. Beija-Flor January 1991.



MESTRE

Image 15: Performing *bateria* of *Os 27 Amigos*. The plan is modified from the original one by the author.

4. BATERIA AND BATUCADA

We will now delve deeper into the system of *Portela*, and study the organization of *bateria* and the musical ideas of *batucada*. The system was initiated in *Deixa Falar*, and it was developed to its full glory in *Portela* by three mestres during the next four decades. It was the time of creating organization, developing new instruments, and finding new ways to play, and most importantly, to develop the theory of *batucada*. We start by studying how de Souza organized his *bateria* and what kind of instruments he used. We then proceed to the rhythms and to the basic compositions. After this, we turn our attention to the ideas that conduct the musical actions on the practical level. Lastly, we will concentrate on the theory of *batucada*. Our study will focus on the *bateria Os 27 Amigos*. De Souza says that this *bateria* has the essence of theory and *batucada* within it.

4.1. Instruments, rhythms and functions

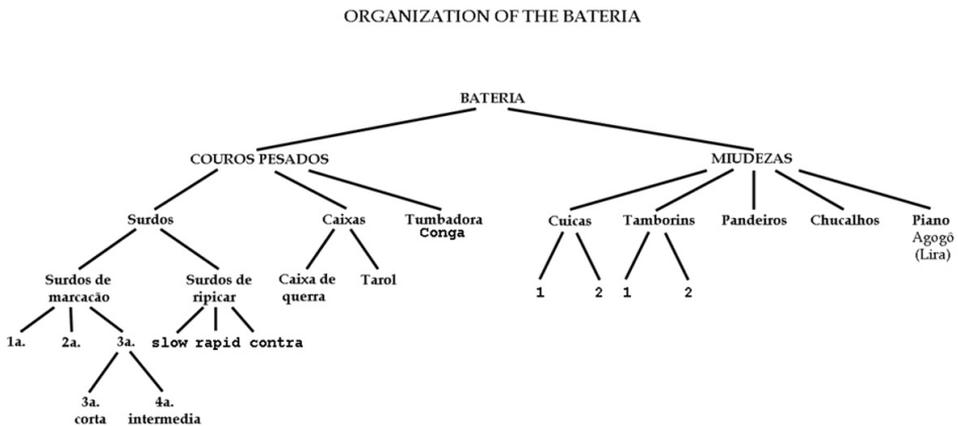


Image 16: The organization of the *bateria* in parts, sections and sub-sections.

The *bateria* is divided into two main parts. The physical manageability of the instruments defines these parts. All heavy instruments that are carried with a strap, like the *surdo* and *tarol*, belong to the section called *couros pesados*, or heavy leathers. *Tumbadoras* and *congas* belong to this section also. Lighter instruments, *agogôs*,

tamborims, and others that can be held in one hand, form a part called *miudezas*, or small things.

4.1.1. Couros pesados

The name *couros pesados* obviously refers to the time when all drum skins were made of leather.¹ Today, only the skins of *surdos de marcação* and *cuicas* are leather, whereas others are made from artificial materials. It is typical for the instruments of the *couros pesados* section to require both hands to play them. They are the heaviest instruments in the *bateria* –the *surdos* especially, which are quite impossible to handle without the aid of a strap. Only the *tarol* and *caixa em cima*, or upper *caixa*, are supported by the crook of the arm. They do not necessarily need a strap, but still belong to this section. For these reasons, the *tumbadora* and *conga* are also located in this section. They are clearly heavy instruments, and not *miudezas*. The fact that the *bateria* of this study exists to perform mainly on stage, does not change the definition of the section.

When conversing with de Souza, the organization of the *bateria* on this level did not receive much attention. The main issues were on more detailed levels. This partition is common in all samba schools in Rio de Janeiro, and not only in *Portela*.²

4.1.2. Surdos

The *surdos* is the biggest section in the *bateria*. De Souza emphasized that the *surdo* is the most versatile of all instruments. No other instrument is divided into so many sections and subsections. This is interesting when remembering that the *surdo* is a new instrument. If we took away all *surdos* and changed the *piano de agogô* and the *tumbadora* for the original corresponding Brazilian instruments, the difference with the first *baterias* of the first samba schools would be only nominal. When we talk about the

¹ Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. p. 43.

² Cabral, Sérgio 1974. *As escolas de samba: o quê, quem, como, quando e por quê*. Rio de Janeiro: Fontana. p. 30.

development of *batucada*, it seems that the development of the *surdos* is the key detail. Modern *batucadas* would not exist without them. All variations of *surdos* were developed in the 20th century after the invention of the first *surdo*. Therefore, the definition of this section also follows the historical progression.

From a technical point of view, it is interesting that the playing technique of all *surdos* differs from the other *couros pesados*. *Caixas* are played by two sticks, and *atabaques* and *tumbadora* with bare hands. All *surdos* are played with one stick or a beater and with a bare hand. This resembles the playing technique of some West African drums.

The *surdo* section is divided into two sub-sections. They are the big *surdos de marcação* and small *surdos de repicar*, which are also called *repiques*.

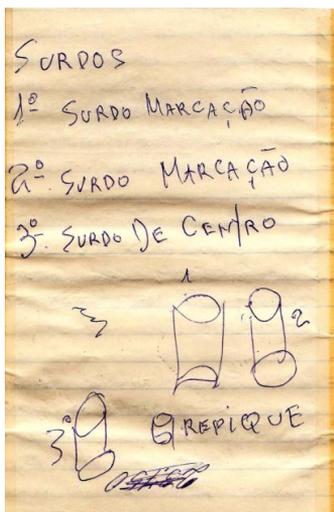


Image 17: The *surdos*. Sketch by de Souza.³

De Souza's drawing depicts the system of the *surdos*. Here, he calls the third *surdo* by the title, *surdo de centro*. There are two obvious reasons for this: Firstly, in the *bateria*, it is positioned between the first and the second *surdos*. Secondly, it plays the rhythms between the *marcações* of the first and the second *surdo*. In addition to this denomination, he also calls it *surdo de terceira marca[ção]*, or *surdo* of the third mark.⁵

³Author's archive. Notes 1990–91. p. 4.

⁵Author's archive. Oscar Bigode paper.

Surdos de marcação means all *surdos* of the bass subsection. They form a system of their own in that each *surdo* has a separate function. Due to this, the *surdos de marcação* section is traditionally divided into three groups: *Surdos de primeira*, *surdos de segunda*, and *surdos de terceira marcação*.

4.1.3. *Surdos de primeira* and *segunda marcação*

These two instruments define the very basis of the system. Their low sounds can be heard through the whole *bateria*, leading them to be good timing marks for other players. Their diameter can be up to almost 30 inches, but usually the sizes vary from 20 to 24 inches. Depending on the length of the desired sound, the height of *surdos* vary from about 18 inches to 24 inches. The longer the *surdo* is in ratio to its diameter, the more sustainable the sound is. Relatively short *surdos* emphasize the beat, and the longest *surdos* the sound.

The sizes of the *surdos* used in this *bateria* are not known, but based on the sound, the estimate is that the diameter is 20–22 inches and the height is about 18 inches. It is also possible that the size of these two *surdos* is not the same. This practice is common in modern *baterias*, but de Souza did not mention anything like that. The main indication about the sizes are the first *bateria* plan and Souza's drawing, where he separates the size of the first and the second *surdo* from the size of the third *surdo*. Separating the similar-looking first and second *surdos* by tuning is a normal practice.⁶

In *batucada*, the *primeira*, (the first), and the *segunda*, (the second), *marcação* always belong together: “A Bateria é marcada em dois Tempos: –surdos de 1^a e 2^a,” meaning the *bateria* is marked with two beats: *surdos* of the first and the second.⁷ The only situation where the first *marcação* is played alone, is in the presentation of the lyrics, before the whole *bateria* starts. The full *batucada* makes it difficult to hear the voice of the *puxador*, or principal singer. In the presentation, the *surdo* is played together with the *cavaquinho*, possibly the guitar, and some *miudezas* like the *reco-reco* or *ganzá*. A smaller *surdo* of the *terceira marcação* is often used in this setup. In the presentation of the lyrics, the simplest possible *batucada surdo* rhythm is:

⁶ Riotur 1991. *Memória do carnaval*. Rio de Janeiro: Oficina do Livro. p. 316.

⁷ Author's archive. Oscar Bigode paper.

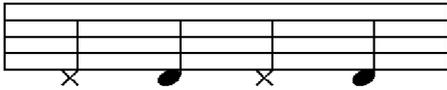


Image 18: The simplest form.

The rhythm can also be the following. Hand strokes precede the main beats.



Image 19: The rhythm of the third *surdo* with syncopating left hand. Closed strokes are marked by C and open strokes by O. Closed strokes are produced by the left hand, which is left to rest on the drum skin until the beater's stroke.

In the full *batacada*, the *surdo de primeira marcação* plays the basic mark. According to de Souza, “O surdo de 1_a, faz *contra tempo* para o de 2_a,” meaning the *surdo* of the first makes *contra tempo* for the [*surdo* of the] second.⁸ This action is also often described as the *surdo* of the first *marcação* playing the *pergunta*, or the question, and the *surdo de segunda marcação* playing *resposta*, or the answer. In contrast to the European practice, the second and the fourth quarter beats of the bar are the main beats.

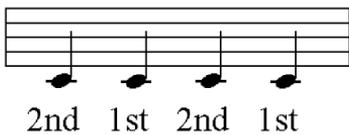


Image 20: The second and the first *marcação*.

4.1.4. Surdos de terceira marcação

De Souza has many denominations for these *surdos*. They are *surdos de terceira marcação*, (the 3rd mark), *surdos de centro*, (center surdos), and *surdos de cortar*,

⁸ Author's archive. Oscar Bigode paper.

(cutting surdos). The first one is the most specific one. The second one refers the position of the *surdos*, and the third refers their general function. The *terceira marcação* is an interesting exception in the terminology of *batucada* because it is the only example of a hidden term. It is a concept that is defined using imperfect terminology. The term *surdo de terceira marcação* encompasses two instruments that have different functions and rhythms. In the traditional *batucada* terminology, they do not have separate names.⁹ Deviating from this practise, de Souza allocates names to both. He emphasized that this is his own solution to clarify the practise. This is why this group is divided into the sub-groups of the *terceira* (third), and the *quarta* (fourth), *marcação*, as he calls them. In this study, we use this terminology when necessary.

The size of the *surdos* in these sub-groups is different from those in the *primeira* and *segunda marcação*. This is done to separate the sound from the basic *marcações*. The third *surdo* is probably the biggest of all because its tuning is the lowest. In the *Portela* tradition, the third *marcação* is tuned low. If the size is not that big, the tension of the skin must be very loose that threatens a rupture of the skin. The fourth *surdo* is smaller in order to facilitate playing the more dense, intermediating rhythm. Taking into consideration the estimated size of the *surdos* of the first and the second *marcação*, the diameter of the third *surdo* may be 24 inches, and the fourth about 18 inches.

The concept of *surdos de terceira marcação* varies from one *bateria* to another. The functions of these instruments can normally be explained precisely. They can *corta* (cut), make *intermediárias* (intermediators), *dobra* (double), *recorta* (pattern), *segura* (secure), etc., depending on the *bateria*. In all *baterias*, the basic idea is the same: The *terceira marcação* is almost always divided into at least two different functional parts. An interesting exception was seen in 1991 in the *bateria* of *Estácio de Sá* samba school where the *terceira marcação* was composed of three different rhythms.

In de Souza's *bateria*, the basic functions and rhythms of these *surdos* are *cortar* (cross cutting), and the making *intermediárias* (intermediators). *Surdo de terceira marcação* plays the cross cutting rhythm of the *surdo* composition, and, together with its pair, the main rhythmical cadenzas of *batucada*.¹⁰ The cross cutting here means dividing the long tones of the first and second *marcações* in half. The function of the instrument is defined as “faz contra tempo cortando para 1^a e 2^a,” meaning making

⁹ Author's archive. Notes 1991. p. 106.

¹⁰ Riotur 1991 *Memória do Carnaval: Oficina do Livro*. p. 317.

cutting contra tempo for the first and the second marcação.¹¹ In de Souza's terminology, the term *contra tempo* is not limited only to the two major *surdos*, but is used to describe corresponding action universally.

4.1.5. Surdo de quarta marcação

In *Os 27 Amigos bateria*, this *surdo* is an intermediate. The rhythm is more dense than the exclusively cross cutting rhythm. Unlike its counterpart, which cuts the main *marcações*, the semi-dense fourth *marcação* supports the timing of 1/8 and 1/16 beats, and also supports the timing on the main *marcações*. It signals the timing from the first *marcação* to the second, and for all other instruments of the *bateria*. The rhythm also has clear *cadência*, which defines the polarity of the rhythm.

De Souza notes that the function of the *quarta marcação*, (the fourth marking), is “faz as intermediárias, sempre cortando para dar balanço,” meaning make the intermediators always cut in order to give *balanço*.¹² He uses the term “cutting” in its wider meaning. It does not only refer to the cross cutting rhythm as with the *surdo de terceira*, but the wider action of making rhythm more dense: A more dense rhythm cuts a coarser rhythm in smaller parts, whereas the second *surdo* cuts the first one. The third *surdo* cuts both the preceding ones and the fourth *surdo* cuts them all.

The *surdo de quarta marcação* is the one that completes the overall coarse rhythm of the other *surdos* and combines the rhythmic and tonal passage of the section into an energetic whole, where the *balanço*, meaning the tonal aspect of rhythm, is nicely emphasized.

¹¹ Author's archive. Oscar Bigode paper.

¹² Author's archive. Oscar Bigode paper.

are about half of the diameter of the big *surdos de marcação*. They are typically 12 inches. However, larger and smaller examples do exist. The playing method is basically the same as with the big ones. There is a stick in one hand while the other is free. The tuning is much higher and the rhythm is more dense. The rhythmic patterns are distinctively different from those of the *surdos de marcação*.

De Souza composed this subsection from three different rhythms. When there were enough *repiques* in the *bateria*, he divided them into smaller groups, which all had different tunings and rhythms. He also preferred to emphasize this tonal and rhythmical dividing by using instruments of different diameter. The smallest ones can be 10 inches, the middle ones 12 inches, and the biggest ones, which also are the longest, 14 inches in diameter.¹⁵ With this solution he ensured that the pitches of different parts of the subsection stood out from each other. This solution has been essential especially when moisture sensitive leather skins were used. Modern nylon skins are not that sensitive.

All *repiques* have the same function and belong to the same *floriado* rhythmic category, even though the rhythm of the rapid *repique* is very straight. It varies constantly like the others, which puts it into the same category with the others. This variation is done by damping or leaving out some strokes. The slow *repique* rhythm resembles the rhythm of *samba de roda*. The rapid *repique* plays a dense pattern typical for contemporary *batucada*. The tonal passages of these two instruments rise up towards the end of each quarter of the bar. The last quarter of the slow *repique* is tonally more flat and clearly cadential.

The pattern of the *contra repique* represents the unpredictable tonal movement of the *surdos* of the *primeira* and *segunda marcação*. It provides contrasting tonal passage for the rhythmic weaving. As de Souza mentions: “Surdos de Repique [...] fazendo floriados dando assim um balanço,” meaning *surdos* de repique [...] making floriados thus giving one balanço.¹⁶ All *repiques* play *floriado* rhythms, and together, they bring a more [collective] *balanço* to *batucada*.

¹⁵ Author’s archive. Notes 1990–91. p. 120.

¹⁶ Author’s archive. Oscar Bigode paper.



Image 23: *Floriando* rhythms of the *repiques* of the first take.



Image 24: The bipolar tonal movement and the rhythm variation of the *contra repique*.

The first function of *surdo de repique* is to, “Faz a chamada para a 1^a e 2^a entrar no samba;” meaning make the call for [the *surdos de*] *primeira* and *segunda* [marcação] to enter samba.¹⁷ The call means playing two beats called *chamada dos surdos*. This is the role of the slow *repique*.



Image 25: An introduction played by a *repique*. *Chamada dos surdos* is the two accented beats.

De Souza does not mention that the *repique* also leads the *breques* (breaks) of *batucada*, although it can be heard in the corpus. The *breques* are in two parts: The

¹⁷ Author’s archive. Oscar Bigode paper.

repique plays a *pergunta*, (question), and the rest of the *bateria resposta*, (answers). From that point of view, the *surdo de repique* is also the commanding instrument of the *bateria*. The *mestre* gives signals for that instrument to lead certain actions.

De Souza describes how originally, there were no introductions played by *surdo de repique*, but rather the *bateria* started from the lead of the *surdo de primeira marcação*. *Repique* got involved when *baterias* wanted to show a greater spectacle with *batucada*.¹⁸

The other function of the *surdos de repique*, which de Souza mentions, is the total development [of the rhythm] for the *repiques*. This does not mean making solos, but rather rhythmic development and variation in cooperation with the other instruments of the subsection. This action, when it is done in mutual understanding with other skilful players, generates a versatile and lively rhythmic weaving. It constantly varies the rhythm, produces new passages, and animates the music. This way of playing *desenvolvimento total* differentiates the *repique* subsection from the other sections of heavy leathers. All these variations and rhythmic patterns, even though they might be used with a certain degree of freedom as with the *surdos de terceira marcação*, are predetermined.

4.1.7. Caixas

Caixa is a common noun for drums that have resonators, snare drums, and are played with two sticks. De Souza calls the smaller *caixa* by name *tarol*, and the bigger one, *caixa de guerra*, or war drum. These larger *caixas* evidently refers to the original source of those drums, which are army orchestras.¹⁹ These days, the *caixa de guerra* is not very popular in *baterias*. From 1990–91, they were still seen at least in the *bateria* of the *Beija Flor* samba school, where de Souza was the *bateria* supervisor only a few years

¹⁸ Author's archive. Notes 1990–91. p. 95: "Intro is a newer development, when [baterias] wanted to make more show in playing. Originally *bateria* joined singing and *cavaquinho* [possibly also a *surdo*] 'directly' without intro with the lead of *surdos*."

¹⁹ Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. p. 43.

earlier.²⁰ The influence was still clear. From 2002–03 they were seen only in the *Mangueira* samba school.²¹

The playing technique of these instruments varies depending on the tradition and the desired rhythms. There are two basic ways to hold these instruments. They can be held up in the crook of the arm *-em cima*, (up), or they can hang in a strap, *em baixo*, (down). Normally, the lighter, high tuned instruments are held up and the sturdier, lower tuned ones are held down. One reason for this practice is that if the instrument is very shallow, it hangs from the strap like a plate. In that position, it is quite impossible to play when marching. The other obvious reason is that the high sound of the instrument can be heard better when the instrument is level with the upper body and the sound from the skins is directed horizontally.

De Souza divides the *caixa* section in two functional subsections of different instruments, which have distinctively different tunings and rhythms.²² The two instruments are the *tarol* and the *caixa de guerra*. In the corpus, the section is divided in the same manner as in the 50 player *bateria*.

4.1.8. Tarol

The *tarol* is smaller than the *caixa de guerra*. Its diameter is typically 12 inches. The noun *tarol* is often associated with two different drums. They have the same diameter but the height is different. The height of the lighter one can be as little as 2–3 inches. Due to the limited volume, the sound of the instrument lacks lower frequencies and is distinctively high. The body of the other instrument is higher by 5–8 inches, therefore creating sound that has more bass content and roundness. The *tarol* is also called *caixa*, but the classification is not always clear.

There was no extensive conversation about the sizes of the *caixas* with de Souza. The only comments are that the *tarol* is smaller than the *caixa de guerra*, its

²⁰ Author's archive. Beija-Flor, January 1991; Curriculum vitae of de Souza; Oscar Bigode paper.

²¹ Author's archive. Video: Ensaio técnico at Sambódromo in the 19th of January 2003.

²² Author's archive. Notes 1991. p. 94: "In the Mestre Bigode's example *bateria* of 50 instruments, the *esterinha* section is composed of *caixas de guerra*, which play 'direct' rhythm and from *tarols*, which play more complicated pattern. The *caixas de guerra* give strength and sturdiness and the *tarols* rhythm." –Author's archive. Posições dos instrumentos de uma *bateria* paper.

2:2,14-2,53

Tarol
sequimentos agudos

4

7

10

13

16

19

22

Image 29: Variation in the *sequimentos agudos* of the 2nd take.

4.1.9. Caixa de guerra

The size of the *caixa de guerra* is typically 14 inches, where the height can be as much as 10 inches. Its basic construction is the same as with the *tarol*. De Souza defines the rhythm and the function of *caixa de guerra* as, “Marca para os Tarois, fazendo balanço total,” or mark for the *tarols*, making total *balanço*.²⁷ In this way, he also provides guidelines for the playing technique of the instrument. The easiest way to produce *balanço total* is to use the *repinique* technique: The first three beats of each quarter are

²⁷ Author’s archive. Oscar Bigode paper.

beaten by the leading hand. During this action, the stick sweeps over the skin starting from the middle towards the edge. The last beat is from the assisting hand. This is the way to produce the tonal aspect of *balanço*. With other techniques, it is more difficult but not impossible.



Image 30: The rhythm of *caixa de guerra*.

The distinctive swing of the rhythm is produced by dampening the second beat of every quarter. By combining these two actions in the same pattern, de Souza produces the maximum *balanço*. The other function, the mark for the *tarols*, doubles and emphasizes the first and second *marcações* of the big *surdos*. This is done to support the timing of the *tarols*.

When these two *caixa* patterns are superimposed, they produce the overall pattern of the *caixa* section. The *caixa de guerra* creates *balanço* with its full power, but its pattern is rhythmically straight, and emphasizes only the *marcas*. In contrast, the bare *tarol* pattern is *floriando*, and there is no tonal or temporal *balanço*. In addition to *floriando*, the *tarol* emphasizes the rim shots, which infuses another musical effect into the weaving of the rhythm. With this combination of *marcas*, *balanço total*, *floriando*, and *sequimentos agudos*, de Souza produces a complex composition for this section using only two different instruments.

4.1.10. Tumbadora and conga

The *tumbadora* section is the last of the *couros pesados*. The *tumbadora* and *conga* are not Brazilian instruments, but are Cuban. Their Brazilian counterparts are *atabaques*, which normally have a somewhat lighter construction. Even though de Souza mentions only *tumbadora* in the description of the show, it is clearly not the only perceived instrument. A *conga* is distinctly heard.



Image 31: The basic rhythm of *tumbadora*.

The role of the *tumbadora* section is emphasized in the *paradas* of the third take as accompaniment instruments. Its rhythm changes depending on the rhythm of the solo instrument. In the background *chucalhos*, the rhythm is quite straight and emphasizes the *marcas*, which are typical for the *chucalhos*. The *floriados* are emphasized with the *tamborims*.

Neither the *tumbadora* nor the *conga* are in the instrument functions listing of the *bateria*. From a vocal point of view, they resemble the *contra repique* -the low tuned *surdo de repique*. A set of *tumbadora* and *conga* is more versatile in its vocal qualities. Just one player with a set of drums can improve the *balanço* of the *bateria* better than any single player of a big *surdo de repique* can. Taking into consideration the size of the *bateria*, de Souza's tonal aims, and his definition about the harmony, "não teve suavidade no conjunto da bateria, a bateria não teve harmonia;" if there is no tenderness in the *bateria*, the *bateria* does not have harmony.²⁸ The use of cuban drums to accomplish *couros pesados* is logical.

²⁸ Author's archive. Desafinação dos sons paper.

4.1.11. Miudezas

The *miudezas* form the other main part of the *bateria*. Technical evolution has changed these instruments throughout history, but most of them are traditional and not new inventions like *surdos*, or loans like *caixas* and *tumbadora*.

4.1.12. Cuica

The first section are the *cuicas*. This section is divided into three subsections, which all have different rhythms and tunings. This associates the *cuicas* closely with the *couros pesados*. If the basis of the division within the two main parts of the *bateria* were musical and not technical, the *cuicas* would preferably belong to *couros pesados*.

The basic functions of the *cuica* are not entirely evident in the corpus. The rhythm of the *cuica* section is composed of two *ripica* and one cutting rhythm.



Image 32: *Cuicas* according to the third take

The composition is delicate, and there are features that are not typical for *cuica* sections of the samba schools. The *ripica* rhythm is composed of two steady components. The first one, marked as *ripica 1*, is typical for *batucada* whereas the other one, *ripica 2*, tends towards the *samba de roda*. The instruments are tuned a fourth apart. The tones blend nicely with each other, and it is difficult to differentiate them from each other. It sounds like some of the beats would undulate by themselves. In practise, the legato

sounds of the lower pattern yield lower pitches for the staccato beats, which then causes the effect of rippling or undulation.

The cutting rhythm brings in the second undulation. It bends the second and the fourth quarters downwards. The effect is clear, despite the difficulty in separating the cutting rhythm from the *ripica* composition, since they merge so effectively. The high tones of the cutting *cuica* are not heard on the tape, apparently, because of the quality of the recording. Their ability to enrich the pattern can easily be seen in the notation. This kind of delicate composition is rare in *batacada*. Normally, *cuica* passages are considerably more rugged and straightforward if they are composed at all.

4.1.13. Tamborim

De Souza defines *tamborims* by saying that they are the “cântico da bateria,” the canto of the *bateria*.²⁹ This may refer to the *tamborims*’ quality to speak and make different rhythmic passages. They play different *desenhos*, or rhythmic patterns, to emphasize and comment on the musical actions of the *bateria* and samba. De Souza called these patterns *conversação*, (pl. *conversações*), or conversations.

These days, there are myriads of different rhythmic patterns for *tamborims*. The most common of them are *súbida*, *teleco-teco*, and *carreteiro*. These three also have names unlike most of the others.



Image 33: Some *conversações*: *súbida*, *teleco-teco*, and *carreteiro*.

²⁹ Author’s archive. Oscar Bigode paper.

The *teleco-teco* resembles the pattern of the modern samba, which de Souza called *pé-chato*. However, names do change over time. *Súbida* is mostly used to raise samba at the beginning of a line. *Teleco-teco* and *carreteiro* are more accompaniment figures.

The term “cântico” may also refer to the special *tamborim* composition of the corpus. Departing from the normal practice, the rhythm of the section is composed of two different slightly varying patterns, which are tuned to different levels. These patterns subsequently blend with each other and produce a vivid, singing overall rhythm. This way, they produce all the necessary *floriados*, “todo os floriados necessarios.”³⁰

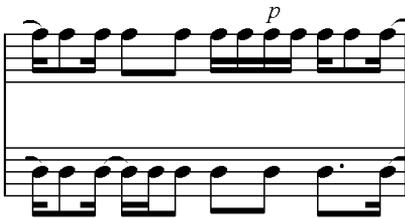


Image 34: The rhythms of *tamborims*.

This composition is apparently developed from the older practice of playing *tamborims*, where many *floriado* rhythms are played simultaneously and quite randomly. In samba schools, this way of playing is no longer fashionable, and the only time I witnessed it in a *bateria* rehearsal was in 1990, at the *Mangueira* samba school.³¹ Corresponding ways of playing can also be found in old Brazilian movies like *Orfeo Negro*.³² Today, this custom can be met in street *pagodes* -in old style melodic samba sessions.

The choice for the composition of *tamborims* in the corpus is logical. The different *tamborim* patterns are fixed and are composed for certain sambas and lyrics. The compositions are not inter-related. The performance of the *bateria Os 27 Amigos* is completely rhythmical, as in “Um Espetáculo de Ritmo,” or rhythm spectacle.³³ There are no lyrics or melodies except in the solo of the *piano de agogô*. The modern

³⁰ Author’s archive. Oscar Bigode paper.

³¹ Author’s archive. Mangueira, October 1990.

³² *Orfeo Negro* 1959. Movie, Brasil. Producer: Sacha Gordine. Director: Marcel Camus.

³³ Author’s archive. Explicação paper.

composed patterns, do not have a melody or lyrics for a base. They are not necessary here. The performance is based on a different idea.

4.1.14. Pandeiro

The *pandeiro* section is probably just one instrument. It is so silent that it can only be heard during the *piano de agogô* solos in the first and second take. Apparently, it plays continuously throughout. Other instruments, though, cover it in the recording. In live action, its sound can be a little more audible. Its role in the performance is quite small, but de Souza defines an important function for it: “Floria os variedades de sequimentos;” embellish the variations of *sequimentos*.³⁴ It is not only a traditional add-on, but it has an important compositional role as it widens the rhythm of *caixa*.

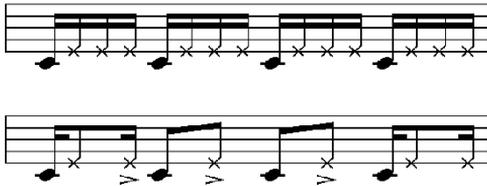


Image 35: Two rhythms of *pandeiro*, upper *marcando* and lower *floriando*.

In the first take, it plays a straight *marcando* rhythm of the upper example, which can be found when the tape is filtered. In the second take, it varies the *sequimentos agudos* rhythm of the *caixa*. By this action, it gives contrast and creates tension for the *caixa* rhythm. The notation is just a sophisticated guess because only the slaps of the two middle quarters can be heard in the recording. A rhythm like this and its variations are typical for *pandeiro*, so this can give an idea of how the variations of the *sequimentos agudos* are played.

³⁴ Author's archive. Oscar Bigode paper.

4.1.15. Chucalhos

Nowadays, *chucalhos* are rare instruments and only very few can be found in the samba schools. This instrument is currently replaced by *ganzá* or *chocalho de pratinelas*, which is also called *rocar*. The *chucalhos* are a pair of tin plate maracas. The sound is vivid and produces light timbral movement when one cone one is partially dampened. The overall rhythm is formed of two different parts.



Image 36: The rhythm of *chucalhos*.

The function of the *chucalhos* is to “Aumenta o ritmo e o balanço,” increase rhythm and *balanço* for *batucada*.³⁵ The increase of rhythm in fully rhythmic music would not make a lot of sense, but the point here is the sound. The sound of *chucalhos* is distinctively different from the other instruments of the *bateria* and gives a contrasting rhythmic and tonal element to the music. Unlike most of the instruments, the rhythmic passage is very balanced without syncopating emphasis, and relies on the basic *marcações* and the cutting rhythm. It balances well the temper of the other rhythms of *batucada*. The flowing sound brings one more *contra balanço* to the music.

4.1.16. Reco-reco

There is no *reco-reco* in this *bateria*. The *chucalhos* that belong to the same sound register and to the same rhythmic category do the job in this composition. The modern *reco-reco* is one of the improvements that de Souza brought into the *bateria*.³⁶ From that point of view, there are no other reasons to drop this instrument out of the *bateria* except for compositional reasons.

³⁵ Author’s archive. Oscar Bigode paper.

³⁶ Author’s archive. Curriculum Vitae of de Souza.

De Souza says that *reco-reco* “Faz o complemento do Ritimo,” or makes an addition to the rhythm.³⁷ In this, he obviously refers to the sound of the instrument that eases and balances the tightly beaten parts of *batucada*. It constantly emphasizes the back beat unlike any other instrument. From this point of view, it is a special addition.

In the *bateria* composition, the rhythm of *chucalhos* already emphasizes the back beat so strongly that a typical *reco-reco* back beat would be an insignificant addition without any real compositional value.



Image 37: The *reco-reco* back beat.

The situation would be different if de Souza had chosen *ganzá* instead of the *chucalhos*. The same rhythmic effect that is now produced with *chucalhos* would need a combination of *reco-reco* and *ganzá*.

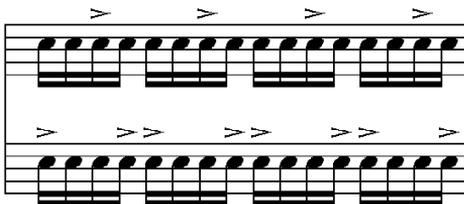


Image 38: *Reco reco* and *ganzá* together producing corresponding rhythm for the *chucalhos*.

Using *chucalhos* is then an economic solution because this way, the number of players needed in the section can be cut in half, which is essential in a small *bateria*. With this solution the *chucalhos* take care about the functions of both *reco-reco* and *ganzá*.

³⁷ Author’s archive. Oscar Bigode paper.

4.1.17. Piano de agogô

Piano de agogô is the second deviation within the original *bateria* plan from the filming. It is not suitable for parading because of its size and troublesome mobility. Here, in a stage performance, its advantages can easily be utilized. In the corpus, the *piano de agogô* has four roles depending on the take: In the first and the second it steadily maintains the four stage, basic rhythm.



Image 39: *Piano de agogô* rhythm in the first and the second take.

In the solo, it played different popular melodies like *Hino das torcidas*, *Asa Branca*, and *Samba de uma nota só*. In the third take, instead of maintaining the basic rhythm the instrument varies it. It also infrequently mimics the rhythm of the *cuicas*, which it also varies. The examples below are estimations, because of the constant variation and somewhat poor quality of the recording.

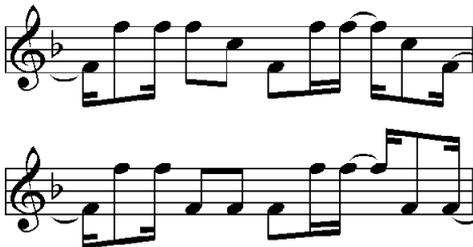


Image 40: *Piano de agogô* variations of the *cuica* rhythm in the third take.

The fourth role is to play melodic variations for the *batucada*. This action is typical for the samba schools in the *Madureira* region. It is not known whether these variations were created by de Souza, but he was certainly connected with the development of the multi bell *agogôs*.³⁸ These variations are composed patterns that are

³⁸ Candeia; Isnard 1978. *Escola de samba: árvore que perdeu a raiz*. Rio de Janeiro: Lidador / SEEC. pp. 43, 61.

used to colour the basic *batucada*. They are not determined by any melody, but are somewhat independent, and led by the director of the section. The following patterns are extracted from the third take.



Image 41: Two composed patterns, *variações do conjunto* of the *piano de agogô*.

The *piano de agogô* has two functions in a *batucada*. The first is to “Produz os balanços para os ritmos anteriores;” produce the *balanços* -tonal variations -for the ancient rhythms.³⁹ It is actually the role of a traditional two bell *agogô*. This function is realized in its modern form when the instrument plays standard, four stage, and varied repetitive rhythmic passages.

De Souza does not describe the next function with the use of the *piano de agogô*, but rather with the corresponding instrument: “Lira [...] tem a escala musical e aumenta as variações do conjunto,” *lira* [...] has a musical scale that increases the numbered variations in the ensemble.⁴⁰ Because of their musical scales, the *lira* and *piano de agogô* are corresponding instruments. They both have a capacity to add to the tonal variations in the ensemble. The *variações do conjunto* is a modern melodic addition to the traditional, strictly percussive, and tonally limited *batucada*.

³⁹ Author’s archive. Oscar Bigode paper.

⁴⁰ Author’s archive. Oscar Bigode paper.

4.1.18. Summary

The basic organization of the *bateria* follows the traditional lines that are typical for all samba schools. Both parts of the *bateria*, *couros pesados* and *miudezas*, are formed of sections of different instruments. In *couros pesados*, these sections are the *surdos de marcação*, the *surdos de repique*, and the *caixas*. Departing from the tradition, de Souza specified four different *marcações* in the *surdos de marcação* section. The practice of using four or even more rhythms in the section is normal. A good example of this is the *Estácio de Sá bateria* from 1990, which had three different *surdos de terceira*.⁴¹

It was quite unique that de Souza used three different instruments in the *surdos de repique* section, which all played different rhythms and had different tunings. This was a departure from the practice of the 1990s. It may have been typical for the older practice, but from 1990–91, it was already rare. The only similarity to this older setup was the *surdo de repique* playing of some *baterias*. However, that playing was not disciplined, unlike the music in the *bateria Os 27 Amigos*. The basic way of playing was a direct *repinicava* 1/16 –pulse rhythm.

Composing the rhythm of the *caixa* section from different components was still the normal practice from 2002–04, as it was in the 1990s. A unique factor here is that the rhythm of the section is actually made of three components. Two of these are fixed: The *caixa de guerra* rhythms, and the basic rhythm of the *tarol*. The third component is the varying *sequimentos agudos*. This practice departs from all known samba school compositions.

Putting the *tumbadora* in the *bateria* was one of de Souza's initiatives.⁴² Different additions are sometimes heard in the *baterias* when the conductors aim to develop new sounds and innovations. Some of them are quite detached or separate, but here, the *tumbadora* serves an important purpose -to accompany the solists in the performance.

The *miudeza* sections are normally mono-rhythmic. In his *bateria*, de Souza had composed two delicate polyrhythmic and polytonal patterns. The *cuica* pattern is exceptional because of its accuracy and discipline. The composition is very tight and the

⁴¹ Author's archive. Estácio de Sá, November 1990.

⁴² Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. p. 43.

uses of variations are kept to a minimum. A distinctive feature here is the *tamborim* section. Comprised of two parts, which are both precisely tuned in relation with each other, it is something very rare in a *batucada*.

The last curiosity in the *miudeza* section is the *piano de agogô*, whose role changes depending on the need. It serves four different roles in the third take. It plays the basic rhythm, varies the *cuicas*, and plays *variações do conjunto* patterns and melodies.

As a whole, the *bateria Os 27 Amigos* follows the normal organization of being divided in sections according to the instruments. The distinctive difference is that almost all sections are divided in subsections of different rhythms and tunings. This practice is sophisticated and differs notably from the other *baterias*. Composing for these ensembles requires good knowledge, skills, and creativity which, for the most part, explain de Souza's advanced comprehension of all the functions of the instruments.

4.2. Elements of batucada

Batucada is not just one atomary entity that exists only in one specific form, but rather it consists of many elements, which all together constitute this complex style. The study of these constitutional parts is based on the *batucada*'s terminology of the corpus. The elements are the musical actions that are based on the terminology. The terms represent what is heard in the music. Thus, the terms reflect the understanding of de Souza's *batucada* and the understanding developed in the *Deixa Falar-Portela* tradition. More profoundly, they reflect the ancient African interpretation of this type of music. We classify and organize the terms to see the elements and the musical system they build.

By using all the parts correctly, it is possible to produce live *batucada*. Knowing what the correct approach is, is a challenge in and of itself due to the constantly changing practices and traditions. The *batucada* in the time of *Os 27 Amigos* is different from the *batucada* of today, even in the *Portela* samba school. However, the elements are almost the same. By knowing them, we can also study the evolution and changes in *batucada*.

The different parts can have variation, and the rhythmic material can be changed and replaced by materials that correspond to the character of the element. Each element has certain characteristic qualities that outline it. A good example of this are the rhythms of *cortar*. The rhythms of *surdo de terceira* and *cuica de cortar* are different, but without a doubt they represent the same element. They cannot be confused with other rhythms that are different. The essential question is the demarcation between the terms. This study does not present the overall library of all possible elements of *batucada*. It only represents the elements of the corpus with some minor additions.

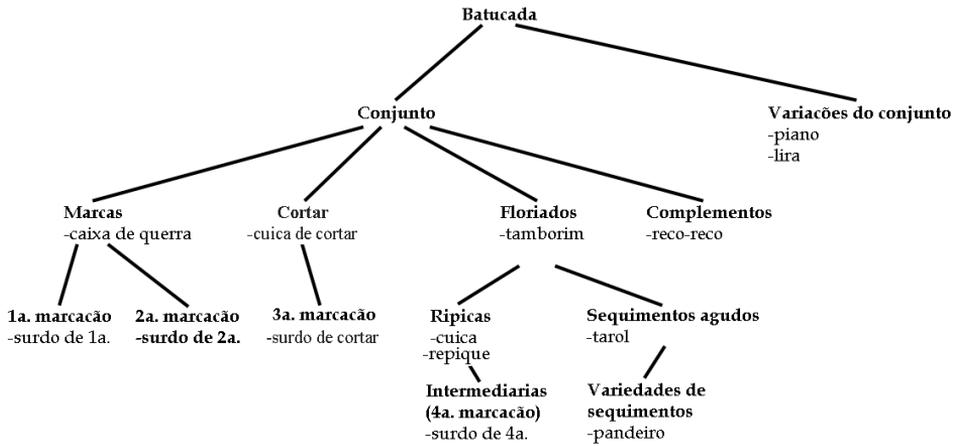


Image 42: The elements of *batucada*.

4.2.1. Batucada

From 1990–91, when de Souza taught his approach about *batucada*, he did not know of the latest developments in the *batucada* of *Mocidade Independente*. He knew the *batucada* of *Mestre André*, who was his rival since the early 50s, but he did not know the *batucada* that was developed by *Mestre Jorjão*. It was developed at the end of the 80s and at the beginning of the 90s after *Mestre André*'s death. Therefore, the stylistic approach of Souza's *batucada* was based on a time before the 90s, apparently during the time of his active career as a *mestre de bateria*.

The *batucada* consists of two main parts, which are the *conjunto* and the *variações do conjunto*.

4.2.2. Conjunto

The *conjunto* is the body of the *batucada*. It can also be translated as a whole or wholeness. It refers to a composition of all the elements that can be defined as traditional rhythmic elements. All elements in this category are percussive, even though most of the instruments also have wider tonal aspects. Such is the case with the *agogô*

and *cuica*, but also with the *surdos de marcação*, which together, comprise a distinctive melodic pattern.

It is noteworthy that de Souza differentiates between this tonal aspect of rhythm and the rhythmic-melodic variations that are based on musical scales and melodies. In the case of the *agogô*, the difference is distinctive. Even though the traditional two bell *agogô* is intentionally constructed to produce clear melodic intervals, (and from that point of view it is a pure melodic instrument), it is obviously a traditional instrument that falls into the category of percussive instruments of the *conjunto*. The *conjunto* can be seen as the traditional base of *batucada*.

4.2.3. Variações do conjunto

The main definition of this category is stated with the function of the *lira*. It emphasizes the musical scale and increases the variations of the *conjunto*, (*variações do conjunto*).¹ The difference with the previous category is the musical scale. De Souza places only the *lira* in this category. He does not mention in his listing the multi bell *piano de agogô*, which is an equivalent instrument. The reason for this is not known, thus the placing of the *piano de agogô* in this category is based purely on the analogy of the musical scale, which both instruments have.

The variations of *conjunto* are composed patterns that the *piano de agogô* plays in the third take, but that can also be played by the *lira*. Melodies played in the solo are then just melodies. These patterns are typical for *Portela* and other Madureira region samba schools. These days, they are played by four bell *agogôs*.

The *lira* and *piano de agogô* themselves can be as percussive as the other instruments in the *conjunto* category, however their melodic potency is wider than just the traditional melodic aspect of *balanço*. These instruments are used to enrich the limited melodiousness of the *batucada*. It seems that de Souza determined his own comprehension about *batucada* based on this distinction between the *conjunto* and the *variações do conjunto*. *Batucada* is traditionally purely percussive, but it can be enriched by modern scale-based variations. It is also noteworthy that de Souza was one

¹ Author's archive. Oscar Bigode paper.

of the developers or even the sole developer of the melodic variations. It is known that he developed multi-bell *agogôs*, and that one of his favourite instruments was the *piano de agogô*. From this point of view, it is also logical that the *variações de conjunto* is a different category. It differs from the conjunto musically and historically. It is a modern addition.

4.2.4. Marcas

The category of *conjunto* is divided into four basic classes that each have different rhythmic and musical characters. In de Souza's *batucada*, the *marcas* (marks) are played by three instruments: Two *surdos*, (the first and the second), play plain *marcas* of the *primeira* and *segunda marcação*. In the rhythm of the *caixa de guerra*, the first beat of each quarter is the *marca* that de Souza discusses. This type of playing, with emphasis on the *marcas*, is called playing *marcando* -by marking. The tonal movement in the pattern leads to full *balanço -balanço total*.²



Image 43: The *marcas* and the *balanço total* of *caixa de guerra*.

The fourth possible instrument to play *marcas* is the *cuica*. *Marca* is the first function that de Souza appoints for the *cuica*. Both patterns, similar to the *caixa de guerra* and the *surdos*, are possible. The next pattern was found in *Unidos da Tijuca* in 2003.³ It was played long after the prime of de Souza's career, but it undoubtedly falls into the category of *marcas*.



Image 44: *Cuica* playing *marcas*.

²Author's archive. Oscar Bigode paper.

³ Author's archive. Unidos da Tijuca, the 4th of January 2003.

Marcas has two sub-categories. The most important is the *primeira marcação*, or the first marking. Together with the *segunda marcação* -the second marking -it is the other basic marking of *batucada*.

Marcas are parallel with the strong and weak beats of the western 2/4 meter, although they are not the same because the first *marcação* is emphasized. *Batucada* can be played without the second *marcação*, but not without the first. The importance of this is evident in every *repique* introduction of *batucada*. The *bateria* always starts playing with the first *marcação*.

4.2.5. Cortar

The *cortar*, or cut, is the second basic class of the *conjunto*. Its technical relationship with the *marcas* category is evident. De Souza defines the function of the *surdo de terceira marcação* in order to make “contra tempo cortando,” (cutting contra tempo), for the first and the second [*marcação*].⁴ The cutting also refers to a wider concept that corresponds with the idea of making the rhythm diminished. In this instance, the term has a specific meaning of cutting the long tones of the first and second *marcações* in half.



Image 45: The cutting rhythm of the *surdo de terceira marcação* in its basic form.

In its basic form, this cutting relates only to the first *marcação*. It is, however, extended to also cut the second *marcação* in cadenzas.



Image 46: The rhythm of the *surdo de terceira marcação* with cadenza.

⁴ Author's archive. Oscar Bigode paper.

De Souza said that the *cuica* also plays the cutting rhythm, which in the corpus, is difficult to hear in complete form without electronic filtration. The tonal movement it causes is, however, noticeable. Today, this rhythm is quite rare. The following sample is from the general rehearsal of the *Unidos da Tijuca* samba school.⁵ Before the *bateria* rehearsal, only two *cuica* players were present, and together, they practiced the following *cuica* rhythmic composition.



Image 47: The *cuicas* of *Tijuca*.

The first *cuica* was playing an old fashioned *ripica* rhythm, (the same as in the corpus), while the other one carefully played the cutting rhythm. Indeed, this rhythm is similar with the rhythm on the third *marcação*. It is only played with the standards of the *cuica*.

The category of *cortar* can technically be seen as a sub-category of the *marcas*, because it is evidently interconnected, and especially with the first *marcação*. De Souza clearly defines the functions of *surdos* and *cuicas* to be: “marca, corta, and ripica,” mark, cut, and *ripica*.⁶ From his point of view, the *cortar* has a certain relation with the *marcas*, but is not dependent on them. Regardless of the apparently direct relationship between these two categories, the *cortar* can have different historical bases, and can reflect or adopt some other rhythmic pattern. This could include, for example, the three-folded tresillo. The *cortar* presents here an independent rhythmic category in the architecture of *batucada*.

⁵ Author’s archive. MD 2004. The 7th of February. Unidos da Tijuca.

⁶ Author’s archive. Notes 1990–91. p. 164.

- Author’s archive. Oscar Bigode paper.

4.2.6. Floriados

The most versatile of all the basic classes of *conjunto* is the *floriados*. The unique distinction the rhythms in this class is that they are clearly *clave*-based. From the European point of view they are syncopated. Depending on the instrument, there are also *marca* and cutting beats in the rhythmic patterns. Otherwise, these patterns have a clear character that differs from the other categories of *conjunto*. The sub-groups have the same basic character, but they also have tonal or timbral properties, which are specifically defined. The only plain *floriados* without tonal movement are played by the *tamborim*. Both rhythms are flat so they are just *floriados* without other attributes.



In the corpus the *surdos de repicar* play the following *ripicas*. The rhythm in the second line is very close to being completely *marcando* and *repinicando*, but because of the weak (p) beats, which may vary and break the direct flow of the rhythm, it is a *floriado*. The tonal movement is also clear. As in the pattern of the *caixa de guerra*, there is a full *balanço* in this pattern. These two properties place this pattern within this sub-class.

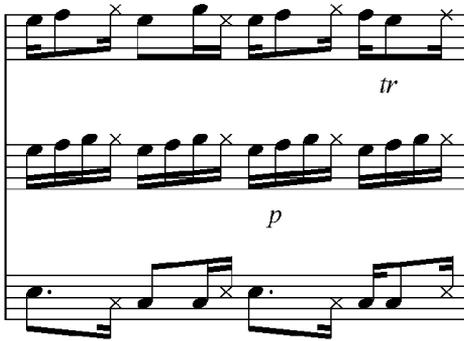


Image 50: The *ripica* rhythms of the slow, rapid, and *contra surdo de repicar*.

All rhythmic patterns in the *repiques* are different, appearing as variations of the same like theme. Thus, the *floriados* class is not strictly defined by only one rhythm. The idea of *floriados* is flexible to some degree, and somehow analogous with the concept of syncopation. However, it is not the same because the action is not random. Syncopation is just a description for something contrasting with meter, and as a concept, it has no known compositional rules. By distinction, all *floriados* are based on the guiding of the *clave* rhythms. All variations derive from this clear understanding.

The other instrument in this sub-class is the *cuica*. The rhythm is not exactly the same in all takes, but in the third take, it is rather stable. The following simultaneous *ripica* patterns can be recognized.

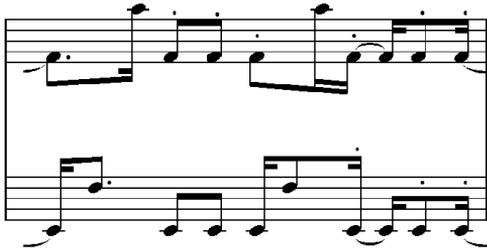


Image 51: The *ripica* patterns of the *cuicas*.

These patterns are distinctive and they have a clear, individualistic character. Even though they are rhythmically slightly less dense than the previous patterns, the relation is evident, and the basic rhythmic character is *floriado*. These patterns also have a very clear tonal movement of an octave plus a minor third.

The special character of this sub-class becomes evident when comparing the rhythmic patterns of the *tamborim* with the *repiques* and *cuicas*. The difference there is that the *ripicas* have clear tonal movement that the plain *floridos* of the *tamborims* do not have. Thus, the *ripicas* are *floridos* where the *balanço* is clear and essential.

4.2.8. Intermediárias

The last sub-class in the line of *floridos-ripicas* is the *intermediárias*, which is a specific term used to describe the rhythm of the *surdo* of the fourth marking, or *surdo de quarta marcação*. The rhythm of the *quarta marcação* is less dense than the others in the *floridos* category. This is because it is closely related with the *first marcação*, and is a *floriado* that is customized to the *marcação* system of the big *surdos*. It is clearly a *floriado* because of its syncopating latter part, which is also the basic pattern of its cadenzas.



Image 52: The fourth *marcação*, in the first bar the basic pattern, in the second bar a short cadenza.

It is interesting to note de Souza's description of *balanço* with an instrument that is actually played in a manner without any tonal or temporal movement of the *balanço*.⁸ Instead of making, (*fazendo*), a *balanço*, this instrument is giving, (*dando*), a *balanço*. It can give it in co-operation with the other *surdos*, which all have an individual tuning. When all markings, or *marcações*, with different tunings are played together, the composed rhythmic pattern has a clear tonal movement of *balanço*. All other *marcações* are just coarse single beats, whereas the *intermediárias* pattern is dense. Therefore its role is emphasized in the making of *balanço* for the big *surdos*. It ties all the components together in a vivid assembly. This role also comes up in de Souza's verbalization of the complete *surdo* rhythm.⁹ Without the *intermediárias*, the pattern would be very different.



Image 53: De Souza's verbalization of the complete *surdo* rhythm. Note that the phrase starts from the first *marcação*.

The function of giving a *balanço* defines the *intermediárias* as a sub-class of *ripica*. De Souza also classifies the functions of the rhythms of the *surdos* with almost the same definition as the *cuicas*: They are *marcava*, *cortava*, and *ripinicava*.¹⁰ With the *cuicas*, he uses the titles *marca[va]*, *corta[va]*, and *ripica[va]*. Note that the terms *ripinica* and *ripica* are descriptive. They describe rhythms of different densities. The first term has four syllabuses per word and the last one has three syllabuses per word. The small difference in the term does not change the basic meaning. It just precisely describes the density of the pattern. The *balanço*-giving, *ripica* / *ripinicava* aspect, is essential here. Thus, the *intermediárias* are special *ripicas* with a character and function of their own.

⁸ Author's archive. Oscar Bigode paper.

⁹ Author's archive. Notes 1990–91. p. 125.

¹⁰ Author's archive. Notes 1990–91. p. 164.

4.2.9. Sequimentos agudos

The second category of sub-classes under the *floriados* have an interesting rhythmic character. There is no direct note in the conversations with de Souza where he would have referred to the rhythm of the *tarol* as *floriado*. The main information in the *caixa / tarol* conversations was that the rhythm of the *esterinhas*, or drums with resonators, is divided into two different parts that have a different tuning and rhythm. One part is straighter and the other one more rhythmic.¹¹

Locating the *tarol*'s rhythm with the *sequimentos agudos* (the correct spelling could be *segmentos agudos*) in the category of *floriados* is easy. The rhythm is the same as the rhythm of the *tamborim*, with only minor exceptions. The rhythmic character also differs from the *marcas* and *cortar* because of the syncopation. In the newspaper interview, de Souza divides the rhythm of the *tarol* between *teleco-teco* and *floriado*.¹² *Teleco-teco* is the old, (2/4), samba rhythm that can still be found in samba schools.¹³ It is a rhythm and meter that the *floriado* rhythm does assimilate to.



Image 54: The *teleco-teco* rhythm.

The rhythm of the *tarol* is clearly different from the previous one, as seen below.



Image 55: The rhythm of the *tarol* in the first take.

¹¹ Author's notes in the *Posições dos instrumentos de uma bateria* paper.

¹² Author's archive. Anonym. *O samba mais puro da bateria*. Clipping of an unknown newspaper from Rio de Janeiro: Date: between November 1966 and the 30th April. Obviously before the carnival: "The tarols [...] can be teleco-teco or floreado."

¹³ Araújo, Samuel 1992. *Acoustic Labor in the Timing of Everyday life: a Critical Contribution to the History of Samba in Rio de Janeiro*. Illinois: Phd Urbana. p. 145.

The rhythm of the *tarol* follows the same guidelines as the other *floriados*, but unlike those, there seems to be only very minimal tonal movement of *balanço*: However, the pattern is still not as flat as that of the *tamborims*. De Souza does not mention the *balanço* in this context, but emphasizes the importance of the *sequimentos agudos*. From that point of view, the *sequimentos agudos*, which are rim shots marked with a small diamond in the note, do not have the same tonal quality as the *balanço*. They are an additional effect that is used to enrich the rhythm.

The demarcation between the tonal movement of *balanço* and the *sequimentos agudos*, which are timbral, is not that clear. Even though de Souza does not mention the *balanço* in his very short description, it is possible that the *sequimentos agudos* are just one aspect of *balanço*. It could also be a term used to delineate a specific way of making *balanço*. Regardless of the terminology, the *sequimentos agudos* are clearly another vehicle used to widen the tonal expression of the instruments, and are typical of de Souza's way of composing *batucada*.

4.2.10. Variedades de sequimentos

The variations of the tarol's rim shots, *variedades de sequimentos [agudos]*, are played by a *pandeiro*.¹⁴ It is a traditional instrument whose importance in a modern *bateria* is small because of its weak voice. Within a small *bateria*, it can have real rhythmic value, but as seen in the corpus, it is rather hidden. A part of the varying rhythm can be heard in just one *parada*. In this case, only the beats of the *sequimentos agudos* in the two central quarters can be heard. The rest of the rhythm is an estimation that is based on the knowledge of how *pandeiro* can be played. The variations occur from the base in this configuration.



Image 56: *Pandeiro floriando* and accenting the *sequimentos agudos* of the *tarol*.

¹⁴ Author's archive. Oscar Bigode paper.

As de Souza notes, the *pandeiro* develops variations of *sequimentos*. The *pandeiro* plays variations for the rim shots of the *tarol*. This brings up another rhythmical aspect of *batucada*.

4.2.11. Complementos

The last basic class of the conjunto is *complementos*. De Souza mentions two instruments that fall into this class: the *reco-reco* and *chuchalhos*. In the corpus, however, there are only *chuchalhos*.



Image 57: The rhythm of the *chuchalhos*.

They act as addition to widen the rhythm and the *balanço*. These additions are not insignificant, but, as the instruments of other classes, they serve de Souza's compositional intentions. Their character is different and leads to a different class.

Both instruments normally play quite a simple rhythm. The conjunctive factor between these instruments is the sound. They are not beating, but rather scratching and hissing. Thus, they are both add-ons for the tightly beaten parts of the *conjunto*. Their purpose seems to be to bring a contrasting rhythmic sound to *batucada*, which heads to an increase of the *total balanço*. The third possible instrument in this category is the *ganzá*.

The connecting factor of all these instruments and rhythms is the sound, and the fact that they are all, unlike any other category, directly dependent on the *marcas*. They emphasize or cut the *marcas*, no other option is available. When they are used in other contexts, these instruments can also play different rhythms. But in the context of *batucada*, they play nothing else.

4.2.12. Summary

The analysis proves that de Souza had a clear and structured comprehension of the rhythmic construction of *batucada*. This understanding is also a part of the *batucada*'s tradition. Different rhythmic, voiced, historic, and functional properties all convey their various parts. In the following table, the rhythms are organized according to their category. Note that in the table, the basic rhythm of the *piano de agogô* is placed in the *floriados* category, where it undoubtedly belongs due to its rhythmic character.

It is noteworthy that this is not a complete chart of *batucada*; it presents only the *batucada* of the show of *Os 27 Amigos*. Another category of rhythms that was presented earlier, which de Souza knew about, is missing here because there was no example of it in the corpus. They are the *tamborim* patterns, which are used to enrich the compositions of *samba de enredo* songs.

MARCAS		FLORIADOS	
caixa de g.		tamborim 1	
surdo de 2a		tamborim 2	
surdo de 1a		pandeiro	
CORTAR		cuica 1	
surdo de 3a		cuica 2	
cuica 3		tarol & seg. ag.	
COMPLEMENTOS		tumbadora & c	
chocalho		slow repique	
VARIAÇÕES DO CONJUNTO		rapid repique	
pattern 1		contra repique	
pattern 2		surdo de 4a	
agogô 4			

Image 58: The rhythms in different categories.

The entity of *batucada* is divided into two main parts. The first is *conjunto*, which comprises the traditional parts of *batucada* that are produced by non-melodic instruments. These instruments have the capability of producing one or more aspects of *balanço* independently or together with other instruments. The second part is *variações do conjunto*. The modern rhythmic-melodic compositions are placed in this category. They all are played by percussive instruments, but the quality that distinguishes them from the *conjunto* is the melody in terms of the musical scale.

The traditional essence of *batucada* is the *conjunto* part. De Souza integrated it from three rhythmic and one voiced classes. The rhythmic classes are *marcas*, *cortar*,

and *floriados*, which all have different rhythmic forms and functions. The *marcas* play the longest beats, which create the straight pulse for *batucada*. The *cortar* play the beats that divide the long beats in half. The *floriados* are the beats that emphasize the syncopated, more detailed, *clave*-based structures of *batucada*. The last class, the *complementos*, are comprised of the voiced parts that do not have as specially defined rhythmic functions as the others. They do, however, increase the *balanço* of the *conjunto*.

The *marcas*, *cortar*, and *floriados* are divided into more detailed sub-classes where the elements have more specific attributes, depending on their role in the *conjunto*. With the *marcas*, the most important *surdo* beats are called the *primeira* and the *segunda marcação*. In the *cortar*, the *surdo* beats are called the *terceira marcação*, and in the *floriados*, the *surdo* beats are called the *quarta marcação*. The *surdos de marcação* are spread over all rhythmic classes, and practically form an inter-class system called *marcações*. The *cuicas* have the exact same roles and functions, but their system is not as specially defined as the *surdo* system.

The class of syncopating rhythms, the *floriados*, is the most detailed one. The only instrument in this basic class is the *tamborim*. The *floriados* class is divided into two lines that determine the quality of the rhythm in more detail. These lines are the *ripicas* and the *sequimentos agudos*.

The term *ripica* determines the *floriado* rhythms, which have their own clear tonal movement of *balanço*. The instruments here are the *surdos de repicar* and *cuicas*. The *ripica* forms a sub-class of the *surdo* rhythms that produces *balanço* in co-operation with the other instruments of its section. This is known as the *intermediárias*.

The second line under the *floriados* class is the *sequimentos agudos*. They are different from the *balanço*, and are more timbral than tonal. The rhythmic pattern of the *sequimentos agudos* is the coarsest pattern in this category. They are rim shots of the *tarol*, which emphasize some of the beats of the *floriados*. These *sequimentos agudos* are then varied by the *pandeiro*, which is part of a sub-category of *variedades de sequimentos*.

The basic terminology of the *batucada* is crystallized in the functions of *cuicas* and *surdos*. They are: *marcar*, *cortar*, and *ripicar*. When we take into consideration that the *variações de conjunto* category contains the modern melodic supplement to the

traditional body of *batucada*, the importance of these basic elements does increase. It is possible that they are relics of a musical system that is older than *batucada* itself. Within the system of *marcar*, *cortar*, and *ripicar*, the rhythmical core itself of this kind of music is contextualized. The core formed from these tightly percussive elements can be enriched with non-beating *complementos* and with modern scale-based variations.

4.3. Quality of batucada

In this section, we study de Souza’s comprehension of the quality of *batucada*, how he evaluated the quality, and which factors were central to his evaluation. The core and beginning point of the process is de Souza’s paper called “Desafinação dos sons,” (out of tune sounds), where he briefly lists the faults in *batucada* and explains them.¹ In the same paper, he also gives the definition of harmony and thus determines his musical intentions, as well as the main faults that threaten them. The paper was originally written for one of the courses for the carnival jury he held in Riotur from 1981–83.²

4.3.1. Poor / good batucada

This poor / good concept is a question of the aesthetics of *batucada*. How can the quality of *batucada* be evaluated and what are de Souza’s aesthetic aims? It also defines the limits of *batucada*: What kind of music constitutes *batucada*, and what can be dismissed as not being music at all? These questions are also deeply rooted in the technical aspects of how to determine and control the quality of *bateria*, and to evaluate the musical performance of individual players.

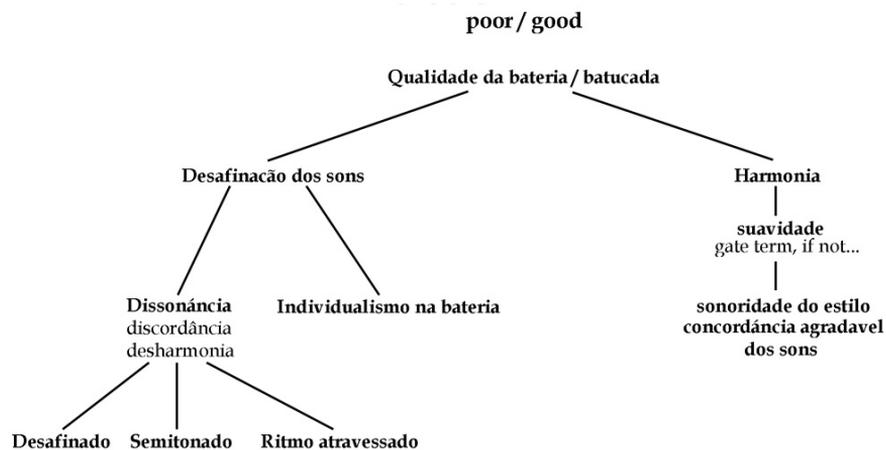


Image 59: Poor / good *batucada*.

¹ Author’s archive. Desafinação dos sons paper.

² Author’s archive. Curriculum Vitae of de Souza.

4.3.2. Desafinação de sons

This concept of detunedness, *desafinação de sons*, includes the faults that degrade the musical performance of the *bateria* and the quality of *batucada*. De Souza distils two main categories. They are the *desharmonia*, disharmony, which is in opposition to an intention called harmonia, and the *individualismo na bateria*, individualism in the *bateria*. Disharmony comprises faults that are musical, while the individualism in the *bateria* is practically disciplinary.

4.3.3. Desharmonia (disharmony)

There are two other qualifiers in this category, *discordância*, (discordance), and *dissonância*, (dissonance). In his listing, de Souza describes the category as dissonance, but here, because his aim in *batucada* is to produce harmony, the contrary disharmony would be a logical choice for this category. Dissonance suggests the same as disharmony, wherein something is wrong with the tonal relation of the instruments. The combinations do not sound good, and are the result of the combined sounds that lack softness. In practice, these two terms can be seen as synonyms. Instead, the third qualifier, discordance, refers to the incorrect tuning of individual instruments. Neither the tonal response, nor the sound of the instrument is correct, so this term also refers to another category of the lower level, *desafinado*, or detunedness.

The terms do not form a hierarchy with each other, but are rather a topic for a group of more specified musical errors that form three subcategories. The common factor for the subcategories is that they are all technical faults. They are somehow detuned or delayed, which refers to a musical distortion within the *bateria* and *batucada*.

4.3.4. Desafinado

Desafinado literally means detuned. According to de Souza, this is especially a mistake of the conductor. He says that “the instruments must be tuned by a tuning key, not by the criterion of any player.” The comment becomes understandable when knowing that only the conductor or the persons who are responsible for tuning the instruments of the *bateria* before the playing session have a tuning key. It is also good to know that normally the samba school owns the heavy *bateria* instruments, the *couros pesados* of the *bateria*, and not the players. Players rarely bring their own heavy instruments to samba school. So tuning is an important task, because when the instruments are stored, the skins are released to let them compress. They must be tuned before the performance and before the players can use them.

4.3.5. Semitonado

This is a player’s fault, but can also be caused by a conductor if the tuning of the instrument is not properly done. Even when the instrument is properly tuned it can be played out of tune, *semitonado*. One corollary to this in the musical world can be found in the violin and other instruments that have a plain, unfretted fingerboard. The strings may be tuned properly, but if the player plays poor and out of tune scales, or if he has a poor playing technique, it can produce unwanted sounds. The same applies to properly tuned drums. The tradition or the conductor determines the desirable rhythm and its qualities. If this cannot be achieved, or if the tones are wrong or in the wrong order, the result, then, is *semitonado*. This blurs the sound of the section and obscures the tonal movement. It also harms the harmony of the section and the *bateria*, and worst case, can lead to major confusion.

4.3.6. Ritmo atravessado

The term *ritmo atravessado* is known as delayed rhythm. This means that a player can not keep the right tempo and his timing is delayed. Beats are not in the right place in relation to the other players. On a wider scale, it highlights serious problems in ensemble harmony if correct timing can not be kept.

4.3.7. Individualismo na bateria

The second category under the *desafinação de sons* is *individualismo na bateria*, or individualism in the *bateria*. It is significant that de Souza does not associate this fault with disharmony. It differs from disharmony because in this case, playing can be technically and musically correct, but the fault is caused by a player who does not cooperate with the rest of the *bateria*. Harmony is then a question of tonality and timing. In this instance, a player is trying to separate himself by playing in the way that stands out from the rest of the *bateria*, (*destacar-se do conjunto da bateria*). This also means that he does not follow the guidelines defined by the conductor, thereby abusing *batucada* and disturbing the work of the conductor.

4.3.8. Harmonia

Harmonia, (harmony), “concordância agradável dos sons,” or agreeable compatibility of the sounds, is de Souza’s main goal. In a nut-shell, it emphasizes tonal harmony and timing, and not the rhythmic harmony. This principle guides the tonal actions of every level in the *bateria*, from the tuning of a single instrument to the complete *bateria*. All of de Souza’s actions with *bateria* focus on this principle. According to the paper, the most important sign of the harmony is the concept of *suavidade*.

4.3.9. Suavidade

Suavidade, or gentleness, is a key term. “If there is no gentleness in the ensemble, the *bateria* does not have harmony.” *Suavidade* itself is not harmony, but is the primary sign of it. It occurs when the music has the right qualities and there is no conflicting tonal material.

4.3.10. Sonoridade do estilo / Concordância agradável dos sons

The other qualifier of harmony is the *sonoridade do estilo*, or sonority of style. *Concordância agradável dos sons*, or pleasant concordance of the sounds, refers the same property. Concisely, when not talking about playing style, sonority is a property of *batucada* that occurs when the tonal relations of the instruments are correct. It is a clearly detectable harmonic sound when the beats and the sustained sounds amalgamate and create clear melodic intonations.

De Souza does not only associate this with the internal musical relations of the instruments, but with the whole style of the music. It is reflected in wider musical actions like in the composition of *breques* and in the relationship of the different parts of *batucada*. It also means that the relationship of the rhythmic composition and its tonality can be sonorous. If they are conflicting, the sonority suffers. The sonority of style is possible if all the parts of the musical system are in proper harmonic relation with each other, from the individual level to the overall level.

4.3.11. Summary

The content of the “Desafinação de sons” paper is compressed and sums up the main issues that have to be taken into consideration when estimating the quality of a *bateria*. This is especially true of the carefully-listed faults that degrade the performance. Although harmony is always a primary focus, it is discussed here on a more general level. On the other hand, when the faults mentioned do not appear, then harmony is

possible. The meaning of the paper is to comprehensively list the things that have previously been discussed in more detail. We are therefore lacking a lot of complementary information.

The paper itself and study of the terminology prove that de Souza has a detailed, well structured, and comprehensive understanding of all the problematic facets inherent to *batucada*. This understanding is clearly better than what can be expected of an average player. It also represents an example of what good practice is at the theoretical level, as well as in leadership of the *bateria*. There are different problems that provoke disharmony: Detunedness, playing out of tune, and playing out of tempo, constitute a group that stands in opposition of harmony. The first two of these directly oppose the tonal harmony and degrade it. The third one is simply inaccuracy. An individual player's self-assertion that does not fall into any of these elements is then a disciplinary problem.

The main goal -harmony -is defined as a pleasant compatibility of sounds. It is based on the correct tuning of instruments, correct tonal interaction within sections, and correct interaction between sections. If these tenets are achieved, the result is nice harmonic *balanço total*, or total tonal movement. *Suavidade*, or softness, is a key qualifier for harmony, and is a signal for it. The suavity and sonority are together excellent verbal descriptions for the quality of harmonic *batucada*. De Souza clearly expressed the limit of *batucada* by saying: "If there is no harmony and drums are just banging, it is not music at all. It is noise."³

³ Personal communication with Mr. de Souza at 1990–91.

4.4. Development of batucada

These notes refer largely to the preceding studies of *batucada* and its properties. Even though the logical place for this section this would be immediately after the literary study, it cannot be understood completely without knowing *batucada* and its properties. Therefore, it occupies this juncture in the narrative.

The literature does not give much insight into the development of *batucada*. We know the instruments of *Deixa Falar*, and when comparing its *bateria* with that of *Os 27 Amigos*, the differences are evident. The makeup of *Os 27 Amigos* represents the development of *batucada*. It is indeed more complicated than any other contemporary *bateria*, so it is the best possible comparison with the composition of the original *Deixa Falar*. *Deixa Falar* is also its direct predecessor, so we can discuss the development of the original *batucada*.

In the following plan, the instruments of *Deixa Falar* are marked in orange.¹ In addition to those, there are all the basic samba instruments of *Os 27 Amigos*. Only the *tumbadora* is missing. The *agogô* in the plan represents all types of *agogôs*. All instruments in the plan are technically modern versions, unlike those in the *Deixa Falar* era at the end of the 1920s. This is just a curiosity and does not affect the study.



Image 60: The instruments of *Deixa Falar* versus *Os 27 Amigos*.

In the first line of the *couros pesados*, the heavy instruments, the *contra surdo de repicar*, which corresponds the original *surdo*, is the only one used in *Deixa Falar*.

¹ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 51.

This is based on the study of the Bum bum vocalization, which is presented later in this work. Other instruments were added later. There is literature that describes how different *caixas*, snare drums, were already used in the very early days.² However, with *Deixa Falar*, there is no information about this practice, so they are considered as newcomers.

The second line is for the *miudezas*, or small instruments, which are all traditional, regardless of the construction. Their rhythms are also traditional, and according to the present knowledge, their rhythms have remained unchanged since the beginning of samba schools. The *agogô* has developed during these times to include more bells but its base is traditional. Incorporating other *miudezas* has been attempted during the history of *batucada*, but their significance is mainly limited to just coloring on top of the *couros pesados*.

This simple scheme brings about the fact that when we talk about the development of *batucada* and *bateria* standards, we predominantly discuss the development of the *surdos* and other *couros pesados*, and ways to play them. The question then becomes: Where are the new instruments and their rhythms from?

The answer to that question is simple. All *couros pesados* are new inventions or loans. The *surdos*, in all of their forms, were inventions of the 20th century. All *surdos* emerged after 1927 when Alcebiades Barcelos constructed the first one.³ This started the development of the whole family. Obviously, the *Portela* samba school has been very active with this. The comparison with *Os 27 Amigos* and other *baterias* attests to this. De Souza's statement also supports this notion. He said that *surdo* is the most versatile instrument in the whole *bateria*.⁴ Such versatility is not seen in any other *bateria* included in this study.

The *caixa* and its auxiliaries were loans from military bands. The original military *caixa de guerra*, war drum, and other corresponding instruments, generated the

² Araújo, Hiram 2003. *Carnaval – Seis Milênios de História*. 2. ed. Rio de Janeiro: Gryphus. p. 258. Refers obviously: Muniz Jr, J. 1976. *Do batuque à escola de samba: subsídios para a história do samba*. São Paulo: Símbolo. This book is not found.

³ Cabral, Sérgio 1974. *As escolas de samba: o quê, quem, como, quando e por quê*. Rio de Janeiro: Editora Fontana Ltda. p. 30.

⁴ Personal communication with de Souza, Rio 1991.

contemporary family of *caixas* in samba schools. At the time local instrument makers started to make instruments for samba school *baterias*.⁵

The question of the instrument's rhythms is more complicated. There is no written history about the development of rhythms. Only a few remarks can be found in the literature: "The tuning of the third *surdo* of the *Portela bateria* is slack. When the *cuicas* are included, this produces a particular sound when played between the first and the second *marcação*. This basic third *surdo* was invented in the 40s by *Sula*."⁶ The other remarks about *Portela* describe who introduced or invented a certain instrument, but not how they were played. This can suggest two things. First, the writers do not know or are not interested in how they were played. The second possibility is that "everybody" knew it; that knowledge was so common that it did not raise much interest. According to my experience, the latter possibility is more probable. From another point of view, this may also suggest that styles or rhythms were traditional, and that everybody knew them because there were no significant changes in the tradition. This does not mean that there would not have been new experiments or combinations, or even new rhythmic functions, like in the case of the *piano de agogô* where a new instrument and new variations of rhythm were developed. The foundation was still rooted in tradition.

Historical photographs in different publications and in private collections where the instruments of the era can be seen have not been studied. Even though there could be some evidence, the history is mainly unwritten. Luckily, the study of de Souza's terminology gives us an interesting insight into the history. Some practical facts are also informative.

According to Carlos Sandroni, the main improvement that is bound up with the development of the modern samba, and then also *batucada*, is the change of rhythm from the old 2/4 samba to the modern 4/4 rhythm.⁷ The other improvement is the invention of the *surdo*, which later became the central instrument of *batucada*. It is also

⁵ Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC. p. 43.

⁶ Riotur 1991. *Memória do carnaval*. Rio de Janeiro: Oficina do Livro. p. 317.

⁷ Sandroni, Carlos 2001. *Feitiço Decente. Transformações do samba no Rio de Janeiro (1917–1933)*. Rio de Janeiro: Jorge Zahar Editor / Editora UFRJ. pp. 218–222.

mentioned that the *cuica* first emerged in the samba of *Deixa Falar's bateria*.⁸ Hiram Araújo, who is a scholar and a long term sambista of *Portela*, mentions that the relationship between the *cuicas* and *surdos* has been essential in the *Portela* samba school.⁹

In de Souza's terminology, the connection between the *cuicas* and *surdos* is direct. He said that the *surdos* were: *Marcava, cortava, and repinicava*,¹⁰ (marking, cutting, and repinicing), and gives the same basic functions to the *cuicas*: *Marca, corta, and ripica* (mark, cut, and ripica).¹¹ The variation in the written words *repica / ripica, repicar / ripicar, etc.*, is common. The form varies depending on the source, but the meaning is the same. The expression is onomatopoeic and describes a rhythm. The alphabet is not as important as the phrases are. The real difference is between *repica* and *repinica*, where there are three beats (re-pi-ca), against a four beat (re-pi-ni-ca), rhythmic pattern. Musically, the instrument used can be the *surdo de repicar* or *surdo de repinicar*, depending on the rhythm it plays. Nevertheless, they present the same rhythmic function.

The simplest way of playing *marcas* with the *cuica* and separating them from each other, is to utilize the tonal variation of the instrument (Image 62). This rhythm is not often heard in samba school *baterias*, but the when *cuicas* get enough space or freedom from the popular *ripica* pattern, it can be perceived.

Another rhythmic composition that reveals the cutting rhythm was recorded in the *Unidos da Tijuca* samba school before the start of the rehearsal. Obviously, the older player was teaching his younger colleague. He played the *ripica* rhythm and the student very carefully maintained the cutting rhythm (Image 47). The first line rhythm is exactly the same as one of the *cuica ripica* patterns of *Os 27 Amigos*. The second line was previously unheard, but without a doubt, it is a cutting rhythm played by a *cuica*. It differs from the rhythm of the cutting *surdo* because of the high tones, but the low tone pattern is exactly the same as the cutting rhythm of the *surdo*.

⁸ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 53.

⁹ Riotur 1991. *Memória do carnaval*. Rio de Janeiro: Oficina do Livro. p. 317.

¹⁰ Author's archive, Notes 1991, the 26th of February.

¹¹ Author's archive . Oscar Bigode paper: "Cuicas, Funções: Marca, corta e ripica." (Cuicas, Functions: Mark, cut, and ripica)

The *cuica* patterns all around Rio de Janeiro are quite similar, and it seems that the tradition of playing *cuica* has been consolidated. When comparing the patterns heard and recorded from 2002–03 and 2004, with the material of 1990-91, they are very similar. The situation seems to be the same as with the *tamborim* pattern that emerged in *Deixa Falar*. Today, it is basically still the same as it was at the beginning of the 20th century. Sandroni confirms this situation with the *cuica* rhythms.¹² Taking this into consideration, the *cuica* composition of *marca*, *corta*, and *ripica* that de Souza mentions, can be composed from the material of *Unidos Tijuca*. We can assume with reasonable confidence that it is commensurate with de Souza's idea and the old *Portela* practice.



Image 61: All *cuica* functions together.

The *cuicas* and *surdos* play the same rhythms with a manner typical of the instruments themselves. The same functional actions are repeated in both *bateria* parts, in *couros pesados*, and in *miudezas*. It is worth mentioning that this repetition is not copying, since even though the functions are the same, the rhythms and the composition are different. This can be seen from the following overall rhythmic examples.

¹² Sandroni, Carlos 2001. *Feitiço Decente. Transformações do samba no Rio de Janeiro (1917–1933)*. Rio de Janeiro: Jorge Zahar Editor / Editora UFRJ. p. 35.

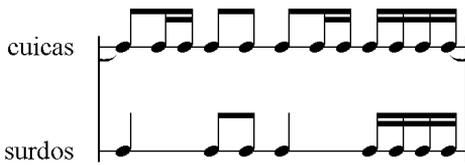


Image 62: Overall rhythms of the *cuica* and *surdo* sections: *marcar*, *cortar*, and *ripicar* together condensed in one line.

This emphasizes the important fact that a rhythmic category or a function of an instrument does not suggest a rhythm that is meant to be played a certain way, but both are wider concepts and define a general class or quality. This can be seen in the following comparisons where the functions of the instruments are the same, but the compositions, are different, despite their relativity.



Image 63: *Cuica* and *surdo* playing *marcas*.

The *marca* rhythms in both instruments are the same, but the intervals between them are different. The tuning of the *marca* of *surdos* can also be reversed, but the *marcas* remain the same.

With the cutting rhythm, the difference between the rhythms is more distinct. The *cuica* constantly cuts in half both of the *marcações*. Regardless of this, the emphasis of the pattern is on the low tones that are the same with the *surdo de terceira*. They clearly play the same action, even though the rhythms are different. This relation is also clear in the cadenzas of both instruments.



Image 64: *Cuica* and *surdo* basic cutting rhythm and cadenza.

In the next example, the denser *cuica* rhythm is modified to the nature of the *surdos*. The high tones of the pattern are not played, and the phrase is modified to emphasize the bipolar nature of the *surdos*.



Image 65: *Cuica* and *surdo* play *ripicas*.

The relation with the *cuica* rhythms and the rhythms of the *surdo de repique* is also evident. The rhythms of these high tuned instruments and the rhythms of the *cuica* have the same foundation. In the next examples, two *cuica* and two *surdo de repicar* rhythms are superimposed. The tonalities and the densities of the rhythms are different, but the rhythms have the same basis.

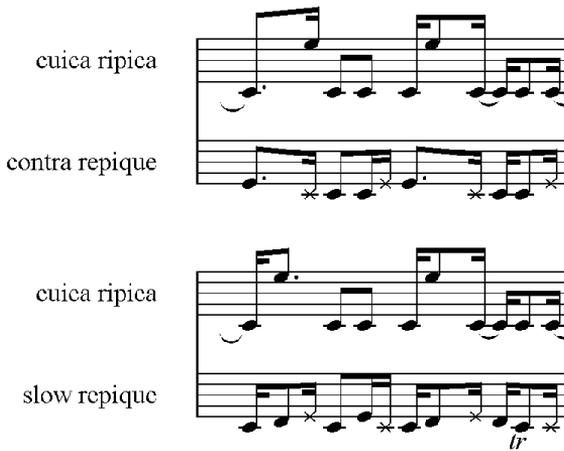


Image 66: Relation between *repiques* and *cuicas*.

The following *ripica* pattern was discovered in 2003 in the *ensaio técnico*, or technical rehearsal, of the *Mangueira* samba school at the *Sambódromo*, (Samba Stadium).¹³ A group of players were warming up and having some fun in a small group with small instruments. The following notation is not exact because of constant variation, but the idea and the type of rhythm is clear. As in the previous patterns, the *cuica* approximates the *ripica* pattern of the *surdo de repicar*.



Image 67: *Cuica* playing *surdo de repicar*.

Even though the dense *repinicar* rhythm of the *cuica* is not used in the corpus, the relation with it and the typical *surdo de repinicar* rhythms are very clear. The following ways to play *marcando* rhythms with *cuica* are found in the literature. They are all standard patterns and are widely used in samba.

¹³ Author's archive. MD 2003. The 19th of January. Ensaio técnico at Sambódromo. Players of the Mangueira Samba School in warming up.

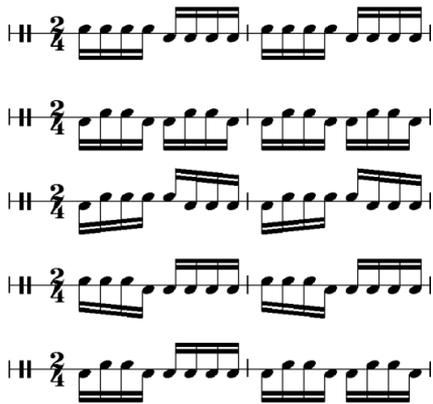


Image 68: Examples 1–4, *cuicas marcando*. Sabanovich 1986.¹⁴

Even though these examples are written in 2/4 meter, they are examples of *batucada*. The relation with the following *marcando* / *repinicando* rhythms of the *surdos de repinicar* is direct.



Image 69: Different *repinicando* rhythms.

The compositional relation between the *cuicas* and the *surdos de marcação* is interesting. Unlike other instruments in the *miudeza* part of the *bateria*, the *cuica* section is divided into subsections with the manner of *couros pesados*. All other sections except the *tamborims* are monorhythmic. In the corpus, the *cuica* section is

¹⁴ Sabanovich, Daniel 1986. *Escola de Samba techniques, instruments and rhythms: A Performance Manual*. The Faculty of the Department of Music San Jose State University. In Partial Fulfillment of the Requirements for the Degree Master of Arts. p. 40.

divided into three parts, which all have different rhythms and tunings.¹⁵ This associates the *cuicas* closely with the *couros pesados*. If the foundation of the division between the two main parts of the *bateria* were musical and not technical, the *cuicas* would be part of the *couros pesados*.

Normally, the *miudezas* follow a different system. The sections are not divided into subsections -they are monorhythmic. In the corpus, excluding the *cuicas*, the only deviation of this is the varied rhythm of the *tamborim* section. The separation of compositional principles between the main sections is essential when we remember that the division of the *bateria* into *couros pesados* and *miudezas* also follows the broad outline of division into traditional and modern instruments.

The compositions and rhythms of all *surdos* follow the guidelines of *cuica* practices. No instrument than other *cuica* in the original *Deixa Falar bateria* had that compositional potency. It seems that *cuica* as a traditional instrument has been the rhythmical ancestor of all *surdos*. The emergence then of *cuica* in the first *bateria* was a lucky coincidence, and with the invention of the first *surdo*, it gave a basis and started the development of the modern *bateria* standards in *batucada*.

The only non-*surdo* instrument in *couros pesados* is the *caixa*, and its whole family of drums with resonators. There are many ways to play those instruments, especially the syncopated *floriando* rhythms. Instead, all *marcando* rhythms seem to be quite similar, and the only variation occurs in the type and degree of tonal movement. These straight rhythms are equal to the simplest *marcando* rhythm of the *surdo de repinicar*. The function and the accentuation are the same. It is possible that these rhythms might have their bases somewhere else also, but their relation with the *marcando* rhythms of the *surdos de repinicar* and *cuicas* is very direct.

In the case of *Os 27 Amigos*, the rhythmic predecessor of the *tarol* rhythm seems to be the *tamborim*. Keeping in mind de Souza's statement that the other rhythmic mode of the *caixas* is *floriando*, the analogy with the *tamborim*, which plays *floriados*, is

¹⁵ Author's archive, Notes 1990–91: "For example. If there are six *cuicas*, then three of them play a pattern that resembles *repiques* and three of them plays a cutting pattern." pp. 119–120.
–Author's archive. Oscar Bigode paper: "Cuicas, Funções: Marca, corta e ripica." (Cuicas, Functions: Mark, cut and ripica).

clear.¹⁶ The relation of the *tamborim*'s and the *caixa*'s rhythms with the overall-rhythm of the *cuica* section in the next image, is also interesting.

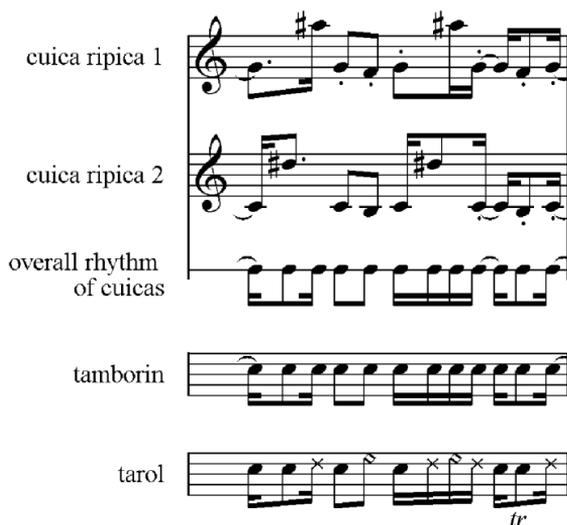


Image 70: The relations between *cuicas*, *tamborim*, and *tarol*.

The only deviations between these rhythms are the placement of ties with the *cuica*'s overall rhythm, the *tamborim*'s ties, and the lack of ties in the tarol line. These differences arise from the different phrasings and playing techniques of the instruments. Nevertheless, the basic rhythm is the same. With this, it seems that the *tamborim* rhythm and the tarol rhythm are modified to be synchronised with the overall rhythm of the *cuicas*.

When examining the rhythms of the *caixas*, the development of rhythm is generally not that clear. Even though the primary way of playing the instrument is quite standardized, in samba schools, many different variations and rhythms are used. Without a wider and deeper analysis, not all influences can be traced. So this relation between the *tarol* rhythm and the *tamborim* rhythm concerns only *Os 27 Amigos batucada*, and possibly, to some degree, the *batucada* of *Portela*.

¹⁶ Author's archive. *O samba mais puro da bateria*. Clipping of an unknown newspaper from Rio de Janeiro: Date: between November 1966 and the 30th April. Obviously before the carnival: "Tarols enter in the bateria [...] and [it] can be teleco-teco or floreado."

4.5. Summary

It is often thought that the development of samba coincided with the invention of the *surdo*, and the adaptation of the new *tamborim* rhythm. This is partly true, but the development of *batucada* and the *bateria* standards have a deeper premise. In the *bateria Os 27 Amigos* and presumably in the *Portela* samba school tradition, the *tamborim* possibly only exists to facilitate the *tarol's* rhythm. Conversely, the *cuica*, which emerged in the *bateria* of *Deixa Falar*, had more influence. It seems that the *cuica* brought the deep African compositional practices to *batucada*. The *cuica* provided a reasonable basis for the rhythms of all new *couros pesados*. All new rhythms are adaptations and modifications of the *cuica* rhythms of all rhythmical functions. From this point of view, the real predecessor of the *batucada* of *Portela* and *Os 27 Amigos* is the *cuica*, which set the foundation for the development of all the *surdos* in *couros pesados*. Because the development of the *bateria* standards meant first and foremost the development of the *couros pesados*, the first *cuica* was the real innovator, and set the tone for the contemporary *batucada*. Other instruments, such as the *tamborim* and later the *agogô*, only had an effect with this. This development is illustrated in the following scheme.

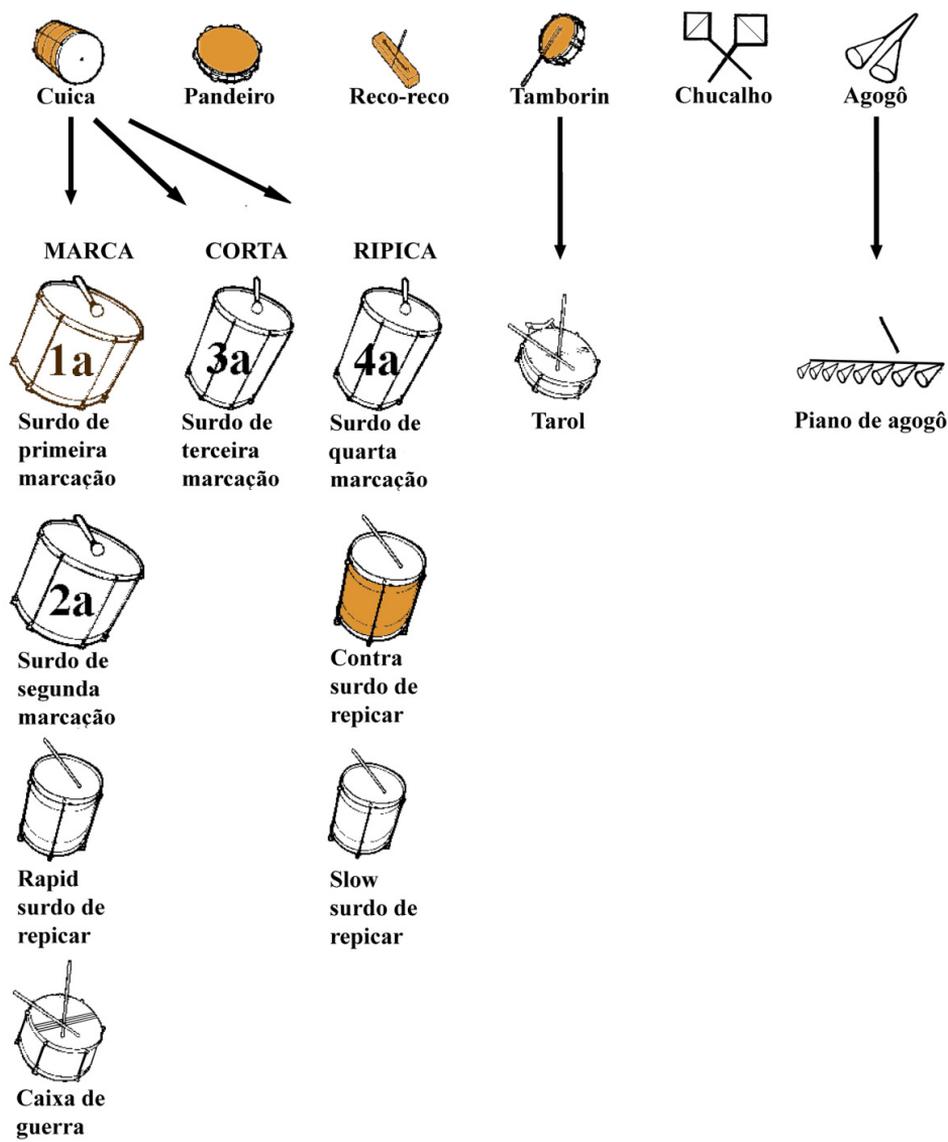


Image 71: The development of *bateria*'s rhythms and playing standards. The instruments of the *bateria* of *Deixa Falar* are coloured.

5. ANALYSIS OF BATUCADA

5.1. Analysis of the batucada vocalization of Ismael Silva

Modeling the early *Deixa Falar batucada* is problematic. We are accustomed to modern *batucada* and its clear, simple time signature. However, the changes to the *batucadas* compositions and instruments over the decades are a fact, which will become apparent in this study too. The *marca* rhythm is strongly accentuated these days, but as shown by the comparisons of the *Os 27 Amigos bateria* and the *baterias* of the 1990s, the *clave* based rhythms were central earlier on. The 1959 soundtrack of Camus' film *Orfeu Negro* and the *batucadas* of the *Mocidade Independente* and *Portela* samba schools are even further removed from the current style.¹ The further back we go in history, the more alien the *batucadas* sound.

Over the decades, the *batucada* has been undergoing continuous demarcation with other forms of music and many experiments have been carried out. Some of them have disappeared without leaving a trace and some of them have merged with the *batucada*, becoming a part of it. Even the *batucada* itself is not a single rhythm, but as can be seen in the rhythm analysis, it is a hybrid of the *marca* rhythm, several *claves* and diminished rhythms. Historically, the development of the *batucada* has been a development of *couros pesados*, particularly *surdos*, and their rhythms. The rhythms of the smaller instruments have remained traditional and the *surdos*' rhythms have developed based on the *cuica*'s *marca*, cutting and *ripica* rhythms.

When focusing on the descriptive nature of the Bum bum paticumbumprugurundum rhyme documented by Cabral and its possible analogues in early samba and the modern *batucada*, some basic starting points can be put forth. In my opinion, the rhyme should not be seen as a mythical description, but we should rather look at it realistically and put it in the perspective of what we know about samba and the *batucada*.

This review starts from the assumptions, that the Bum bum rhyme at the very least, is relatively relevant. If someone has been able to describe the early *batucada* accurately, it was none other than Ismael Silva. If Cabral, in his turn, followed good

¹ *Orfeu Negro* 1959. Movie, Brasil. Producer Sacha Gordine; Director Marcel Camus.

journalistic procedure and taped the interview, as the book's illustrations² lead us to believe, the rhyme has strong links to samba and the *batucada* and its synchrony with the music is clear. If this not actually true, the links and synchrony are limited. Secondly, the rhyme's way of presenting things is most apparently typical of samba and *batucada* and it is also linked with the rhythms' current vocalization methods. Additionally, the rhythm patterns derived from the rhyme must be the *claves* in the *batucada*, their diminutions or based on the *marca* rhythm, but they do not need to be typical of the current, accented *marca* rhythms.

The rhyme does not depict all the instruments in detail, but rather highlights whichever instrument is most emphasized in the rhythmic pattern at the time. It can be seen as a depiction of the *balanço total*, total balance. Based on Ismael Silva's statement, the rhyme describes the rhythm as it was when it was introduced, when the tan-tantan samba had been cast aside. Based on what was said, this happened before *Deixa Falar's* first parade in 1929. Therefore, the rhyme should have a clear link with the *bateria* description according to which the instruments in *Deixa Falar's* parade were the *tamborim*, the *surdos*, the *cuicas*, the *pandeiros* and the *reco-reco*.³ The rhyme's vocalizations depict either that selection of instruments, or something which is very similar to it. There is no information regarding possible instrument or rhythm experiments carried out in *Deixa Falar*.

The sounds of the instruments in a *bateria* like the one described are clearly distinctive, which makes it easy to separate the sound descriptions from one another. The *surdo's* sound is long and rumbling. It is differentiated clearly from the long sounding *cuica*, which has an open sound like a sung a or u vowel sound. The *pandeiro* is the *bateria's* only instrument which has a metallic and ringing sound. This is caused by the small metal plates placed along the rim of the instrument. Its sound can vary, depending on the quality of the plates and the way in which they are spaced. If the plates only move a small amount, the sound is short, precise, and like a ticking sound. If

² Cabral, Sérgio 1974. *As Escolas de Samba: o quê, quem, como, quando e por quê*. Rio de Janeiro: Editora Fontana Ltda. p. 7.

³ Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85-88530-03-1. p. 51: "tamborins, latas de manteiga encouradas (o *surdo*), cuicas, *pandeiros* e *reco-recos* [...]."

the plates are spaced far apart, the sound is crunchy and less precise. The wooden *reco-reco* resembles the croak of a frog and the *tamborim*'s sound is short and cracking.

The rhyme's syllables apparently only describe the sounds of the top three most audible instruments in a rhythmic pattern: those of the *surdo*, *cuica* and *pandeiro*. The *reco-reco* and the *tamborim* aren't depicted. The "bum" and "cum" syllables are clearly open sounds of the *surdo*. The instruments sound is stronger than all the others, so it drowns out the sounds of the other instruments. The "pa" syllable represents the low sound of the *cuica*. "Ti" could either be the high sound of the *cuica*, or the tight slap of the *pandeiro*. The "ru" and "run" syllables are most likely depictions of the fairly open sounds of the *pandeiro*'s bells. That is the only possibility, if there was no *caixa* in the *bateria*. In those cases, the "ti" syllable must originate from the *cuica*. Another alternative for the "ru" and "run" syllables could be the *reco-reco*, but the sound of the wooden *reco-reco* is closer to a croak than a crunch. Out of these three instruments, the "gu" syllable could only be caused by the closed sound of the *surdo*. The unvoiced "gu" syllable is a great example of it. The last "dum" syllable could only be made by the *surdo*. It could represent the hand strike which precedes an open beat of the *surdo*. When the rhyme is deconstructed into syllables, and the syllables are linked to the instruments the following chart is born.

Syllable	Explanation
Bum	surdo's open sound hit with a mallet
bum	surdo's open sound hit with a mallet
pa	cuica's low sound
ti	cuica's high sound
cum	surdo's open sound with hand strike to the edge of the skin
bum	surdo's open sound hit with a mallet
pru	pandeiro's slap in the center of the skin
gu	surdo's closed sound hit with a mallet
ru-n	pandeiro's slap in the center followed by background surdo sound (n)
du(m)	surdo sound by hand in the center of the skin (prelude to the mallet beat)

Image 72: Chart.

If the above is at reasonably accurate, the next question relates to the synchrony between the instruments' rhythmic patterns and the rhyme. Regarding the *tamborim* and the *cuica*, we know that their rhythms have remained much the same as they were in the 1930.⁴ There are no noteworthy depictions of the rhythms of the other *batucada* instruments from that period. Out of these instruments, the rhyme is only in clear synchrony with the rhythms of the *cuica*.

Next, I will examine the relationship between the rhyme with the *cuica's ripica* rhythms presented by Sandroni and in the corpus. I've synchronized the beginning of the rhyme and the beginning of the *cuica's* rhythm. The reason for this synchrony is clear: following samba practices, the rhythms of the *surdo* and the *cuica* are vocalized from that point, beginning from the first *marcação*. The rhyme starts with two beats of the *surdo*, which per current practice, are the beats of the *surdo de terceira marcação*. They are the same beats with which the *cuica's ripica* rhythms begin. The presented synchronies fulfil the criteria presented at the off-set: the depiction is typical of samba and the *batucada*. De Souza also used this form of depiction when describing the rhythmic phrases of the *surdo*.⁵

Departing from the other practises of this study, I use only one line instead of five in the following rhyme notations for the sake of clarity.

⁴ Sandroni, Carlos 2001. *Feitiço Decente. Transformações do samba no Rio de Janeiro (1917 –1933)*. Rio de Janeiro: Jorge Zahar Editor / Editora UFRJ pp. 32-37.

⁵ Author's archive. Notes 1990–91. p. 125.

tamborim

cuica Sandroni 1
Bum bum pa - ti cum bum

cuica Sandroni 2
Bum bum pa - ti cum bum pru

cuica Sandroni 3
Bum bum pa - ti cum bum

cuica 1 Os 27 Amigos
Bum bum pa - ti cum bum pru

cuica 2 Os 27 Amigos
Bum bum pa - ti cum bum pru

Image 73: The rhyme's synchrony with different rhythms.

The synchrony of the rhyme's beginning with the Sandroni 2 *cuica* rhythm is good. Without the arc that connects the beginning of the bar and the end, the equivalence is almost perfect. The equivalence is also good with both the *Os 27 Amigos* *cuica* rhythms. When the end of the rhyme, “gu-run-dum”, is placed at the beginning of the bar in these three examples, the rhyme fits in very well into the rhythm of samba and the *batucada*. I have marked edits and additions with x-headed notes.

CUICA Sandroni 2
 gu - run - du(m) Bum bum pa - ti cum_ bum pru

CUICA Os 27 Amigos 1
 gu - run - du(m) Bum bum pa - ti cum_ bum pru

CUICA Os 27 Amigos 2
 gu - run - du(m) Bum bum pa - ti cum_ bum pru

Image 74: The rhythms that fit the rhyme the best, with supplementation to the beginning of the rhyme.

Based on modern playing practices, the sounds of each instrument's beats are in the proper places. All the rhythms in the examples are possible and typical. Based on this, it is likely that Cabral notated the rhyme performed by Silva with considerable accuracy. If there are errors, they fit exceptionally well into the samba, at the very least. At the same time, it should be noted that there is a marked similarity between the rhythms of modern samba and the samba of the *Deixa Falar bateria*.

Modelling the *Deixa Falar* rhythm can be continued based on the above examples. I arrange Sandroni 2 and both the *Os 27 Amigos cuica* rhythms with the *pandeiro* and the *surdo*, so that they correspond to the rhyme as well as possible. I have selected the *surdo* rhythm that fits best into each example. The *pandeiro*'s rhythm is the same in all the examples. I am only using documented rhythms.

The image shows a musical score for four instruments: cuica, surdo, pandeiro, and rhyme. The cuica part consists of a melodic line with eighth and sixteenth notes. The surdo part is a rhythmic accompaniment with notes marked with 'x' and 'v' symbols, and some notes are highlighted in red. The pandeiro part features a rhythmic pattern with eighth notes. The rhyme part is a vocal line with lyrics written below it. The lyrics are: gu - run - du(m)Bum bum pá - tí cu(m) bum pru.

Image 75. *Cuica 2* Sandroni, *surdo* played using the *surdo de repicar* technique.

This first example is based on the Sandroni 2 *cuica* rhythm and I have selected a *surdo* which is played with a technique like that of the one used for the *surdo de repicar*. In this case, the “cum” and “bum” syllables at the end play as open sounds and the last *surdo* beat is just a muffled hand beat, before the closed mallet beat at the beginning of the bar. This rhythm fits well, in a vocal sense, with the description of the rhyme. I have marked the notes that differ from the rhyme in this arrangement in red. I think that the first anomaly is meaningless. The “dum” syllable is described as a long one, but in this case a short description would be more apt. The second anomaly, the final *surdo* beat in the second fourth is just a muffled hand beat as hand touches to the membrane before the mallet strikes. In practice, it is very quiet and in my opinion, has very little effect on the rhyme itself. However, the last hand strike on the *surdo* in the third fourth is clearly distinctive. It is the same “dum” sound, as at the end of the first fourth. It could be assumed that it should also have been voiced. This is a clear and audible departure from the rhyme. The following “cum” vocalization should be long, per the rhyme, but in this case, it is shortened, just like the “dum” vocalization in the first fourth. The deviation is not great, but it is still distinct.

cuica

surdo

pandeiro

rhyme

gu - run - du(m)bum bum pa - ti cum bum pru

Image 76: *Cuica 2* played based on *Os 27 Amigos* and *surdo* on *contra repique*'s rhythmic variation.

This example is based on the *Os 27 Amigos 2 cuica* rhythm. I have chosen to pair it with the *contra repique* rhythmic variation, where the lows follow a similar rhythm than the *cuica*'s low sounds, from the corpus. In this example, there are only two discrepancies vis à vis the rhyme. The first of these, the *surdo*'s "dum" from the beat's first fourth is shortened, like in the previous example. The second discrepancy, the *pandeiro*'s slap beat from the third fourth is strong and should be clearly distinctive. However, it does not have an equivalent in the rhyme. The *pandeiro*'s rhythm is alive and the version presented here is only an educated guess, based on playing practices. It should not be over-esteemed, because the rhythm can be emphasized differently as well. That said, the emphasis of the "pa-ti" syllables, which in this version becomes end oriented, is far more meaningful. No such emphasis is implied in the rhyme, so the syllable pair should follow Portuguese usage custom and be emphasized as pá-ti.

The image shows a musical score for four parts: Cuica, Surdo, Pandeiro, and Rhyme. The Cuica part is a melodic line with lyrics 'pá - ti'. The Surdo part is a rhythmic line with lyrics 'gu du(m)Bum bum cum bum'. The Pandeiro part is a rhythmic line with lyrics 'run' and 'pru'. The Rhyme part is a rhythmic line with lyrics 'gu - run - du(m)Bum bum pa - ti cum_ bum pru'. The score includes various musical notations such as notes, rests, and accents.

Image 77: *Cuica* played based on the *Os 27 Amigos* and *surdo* on *contra repique* rhythmic variation.

Lastly, I will examine the *Os 27 Amigos cuica 1* rhythm. Both the *surdo* and the *pandeiro* play the same way as in the previous arrangement. This time the only discrepancy is the shortening in “dum” syllable in the first fourth’s *surdo*. In other ways, the rhyme and the rhythm fit together perfectly. The greatest question is related to the *surdo*’s rhythm, which is not tied to a *marca*. Based on modern practice, the first beat in the last fourth of the *surdo*’s rhythm should be played, tying it to a *marca*, but in there is only an arc in the *surdo*’s rhythm. Only the *pandeiro* and the *tamborim*, which aren’t marked in the arrangement, play that accent. This is an anomaly with the current practise, but the chosen *surdo* pattern for this example is from the corpus, where is a variation of the rhythm.

This leads to a question on the *surdo* and the development of its rhythm. Previous analysis on the development on the *bateria* and the instruments therein brought up the point that the *surdos*’ rhythms probably developed from the *cuicas*’ rhythms. Not much information is available on when the *surdos*’ different *marcações* developed or which the first one was. We should be particularly wary of the impression that the terms *primeira*, *segunda*, *terceira* and *quarta marcação* are somehow chronological. The terms are technical and the first *marcação* wasn’t necessarily the first one played on the *surdo*. In fact, the Bum bum rhyme refutes this idea. The *surdo* rhythm depicted in it is neither *primeira* or *segunda marcação*, by any stretch of the imagination. It is much closer to the *terceira marcação*. The *primeira marcação* is, therefore, later, and probably either a loan from somewhere else or an elaboration which

developed alongside the *bateria*'s size. Based on modern practice, the *surdo*'s rhythm being tied to a *marca* rhythm should not be seen as self-evident in early *batucada* particularly as a new way of playing was new born. Based on what we know, this development has happened in phases and took several decades. *Batucada* was not born the way that we know it today.

The kind of *surdo* rhythm presented is logical. The basis of this examination, in that case, is not the *marca* rhythm, but rather the *clave* rhythms and their diminutions, which were once central to *batucada*. When we also take the *surdo*'s rhythmic ancestor, the *cuica*, into consideration, the close connection between the rhythms of the *cuica* and the *surdo* is more than something to be expected. As shown in the rhythmic analysis, the presented rhythm is also a diminution of the same *clave* as the *cuica* rhythm it is paired with.

If we complement the above interpretation with instruments that are congruent with the description of *Deixa Falar*'s *bateria*, we have one possible description of the first steps of the *batucada*.



Image 78: One possible reconstruction of early *batucada*.

5.1.1. Summary

Even though this reconstruction is only slightly removed from current practice, as music, it sounds remarkably different. The absence of the first and second *marcações* removes the familiar simple time signature. When the *claves*' diminutions, the *ripica* rhythms, become emphasized, a listener familiar with modern samba is forced to make an effort to be able to perceive the ensemble.

When examined against the presumptions and conditions presented at the beginning, the rhyme documented by Cabral is a good depiction of samba and *batucada*. The connections are clear and the synchrony is strong. The presentation of the rhyme follows also the modern conventions of samba. In this regard, samba itself seems to be unchanged but compositions not. Additionally, the rhythms used in the analysis are documented and clearly fall under the samba and *batucada* labels. They are all based on the *clave* rhythms found in samba, with limited emphasis on *marca* rhythms. The emphasis of the *marca* rhythm is, however, only a feature typical to modern *batucada*. In this sense, older *batucada* apparently differs from it.

When it comes to the strict interpretation of the rhyme, I do not think it important, because as we can see from the corpus, rhythmic variations were, apparently, central features of even the oldest *batucada*. We should also remember, that when *Deixa Falar* began to develop its new samba, this was just the beginning and an experiment. We do not know exactly how things progressed and many things are shrouded in mystery. The interview, in which Silva performed his famous rhyme, was carried out decades after the actual event. Of course, a musician will remember the rhythms well, but the degree of detail is unknown. At the time of the interview, samba schools were already institutions and events from the beginning were glossed over, as clues in several sources point out. At that point, the samba school story canon was being created, so it is possible that the rhyme presented in the interview was arranged to fit it.

5.2. Analysis of the rhythm

During the first quarter of the last century, African music has been studied more extensively than samba. There is an excellent collection of notation and recordings of African music, and several theories have been developed on it. It would be an extensive task to present and summarise all of the material with the accuracy it deserves. Since presenting previous studies is not the main purpose of this work, there is no reason to detail all lines of previous research and results. On a general level, previous study clearly demonstrates that even though African and Afro-Brazilian music have confluence and several similar traits, they also have significant differences particularly in the case of samba.

However, previous studies include approaches relevant to this study. I will utilise them as examples as I explore more general lines of study. A common feature for all these African music theories presented here is that they help to conceive the music and shed light to its attributes from different angles. They do not expose the deeper guiding structures of the music, in other words they do not answer the question why something is the way it is, but they facilitate examining audible phenomena and describe what is. In observing these phenomena, I leave open critical viewpoints that I will discuss later, hopefully giving them a comprehensible explanation. The essential choice in the observation is to focus solely on percussions, since the *batucada* in the corpus is percussion music. This leaves out everything else. I will look at studies representing various viewpoints in a roughly chronological order starting from the earliest study.

5.2.1. Studies of African and Afro-Brazilian rhythm

Hornbostel opens his study by stating: “1. African and (modern) European music are constructed on entirely different principles, and therefore 2. they cannot be fused into one”.¹ He considered Africans exceptionally musically talented and paid attention to the syncopal nature of the music, a feature that stood out clearly in the eyes of a person with

¹ Hornbostel, Erich von 1928. African Negro Music. *Africa* vol. 1 no. 1. January 1928. Journal of the International Institute of African Languages and Cultures. Reprinted 1963 for Wm. Dawson & Sons Ltd., London. pp. 30-62.

a Western music education. He assumed that Africans perceive music kinetically and the actual beats were played in the air. The sound listeners hear are only the retro reflection of the beat. Thus, there would be an underlying idea of perfect time that also the Africans would follow, but the basic functionality of their rhythmic differ from European practices.

Rose Brandel researched *African Hemiola* type asymmetrically built musics that she considers the most essential African rhythm type.² She assumed they were based on some underlying motoric-rhythmic or kinaesthetic structure that presumably forms the basis for the entire world of rhythms in East India and Africa. To her theory of asymmetrical rhythms formed by divisions to 3 and 2 she also connects Sachs' theory of additive and divisive rhythms.³ In addition to the most common 3+3+2 rhythm, Brandel also recognises its longer version with 12 beats, 3+3+2+2+2.

As for Jones, he examines rhythmic with a wider scope.⁴ He focuses on the repeating rhythm patterns he calls "African signature tunes" as the essential ingredients of the music. However, he has no premise to draw these rhythmic phrases from. Also, he does not refer to or suggest any system to tie the remaining rhythmic material to these patterns, and therefore they remain separate observations of the whole. However, Jones himself stated that he presents the music but he considered drawing a grammar out of it too artificial.⁵ The material is as complete as possible to allow others to analyse it.

Another approach is to find the smallest common denominator in the rhythmic pattern, an existing one or an artificial one created to support perception, and time the process of the rhythmic patterns based on that. This approach is demonstrated in Hood's "density referent" and other similar views.⁶ These approaches are theoretical. They do not represent the basis of the music or its essential forms, but instead they are structures created to help the conception of wholes and to construct a net against that music can be studied in a network of musical coordinates.

² Brandel, Rose 1959. The African Hemiola Style. *Ethnomusicology* vol. III: 3: 106-116.

³ Sachs, Kurt 1953. Rhythm and Tempo. *A Study in Music History*. New York, Guilford, Surrey. Columbia University Press Morningside Edition. p. 24-25.

⁴ Jones, A.M. 1971 (orig. 1959). *Studies in African Music*. London: Oxford University Press. ISBN: 0 19 713512 9. p.3, 210.

⁵ Jones, A.M. 1971 (orig. 1959). *Studies in African Music*. London: Oxford University Press. ISBN: 0 19 713512 9. pp. 1-15.

⁶ Hood, Mantle 1971. *The Ethnomusicologist*. McGraw-Hill company. p. 114.

Possibly the most controversial article of the area is “Problems in Ethnomusicology” by Constantin Brailou.⁷ He gives heavy criticism to the ethnocentrism of Western music research and states for example: “He [the Western researcher] has a great difficulty in imagining that an anonymous rhythm system can be founded on data fundamentally different from those that he believes to be universally valid.” This statement still rings true. The single very frequently used basic term in the study of African music is still “metre”.

It appears that Brailou saw other rhythmic systems as somehow radically divergent from Western rhythmic systems. In my opinion, the same underlying basic premises apply to both European and African rhythmic systems. In European rhythmic systems, we are simply more focused on melody and harmony, whereas the African culture has developed the rhythm. This is why our harmonic and melodic structures are quite advanced and also why the structures in Afro rhythmic systems have become multileveled and profound. It is based on the same human conception as Western rhythmic systems. Its structures are exotic and strange to us, just as Western harmony is exotic and strange for West Africans. The table of *aksak* rhythms at the end of Brailou’s article is quite comprehensive, and with further analysis it could offer a more specific idea of relations between different rhythms. However, that work remains to be done and the table in its current form is merely basic source material that still awaits analysis.

Robert Kaufman analyses the rhythmic structure in his work “African Rhythm”.⁸ In addition to compiling different theories, he identifies the rhythm diminutions and basic rhythmic relationships that guide them, as well as acknowledges that the music consists of several different rhythms and recognises the rhythm he calls cross-pattern that contrasts the basic rhythm.

An approach to African music interesting to this study can be found in the study by Nketia.⁹ Those who are familiar with his work will notice that this study moves close to his. Especially the rhythmic notations are closely related, and some of his notations could be from this study or explain some views presented in it. The greatest differences, in addition to the music studied, is Nketia’s striving for symmetrical structure, and that

⁷ Brailou, Constantin 1984. *Problems in Ethnomusicology: 9 / Aksak rhythm*. Cambridge University Press. ISBN 0 521 24528 1.

⁸ Kaufman, Robert 1980. African Rhythm: A Reassessment. *Ethnomusicology* vol. 24 no. 3.

⁹ Nketia, J.H. Kwabena 1975. *The Music of Africa*. London, Victor Gollancz Ltd.

his study does not differentiate between basic rhythms and diminutions derived from them. However, both rhythm levels are clearly visible in the examples.

Ekwueme brings out a point of view complementing this in his article on structures in African music.¹⁰ He refers to Schenker's view that African music is constructed of three main levels of structure. The basic level is called back-ground, and African music is based on the call-and-answer pattern of this level. Thus the basic pulsation of the music in the long run is a binary symmetric balance. Derived from this basic level using various techniques and arrangement is the middle level, the middle-ground, which can be refined into the decorative surface level, the fore-ground. Most of the material the listeners hear belong to the fore-ground that is produced from the material of the other levels by dividing their harmonic, melodic and other tonal material. Ekwueme's summary is essential to the entire structure:

“...and the rhythm of African music is built on three distinguishable structural levels. The background material is a skeleton of the structure that gives us the form of the music often reducible to the antiphonal “call and response” or “call and refrain” pattern; the middle-ground contains rhythm motifs such as the standard patterns and other delimiters on which the music is based, while decorative motifs such as are employed by the master drummer are merely foreground material which do not significantly affect the structure of the music.”

Without the deep understanding of African music that Ekwueme has, I cannot comment on his view on the attributes that affect the back-ground structure. However, his view on levels of music is significant to this study and is considerably close to the view I have developed on the subject through performing the music and analysing its structures. My view is formulated slightly differently and can be analytically expanded to more levels, but in practice these aforementioned three levels are fully sufficient to explain the structures of both samba and *batucada* with near mechanical accuracy. Thus the analysis is based on the basic rhythms of the back-ground.

¹⁰ Ekwueme, Laz E.N. 1975/6. Structural Levels of Rhythm and Form in African Music. *African Music* vol 5. Number 4. pp. 27-35.

In addition to purely rhythm-based views, the study of African and Afro-Brazilian music has paid attention to the significance of tunings and timbre.¹¹ Brandel defines tunings and in his article refers to Natalie Curtis, 1920,¹² who according to Brandel "...mentions the tuning of drums a fourth apart as usual procedure." In a similar manner, Jones states of drumming music and rhythmic patterns: "African drum-beats vary not only in pitch but also on quality. If the wrong quality of note is played in any particular drum-pattern, that pattern is no longer what it is intended to be and becomes another pattern".¹³ In this conjunction we should also include Pressing's view, stating: "It is important for the purposes of this article to note, however, that all the instruments have at least two distinct tones or states, allowing a rhythmic pattern to be a registral melody."¹⁴ All these comments attest to there being wholes consisting of several different instruments in various sizes, including various tuning systems. They can be formed passively based on the features of traditional instruments or they can be active, utilised and adapted when needed. Looking at it the other way around, it would be rather strange if tuning and timbre were not somewhat important or outright essential, since otherwise the overall timbre and the relations between the rhythmic patterns of different instruments would be random.

All the features presented in the aforementioned studies can also be observed in samba and *batucada*. The emphases vary case-specifically, but the study problems are very similar. The relationship between African and Afro-Brazilian rhythmic has been so clearly demonstrated that there can hardly be any doubt about it.¹⁵ What is essential are the differences developed through history. According to Alvarenga, Brazilian blacks received European music already in the 15th century, and therefore Brazilian music is no longer pure black African music.¹⁶ Alvarenga states that European music has possibly influenced black music, and they have adopted and adapted their music to European

¹¹ Brandel, Rose 1952. Music of the Giants and Pygmies of the Belgian Congo. *Journal of the American Musicological Society* vol V. No I. pp. 19, 21.

- Pantaleoni, Hewitt 1972. Three Principles of Timing in Anlo Dance Drumming. *African Music Society Journal* 6 (3) p. 50.

¹² Curtis, Natalie 1920. *Songs and Tales From the Dark Continent*. New York.

¹³ Jones M.A. 1959. *Studies in African Music*. London, Oxford University Press. p. 11.

¹⁴ Pressing, Jeff 1983. Rhythmic Desing in the Support Drums of Agbadza. *African music*. Journal of the International Library of African Music vol. 6. Number 3. p. 4.

¹⁵ Kubik, Gerhard 1979. Angolan Traits in Black Music, Games and Dances of Brazil. *Estudos de Antropologia Cultural*. No. 10. Lisbon. pp. 7-51.

¹⁶ Alvarenga, Oneyda 1946. A influencia negra na música brasileira. *Boletim latinoamerica da música* VI. pp. 357-407.

practices. It is possible that originally only the melody guided by rhythmic has converted into following the European quadruple time.

In my view, it is not only a question of adapting the melody, but in samba and *batucada* the rhythmic has changed in a similar manner. In addition to African rhythmic elements, *batucada* has a clear beat that resembles common time. How African this *marca* rhythm, *marcas*, really is, cannot be determined with current information. Is it a newer form, developed to adapt African rhythm to European form, or does it have deep roots in Africa? Several studies point to the latter.¹⁷ Apparently this structure in this form in *batucada* is relatively new and thin. When it is peeled off and we go backwards in history, already if we examine the Bum bum *batucada* of *Deixa Falar* samba school, it feels very different and alien. There is no safe common time, and the shape of the rhythm is very African. It is possible that other rhythmic material has also changed and organised into a different form from what it was when it came from Africa. It is difficult to observe direct equivalence between the structure and arrangement of *batucada* and for example Jones' notations. There are many similarities though.

The contemporary *marca* rhythm separates *batucada* clearly from more African percussion music and simultaneously offers a solid line of reference that other rhythmic material can easily be compared to. However, this line should not be confused with metre, which it is not; its basic emphasis is rather the opposite and it does not follow other Western rhythmic conventions either. If these conventions are applied to interpreting *marcas* and other rhythmic material, the form of rhythmic events becomes distorted and contaminated beyond recognition. Here I agree with Koetting and Kolinski.¹⁸

¹⁷ Blacking, John 1955. Some Notes of a Theory of African Rhythm Advanced by Eric von Hornbostel. *African Music Society Journal*. vol. 1. no. 2. p. 18.

- Kaufmann, Robert 1980. African Rhythm: A Reassessment. *Ethnomusicology* vol. 24 no. 3. pp. 413-414.

- Locke, David 1982. Principles of Offbeat Timing and Cross-Rhythm in southern Eve Dance Drumming. *Ethnomusicology* vol. 26 no. 2. pp. 217-246.

¹⁸ Koetting, James 1970. Analysis and Notation of West African Drum Ensemble Music. *Selected Reports* vol. 1 no. 3: 139.

- Kolinski, Mieczyslaw 1973. A Cross Cultural Approach to Metro-Rhythmic Patterns. *Ethnomusicology* vol. 17 no. 3: 494.

5.2.2. Analysis of batucada

Previous studies showed that the emic system of *batucada* can present clearly the basic components of music. This prompts the question: is it possible that *batucada* also has a distinct, verifiable deep structure that cannot be directly or indirectly found on emic levels? Here I mean a possible structure that for example Ekwueme refers to.¹⁹ According to this, music consists of three levels, the last of that is the sounding surface structure that we hear. Beneath it are two more levels that define music in a deeper manner.

The following analysis starts from an emic premise, and the idea presented here is primarily based on music practice, practical experience and the view formed based on them. It is also based on rhythmic constructions where the overall rhythm is constructed starting from basic rhythms. These are quite common in samba. I have on occasion heard them played on different *repiniques*, the *tan-tan*, and the *atabaque*. I also use them in my own teaching, as they enhance both motor coordination and perception of rhythms. The exercise starts with playing the *marca* rhythm and a selected contrasting *clave* rhythm, (cross rhythm), simultaneously. For example, the left hand plays the *marca* on the drum skin and the right hand plays the contrasting rhythm on the body of the drum. In the next stage, the selected *clave* is diminished and after that the same is done to the *marca* rhythm. The exercise continues with switching the *clave* diminutions, alternating between the *tamborim* and *cuica* rhythms of the *clave*, followed by for example the *repicava surdo* pattern.



Image 79: Rhythm construction exercise.

¹⁹ Ekwueme, Laz E.N. 1975/6. Structural Levels of Rhythm and Form in African Music. *African Music* 5:4: 27-35.

De Souza's instruction has deepened my view of these constructions. Although we never discussed the matter on this level and from this viewpoint, my impression is that de Souza shared this understanding. He may have formulated it differently than I do here, but that understanding was reflected in all that he said about the structure of music, instrumentation and the function of the instruments. I would find it strange if he did not know the practice of playing or the relationships between the rhythms, even though he spoke about it using emic terminology. It is quite impossible to assess afterwards how analytical his understanding was. However, in my opinion de Souza's thinking and his conception of *batucada* were very clear and analytic. The following relationships between musical levels presented in analysis were hardly implicit to him.

The emic terms on that I base my analysis are *sequimentos agudos*, *marcas*, *ripicas*, and *balanço*. The first two, *sequimentos agudos* and *marcas* represent deeper levels and they define the rhythmic structure of the other levels. However, *sequimentos agudos* are not the level itself, but they refer to basic rhythms and through that also to level. On this deep level I always talk about basic rhythm on that the rhythmic structures of the following levels are based. A rhythm of this level can be called for example *clave*, which is perceived as defining the rhythmic structure of the music. Peñalosa's definition clarifies the concept:²⁰

“Clave: A Spanish word meaning “code,” or “key,” as in the key to a mystery or puzzle. Also “keystone,” the wedge shaped stone in the center of an arch that ties all the stones together. Clave is the key pattern that both binds and decorates the rhythmic structure of Afro-Cuban music.”

Even though *clave* is a term relating primarily to Cuban music, it can well be used to describe the deeper structure of Afro-Brazilian music. From the perspective of this study there are several *clave* basic rhythms and they form a logical system that affects everything at the bottom of *batucada*. Since all various *claves* are basic rhythms, I will henceforth call all *claves* with a common name “basic rhythm” and I will similarly talk about “basic rhythm level”.

Another term at the deepest level, *marcas*, refers to a basic pulse of four 1/16 beats in common time, that in *batucada* is formed by the second and first *marcação*. In

²⁰ Peñalosa, David 2012. *The Clave Matrix*. California, Bembe Books. p. back cover.

batucada this pulse is fully visible, a part of its structure. It should not be confused with the 1/4 beats in 2/4 or 4/4 metres, although the *marcas* do fall on the same beats as the aforementioned metres in *batucada*. The *marcações* are an arrangement feature in relation to the basic pulse, and I will therefore refer to this basic rhythm as the *marca* rhythm. This rhythm is clearly distinct from *clave* and steers a different kind of rhythmic phenomenon. To sum up, there are two types of basic rhythms, the *clave* and the *marcas*.

The next, more diminutive level are the *ripicas* and the *floreios*. They are rhythms derived from *clave* by diminution. Next level rhythms can also be derived from *marca* rhythms in the same manner. I will henceforth refer to both *clave* and *marca* based rhythms on this level as “diminutive rhythms”. As a result of this structure, playing in rhythm means respecting the basic rhythm beats, repeating them and dividing them into smaller units. This determination works both ways. The basic rhythm determines the diminutive rhythm pattern, and therefore the determining basic rhythm can be identified from the diminutive rhythm.

The final term to discuss is *balanço* that refers to the timbre and tonality of the rhythms. This is the audible surface level of the music. I will henceforth call it the “music level”. In the following analysis, I will discuss the three analytic levels of *batucada*, which are: basic rhythms, diminutive rhythms and the music level. In this analysis, I write the basic rhythm level and diminutive rhythm level rhythms on one line to emphasise that we are looking at the rhythm theoretically, without the music level, that would have other attributes beside pure rhythm. I will always use a pentagram to write the music level.

5.2.3. System of claves in batucada

All *clave* basic rhythms of the *batucada* can be derived from one basis that I call the “mother rhythm”, because in this conjunction it is the basis of everything. This rhythm is the well-known 3+3+2, often called *tresillo*.²¹ I expose the logic of the *clave* system

²¹ Penalôsa, David 2012. *The Clave Matrix*. California, Bembe Books. p.38.

- Sandroni, Carlos 2001. *Feitiço Decente*. Jorge Zahar Editor / Editora UFRJ. p. 28.

by notating the mother rhythm and dividing it in two in the middle, into the beginning and the end part.



Image 80: Mother rhythm.

This division into two halves corresponds to the *batucada marca* rhythm beats, the second and first *marcação* beats, that always last for four density referent beats. Henceforth I will examine the rhythm either from the *clave* perspective, dividing the diminutive rhythm according to *clave*, or from the *marca* perspective, notating the division according to the *marca* rhythm. Then the *marca* rhythm creates a rhythmic framework that syllabifies the *clave* and the diminutive rhythms derived from it into a familiar format, that should however not be confused with metres or connected with their terminology or rules.

The mother rhythm can be diminished, in emic terms *cortar*, in several different ways. In the examples I use minimum diminution, meaning here that I only divide in two beats longer than $3/16^{\text{th}}$. The purpose is not to fill up the rhythm, but to bring out its qualities more clearly. This also corresponds with the old *batucada* practice, the *ripica* and *floriado* rhythms, where the rhythm is emphasized and room is left for others. They are not filled as much as today.



Image 81: Mother rhythm and its diminutions 1-4.

The diminutions on the left in the image are written from the mother rhythm's point of view. To the right, the same is notated divided according to the *marca* pattern. Of these, the most typical diminutions to *batucada* and samba are examples two and three. Typically, in samba the mother rhythm determines that the first segment is against the beat²² and the second either on the beat (example 2) or indifferent (example 3) in relation to the *marca* pattern.

To advance in the analysis, I draw attention to two key matters that cannot be emphasised enough. Firstly, the fixing point of the mother rhythm and all *clave* and *marca* rhythms is always the first beat of the mother rhythm. It connects to the second *marcação*. This is a solid connection in all combinations of *batucada* and samba. It defines the beginning and the ending of the complete rhythm pattern in a way that it corresponds to samba cadences. Secondly, in *batucada* the *clave* is never inverted that can happen in for example Cuban music. *Batucada* has structures that resemble inversions, but they are either related to the synchronicity of singing phrases and the rhythm, that especially in older *batucada*, differs from Western traditions, or introductions played by the *repique* where the *bateria* joins in on the first *marcação*.

When the mother rhythm and the *marca* rhythm are notated together, we can see that the mother rhythm is a cross-rhythm for the *marca* rhythm. If the synchronicity of

²² Alverenga, Oneyda 1946. A influencia negra na música brasileira. *Boletim latinoamerica de música* VI. p. 359.

the *clave* and *marca* is changed, then also the relationship between the rhythms change and we can no longer consider it Brazilian samba or *batucada*. Then it is something else. The mother rhythm forms the basis for the rhythmic structure between the *marca* beats. Other beats are formed as a result of diminishing the mother rhythm. This is how all *clave* rhythms presented in this analysis work.



Image 82: Mother rhythm, *marcas* and segments.

In a short rhythmic pattern like this the beginning of the mother rhythm is solid, always the same, but the ending can vary and define that the second segment of the *marca* rhythm must be played as a cross rhythm, against the beat. This could easily be interpreted as an inversion of the mother rhythm, but that is not what it is; instead, it has a clear nature of its own and it ties in with the *marca* rhythm in the same way as the mother rhythm. The fixing point is the first beat of the *clave* and the second *marcação* of the *marca* rhythm. I call this rhythm the aunt rhythm.



Image 83: Aunt rhythm, *marcas* and segments.

The diminutions of the aunt rhythm are born the same way as from the mother rhythm, by dividing beats into smaller units.



Image 84: Diminutions of aunt rhythm 1-4.

Above examples two and three follow the diminution pattern typical to samba, the same as in the mother rhythm examples. The first *marca* segment of the rhythm pattern is played against the beat. However, the aunt beat brings about a different structure in the second segment. It clearly dictates to play the counter beat on the mark. The structure is emphasised when the stroke is played agogically, (example 3).

The examples above illustrate the essential feature of the *clave* basic rhythms: the first half is unchanging, while the second half may vary. The latter defines the structure of the *marca* segments in the end part: are they played along the *marcas* or against them. Using this logic, we can compile a system of *clave* rhythms in samba, encompassing all variations found in the *batucada*. The presumption here is that in basic rhythms longer than the eight basic pulses, density referents, the mother rhythm is always unchanged, and sections that define the end of the rhythm are added behind it. That results in a following kind of table:

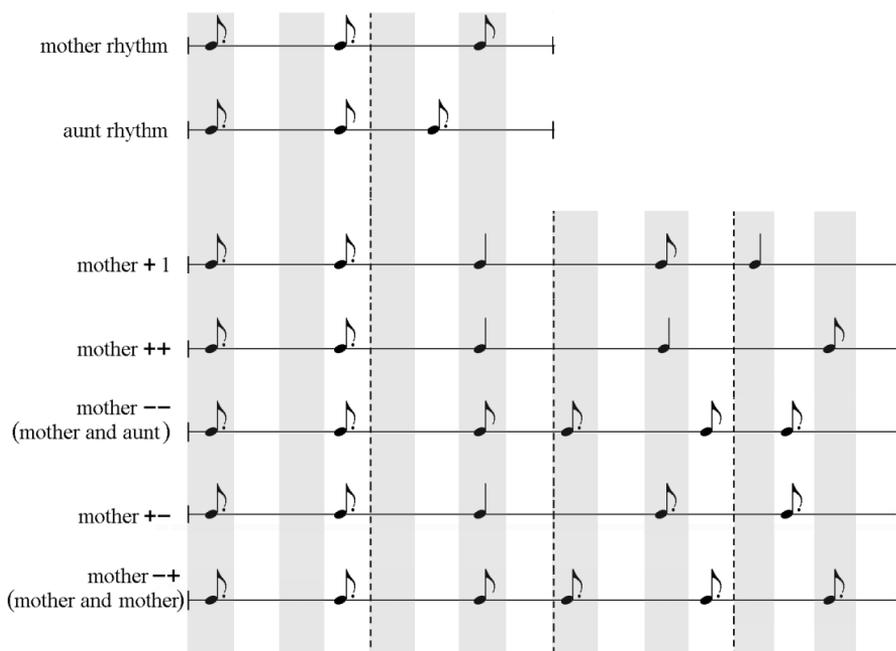


Image 85: Clave table.

In the table, the densest rhythm, the density referent, is highlighted with grey and white vertical columns. The beats are marked with time denoting notes, each placed in the correct column. The vertical dash lines denote the segments of the *marca* rhythms in the *batucada*. Clave rhythms are referred to by different names in different sources. In this connection, as I derive all presented *claves* from the mother rhythm, I will use analytical signs to name the *clave* rhythms. Number one (1) denotes that the *clave* stroke in the segment matches the *marca*, in this case the first *marcação*. A plus sign (+) denotes that the *clave* is on-beat in regards to the *marca* rhythm and a minus sign (-) that the *clave* is off-beat. For example, mother +1 on the third line is a mother rhythm followed by two *marca* segments. In the first one the *clave* is on-beat (+) in regards to the *marca* rhythm. In the second one the *clave* emphasises (1) the *marca* rhythm. The *clave* on the second to last row is mother rhythm +-, a mother rhythm followed by two *marca* segments; in the first one the *clave* is on-beat (+) and in the second one off-beat (-).

The mother ++ *clave* on the fourth row from the top is worth noticing.²³ In the corpus, I found no rhythms except one variation of *contra repique* where the last *marca* segment would be played fully on beat, although such diminished rhythms do appear in Afro-Brazilian music. Such rhythms are for example the *afoxé agogô* pattern and some *caixa* rhythms in *batucada*.



Image 86: *Afoxé agogô* and Grande Rio *caixa* 2002.

The shortest *claves* in the above table refer to music that is older than *batucada*, for example samba *maxixe*. The other sixteen density referents long *claves* are all familiar in *batucada* and include both first *claves*.

5.2.4. The rhythm analysis of the batucada of Os 27 Amigos

Rhythms that are denser than the above *clave* system and all samba and *batucada* basic rhythms are created by dividing the basic rhythms into smaller units. The diminished rhythms are born from the basic rhythms. Since this connection to basic rhythm beats is solid, it means that basic rhythms are included in the diminished rhythms and the basic rhythms can be identified from them. Approaching the rhythm from the diminished rhythm's point of view, the essential rule is that the diminished rhythm repeats the beats of that basic rhythm from that it is derived from. This makes it possible to study the deep structure of *batucada* and to recognise the source of its rhythmic material.

In addition to recognising the diminutions and their basis, the analysis must take into account typical conventions of *batucada* and samba, such as the beginning of the complete rhythm being against the beat, following the first beat of the mother rhythm

²³ Locke, David 1998. *Gahu. An Introduction to African Rhythm*. Gilsum, New Hampshire: White Cliffs Media.

being unemphasised and the beat shifting forward. Personally, I consider the *clave* beat in question unstressed, it is not customary to accent it. In addition, a rhythm produced in this manner is more elegant, since the rhythm patterns resulting from shifting the beats are not too complex, in this case meaning they do not consist of many short beats that would obscure the rhythm. The pattern becomes clearer and breathes lightly. In the following example I depict the impact this phenomenon has on the *tamborim* rhythm. First I present the rhythm without shifting the beat and then the rhythm after the shift.

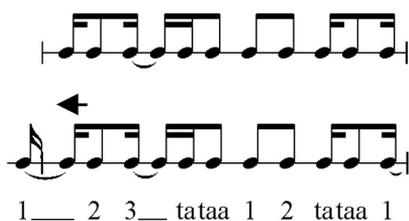


Image 87: The effect of shifting the beat on the rhythm pattern.

This convention related to samba and African music is often repeated. Theoretically it could be examined for example based on Temperley's views, except with the difference that the beat being shifted ahead does not explain the syncopation nor the theory that African type rhythms are based on metre, but represents a cultural custom related to the diminution of *clave* rhythms.²⁴

I will next examine the relationship between three different *tamborim* rhythms and *clave* rhythms. These three rhythms illustrate the most common issues in the analysis. *Tamborim* is a good reference, since its *balanço* is very limited, and in the example analysis there is no need to examine the music level separately to find out the special features of the rhythm. I start with a simple question:

²⁴ Temperley, David 2000. Meter and Grouping in African Music: A View from Music Theory. *Ethnomusicology* vol. 44 no. 1:84.

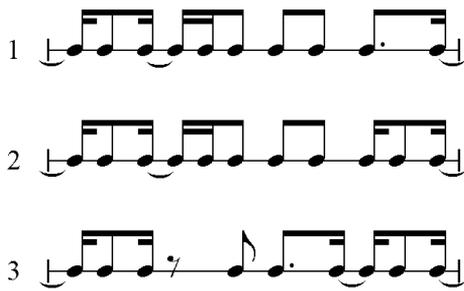


Image 88: Which *claves* are the basic rhythms for these examples?

In this analysis I use the TUBS notation system in order to avoid the reader getting distracted by the conventions and meta knowledge of Western notation.²⁵ In the analysis grid, the beats of the basic rhythm are marked with x's on the topmost grey row. The above presented *tamborim* rhythms are written in the grid under each other in the same order as in image. I have also divided this grid into groups of four columns, *marca segments*, to highlight *clave*'s impact as a contrasting rhythm to the *batucada*'s *marcas*, and to facilitate defining which part of the rhythmic pattern is discussed.

		mark segments											
		1st			2nd			3rd			4th		
basic rhythm		X			X			X			X		
mother - -		X			X			X			X		
1	◀	X			X	X		X			X	X	
2	◀	X			X	X		X			X	X	X
3	◀	X			X	X		X			X	X	X

Image 89: Mother- - and *tamborims* analysis.

The first analysis will focus on examining how the mother - - *clave* beats are repeated in the *tamborim* rhythms. I have marked the *clave* beats with vertical red lines drawn through the columns.

In the first example only the last rhythm repeats the entire *clave* except for the first beat. I have drawn an analytical symbol pointing to the left in the first beat column, denoting a shifted beat typical to samba conventions. The result of this analysis is clear: The *tamborim* rhythm number three is the diminution of the mother- - *clave* rhythm.

²⁵ Koetting, James 1970. Analysis and Notation of West African Drum Ensemble Music. *Selected Reports* vol. 1 no. 3. Los Angeles, University of California, Institute of Ethnomusicology. pp. 116-146.

Tamborim rhythms one and two are not, since they do not repeat all the beats of the *clave*. When the resulting analysis is notated as divided according to the *clave* rhythm, the relationship between the *clave* basic rhythm and the diminished *tamborim* rhythm is very clear.



Image 90: Mother- - and *tamborim*.

The second analysis examines the same *tamborim* rhythms from the point of view of the *clave* on the top row, mother +1.

mother +1	X		X		X		X		X		X		X	
1	◀	X	X	X	X	X	X	X	X	X	X	X	X	X
2	◀	X	X	X	X	X	X	X	X	X	X	X	X	X
3	◀	X	X		X	X	X	X	X	X	X	X	X	X

Image 91: Mother +1 analysis.

As before, I have marked the *clave* beats with vertical red lines drawn through the columns and the shift of the first *clave* beat with an analytical mark. This time rhythms one and two repeat all beats of the *clave*. Therefore, they both can be diminutions of mother +1. However, the second beat of the fourth *marca* segment of rhythm number two in the analysis grid has no explanation. Since the *clave* defines the diminutions' relationship to the *marca* rhythm, more specifically the events between the beats, in this case off-beat, the notated beat needs an explanation. The *clave* mother +1 defines the last segment as either *marca*-emphasised, on beat or indifferent, and therefore the beat does not fit in a diminution. In addition, the goal of analysis is always simplicity. The outset is that *clave* beats that are at least three minimum beats long are divided only into two parts. Here it is divided into three. Rhythm number two fits badly in this *clave*. Based on this, rhythm number one, the *tamborim* rhythm known as *pé-*

chato is the only diminution of the *clave* mother +1 in the grid. The relationship is evident in the following notation.



Image 92: Mother +1 and *tamborim* rhythm number one.

We still have one *clave*, mother +-, that can explain the *tamborim* rhythm number two. Using the same method as in the previous analyses, we get the clear result: The *tamborim* rhythm number two is the diminution of the *clave* mother +-. It fits very well and this time all events between the *marca* rhythm beats are clearly explained.

mother +-	X			X			X			X			X		
1	◀	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	◀	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	◀	X		X		X		X		X		X		X	

Image 93: Mother +- analysis.

The correlation of the rhythms is just as clear in notation.



Image 94: Mother +- and *tamborim* rhythm number two.

When examining the relations between basic rhythms and diminished rhythms, in an ideal case the conclusions can be made directly based on the analysis grid. However, the music is so diverse that it is often impossible to find a solution by just examining the rhythms. A wider study is required. This requires wider knowledge of the music and its arrangement structures.

The beat on the upper row is not even supposed to be emphasised, but the rhythm pattern creates a contrasting variation so that a rhythmic and tonal tension is created between the *tamborims* tuned in different pitches. The rhythm of the *tamborim* section is arranged by combining two *tamborim* rhythms, diminished from different basic rhythms. Since it is a question of intra-rhythmic contrasting, the *tamborim* rhythm in question is more the diminution of the “mother- -“ *clave*, since its end part is fully off-beat and thus strongly contrasts the mother +1 *clave*. Since the mother +1 and mother +- *claves* are identical in their third segment, we should be able to detect a clear emphasis on the music level as the basic beats support each other, if the rhythm under analysis was the diminution of the mother +- *clave*. However, this is not the case. The rhythm is legato-like, without emphasised accents. On these grounds I would interpret the rhythm as a diminution of the mother- - *clave*. As an exception to the pursuit of simplicity in the analysis mentioned before, here the fourth beat of the mother- - *clave* is diminished maximally, which obscures the structure of the rhythm but can be understood through playing technique and the section’s arrangement.

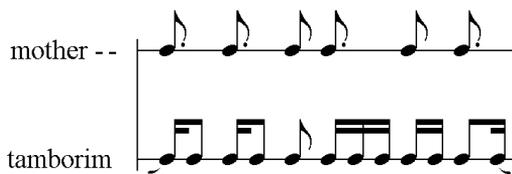


Image 99: Mother- - with *tamborim* 2.

The *tamborim* and the *cuica* are rhythmically close to each other, but unlike *tamborims*, the *cuica* rhythms also connect with the *marcação* system, making their analysis even more exciting. The *surdo* Bum bum also belongs to this group. In the corpus, the *cuica* section rhythm is composed of three different rhythms. The *cuica* 1 and *cuica* 2 are *ripica* rhythms, and the third *cuica* that I will analyse later is a cutting rhythm.

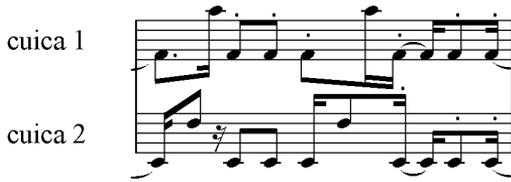


Image 100: *Ripica* composition of the *cuicas*.

The first of the *ripica* rhythms, *cuica 1*, is perhaps the most well-known. Also, it is clearly a diminution of the mother +- *clave*.

mother +-	X			X			X			X			X		
cuica 1	◀		X	X		X		X	X		X		X		X

Image 101: Mother +- and *cuica 1* analysis.

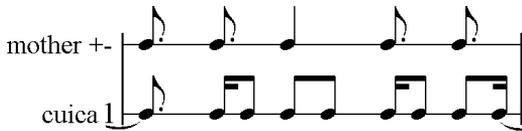


Image 102: Mother +- and *cuica 1* rhythm.

The second rhythm, *cuica 2*, is a diminution of the mother- - *clave*. It is also clearly visible in the rhythm itself since the third and fourth *marca* segments are both off-beat. Notably, the last *clave* beat of the first segment is not repeated in the diminution. This can be explained by the arrangement. The beat is simultaneous with the *cuica 1* rhythm, and therefore there is no need to double the beat. In addition, the contra *balanço* of these *cuicas* is more evident when different pitch tones are separated and there are no overlaps.

mother - -	X			X			X			X			X		
cuica 2	◀	X		X		X	X		X		X		X		X

Image 103: Mother- - and *cuica 2 ripica* -rhythm analysis.



Image 104: Mother- - with *cuica* 2-*ripiça* rhythm.

The third *ripiça* rhythm similar to the *cuicas* is *Deixa Falar's* Bum bum *surdo* rhythm.



Image 105: *Surdo* Bum bum.

It could also be based on the mother +- *clave*, but this cannot be deduced from Silva's Bum bum vocalisation. It only reveals the *surdo* beats of the third *marca* segment marked in the grid, and I must therefore rely on only them.



Image 106: Mother- - with *surdo* Bum bum rhythm analysis.

This rhythm differs from the other rhythms analysed so far in that it repeats all *clave* beats as is. The first beat is not shifted forward. Thus it is clearly attached to the mother- - *clave*. Only two of the *clave* beats are diminished.



Image 107: The relation of mother- - and the *surdo* Bum bum.

The third rhythm in the *cuica* section, the cutting rhythm, together with the *surdo* cutting rhythm is interesting. They can be considered, just as *surdo's* *marca* rhythm, as just eight minimum beat long patterns. If we examine them from the point of

view of metre, these rhythms would be notated in 2/4 metre and the previous rhythms in 4/4 metre. Despite their seemingly short length the rhythms correlate with the whole just like the other rhythms. They follow the 16 minimum beat long structure typical to *batucada*, and they are cadenced just like all other rhythms. There are no differences. Analytically marked, this *clave* would be mother -+, a double mother rhythm.

These rhythms are also interesting in that they can have two basic rhythms guiding them. One is mother -+ and the other is the *marca* rhythm. The cutting *cuica* rhythm can be found in two variants, of which the first, *cuica de cortar 1*, is completely concise.

mother -+	X			X			X			X			X			X		
cuica de cortar 1	X			X	X		X			X	X		X			X		
cuica de cortar 2	X		X		X		X			X		X			X		X	
surdo de cortar					X					X					X			

Image 108: mother-+ and *cuicas de cortar* and *surdo de cortar*.

All *clave* beats are repeated and all rhythmic events can be easily explained by the *clave*. In notation, the correlation is direct.



Image 109: Mother -+ ja *cuica de cortar 1*.

The rhythm is only slightly diminished, so that there are altogether eight beats. The even number of beats fits well to the double measured playing technique with pulls and pushes. When played evenly, the *cuica* sound remains stable when the same sound is not produced alternately by a pull and a push.



Image 110: *Cuica de cortar 1* notated on the music level, divided according to the *marca* rhythm.

The *cuica de cortar 2* rhythm is easily organised according to the *marca* rhythm, which it repeats and divides in two in a stable manner. It attaches to the first and last beat of both halves of the mother $-+$ rhythm, not to the middle ones, and therefore the influence of the *clave* rhythm is weaker than the influence of the *marca* rhythm.

mother $-+$	X		X		X		X		X
mark rhythm	X		X		X		X		X
<i>cuica de cortar 2</i>	X	X	X	X	X	X	X	X	X

Image 111: *cuica de cortar 2* analysis.

On the rhythm analysis level, the situation is crystal clear. However, the music level refers to the mother rhythm as well. Every fourth beat of the pattern is tonally low and it is emphasised often in the mother rhythm. Other beats are tonally high. Despite being in perfect time, the rhythm thus also connects to the end part of the mother rhythm and this pulse is emphasised on the music level.

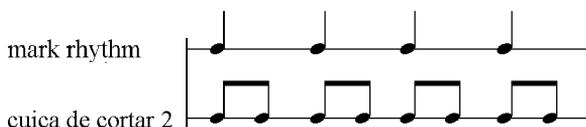


Image 112: *Marca* -rhythm and *cuica de cortar 2*.

The influence of mother $-+$ is evident when the music level is displayed.



Image 113: *Cuica de cortar 2* on the music level.

This cutting *cuica* rhythm can also be examined based on the aforementioned idea of beat shifting, but that would be forcing the rhythm to the *clave* form. This kind of shift is typical only in the beginning of the rhythm pattern and applies to the first beat of the *clave*. The way I see it is that this is a hybrid rhythm that on a purely rhythmic level is based on the *marca* rhythm cutting it in half, but a *balanço* emphasising the last

beat of the mother rhythm is attached to it, making the rhythm streamlined and giving it a multilevel structure.

The last of the cutting rhythms is the *surdo de cortar* rhythm. Unlike the previous rhythms, it is not diminished. Instead, it is maximally augmented and stripped of everything extra. Only the last beat of the mother rhythm is played. Despite the augmentation, I consider this to belong to the same level as the diminished rhythms since it is produced from the *clave* rhythm. In this form it has no direct connection to other basic rhythms.

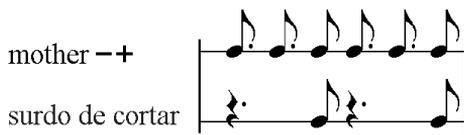


Image 114: Mother -+ and *surdo de cortar*.

Examining *surdo de repicar*, *surdo de repincar* and *contra repique* rhythms differs from the previously examined rhythms because of their rhythm development (*desenvolvimento de ritmo*). The way the section plays is based on constant variation, and therefore finding a stable basic rhythm in the corpus requires either statistical analysis of the material or approximation based on experience in playing the music. The question is: What is the basis of the rhythm development for each player? I have chosen five examples of different rhythms from the corpus and will examine the deep structure of the rhythms through them.



Image 115: Different rhythms from the section.

The influence of the *marca* rhythm is clear in all these rhythms. Except for the fourth *marca* segment of the *contra repique* Bum bum variation, both *marcações* are played in full. This is directly linked to the playing technique of these instruments, where the stick in the leading hand follows the *marca* rhythm. The events following the *marca* beats are directed by different *claves* that define the structure within the various *marca* segments. This is especially clear in the rhythms of this particular section. In this respect all of the section's rhythms except the first *repinique* example are hybrids of two rhythms. In practice, also the first *repinique* rhythm is slightly varied. The varying is done in the same way as with the others, according to the *clave*. In the first example, the pianissimo in the third *marca* segment of the *repinique* rhythm, emphasising the on-beat nature of the segment, suggests influence by either mother +1 or mother +- *clave*. However, this pianissimo is only suggestive and rather describes a variation method, lowering the volume, used in this rhythm to bend it towards the *ripica* rhythm. This *repinique* rhythm is such a clear maximum diminution based on the *marca* rhythm that I will not present a more elaborate graphic analysis of it.

The following four rhythms are divided into two groups. Because of the structure of its third and fourth *marca* segment, the *repique 2* rhythm can only be guided by the mother +-,

mark rhythm	X			X			X			X			
mother +-	X		X	X	X	X	X	X	X	X	X	X	X
repique 2	X	X	X	X	X	X	X	X	X	X	X	X	X

Image 116: *Repique 2* analysis.

It is almost as clear that *repique 1* and the both *contra repique* rhythms can only be guided by the mother- - *clave*. The *contra repique* rhythms do raise a question, whether their guiding *clave* was mother +-, with emphasised rhythm in the first *marcação* and a dismissed *clave* beat in the third *marca* segment like in the case of the *surdo* cutting rhythm. However, these rhythms repeat the mother - - beats completely, and therefore the proposed explanation is the simplest and clearest.

mark rhythm	X			X			X			X			
mother --	X		X	X	X	X	X	X	X	X	X	X	X
repique 1	X	X	X	X	X	X	X	X	X	X	X	X	X
contra repique	X		X	X	X	X	X	X	X	X	X	X	X
contra repique bum bum variant	X		X	X	X	X	X	X	X	X	X	X	X

Image 117: *Repique 1* and *contra repique* analysis.

In the following example, the *repique 2* rhythm is first written based on the *clave* rhythm and then the *marca* rhythm.

mother +- 

clave based 

mark based 

Image 118: *Clave* and *marca* based analytic notation.

In the *clave* based example the influence of the *clave* is clear, but the influence of the *marca* rhythm is almost unnoticeable, whereas in the *marca* based example the influence of the *clave* must be read between the *marcas*. The structure of these kinds of hybrid rhythms can also be examined from another point of view. Then the *marca* rhythm is diminished into indifferent beats, the *marca* pulse, creating a frame for the

clave's guidance. This pulse coincides with the *repinique* basic playing technique: the *marca* stroke is played with a stick and the preceding upbeat with the hand.

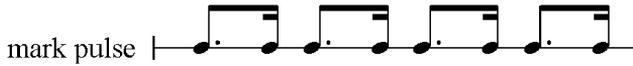


Image 119: Mark pulse.

When the *clave* is combined to this, the influence of the *marca* rhythm and the *clave* on the emerging rhythm can be broken down precisely. The first *marca* segment is played customarily off-beat. The guiding *clave* is mother +-. The hybrid rhythm is created by combination and diminution. The influence of the *clave* is marked with square notes.



Image 120: The mark pulse and the *clave* influence.

In the corpus, the rhythm of the *repinique* section is always comprised of three rhythms.



Image 121: *Marca* rhythm and two *claves* producing contrasting passages.

On the level of the basic rhythms the section's playing is always based on the *marca* rhythm and the mother - - *clave*, diminutions of that the *repinique 1* and *contra repinique* play. The *repinique 2* plays the repinique *balanço*, an almost fully diminished rhythm based on the *marca* rhythm, but it also contracts other rhythms with variations and diminutions based on the "mother +- *clave*. The system of contrasting and rhythmic

structure deepening arrangement based on various *clave* rhythms is similar to the one used in the *tamborim* and *cuica* sections.

The *tumbadora* is rhythmically very close to *contra repique*. In the corpus they have the same role as the instrument accompanying solos and instrument introductions. They also have an almost identical rhythm. The greatest difference is the instruments' *balanço*, which due to its pair of *conga* is wider for the *tumbadora*. *Tumbadora's* rhythm is based on the same mother- - *clave* as *contra repique's*. Likewise, its rhythm is *marca* oriented and emphasises the first *marcação* on the low tones.

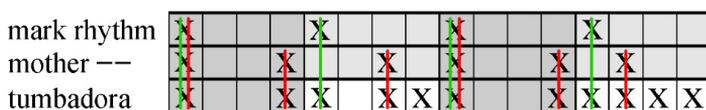


Image 122: *Tumbadora* based on *marca* rhythm and mother- -.

From the rhythm analysis point of view, the last *marca* segment is fully diminished, as if it had no polarity. However, on the music level, the off-beat nature is clearly discernible in the section's bass pattern. The strong *marca* pulse of the rhythm is also visible in the accents.



Image 123: *Tumbadora*.

The function of the *pandeiro* in de Souza's *batucada* is interesting: “Floria os variedades de sequimentos [agudos],” to create variations of rim shots, or from another angle, to vary *clave* rhythms. This hardly means creating completely new *clave* basic rhythms, but variation and switching between different *claves*. Since the *pandeiro* rhythm cannot be transcribed based on the corpus, I will examine the relationship between the *pandeiro* rhythm and basic rhythms using a probable example. It is partly derived from the corpus and partly the result of experimental work based on the analysis of Ismael Silva's Bum bum vocalisation and the reconstruction of an early *batucada* based on it.



Image 124: The *pandeiro* rhythm.

The rhythm has a clear *marca* rhythm orientation, since open rimshots repeat the beats of both the first and the second *marcação*. The sound of the *pandeiro* is weak compared to the heavy leathers of the *bateria*, so the instrument is made to stand out by augmenting beats and with accents. I have therefore written the first beat of the rhythm in parentheses, since it is easily omitted when the rhythm is played fast. In the last *marca* segment of the rhythm pattern I have notated only the first and last beats to be played with hand. The middle beats are bell sounds produced by moving the instrument.

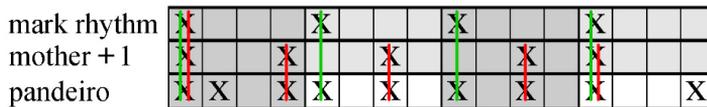


Image 125: *pandeiro* analysis.

Because of the playing style, the rhythm is a clear hybrid where *marca* beats are emphasised and that is guided by the *clave* mother +1. If the *marcas* were not emphasised in the rhythm on the music level, from the *clave* point of view the rhythm would be almost a doubling of the *tamborim*'s pé-chato rhythm and could be interpreted as only a *clave* diminution.

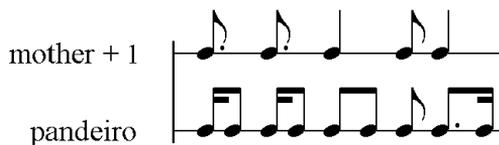


Image 126: *Pandeiro* rhythm from the point of view of mother +1.

Piano de agogô has many roles in the corpus and its rhythm and melody can vary according to the situation. The complete analysis of its rhythm would require transcribing all three takes, but producing such a transcription is not feasible within the

scope of this study. I will therefore limit my examination to the rhythm pattern that resembles the *tamborim* rhythm.



Image 127: *Piano de agogô*.

The presented rhythm is clearly a diminution of the “mother +-“ *clave*. The rhythm in the fourth *marca* segment is similar to the *ripica* rhythms of the *cuica*, and if the *balanço* was changed, it would also resemble the rhythm of the *cuica*.

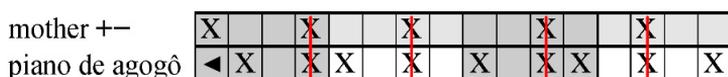


Image 128: Mother +- and *piano de agogô*.

The rhythm pattern begins with a shifted beat typical to samba. I have notated it with a mark denoting shift. When the *clave* and the rhythm are written on top of each other, their relationship is clear.



Image 129: Mother +- and *piano de agogô* relation.

The *tarol's* rhythm is interesting, because it resembles considerably the *tamborim 2's* rhythm. At first glance, the rhythms can appear to be diminutions of the same *clave*, but closer inspection gives a different result. Four details distinguish the rhythms from each other. The least significant difference is the shifted *tamborim* beat at the beginning of the rhythm pattern. The second difference is especially clear: *tarol's* rhythm has *balanço*. Thirdly, *tarol's* rhythm is a hybrid, since the *marca* beats are emphasised both tonally and technically. The fourth difference is the rhythm of the third *marca* segment that clearly points to a different *clave* than with the *tamborim*.



Image 130: *Tamborim 2* and *tarol*.

In the case of the *tamborim*, the rhythm pattern in the thirds *marca* segment is played as *virado*, making its third beat weak or completely missing on the music level. In the *tarol*'s rhythm the same beat is one of the *sequimetos agudos* beats and becomes emphasised on the music level. This turns the rhythm pattern from *tamborim*'s off-beat into *tarol*'s on-beat, and thus also the *clave* has to be a different one. Taking into account the aforementioned issues, the result of the *tarol* rhythm analysis differs from the *tamborim 2* rhythm analysis.

mark rhythm	X				X					X					X				
mother +-	X			X		X			X		X			X		X			X
tarol	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Image 131: *Tarol* analysis.

The rhythm of *tarol* is diminution of the mother +- *clave*, but it also accents the *marca* rhythm.

This analysis highlights the fact that seemingly similar rhythms can turn out to be different when analysed. If the *tamborim 2* and *tarol* rhythms had only been examined based on the beats using rhythm analysis, the *claves* at the bottom of the diminished rhythms would not have emerged clearly. The analysis results would have remained inconclusive, because it would not have been possible to point out the influence of the *clave* mother- - and *clave* mother +- on the diminished rhythm in the third *marca* segment. When also studied on the music level, the differences were evident. The hybrid structure of the *tarol*'s rhythm also became evident. This emphasises the fact that in rhythm analysis, all levels of the music have to be examined and their events taken into account, as the tone, timbre and pitches are an integral part of the rhythm. The rhythms of *batucada* or *samba* are not just beats in a chosen timeframe,

they are tonal music. The history and development of rhythm also affect the analysis. They become significant in the following analysis of *surdo de 4a marca*.

The *surdo* rhythm in the corpus is clear and is emphasized on the first *marcação*.



Image 132: *Surdo de 4a marca*.

However, this is not sufficient to determine which *clave* is guiding this rhythm. We can only say for certain that it is not mother +1 nor mother -, since the latter part of the rhythm is off-beat. A historical view gives more insight. The *surdo* Bum bum rhythm analysed earlier with the *cuicas* is very likely to be the forefather of this fourth *marcação*.



Image 133: *Surdo* Bum bum.

The rhythm has since simplified to better fit the common time sway of the first and second *marca-surdo*. This is what also makes the rhythm a hybrid, since the *marca* rhythm as well as the *clave* guides it. If the rhythm is a Bum bum variation, then the fourth *marcação* is guided by the same mother- - *clave* as the *surdo* Bum bum. Historically, this would be the logical solution. Otherwise the matter cannot be solved due to the missing beats of the first and third *marca* segment, because the rhythm can be perceived both as a *marca* and a diminution of mother- - and mother + - *claves*.

mark rhythm	X			X			X			X			
mother --	X		X		X		X		X		X		
mother +-	X		X		X		X		X		X		
surdo de 4a marca				X		X				X		X	X

Image 134: *surdo de 4a* analysis.

The following two rhythms remind each other in many ways. They both look like diminutions of the *marca* rhythm, and no influence of *claves* can be noticed. The *caixa de guerra* rhythm is fully diminished and it emphasises the marks as per its function. The rhythm has a strong swing, and therefore it is difficult to present it graphically. A good description is a vocalised one: tú-ku-ru-kú, with a round, emphasised tremolo “ru”. The “ru” syllable also has a clear sense of *balanço*. In rhythm analysis the rhythm appears completely flat, which is not accurate.



Image 135: *Caixa de guerra* and *chocalhos*.

The rhythm of the *chocalhos* clearly cut the *marca* rhythm.

mark rhythm	X				X				X				X			
caixa de guerra	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
chocalhos	X		X	X	X		X	X	X		X	X	X		X	X

Image 136: *Caixa de guerra* and *chocalhos* rhythm analysis.

Despite their seeming simplicity, both rhythms are very adaptive. They have a structure where three *claves*, mother, mother +1 and mother ++ fit perfectly. I call this structure the *cavalaria* rhythm, (the cavalry, gallop). It is the same that the *chocalhos* play and is included in the rhythm of the *caixa de guerra*. The mother- - *clave* also fits in the *cavalaria*, but then the third *marca* segment being off-beat must be dismissed. In the figure I have notated the *cavalaria's* mother +1 *clave* with square notes.



Image 137: the *cavalaria* rhythm fitted with the *clave*.

The very last rhythms to be analysed are the rhythms of the first and second *surdo*, *primeira* and *segunda marcação*, which in themselves are an arranged version of the *marca* rhythm, the *marca* being one of the basic rhythms of the *batucada*. These *surdo* rhythms have no other bonds.

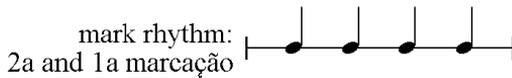


Image 138: 2a and 1a marcação.

5.2.5. The basic rhythms and diminutions

In the following basic rhythm tables, I have gathered together all the rhythms according to paradigm. On the top of each table is the basic rhythm, with diminution rhythms derived from it below. The notation method of the rhythms differs slightly from the previous. I have omitted the head of the note from all but basic rhythm beats so that the basic rhythm is easier to notice throughout the table. I have added some special markings that I will clarify separately with each table. The markings clarify some special features related to the rhythms and refer directly to the preceding instrument specific analysis.

I have marked the hybrid rhythms in the tables according to the *clave* that guides it. They are easily recognised, as I have notated them according to the *marca* rhythm divisions. In this instance I have also marked the basic rhythm beats, in this case the *clave* beats, with notes that have heads. Thus, the influence of both the *marca* rhythm and the *clave* is easily perceived. The *marca* rhythm gives the *marca* pulse and the *clave* defines the rhythmic structures between the *marca* beats.

In the tables we notice that *Os 27 Amigos -bateria's batucada* is based on five different basic rhythms. The first of them is a *marca* rhythm on that the *batucada* has built itself after *Deixa Falar*. This basis is created together by instruments of five different sections. The *surdos*, *chucalhos* and *caixa de guerra* play straight without variation, while the *cuica de cortar 2* and the *repinique* vary the rhythm. The special feature of the *cuica de cortar 2* is a hybrid rhythm. On the music level it borrows its

lowest tone from the mother $-+$ *clave*, cutting especially the first *marcação*. I have marked this beat into the *cuica* rhythm with a square-headed note. The *repinique* varies the rhythm slightly by muting some beats so that the rhythm pattern bends occasionally towards the mother $+ -$ *clave*. This does not show up in rhythm analysis, but can be detected on the music level. Regardless of this the *repinique* rhythm is attached fast to the *marca* rhythm.

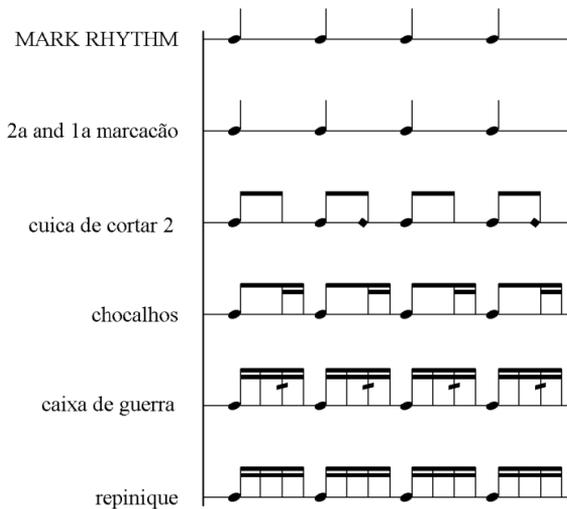


Image 139: *Marca* based rhythms.

The next basic rhythm is the mother $-+$ *clave*. It can also be seen as a repeating mother rhythm having only half the length of the other rhythm patterns. However, this does not match the manner the rhythms derived from it are played. Their cadences follow the same sixteen basic pulse division as the other rhythms. Thus, the rhythm is marked mother $-+$ and the *clave* is just as long as the other ones. *Cuica de cortar*'s rhythm could in a European manner be regarded as *marca* oriented, since it can be neatly divided into two halves. It would be a hybrid rhythm, but nothing on the music level emphasises this. Its beats are completely tied with the *clave*. *Surdo de cortar*'s rhythm is very sparse, and this is not a diminution but an augmentation of the basic rhythm, since only two of the *clave* beats are played. This is not very common in *batucada*, but it emphasises the beats efficiently.

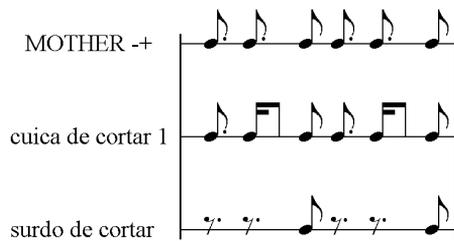


Image 140: Mother -+ *clave* based rhythms.

The next mother- - *clave* is strongly off-beat in regards to the *marca* rhythm. Only one *marca* segment becomes on-beat. Strongly diminished, the rhythm is mainly off-beat just like in the case of *tamborim 2* and *repique 1*. In connection to the *tamborim 2* analysis I examined the *virado* playing method in the third *marca* segment of the rhythm pattern, where one of the beats in the segment is muted or omitted. Since this beat affects determining the *clave* of the rhythm, I have marked this beat in the *tamborim 2* rhythm with parentheses. I have used the same marking with *tumbadora*, where the beat in question is played differently than others on the music level, emphasising the off-beat nature of the segment and determining the *clave*.

Hybrid rhythms stand out in the table because of their notation. I have written them divided according to the *marca* rhythm. Especially in the first hybrid rhythm the effect of the *clave* on the *marca* segments is so clear that the *clave* is easily recognised. However, it is more difficult to define the *surdo de 4a* rhythm due to its sparseness. It could also be guided by the mother +- *clave*. The definition in the table is based on the relation to the *surdo* Bum bum and is thus weaker than the others.

The image displays a musical score for the piece 'Mother', showing rhythmic patterns for various instruments. The score is organized into eight staves, each with a label on the left. The instruments and their corresponding rhythmic patterns are as follows:

- MOTHER --**: A sequence of six eighth notes.
- tamborim 2**: A sequence of six eighth notes, with a circled '2' under the second note.
- cuica 2**: A sequence of six eighth notes, with a circled '2' under the second note.
- surdo Bum bum**: A sequence of six eighth notes.
- repique 1**: A sequence of six eighth notes.
- contra repique**: A sequence of six eighth notes.
- tumbadora**: A sequence of six eighth notes, with a circled '2' under the second note.
- surdo de 4a**: A sequence of six eighth notes.

Image 141: Mother- - *clave* based rhythms.

The mother +- *clave* guides the formation of four diminished rhythms. Two of them, *cuica 1* and *piano de agogô* are straight and beautiful diminutions of the *clave*, both of that feature the forward shifting first beat. On analysis level, the rhythms seem almost identical, but on the music level they are clearly distinct from each other. The other two hybrid rhythms, *repique 2* and *tarol* are also almost identical. Their biggest difference is in the sound. *Tarol's* third *marca* segment appears indifferent, but on the music level the *clave* beat shown in the table is emphasised because it is on of the instrument's *sequimetos agudos* beats. It ties the rhythm clearly to the mother +- *clave*.

MOTHER +-
cuica 1
piano de agogô
repique 2
tarol

Image 142: *Clave* mother +- based rhythms.

The last *clave*, mother +1, guides two rhythms. Of them the *pé-chato* of the *tamborim* is a *batucada* classic and one the icons of *batucada* developed by *Deixa Falar*. The rhythm starts with a forward shifted beat creating its characteristic structure. The *pandeiro's* rhythm differs from it on the music level practically only for the second *marca* segment beat. Since the *pandeiron* rhythm is a hybrid due to the way it is played, I have notated it according to the *marca* rhythm division. This brings out the fact that as the *balanço* of the rhythm and the picture changes, the rhythm is perceived differently. The rhythms appear now considerably different, although they are two almost identical rhythms and diminutions of the same *clave*.

MOTHER + 1
tamborim pé-chato
pandeiro

Image 143: Mother +1 based rhythms.

The deep structure of *Os 27 Amigos bateria's batucada* is opulent on the basic rhythm level. I consider it extraordinary among most *batucadas* I have heard and recorded. There are usually fewer *claves*. I will not go into this in more depth, since

comparing to other *batucadas* is not feasible within this study, even if it would be very interesting. Next, I will present the basic rhythm structure of the *batucada* in question. The basic rhythms are arranged starting from the *marca* rhythm and continuing with the most frequent rhythms. Next to each basic rhythm I have written down the number of diminished rhythms that are based on it.

(5) MARK RHYTHM

(6) MOTHER --

(4) MOTHER +-

(2) MOTHER - +

(2) MOTHER + 1

Image 144: Basic rhythm construction.

This should bring out the source of different influences on the *batucada*. Unfortunately, Afro Brazilian rhythms have not been studied from this angle before, and thus there is no contrasting scientific material available of the basic rhythm structure of other musics. From the performance point of view, most of the material appears to have come from the direction of *samba de roda*, since it has a strong mother- - *clave* feel. The mother +- *clave* of the next rhythm is known as *suinque*, or swing rhythm. I have seen the rhythm often in *batucada* -it is also often called the *bossa nova* rhythm -but I do not know that older music form it is related to. The mother -+ *clave* points to almost everywhere in the world, since it is very common in its various forms. Only from the samba point of view it is a remnant of the older *maxixe* samba in the *batucada*, but this is probably just a part of the truth. It could just as well derive from for example *capoeira*. The last mother +1 *clave* is generally known as the 3+2 *clave*.

5.2.6. The structural properties of *batucada*

The rhythm structure of the *batucada* can be considered having three levels: basic rhythms, diminished rhythms and music level. All rhythms featured in samba and *batucada* are based on basic rhythms, which are the *marca* rhythm and the different *clave* rhythms. In *batucada*, the 2a. and 1a. *marcação* derived from the *marca* rhythm are a clear part of the audible and arranged surface structure of the music, whereas the *clave* rhythms are in the background, usually inaudible as such or even arranged. However, there are exceptions, and in some cases a clear *clave* can also be a part of the audible structure. One common rhythm is the mother rhythm that can be heard clapped, and the *suinque*, the mother +- *clave*, utilised by for example *Mestre Jorgão* as the *Mocidade bateria's caixa* rhythm after the death of *Mestre André* in the turn of the 1980s and 1990s.²⁶ Usually the *claves* are in the background though, but rhythms derived from them by diminution are widely known samba and *batucada* rhythms. The surface level is formed when these diminished rhythms receive a tonal structure. In the following example where the repinique rhythm is derived from the *marca* rhythm, I will present how rhythms are derived from the basic rhythms.



Image 145: *Marcas* and *repinique*.

Clave rhythms work the same way. Their beats are divided into smaller units as the rhythm is diminished. When creating *clave* based diminished rhythms and analysing them, it is important to take into account the typical feature of samba, where the beginning of the rhythm pattern is off-beat in regards of the *marca* rhythm and the

²⁶ Authors archive. Mocidade 1990.

common phenomenon of the first beat of the *clave* shifting forward. In the following example, the *cuica* rhythm is derived from mother +- *clave*.



Image146: Forming the *cuica* rhythm from the mother +- *clave*.

Hybrid rhythms are formed derived simultaneously from the *marca* rhythm and a *clave*. The way it works is that the *clave* defines rhythmic events in the *marca* rhythm segments. In other words, it defines events between the beats. The *clave* is in a cross-rhythm relation to the *marca* rhythm.



Image 147: The formation of hybrid rhythms.

This is also the gist of samba's and *batucada*'s rhythmic structure. All *claves* are in a cross-rhythm relation to the *marca* rhythm. If the music has several simultaneous *claves*, they also are cross-rhythms to each other. The structure can thus consist of several simultaneous, contracting basic rhythms. One essential point, as the case of the Bum bum *batucada* highlights, is that the entire structure can consist of only diminutions, leaving the *marca* rhythm unemphasised. The Bum bum *surdo* is guided by mother- -, the *cuica* mother +- and the *tamborim* mother +1. The *marca* rhythm is only

referred to by the *reco-reco* rhythm diminution, which being very adaptive embeds itself into the most *clave* rhythms and thus does not stand out in the tonal structure.

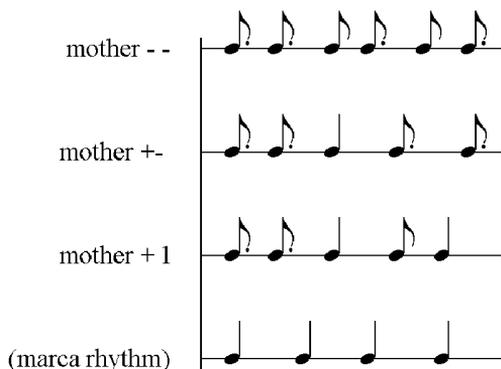


Image 148: The basic rhythm construction of the Bum bum *batucada*.

Finally, I will examine the relations between the sounding phrases and both *clave* rhythms and the *batucada*. By “sounding phrases” I refer to the rhythm patterns of different instruments. In Afro Brazilian music these phrases often confuse outside observers as they are seemingly at odds with the distinct *marca* rhythm. It also appears as though they start at random or that the rhythm patterns turn around during the performance. At times they start at one point and at other times at somewhere completely different. There are clear reasons for such impressions, and there are two main reasons for them: firstly, the metre based perception of the listener, and secondly, unawareness of structures of the music.

The *clave* based rhythms of the *batucada* have three typical synchronicities in regards to the overall rhythm. These rhythms bear a considerable resemblance to their African relatives, and they have typically the same structure as Jones’ “African signature tune”. The phrase is in two parts and the halves are asymmetrical.

x xx x x xx
 x x xx x x x xx
 x x x xx x x x . x

Image 149: Asymmetrical phrases.

These kinds of phrases are the result of diminishing a *clave*. An important factor in the development of their two-part structure is the absence of emphasis in the beginning of the *clave* rhythm and the custom of shifting the first beat of the *clave* forward to form an upbeat, a feature typical to *batucada* and samba. This beat straightens the rhythm pattern half in the beginning of the *clave*, giving it a form based on equal length beats. This music cultural habit makes phrases streamlined two-part wholes that are easy to remember and play.

The shifted beat is not simultaneous with the first beat of the *clave* nor the *marca* rhythm, thus making it difficult to start the phrases from that point as Zeh mentions in connection to *Mestre André's bateria's* performance.²⁷ It is more natural to start the rhythm in a place where it is supported by either the *clave*, the *marca* rhythm, or both. This usually means starting the rhythm in one of two places: The first is the beginning of the second *marca* segment, as in the case of the *cuica's* rhythm. The second possibility is the beginning of the third *marca* segment, in the middle of the overall rhythm pattern, after the clearly equal measured second *marca* segment. The equal beats of the segment offer a good anchor and timing for starting the patterns. Hybrid rhythms behave slightly differently, since due to their structure they can be easily started in the beginning of any *marca* segment. Their start is usually only regulated by the arrangement.

Since all these kinds of rhythm patterns are based on a *clave* and are its diminutions, their relation to the music is also solid. They cannot be moved around within the *batucada* rhythm pattern and they are not complementary to each other. Since *claves* can be diminished in many various ways due to their structure, the amount of possible rhythm patterns is considerable. For example, the mother +- *clave* can be diminished in tens different ways, and taking into account augmentations and different *balanços*, the amount grows exponentially. One single *clave* is an entire musical universe. This enables rich variation, but there are rather few established rhythm patterns. In analysing them, the primary matter to examine is their relationship to the *clave*. Their similarities can be misleading and they may appear inversions of each other, which is an easy assumption to make about the mother and aunt *claves*, for

²⁷ Zeh, Marianne 2006. *O criador na tradição oral: a linguagem do tamborim na escola de samba*. XVI Congresso da Associação Nacional de Pesquisa e Pós-graduação em Música (ANPPOM) Brasília – 2006. p. 171.

example. They are, however, two distinct rhythms, each having a characterising form, and they guide rhythmic events into different shapes, as analysis has proven. The same applies to inversions of the diminished rhythms.

In the following three examples I will derive three different rhythms from the same mother +- *clave*: *tamborim*, *cuica*, and *repique*, whose rhythm patterns each start from a different point in regards to the *clave* and thus the overall rhythm of the *batucada*. In the first two examples, the *clave* is on the top row and below it a rhythm diminished from it, written according to the *clave*. On the third row I have written the same diminution on the music level, as it is played, according to the phrase. I have marked the starting point of the rhythm pattern with a bracket. On the bottom row I have notated the same rhythm with *marca* rhythm division. These figures illustrate the construction of the *batucada* rhythm patterns and point out how essential and at the same time challenging it is to observe the rhythm from different angles. It becomes even more challenging, if the rhythms are only viewed based on the bottom lines, the *marca* rhythm. If we examined the *marca*-derived rhythms from the metre's perspective and incorporated all theories and conceptions of it, advancing towards the upper rows would be quite difficult. Therefore, it is preferable to examine the *batucada* rhythms from the *claves*' point of view, thus making even their more peculiar characteristics easier to explain.

The diagram illustrates the construction of a *tamborim* rhythm from a *clave* pattern. It consists of four staves:

- Staff 1 (clave mother +-):** Shows a sequence of rhythmic pulses: quarter, quarter, eighth, quarter, eighth, quarter, quarter, eighth, quarter, eighth.
- Staff 2 (diminished rhythm):** Shows the same sequence of pulses as the *clave*, but with a different rhythmic value (likely eighth notes).
- Staff 3 (tamborim pattern):** Shows the *tamborim* rhythm pattern, which is a sequence of eighth notes. A bracket indicates the starting point of the rhythm pattern.
- Staff 4 (marca rhythm organization):** Shows the same rhythm as the *tamborim* pattern, but with a different notation style (likely *marca* rhythm division).

Image 150: *Tamborim* rhythm phrase and formation of the rhythm.

Image 151: *Cuica* rhythm phrases and formation of the rhythm.

In the final example I will examine the formation of hybrid rhythms. The top two rows present the *clave* and its diminution. Below them is the *marca* rhythm and the diminution derived from it, the *marca* pulse. When the *clave* diminution and the *marca* pulse are combined, they become the hybrid rhythm. On the bottom row I have written this rhythm on the music level, played by the *repique*. If the rhythm had a different *balanço*, it could also be the rhythm on various other instruments. This rhythm does not have a similar dual phrase as the *tamborim* and *cuica*. It is organised according to the *marca* rhythm and therefore does not have a clear starting point like the aforementioned rhythms do. Instead, it can easily begin at the beginning of any *marca* segment. However, the emphases are usually based on the first *marcação*.

Image 152: Hybrid rhythm phrase and the formation of rhythm.

5.2.7. Summary

When comparing the approach adopted in this analysis and the African rhythm theories presented at the start, many differences can be found. I must remind though that African music and Afro Brazilian music differ from each other on many regards despite being closely related. I examine the rhythms based on *batucada* and Afro-Brazilian music. Therefore, the conclusions should be viewed critically and should not, without knowledge of the music in question, be directly applied to African music or other Afro-based music, even though it may feel tempting.

First of all, Hornbostel's idea of perceiving music kinetically is partly if not completely wrong. Hornbostel does not take into account the cross-rhythms, in this study the *claves*, which bring contrasting beats to the structure that appears equal measured. These beats are played just like any other beat, and they are not meant to coincide with this structure. What Hornbostel did get right is that in some cases playing beats in the air can help synchronicity and focus. For an advanced musician this is not necessary though, as the progress of the music and the knots tying and synchronising different rhythms in the structure are already familiar. Musical events are guided by the structure of the music, not any outside factor. In this regard, different structures that support timing, like the common fastest beat or the density referent, are outside perspectives that do not generally describe the music itself and that are not necessary for a capable musician who knows the music and perceives it from the music as itself. However, they are beneficial in analysis.

Brandel's perception of hemiola rhythms is quite accurate for samba. Especially *claves* fit into the structure she drafted. However, from the angle of this study her idea of alternating duple and triple metres is not theoretically functional, since *claves* do not have metres; they are completely independent structures developed differently. This is exactly the view that Brailou criticizes strongly: applying meters and their rules to non-European musics. In my opinion, meters should not be used in analysis unless they clearly belong to the emic terminology of the music in question. The ontology they carry misleads and distorts the view. Brandel's other thought of rhythms being divisive and additive is not strongly based. She proposes that off-beat rhythmic structures notated according to meter are additive and the on-beat divisive. This Sachs'

terminology refers to the way different rhythms are formed. Sachs theorises that equal measured rhythms are divisive and are formed by dividing longer beats into equal parts according to the European practice. He also assumes that the so called additive rhythms are formed by combining different time values and thus creating structures similar to feet in poetry, and the whole is built from their combinations. The structure forms from the base upwards, and there would be no higher guiding structure.

Examined against the rhythm formation by diminishing *clave* rhythms presented above, Sachs' idea seems like a delusion caused by metric-based observation. If we examine the formation of a hybrid rhythm, organised in the earlier example according to the *marca* rhythm, based on Sachs' conception, the rhythm would be based on two alternating formation methods. This is a great example, because the chosen organisation resembles metric notation. However, it is undisputedly a simple construction of two mutually contrasting rhythms. With this approach, with no understanding of the factors affecting rhythm formation, the result seems metrically inexplicable. This phenomenon can be observed in all *clave* based rhythms in the analysis, when notated according to the *marca* organisation.

When I stated earlier in relation to Brailou that the basic functionality of the European and Afro rhythmic is the same and that Afro rhythmic is based on the same human perception as European rhythmic, I was referring to cognition but also the divisiveness Sachs presented. It is clear that the *clave* based rhythmic of samba and *batucada* is also based on this phenomenon. The difference to Sachs' view is however, that dividing beats into smaller units is a common method to both metric-based European rhythmic and Afro-Brazilian rhythmic, where the phenomenon is called for example cutting, *cortar*. The perception is the same. Longer beats do not always need to be divided into equal parts, they just have to fit in the structure formed by the common fastest beat. This is the feature, the possibility to divide beats into parts of different lengths, which is essential in *clave* based rhythms, since it enables richer variation of rhythm patterns than in the *marca* based rhythms. The same *clave* can act as basis for considerably varying rhythms. In samba and *batucada*, *marca* based rhythms are stable and cannot be varied much, whereas *clave* based rhythms bloom, *floria*, with a myriad of variations. I have never come across additivity in *batucada*, and in the context of

samba and *batucada* it would be a mistake. The basic rhythm is the music defining factor here.

5.3. The nature of batucada

When talking about the nature of *batucada*, I am referring to the balance of different rhythmic elements, based on the concepts of *marcar*, *cortar*, and *ripicar*. From the point of view of analyzing the *batucada*'s elements, the *floriados* paradigm would be better than the *ripica*, because it has a wider perspective. However, this is the result from an external, analytical point of view. The emic division used by de Souza is *marca*, *corta*, and *ripica*, so I will base this analysis on that. In this respect, I will try to keep as close to an emic view point as possible, and take a succinct view of the named rhythmic categories. In that case, all *complementos* paradigm rhythms, which are based on tone, will be classified under the *marca* paradigm based on their rhythmic structure. Similarly, the *variações do conjunto* paradigm rhythms will be classified under the *ripica* paradigm in their entirety. In those cases, where an instrument is clearly playing rhythms from two separate paradigms, each paradigm will be given its own notation. For example, the *tamborim* group can, depending on the arrangement, play both the *marca* based *carreteiro* rhythm and rhythms and patterns that clearly fall under the *ripica* paradigm.

In this section, we compare the rhythmic nature of the *batucada* of *Os 27 Amigos* with other *batucadas*. There is no known scientific material, notations, or recordings, from the end of the 1980s that could provide a wider viewpoint of the *bateria* standards of that time. Carnival recordings unfortunately do not produce documentation about the music of samba schools, but they reflect studio and production practices, as well as the needs of the record industry. As a result, compiling a comparative examination of the nature of the *batucada* of *Os 27 Amigos* can only be done through a comparison of other *baterias* around the years 1990–91. There was a considerable collection of *bateria* notations made by the researcher before the carnival of 1991 in Rio de Janeiro.

Batucada changes constantly. The four year span from 1987-91, from the times of *Os 27 Amigos* to the collection of the comparison material, is relatively short. It can be assumed that the changes are still minor. Some standards are different, but practices are still similar enough to provide material that mirrors the music of *Os 27 Amigos* to others with reasonable accuracy. The other *baterias* in this comparison are mainly from

the top samba schools of Rio de Janeiro. The sizes of these *baterias* vary from 27 to 118 players. Eight of the *baterias* were transcribed in samba school rehearsals or in corresponding occasions. One of which, the *bateria* of the *Acadêmicos da Rocinha*, was transcribed in a performance in the *Circo Voador* theatre, (Flying Circus), in Lapa.

There is a basic notation of each *bateria*. This notation directly reflects the section architecture and their rhythms in the same manner as the notation of *Os 27 Amigos*. Since they were transcribed in the field, the accuracy of detail is not at the same level as with *Os 27 Amigos*, which was transcribed from the tape, where each detail had been repeated as many times as necessary. This is, however, only a question of details. The rhythms, rhythm types, and other information, are precise enough to reveal the standards of each *bateria*. The information of the notations is tabulated to produce graphic information about the properties of each *bateria*. This is because the graphic comparison is a practical and a clear way to compare these properties easily. A large amount of complicated information, such as the notations, was condensed, whereby the general picture of each studied property could be seen and understood at a glance.

5.3.1. Os 27 Amigos

The paradigm *marca*, as well as the *marcas* of *surdos* and *cuicas*, all comprise the denser *marca* rhythms, which do not have any *clave* based structures typical for the *floreado* rhythms. The paradigm *cortar* comprises all cutting rhythms of *surdos* and *cuicas*. The last paradigm, *ripica*, comprises all types of *clave* based rhythms, excluding cutting rhythms, used in samba from the *quarta marcação* to the *pé-chato tamborim* rhythm.

In the following plan, the instruments of *Os 27 Amigos* are marked with colours according to their rhythmic paradigm. The instruments playing *marca* rhythms are blue. The two instruments of cutting rhythms, *surdo de terceira marcação* and one *cuica*, are red. All other instruments play *ripica* rhythms and are marked in yellow tones. Only here have I used different tones of yellow to separate the different rhythms of the same paradigm, and to show the variety of different rhythms. For example, in the *repique*

section, there are three different *ripica* rhythms, but in the *tarol* section, there is only one rhythm that both instruments play.

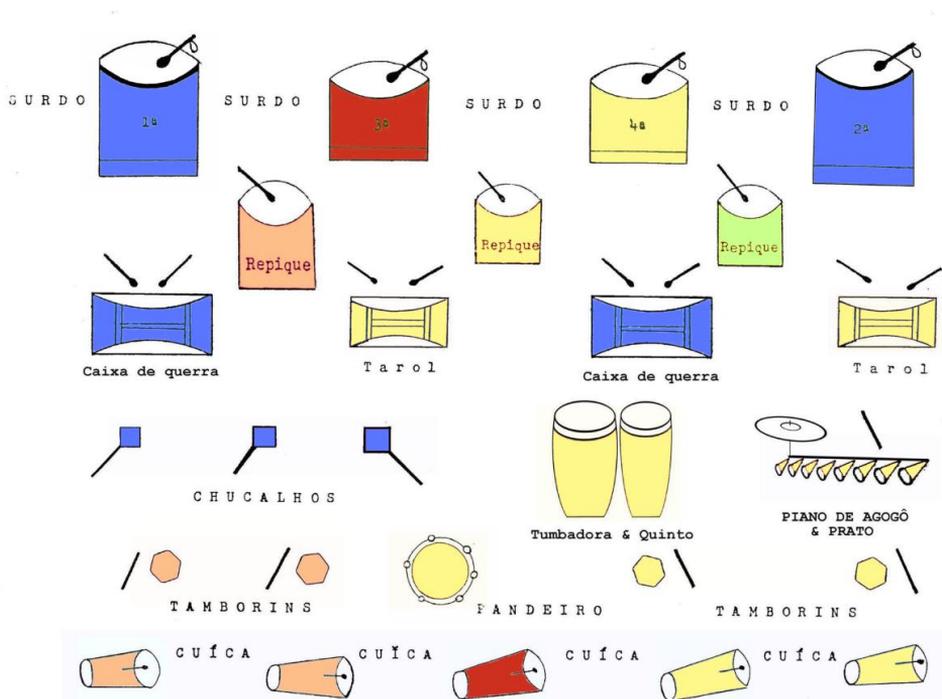


Image 153: The rhythmic paradigms of *Os 27 Amigos*.

Blue: *marca* rhythms. Red: cutting rhythms. Yellow tones: *ripica* rhythms.

The number of the rhythms is tabulated according to their paradigm. The figures can be seen in the following image where the table is under the graph. In the *batucada* of *Os 27 Amigos*, there are twelve *ripica* rhythms, two cutting rhythms, (*cortar*), and four *marca* rhythms. The excel table was developed to produce a simple graph where the balance between the different types of rhythmic materials can be seen.

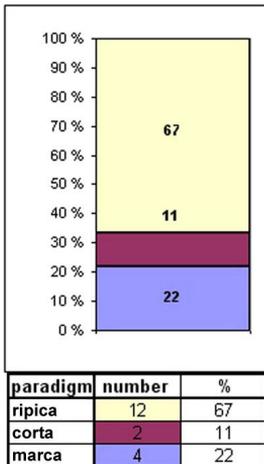


Image 154: The balance of the rhythmic paradigms of *Os 27 Amigos*.

Ripica rhythms are used very prominently by the *bateria Os 27 Amigos*. At least 67 percent of all rhythmic material is then *clave* based, which can be heard clearly in the *batucada* of the *bateria*. The cutting rhythms that also have *clave* effect, are more minor. Less than one fourth of the rhythms are solely based on the *marca* rhythm.

5.3.2. Comparison between baterias

When studying the *batucada* of the main samba schools in Rio de Janeiro at the turn of the 1980s and 90s, a straightforward clarity is evident. The rhythms related to the *marcas* overtake the main role in the live *batucada*. *Ripica* rhythms are absent. When comparing these *batucadas* with the *batucada* of *Os 27 Amigos*, the difference is apparent. The following table is generated according to the method previously explained. The rhythms of each *bateria* are tabulated according to their paradigm. The graph is then produced from this table.

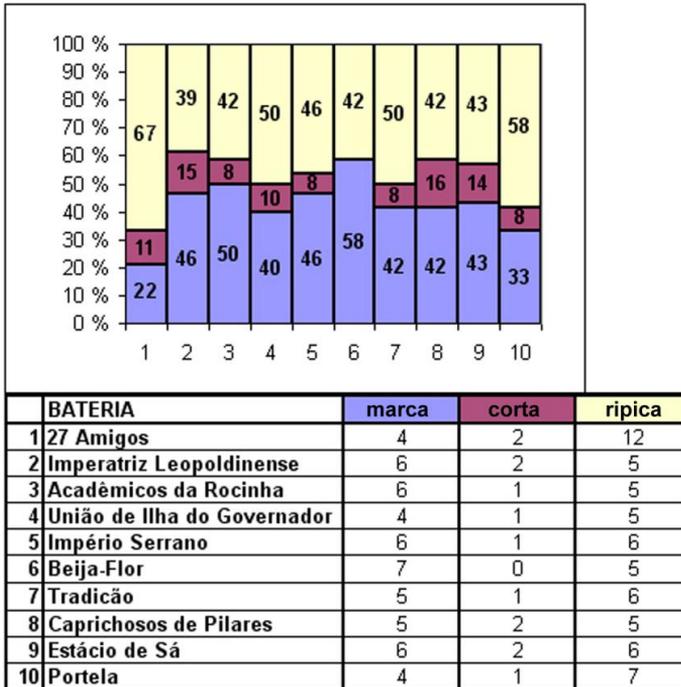


Image 155: Comparison of the balance between the rhythmic paradigms.

The specialty of *Os 27 Amigos* is evident from the onset. The ratio between the *ripica* and stable *marca* rhythms departs notably from the others. Only 22 percent of the rhythmic material is *marca* rhythms, while 67 percent are *ripica* rhythms. The ratio between these two is 67/22; ~3:1, which means that there are three times as many *ripica* rhythms as there are *marca* rhythms. The high number of *ripica* rhythms distinguishes this *bateria* from the others. The closest corresponding ensemble is the *bateria* of the *Portela* samba school, with a proportion of 58 percent *ripica* rhythms. This is not surprising, since it is where de Souza’s perceptions originated. The amount of *ripica* rhythms does not exceed 50 percent in any other *bateria*.

The relation with the *Portela* samba school is understandable, but the relation with the *Beija-Flor* *bateria* is interesting. De Souza was the supervisor of that *bateria* for three years from 1983-85. His way of organizing the *bateria* and their sections was still in use with the *Beija-Flor* at the beginning of 1991. However, according to source materials, the rhythm was quite different from de Souza’s practices, because of the high amount of stable *marca*-based rhythms. It is also interesting that there were no cutting

rhythms at all in that *bateria*. This also sets it apart from all other *baterias*. The reasons for these idiosyncrasies are not known, but it is accepted that de Souza raised the musical level of the *Beija-Flor bateria*. This simplification might have been a part of the process.

5.3.3. Summary

As seen in the *bateria* notations, the complexity of *Os 27 Amigos* is higher than that of any other ensemble. In other *baterias*, the number of different instrument lines vary from nine to thirteen. In *Os 27 Amigos*, the number of lines is eighteen. The information received from de Souza indicates that the composition of the earlier *batucada* of *Portela* would have been more complicated. He said that he preferred dividing subsections into different rhythms and tunings, but that the new *mestres de bateria* did not learn this. The *batucada* of *Mestre Marçal*, de Souza's last pupil, confirms this notation. "A incrível *bateria* do Mestre Marçal" recording is from the same year as the corpus, but different from the *batucada* of *Os 27 Amigos*.¹ The variation in the rhythm of *repiques*, (*desenvolvimento total para os repiques*), is absent, and the rhythm is more straightforward. This may indicate the changing of *batucada*. If so, the transformation from the older *batucada* to the march samba, which is often discussed, can be seen here. Therefore, the music of *Os 27 Amigos* resembles older forms of *batucada*, as do other ensembles in this comparison. They were the average, modern *batucada* of the beginning of the 1990s. The *batucada* of *Portela* is half way between these two. It might also have been indicated that from 1990–91, the *bateria* of the *Portela* samba school was one of the poorest in the general rehearsals. It was poorly controlled, yet the inception of *batucada* happened almost accidentally when some of the players started playing and others joined in randomly. The end result was equally miserable. The *mestre de bateria* did not have authentic control, but was only demonstrating the tempo. The glory was gone.

¹ *A incrível bateria do Mestre Marçal*. PolyGram 835 123-2. 1987.

6. HARMONY OF BATUCADA

According to de Souza, harmony is one of the central properties of *batucada*. The concept that de Souza's papers reflect is complex, especially when associated with his teachings about the harmony in *batucada*, the tuning of the instruments, and the sections. In discussion, he never gave examples on a practical level, but he explained the ideas and made them as understandable as possible. This demands further study, because some of his teachings can not be verified without extra information, and many things would otherwise remain ambiguous and questionable. In practice, it has generated other studies of *batucada* in different fields. Therefore, this study also utilizes other materials about *batucada* that were collected from 1990–91. The measurements and recordings made in 2003, in turn, illuminate the questions about the tuning and the contemporary harmonies of the *baterias*. The central ideas about harmony and its influence in the playing of *bateria*, were also tried and tested in the *bateria* of *Academia Bananeira* from 2006–07, and in the *bateria* of *Academia Pombo de Ouro* from 2009–15.

When taking into consideration the definition of harmony and the statements from other cases that deal with the problems concerning the action of the *bateria* and its poor harmony, the importance of harmony for de Souza is highly interesting. It seems that he did not see harmony only as a musical element but also as being tightly connected with the technical performance of a *bateria*. It implies that harmony was a tool used to control and support the actions of a *bateria*. His understanding of harmony seems to be holistic, where many aspects are brought forward. Some of them, especially the musical ones, seem to be clear and easily understandable. However, the technical proposals are an exception. It would be interesting to better understand the full nature of the term and its potential. The author's long experience with the *baterias* of the samba schools in Rio de Janeiro makes this objective even more necessary, because it seems that de Souza proposed a principle that has already been forgotten in *batucada*. De Souza stated that:

“In earlier times, all *baterias* were tuned to the tonal harmony. But these days, (1990–91), the conductors cannot tune the *baterias*. The *bateria* of the traditional Mangueira samba school is not even tuned harmonically anymore. There have been attempted to

instrument before they arrived at the rehearsal. The tunings were not harmonized before playing, and very likely, they were as random as the heavy leather tunings. The sounds of sections were not harmonic, but formed clusters based on the favourable tuning of the size of instrument. If there was uni-rhythm in the section, like in the *Unidos da Tijuca cuica* section, the section was powerful. If the playing, like in the *Mocidade Independente*, was free or random, the rhythm was obscured and the sound was fuzzy. Audibly, the only deviation for this practise was the *tamborim* group, which played in the *bateria* of the *Unidos da Tijuca* Samba School from 2002-03.

6.1. Contemporary baterias

The general process of tuning all instruments in the samba schools was the same. First, every instrument was tuned individually. *Surdos de repinicar* and all *caixas* were tuned to produce a clear tonal variation between the centre and the margin of the skin. If this was not possible, the instrument was abandoned or the skin was changed. Depending on the intentions of the tuners, the skins were tuned by ear to be loose, medium, or tight. In some schools like *Viradouro* (2003), there were several tuners who worked individually. It was interesting to notice that the favourite tightness of the skin varied depending on the tuner, and in some cases, they even retuned the instruments of their colleagues. In the previous example image, most of the 12" *caixas* were tuned to the scale between H–D, but the highest ones were F and G. The core of the cluster was then a major third apart, whereas the extras were amplified to a sixth. With the 12" *surdos de repinicar*, the scale was B–D, where the main cluster was a minor third apart.

In another instance, the cluster of the *caixas* was C–F# and the cluster of the *surdos de repinicar* was H–G. The tunings changed each time. The tuners said that the *caixas*'s tuning should be lower than the tuning of *surdos de repinicar*, but the measurements proved that this did not work out. There was no difference in tuning. The real difference was in the sound of the instruments. There were resonator wires in the *caixas*.

Measuring the *surdos de marcação* yielded similar results. For example, the scale of the *surdos de primeira* was C–E and the *surdos de segunda* F#–G#. There was

a clear difference between the clusters of the main *surdos*, which did not overlap as in some other schools. The tunings varied, depending on the rehearsal as with the smaller *couros pesados*. However, if the overall sound of the *surdos* did not please the conductor, some of them were replaced after the *bateria* started to play.

The measuring of the instrument tunings proved that the tunings of all *baterias* were quite random. This did not only concern the *Viradouro* samba school. Indeed, the situation was the same in rehearsals of every samba school where measurements were carried out. In some school rehearsals, like in the *Unidos da Tijuca*, the tunings of the *surdos* were cross checked to get the desired intervals. Otherwise, the tuning systems seemed to be based on the traditional sized drums, which were tuned by ear to certain tightness without any cross checking or overall tuning.

The circumstances can be characterized by the fact that the individual instruments were tuned, but as a whole, the *baterias* were not tuned. The sound of the heavy leathers was based on sound clusters of different instruments. From this realization, it is understandable that the use of *surdos de repinicar*, whose tonal variation is quite melodic, had decreased since the study from 1990–91. From 2002–03, large masses of *caixas* had replaced them. The resonators, which distort the sound of the *caixa*, cover the differences in tunings and make the instruments sound quite similar. Using the distortion, the tuning can be easily measured, but its importance is minor, and it does not have that much influence over the total sound.

The blurred sound produced by this style of tuning increases when the *baterias* grow bigger. The smaller *baterias*, which were tuned with patience, sounded relatively good in the *quadras*. However, all *baterias* sounded muddled in their full composition at the carnival parade in the *Sambódromo*. The differences between them were minor, and in practice, it came out only in the rhythm of the *surdos de marcação*. Some of the *baterias* had a noticeable tonal movement in the rhythm of the *surdos*, but many of them sounded like a steam hammer without any tonality. This monotonous sound in the *couros pesados* was then covered by a section of *rocars* and *tamborims*, which create contrast and brought some action to the rhythm.² All in all, the harmonies in rehearsals, and especially in the carnival parades, were poor, and proved de Souza's statement to be relevant.

² Author's archive. Recordings at *Sambódromo* during the Carnival 2003.

The reason for this situation seems to be connected with the growth of *baterias*. The traditional way of tuning the instruments and the whole *bateria* is unclear and undeveloped. It does not meet the requirements of a modern-sized *bateria*. It also leads to the current practise where the basic rhythmic compositions have to be as simple as possible. Complicated full-size section compositions, comprising of *baterias* of about 300 players, are not possible with these tuning methods.

In the following tables, there are measured tunings of fourteen *baterias*. All measurements were made before the carnival in 2003, in the *quadras* of the samba schools. The tables clearly prove the detunedness of all the *baterias*.

6.2. Importance of harmony

There is a good example of de Souza's thinking about harmony and its technical importance. Once in 1991, I followed the technical rehearsal of the *Viradouro* samba school at *Sambódromo*.³ The size of the *bateria* was about 250 players.⁴ There were 12 big *surdos* on both sides of the *bateria*. Every other one played the first *marcação* or the second *marcação*. The *surdos* of the third *marcação* were between the sides, inside the *bateria*.

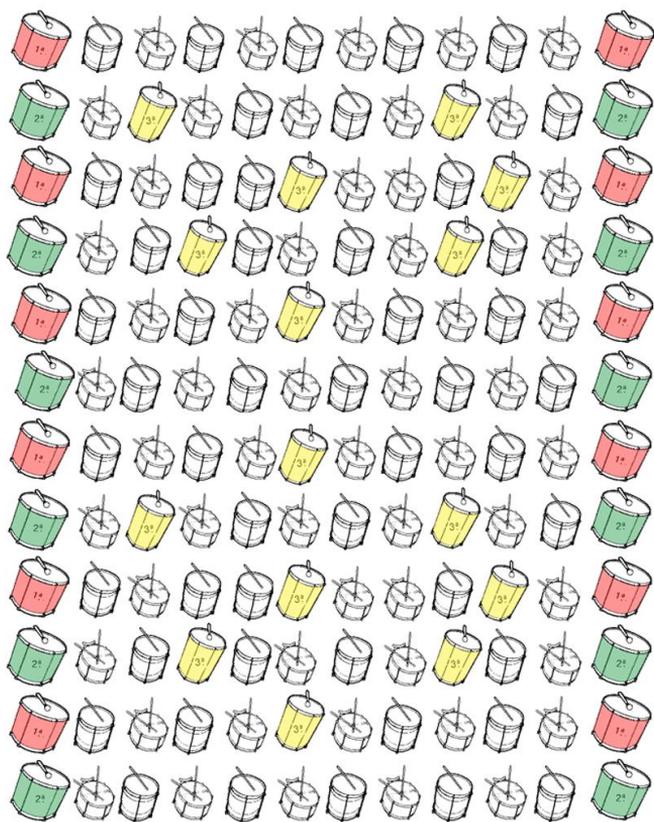


Image 159: The basic layout of the *couros pesados*: Technical rehearsal of the *bateria* of *Viradouro* on *Sambódromo* in 1991.

³ Author's archive. Notes 1990–91. p. 130.

⁴ Author's archive. *Viradouro*, January 1991.

The *bateria* playing was poor, and eventually, the *surdos* on both sides lost the rhythmic connection with the other side. They started to delay and ultimately performed individually. The *bateria* split in two and the rhythm collapsed. My thought was that this happened because of the organization of the *surdos*. The sides of the *bateria* did not hear each other when the closest *surdos* covered the *surdos* of the other side. The expected result from this was that the *bateria* would split in two.

When discussing this with de Souza, he admitted that the reason was poor harmony. It was the reason for the *bateria*'s problems.⁵ At that moment it sounded odd, because it seemed that the reason for this disaster was technical rather than aesthetic. At the next rehearsal, the number of the third *surdos* in the middle of the *bateria* was increased, and they signalled the tempo from one side to another. After this reorganization, the sloppiness did not happen again.

This discussion brought forward a question about the harmony. De Souza never mentioned it, but according to this conversation, it seemed that his comprehension about harmony has at least two different aspects: The tonal harmony and the rhythmic harmony. This distinction was never fully explained until the tests were made with the *bateria* of the *Força Natural* samba school in Helsinki, Finland. After testing different harmonic and non-harmonic tunings of the instruments, the influence of harmony became obvious at every level of the *bateria*.

The tests made with a *tamborim* section of four beginners gave a good example of the influence of the harmony. When the instruments were tuned randomly, there were significant problems in playing the syncopated *pé-chato* rhythm in the *tamborim* section. The rhythm was imprecise and the tempo oscillated continuously. After retuning the instruments to the same pitch, the oscillation of tempo disappeared and the rhythm relaxed. The quality of the music clearly became better. Only with the right tuning were the problems solved. Because the players were beginners, their playing technique was still undeveloped, and was reflected in the music accordingly. However, the main problems were easily solved by the right tuning, which clearly supported their performance.

⁵ Personal communication with de Souza at 1991.

Obviously, this improvement was based on two phenomena. As long as the beats of the rhythm of different players were precisely in sync, there were no technical problems -whether the tuning was harmonic or non-harmonic. The beats built clusters whose sound may be noisy, but the temporal organization of the rhythmic patterns was correct. Complete precision is quite improbable, and it is more likely that there is always some variation of it. In that case, the poor tuning discrepancies of non-harmonic beats was distinct from the rhythm; they caught the attention of the players and altered the timing of the tempo. This led to a continuous oscillation of tempo. When the same imprecise beats were harmonic, they did not elicit attention so much, but assimilated into the body of the beat, and only slightly lengthening it. An oscillation in tempo did not occur either. The sound of the section also became very smooth, which was one of de Souza's harmonic qualifiers.⁶

The same influence and smoothness of sound from proper harmonic tuning also occurred with other sections of the *bateria*. The harmonic tuning enabled the use of more than two different instruments and rhythms in the section. Two mutually, non-harmonic instruments with different rhythms, and with a noticeable interval between them, can always be played simultaneously, where the overall rhythm remains quite clear. When another non-harmonic instrument and rhythm is added, the tonal movement of the overall rhythm quickly becomes obscure. It is difficult to detect the progression of the rhythmic pattern, and the players are forced to concentrate on the accented main beats, which simplify the rhythm. The non-harmonic overall sound may also be quite noisy and devoid of softness.

If the tuning of a section is harmonic, and the intervals between the instruments are properly chosen, three instruments can form a nice, overall pattern where the tonal movement is melodic and easily detected. This facilitates an easy following of the rhythm, where the players know the exact timing of the music at every moment. The practical result of this is better overall timing of the section and better outlining of the music.

The third example of the melodic rhythm and its influence on the action of the *bateria* was attempted with the *surdos de marcação*. Two tonal organizations were

⁶ Author's archive. Desafinação dos sons paper.

tested during a period of one year. In both cases, the tuning of the section was harmonic and basically the same.

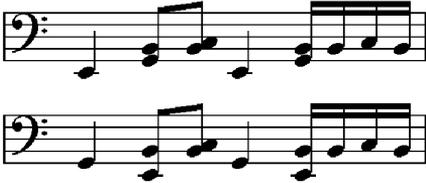


Image 160: Two different tunings of the *surdo* section.

The first tuning proved its advantages when the players were still inexperienced. With it, the tonal movement between the first and the second *marcação* was clear. The second *marcação* was the lowest tone of the pattern, and had a descending intonation, beginning from the first *marcação*. This tonal event specified exactly how the rhythm went, even though the players' reading of the rhythm was still undeveloped, with incorrect readings of the rhythmic construction.

When the relation of the first and second *marcação* was inverted, the situation changed when the first became the lowest, and the third and fourth remained the same. The harmony was still good, but the tonal movement between the first and second *marcação* became obscure. This occurred because the movement towards the second *marcação* started simultaneously from high and low. This did not support the players as well as the clear tonal movement of the first organization. It caused uncertainty, frequent crossed rhythms, and delayed rhythms. The reading of the rhythm suffered. The players also mentioned these problems to the conductor.

Now, after more than two years of training, the basic movement of the rhythm is not so important to the players anymore. In acoustically problematic situations, it is easy to cause problems with poorly chosen, or hastily made non-harmonic tunings, which force the players to concentrate on the *marcações*. As the oscillation in tempo increases, and the quality of the *floriando* rhythms greatly diminishes.

The results of these tests directly highlight the problems of the *Viradouro* samba school as discussed earlier. The tonal movement of the *surdo* section was poor because of poor tuning. There was no difference between the basic *marcações*, and players on either side did not find their counterpart. For the other players, there was no tonal

guiding, and they gradually lost a sense of the rhythm. These problems were caused by poor harmony, which could have been solved by proper tuning of the *bateria*. The director subsequently chose to reinforce the third *marcação* by increasing the instruments between the sides to signal the rhythm from one side to the other. The tunings remained the same, but the intermediating rhythm of the third *marcação* became accented.

When discussing the problems of the *Viradouro* samba school *bateria*, de Souza obviously meant that the tuning of the *bateria* was poor, and that the players could not distinguish between the beats. Because there was not clear difference between the sounds of the beats, the players did not hear the real rhythm on the other side. This caused problems in the *bateria*. Indeed, the *surdos* in particular sounded like a steam hammer.⁷ There was no harmony at all. In this case, the *ritmo atravessado* was caused by the conductor. He had not tuned the *bateria* properly.

De Souza's view on *ritmo atravessado*, or delayed rhythm, is holistic. It emphasizes the wholeness of the *bateria*, and not the individual players. The logical realization for this is that the players, who are allowed to join the *bateria*, are qualified enough and able to keep the correct tempo. Thus, the reasons for the *ritmo atravessado* are collective problems, which create difficulties for the individual players.

Poor harmony and tuning cause confusion because they obscure the limits of the sound. Different rhythmic patterns are also not heard in detail as they should be. The important separation of sound and clarity diminishes. In worst cases, they can not be separated, and the non-harmonic sounds are especially highlighted when the timing is not correct. This confuses other players, and results in *ritmo atravessado*. It deteriorates the quality of the music.

6.3. Summary

There are at least two practical musical solutions for these kinds of problems in a *bateria*. The harmony can be improved where the tonal guiding -clear tonal movement - assists the players and helps the director to control the *bateria*. Or, the rhythm can be

⁷ Author's archive. Notes 1990–91. p. 153.

made simpler and its essential parts can be accented to signal the progression of the rhythm. In that case, the harmony does not have that much importance. The difference between these two methods is naturally distinct, and leads to different musical solutions and developments over time.

It seems that the time of harmony and harmonic solutions in *batucada* are over. Nothing like that has been heard or reported in the samba schools since 1990. The harmonically tuned *bateria* and its *batucada* would be so distinct from the contemporary style, that it certainly would have been noticed. The last decades show that the simplification of the *batucada* basic rhythm in samba school *baterias* is a fact. Complicated section compositions and delicate rhythmic constructions are absent. Instead, vast non-harmonic musical actions, which are based on a distinct contrasting of the rhythmic blocs, have overwhelmed *batucada*. It is remarkable that this has happened at every level of *batucada*, and not only in big *baterias*. The smaller *baterias* also reflect this change, even though they would have a great chance to play different *batucada*. The leaders of the development today are the big *baterias*, whereas the smaller ensembles only reflect the evolution. Broadly speaking, we discuss two different paradigms of rhythmic music: The harmonic tradition and the non-harmonic tradition.

Why is there harmonic and non-harmonic *batucada*? The experimental work reveals part of the answer. In the past, all drum skins were made of leather, but today, most of the skins are made of nylon or some other artificial material. Only the skins of the *surdos de marcação* and *cuicas* are made of leather. The sound and timbre of these two materials are very different. Leather has a warm, rich timbre and a good sustain - about two seconds long. Compared with these, the artificial skins are very different: The sound is short, the attack is strong, and the timbre is not that harmonic.

The drum shell does not have that much influence on the sound. The sound of wood is warmer than aluminium, steel, or brass, but the shell material only supports the tone of the skin. It does, however, provide the final touch to the sound.

The leather skins of the drums have to be tuned correctly. The sound of two or three improperly tuned leather skin drums together can sound tolerable, but when the number of drums increases, cacophony is inevitable because of the long sustain. Artificial drum skins used today in *batucada* instruments do not have that problem. The

sound is very attack-orientated, and if the drums are not tuned in mutual harmony, the rhythm is still clear even though the sound is not very harmonic. The new drum skin materials enable a different approach to tuning, but then the tonality and melody of the rhythm is lost.

So, why are the new materials so popular? One answer is that the leather skin is affected by the humidity of the air. When humidity changes during the day, the tuning of the drum changes. It is practically impossible to properly tune tens or hundreds of leather skin drums in fixed harmony. If the tuning is done before the performance, it will be different by the time the show starts. Tuning works only with relatively small *baterias*. Artificial skins do not have that problem. Why then is the harmonic *batucada* lost, even though better tuning techniques of big *baterias* would be possible today? I think that de Sousa saw the reason: It is complicated and time-consuming with big *baterias*, and the new *bateria* leaders were not able or willing to learn the old fashioned systems. It is also a consequence of the problems of tuning hundreds of instruments properly with the traditional methods, which have originally been developed in a completely different situation for small ensembles.

6.4. Harmony of Os 27 Amigos

According to de Souza, harmony has been an essential quality of *batucada* in the past. Today, however, there is no harmony in the *baterias*. *Os 27 Amigos* is the last known *bateria* that incorporated harmony into their *batucada* performances. There exists only one copied cassette tape recording from a rehearsal of that band. The original recording was not studio-produced and the copying had diminished the quality even further. In the beginning of the 1990s, the only practical method to study the recording was by ear in order to determine the pitches and to compare them with other sources. This method did not provide reliable results. Due to the technological advancements of music studios and sound engineering, it is now possible to analyse the tape in more sophisticated ways. This allows for a more in depth analysis of the harmonies used by *Os 27 Amigos*, and provides greater insights into de Souza's views of those harmonies.

When analyzing the tape, the distortion level of the third take is particularly high. This makes it difficult to define the basic tuning of the instruments. It was almost impossible when trying to isolate the *surdos de marcação*. It was equally difficult when comparing that take to the other ones. Another obstacle in the analysis was that the tape and recording device both acted as filters. Some of the overtones were filtered and the sounds of the instruments were distorted. Due to that result, the exact pitches of the instruments were obscured. The exact instrumentation is inconclusive when listening to the tape. An understanding of the tuning system of the instruments is therefore difficult to come by.

The harmonies of *Os 27 Amigos* were studied by defining the tuning of each individual instrument and section. This was done by isolating the sounds of individual instrument's strokes and measuring the pitch with a tuning gauge. Many of the strokes were so short, (about $2/10^{\text{th}}$ of a second), that the gauge did not recognize them. These short strokes were then copied and multiplied to a second series of repeated strokes. The sound duration was then long enough for the gauge to measure the pitches. Unfortunately, many of the strokes were overlapping or distorted, so not every pitch was able to be measured. These pitches were determined by comparing them with the ones that were clearly perceptible. In some instances, for example with the *surdos de marcação*, the overall rhythm was simulated by a notator, where the unclear intervals

were adjusted to serve the sound of the tape before the rhythms were tested in the *bateria*.

To verify the results, all *couros pesados* and some *miudesa* sections of the corpus have been recreated and tested. This would, in turn, ensure that the right type of instruments were used, and that the right rhythms and pitches were implemented. In some cases, it was not possible to buy or rent the correct instruments because they no longer existed. The most obscure instruments included the wooden shell, leather skinned-*surdos de repicar*, and the *chucalhos*, or tinsplate maracas. These instruments were recreated in accordance with existing information in order to reproduce the original sound. The *surdos de repicar* in particular required a lot of testing in order to determine the right sound.

The meticulous process of analysis required three years of work in collaboration with the student *bateria*. The result of this work was fruitful, and it yielded both a practical understanding of the harmonics, as well as a deeper perception of the musical style itself. This outcome also contributed to corrections of the pitch analyses, and has significantly added to this study.

As a result of this work, the *surdo de terceira marcação* proved to be tuned one octave lower than expected. One literal reference also pointed to this direction.¹ With the higher tuning the sound of the section was not correct. The sound was too clean, and the murmuring “ru” in the *surdo* verbalization “tun–tun–tun; tu–ku–ru–ku–tun” was missing. The verbalizations proved to be very accurate. The organization of the *surdos* was changed so that the *surdo de terceira marcação*, contrary to the popular practice, was changed to be the biggest in diameter. As a result, the sound of the section became more authentic.

Another important correction was with the *cuicas*. In the conversation, de Souza specified that he preferred to divide the *cuicas* into two sub-sections. One plays rhythms that resemble *surdos de repicar*, and the other plays the cutting pattern.² This outcome was expected, but it was nevertheless surprising since the measuring of the pitches and the modelling of rhythm with the notator, brought out a different composition. Two *cuicas* were playing slightly different *ripica* rhythms.

¹ Riotur 1991. *Memória do carnaval*. Rio de Janeiro: Oficina do Livro. p. 317.

² Author’s Archive, Notes 1990–91, p. 120. “If there are six *cuicas*, three of them plays a pattern that resembles *ripiques* and three cutting pattern.”



Image 161: The first modelling of the *cuica* section.

The question of the cutting *cuica* was not answered until 2004 when the undulation of the lower tone proved to be a rhythm of its own. The high tones of the cutting *cuica* can not be heard on the tape, but the effect of the cutting undulates the lower tones. The two *ripica* rhythms are now more conventional, even though they could be played with the undulation. However, this is not the normal practice. The *cuica* section of the two rhythms proved to be a three rhythm section, which was very carefully composed.



Image 162: *Cuica* section of the three rhythms, the third take.

In the following tables, the measured and estimated tunings are summed up. The pitches on the tape appear to be very accurate, and no remarkable deviations were found. The pitches are entered also on a scale graph where the mutual relation can be seen. Each scale is written in a key that corresponds to its proper scale. There are subsequently less deviations and notated accidentals. The suitability of each tonality is distinct, and it is noteworthy how the root, third, and fifth are emphasized in the chosen scales. This makes it easier to identify an appropriate key, which ultimately is not

essential from the point of view of *batucada*, it's tunings do not base on scales, but nevertheless helps the analysis.

The instruments of same sections are connected with a horizontal line. Unknown instruments and pitches are indicated by a question mark. All pitches are marked in one octave to form a continuous scale and to ease reading. With the *cuicas*, only the open tones are marked in the table and in the scale. The tuning of the *piano de agogô* is F major in all of the takes.

6.4.1. The first take

The first take is the only one where the all *surdos de marcação* can be heard and measured separately. All of the *surdos de repicar* can be heard here; the rhythms are transcribed; and the pitches are measured. The lowest sound of the skin, which is produced by striking the centre of the skin with a mallet, is defined as the tuning level. The problem with the pitch is that the sound is filtered and there is a slight tonal shift during the progression of the sound. When measuring, it is not always clear which segment of the stroke's sound is the most fundamental.

INSTRUMENT	TUNING
surdo 1	B
surdo 2	D#
surdo 3	F
surdo 4	E
slow repique	D
rapid repique	E
contra repique	C#
tarol	D~D#?
caixa de guerra	~B?
cuica 1	D->F
cuica 2	G->B
tamborin 1	G
tamborin 2	D

Image 163: The tunings of the first take.

This is a normal problem in measuring drums that are tuned to be relative to each other. The skin sound and the body sound of the instrument are not in complete balance with each other because the instrument is not tuned to its own best

specifications. This tuning is rarely in sync with the correct level of the scale. The consequence is that the sound of an instrument that is tuned to a scale, slightly ascends or descends after the stroke when the sound resonates. The final determination of the tuning levels is done by comparing the intervals between the instruments of one take with the *surdos de repicar* of the other takes.

The tunings of the *caixa* section cannot be measured because the resonators cover the pitches of the drums. In live situations, the resonators would not disturb the tuning gauge. But when the sound is filtered and distorted by the tape, the pitch is immeasurable. The resonator sound and the skin tuning are not the same and the final tuning is often done by adjusting the resonator tension so that the resonator sound matches with the other instruments. In the first take, the comparison level for the *tarol* has apparently been the pitch of the slow *surdo de repicar* or the *surdo de segunda marcação*. The *caixa de guerra* with its lower tuning is then in balance with the *tarol*. So the tuning level of the *caixa de guerra* should just be seen as a sophisticated guess.

The basic tuning of the *cuicas* is estimated from the high tones of the instruments, which can often be heard separately because of the slightly different rhythmic patterns. The pitch is about a minor tenth above the tuning level of the instrument.

The pitch of the *tamborim* is difficult to measure even in a live situation. It was almost impossible to do so from the tape, but luckily there were a few individual strokes that did not overlap with other instruments. These instances confirmed that there were two different pitches in the *tamborim* section. The basic pattern is played by the lower instruments tuned to D, and the contrasting pattern is played by the higher instruments tuned to G. Due to the filtration, the tuning of the higher *tamborim* is somewhat questionable. G is the pitch that the gauge indicates.

esterinhas? tamborins
 repiques

I 2 3 3+ 4 4+ 6

 cuicas
 surdos

Image 164: The scale of the tunings of the first take.

The tunings of this take are loosely structured on a B minor scale. The emphasis is on the minor third where four instruments are tuned. The *surdo de segunda marcação*, however, plays a major third. This stroke is emphasized in the music because it is the only stroke in the rhythm of the bass register on that pitch. The *segunda marcação* is very prominent and results in a diatonic harmony. If the level of the *caixa de guerra* is correct, it emphasises the root. The fifth does not exist. The fourth is played by the rapid *repique* and the *surdo de quarta marcação*, while the sixth is played by *taborims* and *cuicas*, which establish the scale. The sharp fourth is played only by the cutting third *surdo*. The stroke undulates and colours the intermediate rhythm of the *surdo de quarta marcação*.

6.4.2. The second take

INSTRUMENT	TUNING
surdo 1	B
surdo 2	D#
surdo 3	F
surdo 4	E
slow repique	D
rapid repique	E
contra repique	C#
tarol	D~D#?
caixa de guerra	~B?
cuica 1	D->F
cuica 2	G->B
taborin 1	G
taborin 2	D

Image 165: The table of the tunings of the second take.

The second take is more distorted. The *surdo* tunings are more obscure compared with the first take. It is quite possible that the tuning level of the *surdo* section is higher than in the first one, but only the *surdo de segunda* and the *quarta marcação* can be measured with some accuracy. The *primeira* and the *terceira* are imperceptible. Their levels are then just estimations according to the intervals of the first take.

The *contra repique* cannot be heard in the second take. Its level cannot be estimated in relation with the other *repiques* because the mutual interval of the slow and the rapid *repique* has changed. In this instance, the rapid *repique* is a whole step lower, unlike in the first take, where the relation was inverted and the rapid *repique* was tuned higher. It appears that de Souza has not only retuned the instruments, but also changed them because the difference in the sound of the rapid *repique* has been drastically altered.

The tuning of the *caixa* section can not be measured for the same reasons as the first take. The sound is clearer here than in the first take. The estimated level is the same as in the first take.

The mutual interval of the *cuicas* remains the same, but the tuning of the section is a whole step higher. The tunings of the *tamborim* section are also raised. The basic rhythm is now played in A and the contrasting rhythm in C#.

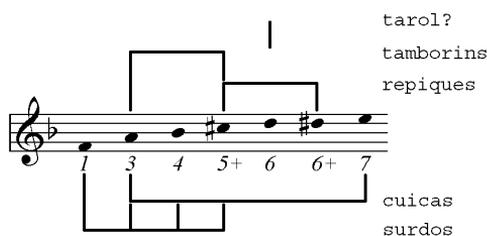


Image 166: The scale of tunings of the second take.

Due to the changes, the scale is now in F major, which is also the tuning of the *piano de agogô*. This clear tonality is broken by the first C# *surdo*, which gives a basis for the *surdo* rhythm. This completely removes the sweetness of the sound caused by the common chord. The higher tuned *tamborim* also serves the same purpose. The weight of the *surdo de terceira*, which plays the fourth, is not remarkable, but just vibrates the third, which is played by the *surdo de quarta marcação*. The emphasis of the *cuicas* is in the third and in the seventh where the main lower tones are.

The main instruments that provide external colour and break the scale are the two *repiques* of the sharp fifth and sharp sixth. The sixth, where the *tarol* seems to be tuned, is interesting. Its tuning would then be separated from the *repiques*, perhaps to emphasize its rhythm. The rhythm of the *esterinha* drums is nice and calm in this take,

but without knowing the tuning of the *caixa de guerra*, further conclusions are improbable.

6.4.3. The Third Take

INSTRUMENT	TUNING
surdo 1	
surdo 2	E
surdo 3	F?
surdo 4	A?
slow repique	D#
tumbadora	D#
conga	F#
tarol	
caixa de guerra	
cuica 1	C#
cuica 2	G#
cuica de corte	G
tamborin 1	A
tamborin 2	C#

Image 167: The table of the tunings of the third take.

The *surdo* tunings of the third take are quite unclear. This is primarily due to the overlapping of the continuous cadenza patterns and the high distortion of the recording. It is also quite difficult to accurately compare by ear whether the overall tuning is lower or higher with the first and second take. The tuning gauge is the only resource that can be used to measure the tunings, but it cannot be cross examined.

The tuning of the slow *surdo de repicar* remains the same as in the second take. It is the most prominent instrument in the third take, and is therefore clearly audible. Other *repiques* cannot be heard, even though the section is apparently complete. More emphasis is placed on the *tumbadora* and *conga*, which now serve as the accompaniment instruments to the solo passages. The tunings of this pair are D# for the *tumbadora* and F# for the *conga*. The *tarol* and the *caixa de guerra* are strongly supported by other instruments in the solo. The size of the instrumentation makes it impossible to estimate individual instrument's tunings.

The tuning of the *cuica* section is still raised. In this take, there are three *cuicas* of different pitches. The tunings of the *repica* pair are G# and C#. The tuning of the

cutting *cuica* is G. The basic interval between the instruments remains the fourth as it was in the previous takes. Now, however, the interval has widened one half step down in the cutting *cuica*. The *tamborim* section's tuning has not changed in this take.

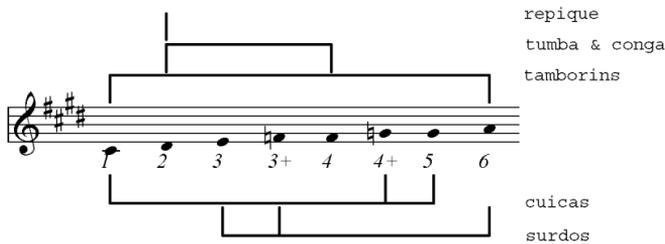


Image 168: The scale of the tunings of the third take.

The whole C # minor scale is nearly present, but the emphasis is on the root, second, and sixth. The known tonality is primarily determined by the *cuicas*, which are tuned to G# and C#. These instruments emphasize the root and the fifth. The cutting *cuica* nicely undulates the fifth downwards. The root is also supported by the high tuned *tamborim*. Together, they lay the basis for the key.

The role of the *tumbadora–conga* pair is emphasized in the solos and in the passages where the *tumbadora* in D# is the main instrument. Together with the slow *repique*, it emphasizes the second, whereas the *conga* occasionally brings the fourth into the rhythm.

6.4.4. Surdos de marcação section, the first take

The *primeira marcação* is the basis of the *surdo* section. Other pitches are studied in relation to it. The interval between the basic *marcações*, the *primeira*, and the *segunda*, is a major third, which is quite normal in any *bateria*. The *segunda marcação* in D# is the tone with the least amount of tension in the *surdo* pattern. It ends the *surdo* eruption and relieves the pattern by providing some space to breath.

differing from the slow *repique*, which probably has a nylon skin. This results in the sound of the rapid and the *contra repique* having a more open and singing quality. There are more lower frequencies in their sounds when compared with the slow *repique*'s skin, which has a sharp sound. Also taking into consideration the normal diameters of all these instruments -12–14 inches -tuning both instruments down an octave would be impossible.

6.4.6. Caixa section, all takes

There is not a lot to say about the tuning levels of the *tarols* and the *caixas de guerra*. The resonator distortion covers the basic tuning of these instruments. In the first take, the dry crackle of the instruments is related to the fast *repique*. In the second take, the sound of this section is clearer and there is no other noteworthy coverage of sound. The rhythm is clear and it is apparent that the *tarol* and *caixa de guerra* are tuned and in a nice balance with each other. The basic interval between the instruments is apparently harmonic. It can be surmised that the *caixa de guerra* might be tuned to a major or a minor third below the *tarol*. The sound of the section matches with the slow *surdo de repicar*. In the third take, the rhythm is also clear, but now it is supported and covered by the *tumbadora*, *cuicas*, *prato*, and *repique*.

6.4.7. Tumbadora and conga, the third take

Tumbadora and *conga* can only be heard in the third take where they have substituted for the leather skinned *repiques* as the main accompaniment instruments for the solos. The *tumbadora* is the main instrument, but its role varies depending on the take. This phenomenon is emphasized when the *piano de agogô* is playing the melodic line. The *tumbadora* is tuned in D#, which is the same as the tuning of the slow *repique*. The *conga* is tuned in F# -a minor third higher.

6.4.8. Cuicas, all takes

The tunings of the *cuicas* were easily measured in all takes. The basic interval between the *ripica* instruments in every take is a fourth. The tuning level of the section rises gradually from take to take. In the first and the second takes, the section is divided in two. However, in the third take, the pattern is coloured by the downward half step undulation of the cutting *cuica*.

The image shows a musical score for three takes of a *cuica* section. The score is written on three staves. The first two staves are for the first two takes, and the third staff is for the third take. The first two takes are divided into two parts by a double bar line. The first take is in G major, and the second take is in A major. The third take is in G major but features a downward half-step undulation in the cutting *cuica* part.

Image 171: *Cuicas* of all takes.

6.4.9. Tamborims, the first take

The tunings of the *tamborim* section are the most difficult to measure, because the sound is high and quite dry. The interval between the parts of the section seems to change in different takes from a fifth to a third. This, however, has to be taken with some scepticism, because the separation of the sounds is done by using filtering equalization that corrupts the overtones. This section is also divided into two parts that have different tunings. Half of the section plays the basic rhythm, while the other half is a slight contrast to it. This is a rare technique, but it resembles an older practise of playing the *tamborims*.

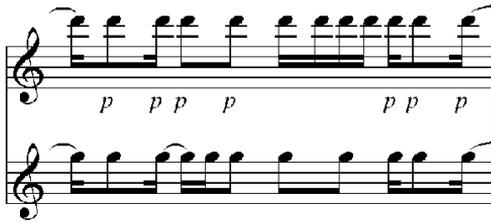


Image 172: *Tamborims* of the first take.

In the first take, the tunings are G and D, thus separated by a fifth. In the second and the third takes, the tuning of the lower rhythm is raised to an A while the contrasting one is lowered to a C#. This subsequently produces an interval of a major third.

6.4.10. Basic tunings

A half step is used in tuning the *surdos de marcação* and *repiques*. The same interval is also employed in the pattern of the *cuicas* in the third take. In every case, the usage of this tuning is the same. Colouring the *floriado* pattern is typical for all *surdos* and *cuicas*, which undulate either a half step up or down. With the *surdos de marcação* and *cuicas*, the undulation is done by a cutting action. The undulation ultimately expands the pattern. The *surdos de marcação* undulates the fourth *marcação* a half step up, but the tuning is one octave lower than with the others. This produces then a special murmuring sound that is typical in the *Portela batucada* tradition. The *surdos de repicar* undulate the overall pattern one half step down. The action is broader and colours the slow *repique* rhythm with the *quarta marcação* style. In the third take with the *cuicas*, the same half step interval undulates down the *cuica* pattern. The primary role of this interval is to animate the rhythmic patterns when the other intervals are used to organize the basic relations of the instruments.

A whole step is used to organize the slow and rapid passages of the *surdos de repicar*. The order of the *repiques* is different between the first and second takes, but the separating interval remains the same. Unfortunately, there is no information from the third take, so it is not known whether this interval would be typical in relation to these

instruments. It is also unknown how the whole section is organized in the second and third takes.

The minor third represents the *tumbadora* and the *conga*. It is also the largest interval between the *contra repique* and the rapid *repique* in the first take. Regarding the relations of the *surdos de repicar*, it is also evident that the *contra repique* and the rapid *repique* are the main pair of the section. The interval between their tunings is a minor third. The slow *repique* between them is the contrasting instrument, which is tuned according to the upper tone of the undulating *contra repique*. In this construction, the most deviating interval, the second, is not so central. It has a more passive role of colouring, due to the undulation.

The major third represents the *primeira* and the *segunda marcação* of the big *surdos* and the *tamborim* section, within the second and the third takes. It is unclear whether this interval between the *surdos* can be fixed. This is typical for the *surdos de marcação*, but information is provided only from the first take. In the case of the *tamborims*, it is possible that de Souza changed the interval from the fifth to the third in the second and third takes.

The interval of a fourth is particularly prominent between the two *ripica* parts of the *cuica* section. Even though the overall tuning level changes take by take, the interval remains the same. Another use for this interval is to organize the relation of the *segunda* and the *surdo de quarta marcação*.

The sharp fourth is between the *segunda* and *terceira surdos de marcação*. This interval is not emphasized, but occurs as a result of the half step tonal undulation, which the third *surdo* produces above the fourth *marcação*.

A fifth is only used with the *tamborims* in the first take. It is also the widest interval between the basic tunings of the instruments in one section. Wider intervals in sections can only be found with the *cuicas* where the amplitude of the tonal variation is a minor tenth, and with the *piano de agogô*, which is tuned to produce one octave. These intervals are embedded in the rhythmic patterns. They have a clear effect on the tuning levels, but they are not used to represent the relations between the instruments.

6.4.11. Summary

The focus on these close intervals in the instrumentation shows that the aim is to organize instruments of each section into close or continuous series, or into harmonic pairs that amplify the tonality of the rhythmic patterns. Apparently, this practice is based on tuning systems of antecedent folk music bands in different ritual performances.

The series are especially important with all *surdos*. The *surdos de marcação* pattern is composed from the tones of individual instruments because the playing technique itself does not produce tonal variation. The amplitude of the pattern, even though it is the widest due to of the timbral octave hop of the *terceira marcação*, remains relatively concentrated. It only modestly exceeds the widest possible tonal variation of a single drum. The situation with the *surdos de repique* is even more apparent. Two of the instruments are tuned to a series based on the basic tonal variation of the *contra repique*. The slow *repique* is just one full step above this configuration, amplifying the series. Instead, the *taborims*, *cuicas*, *caixas*, and *tumbadora-conga* are all organized to form a harmonic pair.

This is first and foremost done to create *contra balanço*, as well as tonal variation between the instruments, and widening the drum based tonal variation. Two trends can be seen here: The first is to widen the tonal scale of a single instrument, such as a minor third, by another companion instrument that can be tuned a second higher. This results with an amplified tonal scale of a flat fourth. The second trend is to organize instruments in harmonic pairs of thirds, fourths, and fifths. This is especially used with single pitch instruments like *surdos de marcação* and *taborims*. The result of this is to create and amplify tonal variation. The tentative outcome of the intervals can be summarized as follows:

1. Flat second: Undulation; creating contrasting movement.
2. The second: Wider tonal variation.
3. The third, fourth, and fifth: formation of harmonic pairs
4. Section tunings in a loose scale to maintain overall harmony.

The instruments are carefully organized in harmonic relations that form concentrated scales. These scales can be presented in loose European keys, which, even though the basic tones are emphasized, are not the basis for the tuning system. They are merely the result of a desire to create as many harmonic combinations as possible. As indicated from the different takes, the scales and the keys vary from take to take.

Some observations can be done when comparing the tuning scales of the different takes. The most prominent detail of the scale in the first take is that there are many overlapping instruments. Tonalities of D and B, seem to be particularly central to the tunings. Knowing the instruments, D is an obvious point of focus. That tonality is where the tuning of the 12 inch diameter instrument is still in balance and the overtones are nicely controlled. Depending on the instrument, if tuned higher, the overtone sound becomes distinct and easily unstable, while the tuning, to a certain level, becomes difficult. The D tonality is the most favourable level for the highest controlled tunings. In the first take, the slow *repique* and *tarol* are both probably 12 inch instruments. They are both apparently in D, as are the *tamborim* and one of the *cuicas*. The overlapping of the instruments is abundant. The situation with the B tonality is almost the same, if the tuning of the *caixa de guerra* is correctly estimated. The *surdo de primeira marcação*, *caixa de guerra*, and the high sound of one *cuica*, is also here.

This kind of multi-layered sound is solid and deep because the sounds amalgamate. However, the disadvantage is that the sounds and rhythms of the individual instruments cannot be distinguished from each other. The benefit of using different instruments decreases here. Since de Souza deepens the sound of the sections and colours the rhythm by using at least two simultaneous tuning levels with contrasting rhythms, the intersectional overlapping does not seem practical. Moreover, it obscures the rhythmic patterns of the sections.

In the following takes, the degree of overlapping decreases. In the second take there are only two, three-layer overlappings, which are further subdivided in the third take. The final result in the third take is four double layer overlappings and four single levels. Only the overlapping of the *tumbadora* and the slow *repique* on D# sound rather covered. The different sounds separate these instruments from each other to some degree. Other overlappings are more distinguishable. The sound pairs of low tone of the *cuica* and *tamborim* on C#; *surdo de marcação* and the high tone of *cuica* on E; *surdo*

de marcação and *tamborim* on A, are all clearly brisk combinations. Even though they are tuned to play the same note, the sounds are different and distinctive from each other.

According to the series of the tuning scales and the instrument overlapping, it seems that the intention after the basic tuning of the first take would be to clarify the rhythmic section patterns by reducing the overlapping of tuning levels. Whether this is also done by changing the internal tuning relations in some of the sections cannot be said, but it is quite probable. Obviously, the tuning system is not the only option. Any means can be used to get the desired result. The starting point for the tuning of the *bateria Os 27 Amigos* seems to be the tuning of the individual instruments of each section to harmonic relations with each other. The levels of the sections of this first tuning are just fundamentals for the instruments. After testing the *bateria*, the overall section tuning levels are changed to improve separation of the sections from each other. Furthermore, they are changed to clarify the rhythmic patterns from each other by reducing the overlapping of the instruments of the different sections. If changing the internal levels of the sections is necessary to improve the result, it is obviously done during the process.

The limit of this separation of the sections and rhythmic clarification is clear. The most extreme solution is to use all the tones of the chromatic scale. Such a measure is not employed, because the harmony of music would be made unclear. Seven to nine tones are used to reduce the number of non-chordal harmonics. Clearly, the selection of the levels is to some degree guided by favouring the same intervals as in the tuning of the sections. It is apparent that the final result is created through this process, but that it could also be different. The various instrument combinations, multiple players, and different sizes of *baterias*, would lead to multiple results. It is also clear, as de Souza stated, that the *bateria* is not tuned to any specific chord, but that each *bateria* has a harmony of its own. This applies to different *baterias* and conductors, where a skilful conductor can create different harmonies as de Souza has demonstrated here on a small scale.

Briefly put, the harmony is based on tuning and tonal variation of individual instruments. This is the level of the simple *balanço*. Since tonal variation of a single instrument is limited, the sections' melodic rhythmic figures are created by combining patterns of many instruments: four *surdos de marcação*, three *surdos de repicar*, three

cuicas, two *caixas*, and two *taborims* like in the corpus. These instruments are used to widen the melodic impression, which creates *contra balanço* within the sections. These section patterns are the source of the harmonic structure in the *bateria*. These designs are adjusted to pitch levels where they distinguish from each other and do not overlap or distort others. The patterns have to be harmonically related to produce a nice *balanço total*, or total *balanço*. A resulting consequence is that the tunings form a loose harmonic scale. The traditional *batucada* is not organized by beats, but by its melody. The musical style, rhythm, and conductor's interpretation, all define the scope of this tradition.

7. CONCLUSIONS

7.1. Organization of bateria, rhythms and functions

The study of the *bateria* organization is amalgamated with the study of the rhythms and the functions of the instruments. The detailed organization is studied from the basis of both the common terminology and de Souza's terminology in principle with the same method used as the studies of the elements and quality of *batucada*. The special features that de Souza exploits in *batucada*, and in the organization of *bateria*, are then rooted in this structure. The common practices and de Souza's personal intentions explain the specialties of the organization of the *bateria Os 27 Amigos*.

The rhythms of instruments are studied together with the *bateria* organization. The analysis is deepened with the study of the functions of the instruments. This is based closely on de Souza's paper, "*marcação da bateria*", in that he defines the functions of the main instruments in the composition of *batucada*. Together, these studies demonstrate that the basics of *bateria*, the rhythms, and the functions of the instruments, are all complex systems, which are clearly developed over time. The understanding of these basics ultimately enables more sophisticated developments. *Batucada* played in a *bateria* is not casual improvisation or informally played music, but is very structured and composed music.

The result of this study can be seen as the library of the basics of *batucada*. It is noteworthy that this information only concentrates on the already archaic *Os 27 Amigos*. *Batucada* standards have changed since 1987 and the time of *Os 27 Amigos*.

7.2. Elements of batucada

The study of the elements of *batucada* illustrates that folk music and oral traditions also have sophisticated theoretical systems that can be developed. It is obvious that the stable environment that the *Portela* samba school provided had supported this evolution. Another obvious reason was that from the early days, *Portela* had capable conductors who one after another, had been able to concentrate on their arts. The size of

the *bateria* had also demanded more sophisticated systems to be developed, than were used in the small samba combos of the early days.

The theoretical development is dependant on the interest of the conductors. The system itself is not generated from nothing. The analysis refers to a system that is older than *batucada*, and possibly older than samba itself. It is noteworthy that this theoretical system is clearly emic, and is not constructed from incomplete material collected by the researcher. The information was given in complete form to the researcher. The researcher's work, in turn, has been to organize it into visual forms to see and understand it. To some degree, this is different from other corresponding studies of emic musical grammar. Here, I especially refer to the Are-Are theory of Hugo Zemp,¹ and to Pekkilä's studies.²

The analysis demonstrates that de Souza had a clearly structured comprehension about the rhythmic construction of *batucada*. Different rhythmic, voiced, historic, and functional properties set apart the various facets. The basic structural terminology of *batucada* is crystallized in the functions of the *cuicas* and *surdos*, which are *marcar*, *cortar*, and *ripicar*. All different basic rhythmic qualities are described here. The *floriados*, which are as a class more comprehensive than the tightly specified *ripicas* and *complementos*, widen this specification. The latest addition to this system is the *variações do conjunto*, the modern rhythmic–melodic variations, which were possibly developed by de Souza.

7.3. Quality of batucada

The result of the aesthetics study of *batucada* -how the quality of *batucada* can be estimated -is interesting. De Souza particularly sees the faults of *batucada* in a very detailed way. His comprehension is much more precise than the average understanding within the world of samba. This is understandable for a conductor. Every fault and

¹ Zemp, Hugo 1979. Aspects of Are' Are' Musical Theory. *Ethnomusicology* vol. 23. no. 1. p. 34.

² Pekkilä, Erkki 1988. *Musiikki tekstinä. Kuulonvaraisen musiikkikulttuurin analyysiteoria ja –metodi*. Suomen Musiikkitieteellinen seura. Acta Musicologica Fennica. Jyväskylä: Gummerus. ISBN 951–95336–1–3. p. 277.

mistake has to be known in order to compose *batucada* and control the *bateria*. These conditions all have very practical bases.

Conversely, the concepts concerning the proper quality and harmony of *batucada* are less detailed. The only practical working definition for harmony is the suavity (*suavidade*), which is explained as the sonority of style (*sonoridade do estilo*), and the pleasant compatibility of sounds (*concordância agradável dos sons*). The term detuned (*desafinado*), is a better definition for what it is all about. According to de Souza, detuned *batucada* is noise and not music.

7.4. Development of *batucada*

The development of *batucada* from the end of the 1920s to the present, is particularly emphatic of the developing of *couros pesados* and their playing standards. The small instruments are the same now as they were at the beginning of the samba school era.

The significance of *tamborim* and its *pé-chato* rhythm, known today as *teleco-teco*, is often thought to characterize the modern samba. It is an indication of the new rhythm. The importance of *tamborim* to *batucada* is minor, but its position in the literature has been emphasized. From this point of view, for *Os 27 Amigos*, and presumably for the *Portela* samba school tradition, *tamborim's* sole contribution has been to the creation of the *tarol* rhythm.

The whole family of *surdos*, the big *surdos de marcação*, and the small *surdos de repicar* and *repinicar*, had all developed from the first *surdo* invented in the first samba school. It seems that all *surdo* rhythms have their foundation in the *marca*, *cortar*, and *ripica* rhythms of *cuica*. In this sense, the *cuica*, which emerged in the *bateria* of *Deixa Falar*, is the real driving force behind the development of modern *batucada*. It instilled the need for the rhythmic development of *surdo*, which contributed to the development of *batucada*.

7.5. Rhythm Analysis

The viewpoint and analysis method based on the three levelled structure of music and the control of the *clave* rhythms are able to describe the entire structure of *batucada*, all the way from the basic rhythms up to the music level. One of the central viewpoints of the analysis is that the divisiveness of the rhythmic structure is more comprehensive than in Sachs' definition. All of the condensed levels of the rhythm are formed by dividing the basic rhythms' beats into smaller units. The surface level is born when the diminished rhythms acquire tonality. Conventions typical of a musical culture, such as in this case, the unaccentedness of the first beat in the *clave* and the related, advancing of the beat in the diminished rhythmic pattern, must also be taken into account in the analysis. This leads to the structure that is typical of many *tamborim*, *cuica* and *agogô* rhythms, as well as Jones' "African signature tune" and many other similar rhythmic patterns.

The *batucada*'s rhythmic grammar, as produced by the analysis and in its presented form, is the product of an outsider's point of view, but the premise behind it very emic. I would have a very hard time imagining that a qualified *batucada* master would be unable to combine the basic rhythm with suitable condensations at a practical level. In both samba and *batucada*, these kinds of musical feats based on *marca* and *clave* rhythms and on *clave* condensations are totally commonplace and I have heard several artists perform them over the decades. Queries regarding the level of analytical outlook that these musical accomplishments are based on remain unanswered.

7.6. Rhyme analysis

The reconstruction of early *batucada* based on Ismael Silva's Bum bum rhyme is interesting. It clearly shows how period and culture specific our interpretations of music, and the media that disseminate it, are. In this case, the identification and careful background work into the musical references found as well as the reconstruction of instruments that respond to the original, enabled the presented end result. Given the uncertainty factors and assumptions presented in the analysis, I think that the end result

is fairly plausible. The Bum bum rhyme, recorded by Sergio Cabral turned out to be a clear musical message, which can be understood.

7.7. Nature of batucada

The study of the rhythmic paradigms examines the balance of the rhythmic characteristics associated with emic *marca*, *cortar*, and *ripica* types of rhythms. In this analysis, these details can be seen as specified emic paradigms, because the researcher combined all the rhythms of even more precise attributes under these three basic paradigms. *Ripica* is used instead of the *floriados*, which, as a term, is more ample. The *marca* also comprises the *complementos*, which are not beaten rhythms, because they are clearly marked rhythms and not *ripicas*. The method was used to study how the balance of rhythms of a different nature in the *batucada* of *Os 27 Amigos* differs from other *baterias*.

In *Os 27 Amigos*, the amount of *clave* -based *ripica* rhythms, which bring the “African” attitude to the rhythm, is considerably high. The ratio is 67/11/22 to *ripicas/cortar/marcas*, respectively. To the ears of a Western listener, this sounds extremely syncopated. Only the *Portela* samba school *bateria* approaches the same level with its ratio of 58/8/33. Others are clearly less syncopated. At the head are the *Imperatriz Leopoldinense* with 39/15/46, and the *Beija-Flor* with a 42/58 *ripicas/marcas* ratio. The rhythmic nature of *Os 27 Amigos* clearly differs when compared to other *baterias*. This difference is a direct reference to the change that has taken place in the *batucada*. When this is compared to, for example, de Oliveira’s 2002 transcripts, it becomes apparent that the trend of change towards a simpler *batucada* has continued.³

³ Cardoso de Oliveira, Rodolfo 2002. *O Império do Samba: Uma etnografia da bateria do Grêmio Recreativo Escola de Samba Império Serrano*. Universidade de Rio de Janeiro. Programa de Pós-Graduação, Mestrado e Doutorado em Música.

7.8. Harmony of batucada

Due to the insufficient level of communication when discussing harmony, that is a very central theme in de Souza's *batucada*, the instrument tunings from different takes were studied. This illustrated better how the harmony in *batucada* is created. As de Souza said, the earlier *baterias* were not tuned to any specific chord, but every *bateria* had a harmony of its own.⁴

According to the analysis, we can also say that the harmony of the *bateria* can change depending on the intentions of the conductor. The changes in instrument tunings from different takes of the recording are logical. To a certain extent, we can see why de Souza did what he had done. The basis of the tuning system seems to be in the tunings of one section. The instruments are tuned in series where the basic intervals from the flat second up to the fifth are important. This extends the basic intervals that an individual drum can produce. The sections are then adjusted so they do not overlap with each other. The result is an overall tuning that fits in some key with some irregularities. The advantage of this tuning method is that it enables more complex compositions than just the non-harmonic tunings.

This result suggests that, even though the terminology of proper harmony and harmonic tunings has not developed to be as precise as the terminology of their defective applications, the goal of accomplishing these tunings has been achieved. We can presume that this tuning system has recently become possible, thereby suggesting that the terminology has not yet matured. The other reason for this might be that even though western musical scales have been adapted to Afro-Brazilian music long ago, the theoretical education needed to understand and master the system has not become common knowledge in the world of samba.⁵ The progression towards harmony is then influenced more by a sophisticated ear than by a deeper knowledge of the Western harmonic system.

The harmony of *Os 27 Amigos* is very different from the all other *baterias* they were compared to. Nothing resembling the serene essence of de Souza's harmony has

⁴ Author's archive. Notes 1990–1991. p 93. "Tuning depends on the *bateria* and every one has [had] its own."

⁵ Alvarenga, Oneyda 1946. A influencia negra na música brasileira. *Boletín latinoamericana de música*. VI. p. 358.

been found in other *baterias*. Their tuning systems are based on completely different ideas. Every instrument is tuned individually, and not in relation to others. The sections form clusters of sounds that are distinct and contrast with each other. Not even the system of *Mestre Jorjão*, which is in its own class compared with other contemporary *baterias*, matches the prowess of de Souza's tonal system in his outdated *bateria*.

If we faithfully accept de Souza's claim, that past *baterias* were all tuned in tonal harmony, unlike any of the ones today, we can see here the difference between the two rhythmic paradigms of *batucada*. There has been harmonic *batucada*, but today, it is only non-harmonic. This study proves that two rhythmic paradigms exist, which can both be used in *batucada* and percussion music. If this result is compared to the opinion presented in the text and to findings presented by different researchers, the interesting point is that in *batucada* the tuning had become non-harmonic. In practice, the harmony has mostly disappeared. Normally the assumption is that progress leads things forward, with an increase in complexity. In my opinion, the main reason for this is the conflict between the traditional tuning methods and the sizes of the *baterias*, which have grown massively in size. I have received information from the field recently (2016) that some mestres are attempting to fix this issue. It remains to be seen what kinds of solutions and results can be achieved in this.

The experimental studies with the *bateria* of the *Academia Pombo de Ouro* helped enlighten de Souza's holistic attitude towards harmony. For him, it did not only mean tonal harmony, but was also the main tool for controlling the *bateria*. The experiments proved that this really worked. The quality of playing could improve with careful harmonic tuning that eliminated the disharmonic sounds of the music. These sounds, when they were not exactly in time, attracted attention and led to the oscillation in tempo. Careful tuning also made it easier to distinguish between the different beats and sounds of *batucada*. This made it easier for the players to follow the music, and it improved the outlining of the tempo. This enabled the players to concentrate on more complicated rhythms. The musical standards of the *bateria* were created before playing started via the tuning key.

7.9. Oscar Pereira de Souza

It is unfortunate that there are no studies of the *mestres* before de Souza. We know practically nothing about their *batucadas*. Fortunately, we know that de Souza was an active *mestre* and made many developments in *batucada*. The standards he reached during his career seem to be superior. But was he just a very capable and knowledgeable person, able to develop and master this kind of delicate system and create advanced *batucada*? Or was he just the last of the great masters, who has been compromised by the modern times –the monstrous *baterias*, television, and other shows related to the carnival. It is certain that he developed the delicacy of *batucada* to its full potential. There is no information that suggests anyone else came close to matching his achievements.

7.10. Advantage and new knowledge

Very few approaches provided the foundation for this study. The most important of these was undoubtedly the theory and method of oral music culture as developed by Erkki Pekkilä.⁶ The result of the studies on the concept of native folk musician was not promising. He concluded that a folk musician is not very theory-oriented because he is above all a musician who expresses himself by playing. He does not need natural language for this. The study by Philip Donner ended more optimistically.⁷

Both of the works emphasized to, study the concepts of individual folk musicians who play alone or in rather free, small compositions, where the praxis and knowledge of repertoires are of primary importance. From this point of view, their ways of executing their art is equivalent to the practices of folk musicians from around the world, regardless of what they play. According to the researcher's experience, a Brazilian folk musician who can play a few samba instruments has about the same

⁶ Pekkilä, Erkki 1988. *Musiikki tekstinä. Kuulonvaraisen musiikkikulttuurin analyysiteoria ja –metodi*. Suomen Musiikkitieteellinen seura. Acta Musicologica Fennica. Jyväskylä: Gummerus. ISBN 951-95336-1-3.

⁷ Donner Philip 1976. Mitä Juuso Lempinen ajattelee musiikista –Lammilainen viulunsoittaja ja hänen musiikkikäsitteistönsä. *Musiikki* 1-2 1976 (6. vuosikerta) . Suomen Musiikkitieteellinen seura. ISSN 0355-1059. pp. 90-117.

theoretical knowledge of music as his Finnish counterparts do. But, unlike Finnish folk music, the drum ensembles of the samba schools are enormous, and are led by conductors who have to know the tradition much better than an average player. These are the most capable men, who are selected and educated by the samba school community to specialize in their job. They maintain and develop the tradition. It is evident that these individuals know much more than average players.

This is contrary to the idea that highly structured, emic concept systems are not found, but created by the researcher, because they only exist in Western music where the theories took centuries to be developed.⁸ The results on the rhythmic structure are also remarkably deeper than those that Rice found in his study of Bulgarian folk music,⁹ or those attained by Zemp's Are-Are music study.¹⁰ However, those studies cannot be directly compared to this work, as in Rice's and Zemp's studies, rhythmic was only a small part of the whole. In this work, it is the only content.

The system that de Souza created was highly detailed, and it seems that it has been developed over decades by many qualified masters. The origins are apparently from Africa as the *marcar-cortar-ripicar* terminology addresses. This was not an accidental creation, but a well defined theoretical representation of a certain kind of music. The successful study of the elements of *batucada* exposed the emic grammar of *batucada*. It clearly proved that the development of complicated theoretical terminology systems and grammars can also exist in folk music.

In addition to the terminological grammar, another important find from this study is the grammar of the *batucada*'s rhythmic structure. It is almost exclusively based on the musical practice and the resulting understanding, but it also has clearly establishable grounds in *batucada* terminology. The analysis' aggregative factor is Ekwueme's premise of African music having a three levelled structure. It is evident that *batucada* and samba are based on a broad, divisive structure, which in turn is based on different basic rhythms, and that this may also be true of some African rhythm music. In the studied case those are the perfect time *marca* rhythms and the *claves*, derived

⁸ Pekkilä, Erkki 1988. *Musiikki tekstinä*. Suomen Musiikkiteollinen Seura. Helsinki. ISBN 951-95336-1-3. pp. 49-50.

⁹ Rice, Timothy 1980. Aspects of Bulgarian Musical Thought. *Yearbook of the International Folk Music Council* vol 12. pp. 43 -66.

Rice, Timothy 1994. *May It Fill Your Soul*. The University of Chicago Press. Chicago and London. ISBN 0-226-71122-6.

¹⁰ Zemp, Hugo 1979. Aspects of 'Are Are' Musical Theory. *Ethnomusicology* vol. 23. no.

from the mother rhythm. In any case, the studied case clearly implies that broad divisiveness in rhythms is a common humane perceptive practice in both European and Afro-Brazilian music. A second clear find is that the conventions related to music culture must be taken into consideration in the analysis of divisive rhythmic structure, which is almost mechanical in its accuracy. When these are known and taken into account, the explanations behind the asymmetric structures found in condensed Afro-Brazilian rhythms, and apparently in many African rhythms as well, become apparent and clear.

This study concentrated solely on the *batucada* of the samba schools in Rio de Janeiro, even though the main subject had only been one *bateria*. This *bateria* was large enough to emphasize a comprehensive understanding of the various elements in *batucada*. The conductor, Oscar Pereira de Souza, proved to be extremely qualified in his knowledge and practice of *batucada*.

In this study, we have been able to notate all rhythms and compositional elements of *batucada* in such detail, that the result can be seen as the basic library of *batucada* in this style. The study of the composition practices highlights the very delicate and deep process of creating *batucada*. In fact, a now-extinct form of the art of *batucada* was found. This tells us much about the history and development of *batucada*, and gives us a reference point to study other *batucadas*, and see how they developed and differ from the art of ancient *Portela*.

The comparison to the *batucada* of *Os 27 Amigos* proves that *batucada* has changed remarkably before the turn of the 1990s. The *bateria* studied was apparently one of the last ones that still mastered the older style of *batucada*. It is also clear that this harmonic style, with its deep compositional structure and plentiful rhythmical material, is today completely forgotten. As we saw, development did not always mean that more intricate or advanced forms were being expanded. Indeed, it could also mean a disintegration of the existing art.

This study also shows that in *batucada*, and possibly Afro-Brazilian music, there are generally at least two different rhythmic paradigms that exist. They are the harmonic and the non-harmonic paradigms. The influence of these on music is considerable.

At the beginning two main objectives were announced for this study. The first one, by Professor Samuel Araújo, stated that “Only marginal attention has been paid so

far to the musical organization of the *bateria* in writings of any standard.”¹¹ Currently, more attention has been paid to *batucada*. It is studied from the very basic up to the top level. The result of this study contains a library of *batucada*, its rhythmic vocabulary, and the grammar of themes and rhythms that can be used as the foundation for further and more advanced research. The study also expressed different paradigms of the harmonic and non-harmonic *batucada*. The other objective was illustrated in Ekwueme’s request:¹²

“More should be done, however, to find out also the original theories behind African traditional musical organization, before those theories are completely swept away from contemporary practice by forces of change [...] discover and explain what the African does musically instead, merely, of why he does it.”

It is interesting how a study of Afro-Brazilian music exposed the collective African origins and profound roots of this type of music. The relation of these two music worlds has been ascertained by so many scholars already, that there is no reason to be suspicious of the grammar that has been found. The basic structure of *marcar*, *cortar*, *ripicar*, and possibly also the *complementos*, was probably an ancient African development. How much of the upper level terminology and other structures are also African based, cannot be known within the limits of this study.

The study also responded to Alan Merriam’s challenge to “analyze music in terms of its component parts and to understand how these parts fit together to form a coherent and cohesive entity.”¹³ It can be said that the answer to all aims is positive.

7.11. Success of the study

As a whole, the study succeeded in following the guidelines set at the beginning. It answered all questions and led to new approaches -new ways of seeing this kind of music. It also provided an insight into the thinking of the ancient masters. I do not only

¹¹ Araújo, Samuel 1992. *Acoustic Labor in the Timing of Everyday life: a Critical Contribution to the History of Samba in Rio de Janeiro*. Illinois Phd: Urbana. p. 155.

¹² Ekwueme, Laz E.N. 1975/6. African Music. *Journal of the African Music Society*. Vol 5. No. 4. p. 5.

¹³ Merriam, Alan P. 1964. *The Anthropology of Music*. Evanston IL: Northwestern University Press. pp. 14-15.

mean the Brazilian masters, but I also refer to the ideas of past African masters. From my point of view, the study was more successful than I had expected. How it is received and how valuable the results are for the discipline, will be seen in the future.

7.12. Limitations of the corpus and the methods

The original aim, when collecting the corpus, was to study the different traditions of *batucada*. The part studied here, the *batucada* of *Mestre Oscar Bigode*, is just the basic study of *batucada* where the essentials are explained to enable a wider and deeper orientation of the different traditions in *batucada*. For this limited study, the corpus has been more than adequate, and only a part of the main material has been used for comparison purposes to give some background and context to the *batucada* of *Mestre Oscar Bigode*.

The limitations of the corpus are evident in the evaluation of the history and development of *batucada*. Not only is the material in the corpus limited, but also in all material published in the field of ethnomusicology, which seeks to highlight the development of *batucada* in detail, as well as possibly all traditions of *batucada*. This does not mean that there are insufficient materials on *batucada*. The materials are sparse, partially private, and certainly not registered to be available to researchers.

The limitations of the novice-master method came out during the process. The amount of information given to the novice was overwhelming, and only the highlights could be recorded. The aim here was to give information to the novice, but above all, to develop his understanding of the subject. The result was that gradually the thinking of the master affected the thinking of the novice. Even when the novice understood this influence, it was later impossible to determine what had resulted from their own original thinking, and what was gained solely during the process. In this regard, de Souza's terminologies and papers have been essential. They have enabled the solid foundation for the study.

The paradigmatic concept analysis illustrated de Souza's specifications, and enabled an exact orientation of the music. However, it was not applicable to situations where the connection between terminology and musical action was not known.

Consequently, assisting studies are required. The most confusing detail was decrypting the term “sequimentos agudos.” What does it mean in Portuguese when applied to samba? What musical action is this? It took more than two years to solve it; to find special dictionaries, and to ask Brazilian colleagues and *sambistas*. Finally, though, the *sequimentos agudos* found its place in the taxonomy.

The method used to study the harmonies of *Os 27 Amigos* was based on the definition of tuning levels of the instruments. It was used for the tabulation of the mutual intervals of the instruments in each section. When used with the whole *batucada*, it enabled the analysis of all the harmonies. The work was unfortunately limited by the quality of the footage. If undistorted and non-covered beats could not be found, measuring the pitch was difficult. This is why the measurements were incomplete, especially in the third take. This problem could probably have been avoided with more sophisticated software, able to filter and analyze the sound in finer detail. At the time of the study, they were not at the researcher’s disposal. This is partly why the extra studies, field work, and experimental work was necessary. Without those, the results could not have been verified.

7.13. Generalizability and adaptability of the results

The results archived in this study do not solely concern one *batucada*. They surely describe the general features of other *batucadas* rather precisely, and provide context for understanding and studying other *batucadas*. It is obvious that the *batucada* of *Os 27 Amigos* was rich enough to surpass most of the musical phenomena encountered in other *batucadas*.

Since *batucada* is one form of samba, the grammar of *batucada* in *Os 27 Amigos*, and its general musical features, can be found in modern *pé-chato* emphasized sambas. The results also emphasize the features of other Afro-Brazilian music to some extent. The *samba afro*, for example, seems to be just a modification of *batucada*, where the grammar of *batucada* can explain it easily. The grammatical variety that comprises all modern derivatives, as well as the older linguistic structure exemplified

here, can effectively explain the essence of related African music. The relation between these two musical worlds has been confirmed many times already.

The method used in the *batucada* rhythmic analysis brings out the *batucada*'s structure with crystal clarity and is able to show its rhythmic grammar throughout its entire structure. Because *batucada* is Afro-Brazilian music, and thus closely related to African music, this method may also be applicable to the study of African and other music genres that are related to it. When adapting this method, the arrangement structure of the music must be given particular care, as it will most likely differ from *batucada* in a number of ways. *Batucada* is also a firmly divisive type of music and its variations are directly based on the basic rhythms. Therefore, when adapting this method, the music's possible free or additive aspects must also be taken into consideration. The music-cultural practices that differ from *batucada* must also be taken into account as they appear in the way they present in the music being studied.

7.14. Further studies and challenges

This document is hopefully just one the first studies of *batucada* and the different traditions in it. The comprehensive history of *batucada* and samba school music is relatively unknown. The study of the development of different traditions -not only *batucada*, but also other corresponding music played in samba schools –will hopefully motivate the future research of these undocumented subjects.

Samba and samba schools are spread all around the world. This phenomenon and its consequences in music have been studied very little. Only some preliminary studies have been published. How is the *batucada* in different countries and different samba schools presented overall? How do these people know and understand music that is not their own, and how do they recreate it without knowing its tradition or grammar? Without a doubt, they perceive it within the structures of their own musical culture.

Batucada is not as rich as it once was. Now it is something other than the traditional *batucada*. This state of being probably gave the *samba de batucada* a chance to become as popular as it is today. It became simple. And it is still becoming simpler. This process is very clear. Most of its African rhythmic material disappeared, and the

rhythm of singing has become straightforward. Now, it better suits the taste of a global audience. In the world of samba, the discussion of its transformation obviously reflects this reformation. How did the samba evolve to become march samba?

The rhythmic analysis method presented in this study, as well as the associated points of view, are in and of themselves only a small portion of the theory related to rhythm structure and analysis. This theory is fundamentally different from the prevailing understanding of rhythm and music. It views the topic at a deeper level than the theory based on arsis and thesis. It is easily able to absorb into itself the presented Western viewpoint, and as noted in the analysis, it is able to easily explain such topics as syncopation in Afro-Brazilian music, which were previously hard to understand. In addition to being used purely for the study of samba this rhythm theory needs to be finalized and published.

To finish, I hope that this study will help to take the study of samba and other similar genres of music forward, while also permitting the even deeper study of rhythmic structural analysis and the study of the rhythmic kinship of music.

LITERAL REFERENCIAS

- Alvarenga, Oneyda 1946. A influencia negra na música brasileira. *Boletín latinoamerica de música*. VI.
- Alvarenga, Oneyda 1950. *Música popular brasileira*. Rio de Janeiro–Porto Alegre– São Paulo: Editora Globo.
- Amorim, Lino Camenietzki 2014. *As baterias das escolas de samba do grupo especial*. Trabalho acústico e os impactos do concurso sobre o seu carácter humanizador. Universidade federal do Rio de Janeiro, Centro de letras e artes. Programa de Pós-Graduação em música, Mestrado e Musicologia.
- Andrade, Mario de 1928. *Ensaio sobre música brasileira*. São Paulo: J.Chiato & Cia.
- Andrade, Mário de 1969?. O Samba Rural Paulista. *Aspectos da Música Brasileira. Obras Completas de Mário de Andrade XI*. São Paulo: Livraria Martins Editôra. Published at 1941 in *Revista do Arquivo Municipal*, no.XLI. São Paulo: Departamento de Cultura.
- Araújo, Hiram 2003. *Carnaval -Seis Milênios de História*. 2. ed. Rio de Janeiro: Gryphus.
- Araújo, Hiram 2012. *A Cartilha das Escola de Samba*. ISBN 978-85-913843-0-9.
- Araújo, Samuel 1992. *Acoustic Labor in the Timing of Everyday life: a Critical Contribution to the History of Samba in Rio de Janeiro*. Illinois: Phd Urbana.
- Azevedo, José Eduardo; Piccino, Evaldo 2002. *O restauro e Digitalização dos registros sonoros do Acervo Histórico da Discoteca Oneyda Alvarenga do CCSP...* I Encontro Nacional da Abet, Recife de 19 a 22 de Novembro de 2002. Sessão Temática 2A.
- Becker, Judith; Becker, Alton 1979. A Grammar of the Musical Genre Srepegan. *Journal of Music Theory* 23.
- Béhaque, Gerard 1993. Latin America. In *The New Grove Handbooks in Music: Ethnomusicology. Historical and Regional Studies*, edited by Helen Myers. New York: W.W, Norton Company, Inc. ISBN 0–333–44444–2.
- Blacking, John 1955. Some Notes of a Theory of African Rhythm Advanced by Eric von Hornbostel. *African Music Society Journal* vol. 1 no. 2. pp 12-20.
- Brandel, Rose 1952. Music of the Giants and Pygmies of the Belgian Congo. *Journal of the American Musicological Society* vol V. No I. pp. 19, 21.

- Brandel, Rose 1959. The African Hemiola Style. *Ethnomusicology* vol. III: 3. pp. 106-116.
- Cabral, Sérgio 1974. *As Escolas de Samba: o quê, quem, como, quando e por quê*. Rio de Janeiro: Editora Fontana Ltda.
- Candeia; Isnard 1978. *Escola de samba: árvore que esqueceu a raiz*. Rio de Janeiro: Lidador / SEEC.
- Cardoso de Oliveira, Rodolfo 2002. *O Império do Samba*. Uma etnografia da bateria do Grêmio Recreativo Escola de Samba de Império Serrano. Universidade de Rio de Janeiro. Programa de Pós-Graduação, Mestrado e Doutorado em Música.
- Crook, Larry N. 1993. Black Consciousness, Samba Reggae, and the Re-Africanization of Bahian Carnival Music in Brazil. *The World of Music* 35(2). pp. 90–108.
- Cunha, Mariana Carneiro da 2001. *Transmissão de saberes na bateria da escola de samba Mocidade Independente de Padre Miguel*. Universidade do Rio de Janeiro. Programa de pós-graduação em música mestrado e doutorado.
- Curtis, Natalie 1920. *Songs and Tales From the Dark Continent*. New York.
- Dicionário eletrônico Houaiss da língua portuguesa 1.0.5.
- Donner Philip 1976. Mitä Juuso Lempinen ajattelee musiikista –Lammilainen viulunsoittaja ja hänen musiikkikäsitteistönsä. *Musiikki* 1–2 1976 (6. vuosikerta). Suomen Musiikkitieteellinen seura. ISSN 0355–1059.
- Ekwueme, Laz E.N. 1975/6. African musicological investigation in a culture conscious era. *African Music*. Vol 5. Number 4. pp. 4-5.
- Ekwueme, Laz E.N. 1975/6. Structural Levels of Rhythm and Form in African Music. *African Music* vol 5. Number 4. pp. 27-35.
- Farias, Julio Cesar 2010. *Bateria: O coração da escola de samba*. Editora Litteris.
- Feld, Steven 1984. Communication, Music, and Speech about Music. *Yearbook for Traditional Music* vol. 16.
- Fernandes, Nelson da Nobrega 2001. *Escolas de Samba: Sujeitos Celebrantes e Objetos Celebrados*. Secretaria das Culturas, Departamento Geral de Documentação e Informação Cultural, Arquivo Geral da Cidade do Rio de Janeiro. ISBN 85–88530–03–1.

- Galinsky, Philip 1995. *Co-option and Cultural Resistance in Brazilian Popular Music: The Pagode Samba Movement in Historical Context*. Masters Thesis. Wesleyan University.
- Galinsky, Philip 1996. Co-Option, Cultural Resistance and Afro-Brazilian Identity – A History of the Bagode Samba Movement in Rio de Janeiro. *Latin American Music Review*. vol. 17. no. 2. pp. 120–149.
- Hood, Mantle 1971. *The Ethnomusicologist*. USA: McGraw-Hill Book Company.
- Hornbostel, Erich von 1928. African Negro Music. *Africa* vol. 1 no. 1. January 1928. Journal of the International Institute of African Languages and Cultures. London: Reprinted 1963 for Wm. Dawson & Sons Ltd. pp. 30-62.
- Jones, A.M. 1971 (orig. 1959). *Studies in African Music*. London: Oxford University Press. ISBN: 0 19 713512 9.
- Kaufman, Robert 1980. African Rhythm: A Reassessment. *Ethnomusicology* vol. 24 no. 3. pp. 393-415.
- Keil, Charles 1979. *Tiv Song*. The University of Chicago Press.
- Koetting, James 1970. Analysis and Notation of West African Drum Ensemble Music. *Selected Reports* vol. 1 no. 3. Los Angeles, University of California, Institute of Ethnomusicology. pp. 116-146.
- Kolinski, Mieczyslaw 1973. A Cross Cultural Approach to Metro-Rhythmic Patterns. *Ethnomusicology* vol. 17 no. 3. p. 494.
- Kubik, Gerhard 1979. Angolan Traits in Black Music, Games and Dances of Brazil. *Estudos de antropologia cultural*. No. 10. Lisbon. (Junta de Investigações Científicas do Ultramar / Centro de Estudos de Antropologia Cultural.)
- Kubik, Gerhard 2010. *Theory of African Music*. The University of Chicago Press.
- List, George 1976. Musical Concepts in Traditional Cultures. In *Folklore today*. Edited by Lindha Dégh. Bloomington, Indiana University. pp. 335-346.
- Livingston, Tamara E. 2000. *Ethnomusicology*, Fall 2000. Vol. 44 no. 3. pp. 523–524.
- Locke, David 1982. Principles of Offbeat Timing and Cross-Rhythm in southern Ewe Dance Drumming. *Ethnomusicology* vol. 26 no. 2. pp. 217–246.
- Locke, David 1998. *Gahu*. An Introduction to African Rhythm. Gilsum, New Hampshire: White Cliffs Media.

- McAdams, Stephen; Depalle, Philippe; Clarke, Eric 2004. *Analyzing Musical Sound. Empirical Musicology*, edited by Clarke, Eric; Cook, Nicholas: Oxford University Press. ISSN 0–19–516749–X. pp. 157–196.
- McGowan; Pessanha 1991. *The Billboard Book of Brazilian Music*. UK, London: Guinness Publishing Limited.
- Merriam, Alan P. 1964. *The Anthropology of Music*. Evanston IL: Northwestern University Press.
- Mukuna, Kazadi wa 1979. *A contribuição bantu na música popular brasileira*. São Paulo: Global.
- Nketia, J.H. Kwabena 1975. *The Music of Africa*. London: Victor Gollancz Ltd.
- Pantaleoni, Hewitt 1972. Three Principles of Timing in Anlo Dance Drumming. *African Music Society Journal* 6 (3) p. 50.
- Pekkilä, Erkki 1988. *Musiikki tekstinä. Kuulonvaraisen musiikkikulttuurin analyysiteoria ja –metodi*. Suomen Musiikkiteollinen seura. Acta Musicologica Fennica. Jyväskylä: Gummerus. ISBN 951–95336–1–3.
- Peñalosa, David 2012. *The Clave Matrix*. California: Bembe Books.
- Pike, Kenneth L. 1971 (orig. 1967). *Language in relation to a unified theory of the structure of human behavior*. The Netherlands, Hague: Mouton & Co.
- Powers, William K. 1980. Ogala Song terminology. *Selected Reports in Ethnomusicology* 3 (2).
- Pressing, Jeff 1983. Rhythmic Design in the Support Drums of Agbadza. *African music. Journal of the International Library of African Music* vol. 6. no. 3. p. 4.
- Rice, Timothy 1980. Aspects of Bulgarian Music Thought. *Yearbook of the International Folk Music Council* vol. 12.
- Rice, Timothy 1994. *May It Fill Your Soul*. Chicago and London: The University of Chicago Press. ISBN 0-226-71122-6.
- Riotur 1991. *Memória do carnaval*. Rio de Janeiro: Oficina do Livro.
- Sabanovich, Daniel 1986. *Escola de Samba techniques, instruments and rhythms: A Performance Manual*. The Faculty of the Department of Music, San Jose University. In Partial Fulfillment of the Requirements for the Degree Master of Arts.
- Sachs, Kurt 1953. *Rhythm and Tempo. A Study in Music History*. New York, Guilford, Surrey: Columbia University Press Morningside Edition.

- Sandroni, Carlos 1996. Mudanças de padrão rítmico no samba carioca, 1917-1937. *Transcultural Music Review*. November 1996.
- Sandroni, Carlos 1997. *Transformations de la samba à Rio de Janeiro, 1917-1933*. PhD. Universidade François Rabelais de Tours.
- Sandroni, Carlos 2001. *Feitiço Decente. Transformações do samba no Rio de Janeiro (1917–1933)*. Rio de Janeiro: Jorge Zahar Editor / Editora UFRJ.
- Série Depoimentos 2002. *Bicho Novo, Carlos Cachaca, Ismael Silva, Pioneiros do Samba*. Museu da Imagem e do Som. Rio de Janeiro: MIS Editorial.
- Silva, Egídio de Castro e 1939. O samba carioca. *Revista Brasileira da Música* 6. pp. 45–50.
- Silva, Marília Trindade Barbosa da; Cachaca, Carlos; Filho, Oliveira; Arthur, L. de 1980. *Speak Mangueira – Fala Mangueira*. Rio de Janeiro: José Olympico.
- Stone, Ruth M. 1981. Toward a Kpelle Conceptualization of Music Performance. *Journal of American Folklore*, vol 94, no. 372.
- Stone, Ruth 1982. *Let the Inside be Sweet. An Interpretation of Music Event among the Kpelle of Liberia*. Bloomington: Indiana University Press.
- Temperley, David 2000. Meter and Grouping in African Music: A View from Music Theory. *Ethnomusicology* vol. 44 no. 1. p. 84.
- Vargens, João Baptista M.; Monte, Carlos 2001. *A Velha Guarda da Portela*. Rio De Janeiro: Manati. ISBN 85-86218-10-3. p. 40. (orig: Silva, M.T.B., Santos, L 1979. *Paulo da Portela: traço de união entre duas culturas*. Rio de Janeiro: Funarte. pp. 46-47.)
- Zeh, Marianna 2006. O criador na tradição oral: a linguagem do tamborim na escola de samba. XVI Congresso de Associação Nacional de Pesquisa e Pós-graduação em Música (ANPPOM) Brasília – 2006.
- Zemp, Hugo 1979. Aspects of ‘Are Are’ Musical Theory. *Ethnomusicology* vol. 23. no. 1.

OTHER SOURCES

- Araújo, Hiram. *História do Carnaval*: Internet: liesa.globo.com > (generated 9.9.2015)
- Araújo Samuel 2002. Lesson in UFRJ 5.11. at 9.00-11.00.
- Orfeo Negro* 1959. Movie, Brasil. Producer Sacha Gordine; Director Marcel Camus.

Personal communication with Mestre Jorgão in Finland, Kokkola in 26.8.2006.

www.portelaweb.com.br/outro.php Ouros Carnavais -33 a 75 (generated 24.9.2015)

www.portelaweb.com.br/escola.php?codico=11&cod_cat=3 A Escola > bateria
(generated 24.9.2015)

www.academiadosamba.com.br/escolasmundo.htm. (generated 25.11.2015)

COMMERCIAL RECORDINGS

A Incrível bateria do Mestre Marçal. PolyGram 835 123-2.

“Se você Jurar”. Francisco Alves/Mario Reis. Orchestra Copacabana. Odeon 10747-B.
In the collection CD *Samba, Batuque – Partido Alto – Samba-canção 1917-1947*. FA 159, Frémeaux et Associes. Groupe Frémeaux Colombini SA 1998.

AUTHOR' S ARCHIVE

Notes 1990-91

Notes 2002-3: Grande Rio 17.12.2002

Notes 2004

Anonym. *Agora Rio* 1986. Newspaper clipping 30/11–6/12/86. p. 6.

Anonym. *O samba mais puro da bateria*. Clipping of an unknown newspaper from Rio de Janeiro. Date between November 1966 and the 30th April. Obviously before carnival.

Armação da bateria dos anos anteriores paper

Curriculum Vitae of Oscar Pereira de Souza

Desafinação dos sons paper

Explanação paper

G.R.E.S. Unidos da Ponte –paper

Narrativa do show paper

Oscar Bigode paper

Posições dos instrumentos de uma bateria –paper

Rêgo, José Carlos 1961-1962. *Oscar “Bigode” Commandante da Bateria Portela, Morre de Amôres é Pelo Agogô*. Author’s archive. Clipping of an unknown newspaper from Rio de Janeiro. Turn of 1961-62. Obviously before the carnival.

NOTATIONS

Unidos da Tijuca, the 4th of January 2003.

VIDEOS AND RECORDINGS

Video 2003. The 3rd of January. Porto da Pedra.

Recordings 2002-2003 and 2004

MD 2004. The 7th of February. Unidos da Tijuca.

MD 2003. The 19th of January. Ensaio técnico at Sambódromo. Players of the Mangueira Samba School in warming up.

APPENDIX

1. Brief vocabulary and instruments
2. Brazilian terminology
3. Storyboards of the takes
4. Notations
 - Os 27 Amigos
 - Academicos da Rocinha 1990
 - Beija-Flor 1991
 - Caprichosos de Pilares 1990
 - Estácio de Sá 1990
 - Ilha do Governador 1990
 - Imperatriz Leopoldinenses 1990
 - Império Serrano 1990
 - Portela 1990
 - Tradição 1991
5. Brief batucada transcription, beginning of the first take
6. Os 27 Amigos CD

BRIEF VOCABULARY AND INSTRUMENTS

Agogô: Two or more metal bells fixed in a handle.



Image 173: Two bell agogôs.



Image 174: Agogô of four bells.

Atabaque: Brazilian wooden drum that corresponds Cuban conga. The construction is somewhat lighter.



Image 175: Atabaques.

Balanço: Swing in music. Here especially the tonal movement in a rhythm pattern.

Balanço total: Balanço of the whole bateria.

Bateria: Drum ensemble.

Batucada: Type of percussion samba played in most of the samba schools. Not in the Mangueira samba school. Also a circle of *samba duro*, hard samba. The participants form a circle where they sing and play. Two of them dance in the middle and try to topple their opponent.

Breque: Any kind of interruption in the rhythm of batucada.

Bumbo: A brass band bass drum.

Cadência: Rhythm, the difference between the beginning and the end of rhythm pattern of modern samba.

Caixa: Drum, common noun,. Here drum with resonator wires, snare drum. Diameter 12 inches, depth 6–10 inches.

Caixa de guerra: War drum. Diameter 14 inches, depth 8–12 inches.

Carreteiro: Direct tamborim rhythm of constant 1/16 pulse.

Cavaquinho: Brazilian "ukulele". Small guitar with four metal strings.

Chamada (de surdos): Two repique beats which call surdos de marcação and bateria to start playing.

Chocalho de pratinelas: Instrument where small metal plates are attached in a wooden body or in a metal frame. Also called Rocar.



Image 176: Chocalho de pratinelas / rocar.

Chucalho (chocalho): Brazilian metal maracas.



Image 177: Chucalhos.

Complemento: Completion of rhythm. Not beaten but shaken and scratched rhythms.

Conjunto: Wholeness. The body of batucada. Also a band / ensemble.

Contrabalanço: Composition of two or more rhythms played simultaneously. For example: Rhythms of caixa de guerra and tarol together produce contrabalanço.

Contra repique: A low tuned surdo de repicar which plays patterns relative to intermediarias. Corresponds the original surdo.

Contratempo: Back-beat, cutting beat.

Convenção: Established beat.

Conversação: Conversation, composed pattern.

Cortar: Cut, play contra metric beats. In wider contexts: making rhythm denser.

Cortava: Cutting. See previous.

Couros pesados: Heavy leathers. Big instruments which are carried in strap. Not cuica.



Image 178: A set of heavy leathers / couros pesados.

Back line: surdos de marcação. Middle line: surdos de repicar / repinicar. Front line esterinhas: tarol (left) and caixa de guerra (right).

Cuica: Brazilian friction drum.



Image 179: Cuica.

Desafinado: Detuned.

Desenhos: Composed rhythm patterns.

Desenvolvimento: Development, developing of rhythm when playing. Not solistic playing.

Desharmonia: Disharmony.

Diretor de bateria: Conductor.

Discordância, dissonância: Lack of harmony, discordant combination of sounds.

Enredo: Story which samba school tells in a carnival parade.

Esterinhas: Common noun: Metal shell drums with resonator wires. Snare drums. Played with two sticks.

Floriar (florear): The playing of syncopated rhythms typical for samba.

Floriado (floreado): Syncopated pattern typical for samba.

Ganzá/Ganzé: Tubular shaker.



Image 180: Ganzá / ganzá.

Intermediar: Play syncopated pattern typical for samba by bass drum called surdo.

Intermediarias: Syncopated bass drum patterns typical for samba.

Lira: March band lyre.

Marca: Mark. Refers to the samba's main beats which correspond the main and side beats of 4/4 meter.

Marcação: Marking. The main beats and rhythms of bass drum, surdo, section. There are four basic beats and rhythms there. The first, the second, the third, and the fourth.

Normally only three are mentioned because the fourth, quarta marcação, is a hidden term and it is included in the third.

Marcava: Marking. Playing mark based rhythms.

Marcha: March.

Mestre de Bateria: Conductor.

Miudeza: Small instrument held in hand. Also cuica.

Pagode: Party samba played with a modernized classical samba formation.

Pandeiro: Brazilian tambourine.



Image 181: Pandeiro.

Parada: Breque where the most of bateria stops playing and only some instruments continue.

Pé-chato: The syncopated rhythm pattern of modern samba played with tamborin. Today called Teleco-teco.

Pergunta: Question. The main bass drum, surdo, beat. Also a rhythmic question after that bateria answers all together, tutti.

Piano de agogô: Bell set tuned in a musical scale. Normally eight bells in one octave.

Pratos: Steel plates.

Puxador: The principal singer who leads the singing of a samba school.

Reco-reco: Instrument, Brazilian scratcher. Onomatopoeic name, refers to a back beat rhythm.

Recortar: Cut patterns, play composed patterns.

Resposta: Answer. The secondary bass drum, surdo, beat. Also a rhythmic answer played by a whole bateria.

Repica / ripica and **repinicar / ripinicar** are onomatopoeic terms which describe rhythm patterns. The way to write and pronounce the term varies.

Ripicar: Play semi dense syncopated rhythm typical for samba. This is a term for cuicas and surdos especially.

Ritmo atravessado: Delayed rhythm.

Ritmo cruzado: Crossed rhythm.

Rocar: Instrument of small metal plates attached in a wooden body or in a metal frame. Also called *chocalho de pratinelas*.

Samba de enredo: Samba which tells a story. Especially composed for a samba school parade.

Samba de roda: A samba game and ritual played in a circle (roda).

Sequimentos agudos (segmentos / seguimentos agudos): Rim shots of a drum played by sticks.

Semitonado: (playing) Out of tune.

Súbida: A triplet pattern of tamborin to start a verse.

Surdo: A common noun for batucada drums played with a stick or a beater and a bare hand.

Surdo de marcação: A common noun for bass surdos.

Surdo de repicar: Small surdo which plays semi dense repique pattern. Physically the same instruments as surdo de repinique.

Surdo de repinicar: Small surdo which plays dense 1/16 pulse based pattern. Physically the same instruments as surdo de repique.

Surdo de primeira marcação: Surdo of the first marking. The main bass drum.

Surdo de segunda marcação / Surdo de resposta: Surdo of the second marking. The bass drum which plays answer (resposta) the first marcação.

Surdo de terceira marcação / Surdo de centro: Surdo of the third marking. Surdo which plays rhythms between the first and the second marcação. Surdo de terceira marcação consists of two different drums and rhythms. They are:

Surdo de corte: Cutting surdo. Bass drum which plays cutting contra pattern for the 1st and the 2nd marcação.

Surdo de intermediar: Intermediating surdo which plays the most dense rhythm patterns of surdos de marcação. In this study it is also called *surdo de quarta marcação*.

Tamborim: 5–7 inches diameter 2 inches deep one skin drum.



Image 182: Tamborims.

Tarol: Shallow drum with resonator wires. Diameter 12 inches, depth down to 2 inches.

Teleco-teco: Onomatopoeic name of the old 2/4 samba rhythm pattern. Today also the name of modern 4/4 tamborin rhythm pattern.

Tresillo: Three-folded 2/4 rhythm pattern: 3+3+2.

Tumbadora: Cuban drum corresponding Brazilian atabaque. The construction is somewhat sturdier.



Image 183: Tumbadora and conga.

Variações do conjunto: Composed patterns of four bell agogô and eight bell piano de agogô.

Virada: Rhythm pattern

BATUCADA TERMINOLGY

Afoxé	Afro-Brazilian cult and music
agogô	trad. a set of two bells
atabaque	Afro-Brazilian drum, corresponding Cuban conga
Balanço	tonal and timbral variation in rhythm
balanço total	full tonal variation of an instrument or an ensemble
bateria	percussion ensemble
batucada	music and rhythm played in the most of the samba school baterias
batucar	act of playing batuque
batuque	Afro-Brazilian music and dance
bloco	carnival group, block
bossas	rhythm compositions used to enrich batucada
breques	all interruptions in the rhythm of batucada
bumbo	brass band march drum
Cadência	in this: the difference between the beginning and the end of a rhythm pattern, rhythm
caixa	common noun, box, drum with resonators, snare drum
caixa em baixo	drum with resonators that is held in the strap. Em baixo: down
caixa em cima	drum with resonators that is supported in the crook of arm. Em cima: up
caixa de guerra	war drum
carreteiro	marca based tamborim rhythm
cavalaria	cavalry, rhythm corresponding the rhythm of a galloping horse
cavaquinho	small Brazilian steel string guitar
chamada dos surdos	the call of surdos, two beats calling the surdos to start batucada
chocalho de pratinelas	shaker of small metal plates
chuchalhos / chocalhos	a pair of tin maracases
clave	non-metric basic rhythm pattern
complementos	not beaten, but shaken or scratched rhythms of batucada
conjunto	ensemble, the body of the rhythm of batucada
contra balanço	tonal variation that is produced by at least two instruments of different tunings played together
contra repique /	
contra surdo de repicar	surdo de repicar that plays rhythm with the tonal variation of surdos de marcação; corresponds the original surdo
contra tempo cortando	(cutting) cross rhythm
convenção	in this: convention, traditional pattern / beat
conversaço	in this: conversation, composed pattern
conversar	in this: conversate, play composed patterns

cortar	Specific: cut in half the marca beats. Common: cut longer beats shorter.
couros pesados	heavy leathers, instruments that are held in a strap
cuica	friction drum
cuica de cortar	a friction drum that plays cutting rhythm for the marcas
Desafinação	detunedness
desafinado	detuned
desenhos	composed patterns
desenvolvimento (total)	(total) development of rhythm, (total) variation of rhythm
desharmonia	disharmony
discordância	discordance
dissonância	dissonance
dobra	double or bend, vary rhythm
Enredo	theme (of samba), plot (of parade)
ensaio técnico	technical rehearsal
escola de samba	samba parade organized in sections; escola: organized in classes
esterinha	drum with resonators, snare drum
Fantasia	carnival costumes
favela	shanty town
floreio / floriado	rhythmic decoration, (varied) syncopated rhythm
Ganzá / ganzé	tubular shaker
Grupo especial	Special group. The top group of the samba schools' liga.
Harmonia	music: harmony. Ala da harmonia: organizing section of a samba school.
Intermediárias	the syncopating rhythms of the third surdo, intermediating rhythms
introdução	introduction, a rhythm passage used to start batucada. Played with surdo de repicar or repinicar
Lira	lyre, march band instrument
Marca(s)	mark, class of marca based rhythms, basic (1/4) beats of batucada
marcação	composed marca beat, marking of bass drums (surdos de marcação)
-primeira marcação	the first marking, the most important beat of surdos
-segunda marcação	the second marking, counter beat for the first marking
-terceira marcação	the third marking. In this: the counter beat for the first and the second marking. Traditionally the term encloses two different rhythms that do not have separate names.
-quarta marcação	in this: intermediating rhythm of the surdos (de quarta marcação)

marcando	play by marking
maxixe	old style 2/4 meter melodic samba
mestre	master, teacher
mestre de bateria	master of the bateria, conductor
mestre sala	major-domo, the flag bearer's pair
miudeza	small instrument
mor	cutting surdo of the Mangueira samba school rhythm
Pagode	old style sung samba
pandeiro	Brazilian tambourine
parada	break in batucada where some players stop and others continue
paradinha	small stop in batucada between verses
pé-chato	flat foot, limping man, (4/4) tamborin rhythm pattern 3+3+2 beats
pergunta	rhythmic question, main beat
piano de agogô	Set of eight (8) bells tuned in a musical scale
porta bandeira	female flag bearer
prato	plate, drum plate
puxador	principal singer
Quadra	house of samba association
Rancho	old style carnival association
reco-reco	scraper
recortar	cut patterns, play composed patterns
repinicar	play constant re-pi-ni-que (4x1/16) pattern
repinicava	re-pi-ni-que rhythm based pattern
repinique	(surdo de) tenor drum that plays constant re-pi-ni-que (4x1/16) pattern.
repique	(surdo de) tenor drum that plays semi dense re-pí-que (1/16-1/8 beats) pattern.
resposta	rhythmic answer, counter beat
ripica	play syncopated pattern.
ripicas	class of syncopating rhythms (clave based).
ritmo atravessado	delayed rhythm
rocar	chocalho de pratinelas: shaker of small metal plates
Samba carnavalesco	carnaval samba
samba de enredo	samba that has a plot, tells a story
samba de morro	samba of the hills, samba played in low income suburbs and in samba school associations
samba de roda	circle samba, Brazilian dance and music game
samba maxixe	old style 2/4 meter melodic samba
samba marcha	march samba
samba partido alto	traditional samba style
samba reggae	Bahian music style

samba-duro	hard samba, sometimes violent samba game played in a circle
sambista	person who loves and participates samba actions, samba school member
Sambódromo	The Samba Stadium of Rua Marques de Sapucaí in Rio de Janeiro
segurar	secure, one of the rhythms of Vila Isabel style
semitonado	playing out of tune
sequimentos agudos	(possibly misspelled) may refer to segmentos agudos or seguimentos agudos. In practise: clave based rim shots
súbida	triole rhythm pattern of tamborim in the beginning of a verse. Raise of rhythm.
suíque	swing, clave rhythm pattern. Also known as the rhythm of bossa nova.
surdo	deaf, bass and tenor drums used in samba
surdo de marcação	bass drum
-de primeira marcação	of the first marking
-de segunda marcação	of the second marking
-de terceira marcação	of the third marking
-de quarta marcação	in this: specific name of the surdo de terceira marcação that plays intermediating rhythm
-surdo de centro	surdo in the middle (between the first and the second), surdo de terceira marcação
-surdo de cortar	surdo that plays cutting rhythm
-surdo de intermediar	surdo that plays intemediating rhythm
surdo de repicar	tenor drum that plays semi dense re-pí-que (1/8-1/16 beats) pattern.
surdo de repinicar	tenor drum that plays constant re-pi-ni-que (4x1/16 beats)
Tabajara da Portela	the bateria of the Portela samba school association
tamborim	small one skinned drum, 5-7" diameter
tan-tan	one skin light metal shell drum played with hands
tarol	shallow drum with resonators
teleco-teco	in this: old style (2/4) samba rhythm pattern. Te-lé-co Té-co .
tresillo	three folded 2/4 clave pattern: 3+3+2 1/16 beats
tumbadora	Cuban drum
Variações do conjunto	composed scale based patterns played with agogô of four (4) bells or with piano de agogô of eight (8) bells or with lira
variedades	
de sequimentos	variations of clave based rim shots
velha guarda	old guard, the club of old sambistas of a samba association (samba school)
viradas	rhythm patterns
virado	marca based constant 1/16 beat rhythm pattern played with tamborim. Virar: rotate (the instrument)

27 AMIGOS

first take

1/4s = 137

time (min, sec)	no. of bars	event	instrument/content	sample	brequé
0,05-0,12	x	rhythm	repique		
0,12-0,14	1	intro 1	repique	repique	
0,14-1,07	31	rhythm	batena		
1,07-1,08		fin	batena		
1,08-1,52	24	parada	piano playing melodies; rapid & contra repiques	repiques	
1,52-1,53		shout	O-Lái		
1,53-1,56	1	intro 2	repique		
1,56-2,34	22	rímo	batena		
2,34-2,35		fin	batena		
2,35-2,54	10	parada	tamborins; contra repique	tamborins	brequé 1
2,54-2,57	1	intro 2	repique		
2,57-3,26	17	rímo	batena		
3,26-3,27		fin	batena		
3,27-3,37	5	parada	esterinhas; contra repique	tarol	brequé 1
3,37-3,39	1	intro 2	repique		
3,39-4,00	13	rímo	batena		
4,00-4,02		fin	batena		
4,02-4,15	7	parada	cucas; contra repique		brequé 1
4,15-4,18	1	intro 2	repique		
4,18-4,44	16	rímo	batena		
4,45-4,46		fin	batena		
4,46-5,02	8	parada	chocalhos; contra repique	c. repique	brequé 1
5,02-5,04	1	intro 2	repique		
5,04-6,14	39	rímo	batena		
6,14-6,15		fin	batena		
6,15-6,34	10	parada	surdos; contra repique	surdos	brequé 1
6,34-6,36	1	intro 2	repique		
6,36-7,40	36	rímo	batena		
7,40-7,41		fin	batena		
7,41-7,42		shout	O-Lái		

27 AMIGOS
second take

1/4s = 137

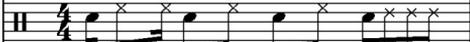
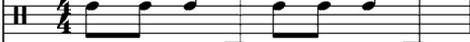
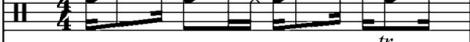
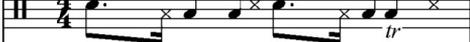
time (min, sec)	no. of bars	event	instrument/content	sample	brequé
0:02-0:13	x	rítmo	repique	repique	
0:13-0:15	1	intro 2	repique	piano	
0:15-0:48	20	rítmo	bateria	surdos de 3a	
0:48-0:49		fim	bateria		
0:49-1:56	39	parada	piano melodies; rapid repique; 3rd surdo; pandeiro	repique	brequé 1
1:56-1:57	1	shout	O-lal	pandeiro	
1:57-1:58		brequé intro 7	repique		breq. intro 7
1:58-2:12	x	rítmo	bateria		
2:13 break					
2:14-2:53	x	parada	esterinhas; repique; prato	tarol sequim;	brequé 1
2:53-2:55	1	intro 2	repique	caixa de quebra	
2:55-3:32	22	rítmo	bateria		
3:32-3:33		fim	bateria		
3:33-4:05	18	parada	chocalhos; rapid repique	repique	brequé 1
4:05-4:07	1	intro 1	repique	chocalho	
4:07-4:31	15	rítmo	bateria		
4:31-4:32		fim	bateria		
4:32-5:02	16	parada	tamborims; repique; prato	tamborim	brequé 1
5:02-5:04	1	intro 2	repique		
5:04-5:25	13	rítmo	bateria		
5:25-5:26		fim	bateria		
5:26-5:56	16	parada	cuicas	cuica	brequé 1
5:56-5:58	1	intro 1	repique		
5:58-6:35	22	rítmo	bateria		
6:35-6:36		fim	bateria		
6:36-7:43	40	parada	piano de agogô; rapid repique; 3rd surdo; pandeiro	pandeiro	
7:43-7:44		shout	O-lal		
7:44-		fade out			

27 AMIGOS
third take

1/4s = 144

time (min, sec)	no. of bars	event	instrument/content	sample	brique
0,05-1,43	X	tempetade/narrative	bateria		
1,43-1,46	(+1/4) 1	intro 3	repique	plano	
1,46-2,37	32	rítmo	bateria	variações do pau!	
2,37-2,38		fim	bateria		
2,38-2,55	11	parada	esterinha; tumbadora; cuica; prato; surdo 3		brique 2
2,55-2,59	(+1/1) 1	intro 4	repique		
2,59-3,22	15	rítmo	bateria		
3,22-3,23		fim	bateria		
3,23-3,41	12	parada	tamborim; tumbadora (plano+cuica)	tumbadora	brique 4
3,41-3,46	(+3/4+1) 1	intro 5	repique	plano cuica viz.	
3,46-4,07	15	rítmo	bateria		
4,07-4,08		fim	bateria		
4,08-4,34	15	parada	cuica; tumbadora	cuicas	brique 3+6
4,34-4,38	(+1/2) 1	intro 3	repique		
4,38-4,56	12	rítmo	bateria		
4,56-4,57		fim	bateria		
4,57-5,24	15	parada	tumbadora; chocalho; 3rd surdo (prato)	transkription	2+3+5
5,24-5,26	1	intro 3	repique		
5,26-5,58	20	rítmo	bateria	tumbadora	
5,58-5,59		fim	bateria		
5,59-7,39	56	parada	piano melodias; tumbadora + conga; surdo 3	tumbadora	marking
7,39-7,40		shout	O-lal	Assa Branca	1+2
7,40-7,42	1	intro 6	repique	Samba de 1 nota	
7,42-8,40	36	rítmo	bateria		
8,40-8,41		fim	bateria		
8,41-9,08	16	parada	surdos; prato		2+3+6
9,08-9,11	(+1/2) 1	intro 3	repique		
9,11-10,19	42	rítmo	bateria		
10,19-10,20		fim	bateria		

27 AMIGOS
according to the 3rd take

	chocalhos	
	pandeiro	
	tamborin 1	
	tamborin 2	
	cuca 1	
	cuca 2	
	cuca de corte	
	piano de agogô	
	repique 1	
	repique 2	
	contra repique	
	tumbadora	
	tarol	
	caixa de guerra	
	surdo de 4a.	
	surdo de 3a.	
	surdo de 2a.	
	surdo de 1a.	

ACADÊMICOS DA ROCINHA
December 1990

rocar

tamborin

agogô 4

repinique

caixa 1

caixa 2

surdo de 3a.

surdo de 3a.

surdo de 2a.

surdo de 1a.

+carreteiro and patterns

+patterns

rhythm of the leading hand

intermediando

dobrando

Detailed description: The image shows a musical score for a percussion ensemble. It consists of ten staves, each representing a different instrument. The instruments are: rocar (blue), tamborin (blue and yellow), agogô 4 (yellow), repinique (blue), caixa 1 (yellow), caixa 2 (blue), surdo de 3a. (yellow), surdo de 3a. (red and yellow), surdo de 2a. (blue), and surdo de 1a. (blue). The score is written in 4/4 time. The rocar part has a steady eighth-note pattern with accents. The tamborin part has a similar pattern with the instruction '+carreteiro and patterns'. The agogô 4 part has a melodic line with the instruction '+patterns'. The repinique part has a pattern with 'x' marks above it. The caixa 1 part has a pattern with the instruction 'rhythm of the leading hand'. The caixa 2 part has a pattern with accents and the instruction 'intermediando'. The surdo de 3a. parts have patterns with the instruction 'dobrando'. The surdo de 2a. and surdo de 1a. parts have simple patterns.

BEIJA-FLOR
January 1991

chocalho

tamborin

cuica

cuica

repinique

caixa

caixa de guerra

surdo de 3a.

surdo de 3a.

surdo de 2a.

surdo de 1a.

carreteiro and patterns

basic beats of the rhythm

(tr)

CAPRICHOSOS DE PILARES
November 1990

The musical score is arranged in a system of nine staves, each representing a different percussion instrument. The instruments and their corresponding colors are: rocar (blue), tamborin (blue and yellow), cuica (yellow), repinique (blue), caixa (yellow), surdo de 3a. (red and yellow), surdo de 3a. (red and yellow), surdo de 2a. (blue), and surdo de 1a. (blue). The notation includes various rhythmic patterns, rests, and dynamic markings such as accents (>) and trills (tr). The score is written in a 2/4 time signature.

rocar
carreteiro and patterns

tamborin

cuica

repinique
right hand pattern, left hand fills the rest

caixa
cortando, repicando, intermediando *tr*

surdo de 3a.
dobrando

surdo de 3a.

surdo de 2a.

surdo de 1a.

ESTÁCIO DE SÁ
November 1990

rocar

reco-reco

tamborin
carreteiro and patterns

cuica

cuica

repinique

caixa

caixa variation
repinicando *tr*

surdo de 3a.
intermediando / repicando

surdo de 3a.
cortando

surdo de 3a.

surdo de 2a.

surdo de 1a.

Ilha do Governador
November 1990

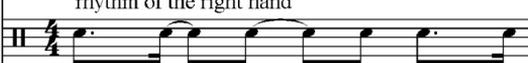
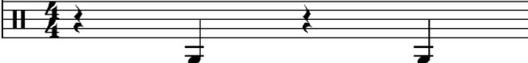
The musical score is arranged in a vertical stack of staves, each representing a different percussion instrument. The instruments and their corresponding colors are listed on the left:

- ganza (Blue)
- tamborin (Yellow)
- repinique (Blue)
- caixa (Yellow)
- caixa (Yellow)
- surdo de 3a. (Yellow and Red)
- surdo de 3a. (Yellow)
- surdo de 2a. (Blue)
- surdo de 1a. (Blue)

The score is in 4/4 time. The instruments play the following patterns:

- ganza:** A continuous eighth-note pattern with accents (>) on every other note.
- tamborin:** Labeled "carreiro and patterns", it remains silent throughout the piece.
- repinique:** A continuous eighth-note pattern with accents (>) and 'x' marks above every other note.
- caixa (top):** A continuous eighth-note pattern with accents (>) and a trill (tr) at the end.
- caixa (bottom):** A continuous eighth-note pattern with accents (>) and a trill (tr) at the end.
- surdo de 3a. (top):** Labeled "intermediando", it plays a pattern of quarter notes with accents (>) on the first and third notes of each measure.
- surdo de 3a. (bottom):** Labeled "intermediando", it plays a pattern of quarter notes with accents (>) on the first and third notes of each measure.
- surdo de 2a.:** Plays a pattern of quarter notes with accents (>) on the first and third notes of each measure.
- surdo de 1a.:** Plays a pattern of quarter notes with accents (>) on the first and third notes of each measure.

IMPERATRIZ LEOPOLDINENSE
December 1990

	rocar	
	tamborim	
	agogô	
	pratos	
	repinique	
	caixa	
	caixa	
	surdo de 3a.	
	surdo de 3a.	
	surdo de 2a.	
	surdo de 1a.	

IMPÉRIO SERRANO
December 1990

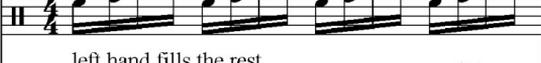
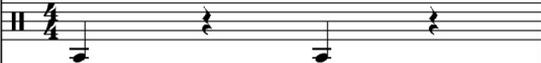
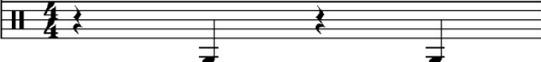
	rocar	
	reco-reco	
	tamborin	<p>carreteiro and patterns</p> 
	agogô de 4 bocas	<p>+patterns</p> 
	cuica	
	repinique	
		<p>rhythm of the right hand</p>
	caixa	
		<p>rhythm of the right hand</p>
	caixa	
	caixa	 <i>R L R L R L R L R L R L R L</i>
	surdo de 3a.	
	surdo de 2a.	
	surdo de 1a.	

PORTELA
January 1991

The musical score is written in 4/4 time and consists of 13 staves. The instruments and their parts are as follows:

- rocar** (Blue square): A continuous eighth-note pattern with accents (>) above each note.
- tamborin** (Yellow square): A pattern of eighth notes with the annotation "+carreteiro and patterns" above the staff.
- cuica** (Yellow square): A melodic line starting with a sharp sign (#) on the first note, with the annotation "section was not in the rehearsal" below the staff.
- agogô de 4 bocas** (No color): A staff with a whole rest, indicating it was not played during the rehearsal.
- repinique** (Blue square): A pattern of eighth notes with 'x' marks above each note.
- caixa** (Yellow square): A continuous eighth-note pattern with accents (>) above each note.
- caixa** (Yellow square): A continuous eighth-note pattern with accents (>) above each note.
- caixa** (Yellow square): A continuous eighth-note pattern with accents (>) above each note.
- surdo de 3a.** (Yellow square): A pattern of eighth notes with the annotation "repicando / repinicando" below the staff.
- surdo de 3a.** (Red and yellow squares): A pattern of eighth notes with the annotation "dobrando" below the staff.
- surdo de 2a.** (Blue square): A pattern of eighth notes.
- surdo de 1a.** (Blue square): A pattern of eighth notes.

TRADICAO
January 1991

	rocar	
		carreteiro and patterns
	tamborin	
		+patterns
	agogô de 4 bocas	
	cuica	
	repinique	
		left hand fills the rest
	caixa	 <p style="text-align: center; margin-top: -10px;"> <i>R R R L R R R R R R R L</i> </p>
		cortando
	surdo de 3a.	
		intermediando
	surdo de 3a.	
	surdo de 2a.	
	surdo de 1a.	

1:0,05-0,12
ritmo do repique

1: 0,12 ->
intro

1: 0,14-1,07
ritmo da bateria

chocalhos

pandeiro

tamborim

tamborim

cuica

cuica

piano de agogô

slow repique

rapid repique

contra repique

tumbadora

tarol

caixa de guerra

surdo de 4a

surdo de 3a

surdo de 2a

surdo de 1a

p p p

3

chamada de surdos

tr

tr

tr

1:1,07
fim

1:1,08 ->
parada

The musical score consists of two systems of staves. The first system includes a vocal line and five instrumental staves. The vocal line features a melodic phrase with a fermata. The instrumental staves include piano accompaniment with dynamic markings of *p* and *tr* (trills). The second system continues the instrumental parts, with the piano accompaniment featuring more complex rhythmic patterns and trills. The score concludes with a final cadence in the vocal line and sustained notes in the piano accompaniment.