# Adaptation capabilities of Brazilian intellectual to Nordic environment: A Case Study

Natale Rolim<sup>1,2</sup>, Gustavo da Silva<sup>1,2</sup>, Catia Martins<sup>3</sup>, Alessandra Medeiros<sup>1,2</sup>, Jose Bianco<sup>1,2</sup>, Christiano Robles<sup>1,2</sup>, Luiz Bozi<sup>1,2</sup>, Marcia Alves<sup>1,2</sup>, Nina Zisko<sup>2</sup>, Javaid Nauman<sup>2</sup>, Øivind Rognmo<sup>2</sup>, Ulrik Wisløff<sup>2</sup>,

<sup>1</sup> School of Physical Education and Sport, University of Sao Paulo, Sao Paulo, Brazil <sup>2</sup> Department of Circulation and Medical Imaging and K.G. Jebsen Center of Exercise in Medicine,NTNU, Trondheim, Norway <sup>3</sup> Department of Cancer Research and Molecular Medicine,NTNU Trondheim, Norway

Correspondence should be addressed to: Ulrik Wisløff, Ph.D. K. G. Jebsen Center of Exercise in Medicine, Norwegian University of Science and Technology, Trondheim, Norwaymail: ulrik.wisloff@ntnu.no

## Received September 1, 2013;

Copyright: © 2013 Rolim et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

#### Acknowledgments:

We gratefully acknowledge members of the Wisløff's group and colleagues from the Department of Circulation and Medical Imaging-NTNU, Faculty of Medicine for helpful discussions.

This research was supported by grants from Fundacao de Amparo a Pesquisa do Estado de Sao Paulo, Sao Paulo-SP, Brazil, Conselho Nacional de Pesquisa e Desenvolvimento (CNPq), the K.G. Jebsen Foundation, The Research Council of Norway, and The Norwegian Council of Cardiovascular Disease

Competing Interests: The authors have declared that no competing interests exist.

# INTRODUCTION

**B** razil is a country known for its powdery white sand beaches, fantastic rain forests and rhythm filled metropoli. Brazilians is the name given to people born in Brazil (Source Common Sense). A Brazilian can also be a person born abroad to a Brazilian

parent or a foreigner living in Brazil who acquired Brazilian citizenship (Wikipedia). Brazilian diaspora refers to migration of Brazilian people from Brazil to some other country (Wikipedia). Brazilian diaspora is large and there are many Brazilians living and working outside of Brazil (Wikipedia). Interestingly, number of ex-pat Brazilians living in Norway is not so bad (Terminology source: Marcia). These individuals have exchanged the sandy beaches, bikinis, abundance of sunshine and vitamin D, willingly and without duress, for a place sporting six months of darkness, winter and ice. Their adaptability to Nordic climate is fascinating to say the least. After carefully searching Pubmed we have come to conclusion that there are virtually no studies looking to investigate the adaptability capabilities of these warm blooded happy people. We have, therefore decided that such study is immensely required and would undoubtedly contribute to the body of knowledge and better understanding of Brazilians in different environmental circumstances. We hypothesized that Brazilians must flock together, drink, dance and adopt certain Norwegian traits in order to illuminate the dark and cold winters and survive in the northern hemisphere. We intend to prove our hypothesis with evidence relating to one particular individual. We will refer to that individual using initials PCB. This individual is a representative of Brazilian expat population and is a pristine example of Brazilian adaptability capabilities in Norway.

## MATERIALS AND METHODS

STUDY DESIGN: SUBJECT

A Brazilian female subject of age corresponding to experience, tallish and pretty, smart with a lovely smile was chosen for this observational study. Subject was observed at Singsaker, Byåsen, St Olav's Hospital (third floor), animal facility, and various other locations in greater Trondheim area in Norway. There was no consent form as the subject did not know that she is being observed. We thought subject should be blind to the study as it would eliminate any bias. Observations were performed by various people of various ethnic backgrounds. Table 1 outlines the major characteristics of the study subject.

Table 1. Baseline Subject Characteristics

Variables	Regular
Height (cm)	Regular
Weight (kg)	Regular
Background	Brazilian
BMI $(kg \cdot m^{-2})$	Regular
Gender	Female
Age	Prime

BMI=Body mass index. All measurements were eyeballed.



Figure 1 Study flowchart. Movement from Brazil to Norway. Duration of stay: 1 year.

#### ETHICAL CONSIDERATIONS

This study was not approved or considered by an ethical committee because we thought that they would not understand. The study was not in accordance with Norwegian Laws or the Helsinki Declaration.

#### WORKING

Working environment at St. Olav's Hospital in Trondheim including office, lab and animal facilities and sometimes a cafeteria at MTSF building for serious data collection. Observation were done by her offspring and reported to the main investigator. Offspring is defined as number of persons with following names Natale Rolim, Gustavo da Silva, Alessandra Medeiros, Jose Bianco, Christiano Robles, Luiz Bozi, Carlos Bueno, and Aline Bacurau.

#### BEER DRINKING

Occasional beer drank at Ni Muser in Trondheim and other locations. This occurred several times but it is believed that Patricia is more fond of an occasional glass of wine then of beer.

## PARTYING

Parties were organized at different locations in greater Trondheim area. They included but were not limited to dinners, outings at cafés, bars etc. These occurred at different time points in the year.

#### BYCYCLING

Subject cycled both alone and with others from and to work and to other locations in greater Trondheim area (Sources Nina, Marcia, Alessandra, Natale, Gustavo, Bianco etc).

### SNOW ACTIVITIES

Subject engaged in skiing, snowballing and sledging during the dark winter months in greater Trondheim area (Sources Nina, Marcia, Alessandra, Natale, Gustavo, Bianco etc).

# GOOD FOOD

Subject ate a diet consisting of many different tasty items including many different world cuisines. She is also known for being a great cook (Sources Nina, Marcia, Alessandra, Natale, Gustavo, Bianco etc). Subject also tried Norwegian delicacies.

## GREAT FRIENDS

Great many people who will miss the subject once she heads back to her native Brazil.

### STATISTICAL ANALYSIS

All statistical analysis was done using a newly developed regression model analysis, where subjective input from different people was taken into consideration. The significant level was assumed to be infinite.

#### RESULTS

Subject is known for working hard in the lab (Figure 2 A). She is in charge of many complex experiments and works closely with both Norwegians and Brazilians alike. However, after working hours are over subject is known to have tried some beer (Figure 2B). Parties are also common places where subject can be seen and these occur with people of different ranges of nationalities (Figure 2C). Subject has also taken up bicycling and is very good at it (Figure 2D). Subject has experienced nordic culture by trying skying (Figure 2E). Mostly, however, subject is known to endulge in very tasty delicacies from around the world including Brazilian recipes (Moqueca, lentilha), as well as Thai, Mexican (i.e., taco, tortillas), Italian (pasta with Alfredo sauce), Lebanese food, and, obviously, the Norwegian dishes, such as risgrøt (Figure 2F), bacalao, laks, wale, vaffel med brunøst, sveler med brungst, etc. Subject is always surrounded by friends.



Figure 2 A. Working in the lab. B. Drinking beer. C. Partying. D. Bicycling. E. Snow activities. F. Eating Risgrøt

## DISCUSSION

The main finding of this non-randomized, observational stalking study is that PCB has adapted very well to the Nordic environment. We also observed a weak feeling of "home-missing-ness" that is apparent by hanging out with the other Brazilian's ex-pats. Our study extend the previous reports of adaptability at an alien place by Adam & Eve (source: Bible, New Testament), but also contribute to show the welcoming nature of Norwegian Society, that Adam & Eve probably did not enjoy.

Our results are in line with the earliest studies of adaptability capabilities of warm blooded humans (The Flintstones: Hanna Barbara), that have shown to correlate well with the changing environment. However, the findings of this single person well thought study should be interpreted with caution. For instance, we cannot rule out the potential bias created by other confounders for the association of adaptability and alien environment: namely beer, cognac, caipirinha, rumba samba, and the psychotic feelings created by Kaoma – The Lambda

- [1] Marcia Alves hearsay, 2013
- [2] Wikipedia: Brazillian Diaspora. Accessed Sept 7, 2013. http://en.wikipedia.org/wiki/Brazilian diaspora
- [3] Natale Rolim, Gustavo da Silva, Alessandra Medeiros, Jose Bianco, Christiano Robles, Luiz Bozi, Carlos Bueno, and Aline Bacurau, hearsay, 2013
- [4] The Bible. Chapter 1: Genesis. Abridged, Bible Publishing, Norway, 2013
- [5] Kaoma, The Lambda. You Tube. Accessed 10 Sept 2013. http://www.youtube.com/watch?v=i8mz9uOvFQA