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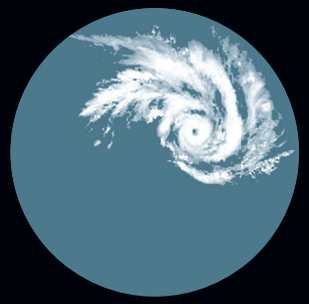

INTERNATIONAL SYMPOSIUM ON ANTHROPOLOGY AND NATURAL DISASTERS

17, 18 • ABRIL • 2015

DEPARTAMENTO DE CIÊNCIAS DA VIDA, FCTUC
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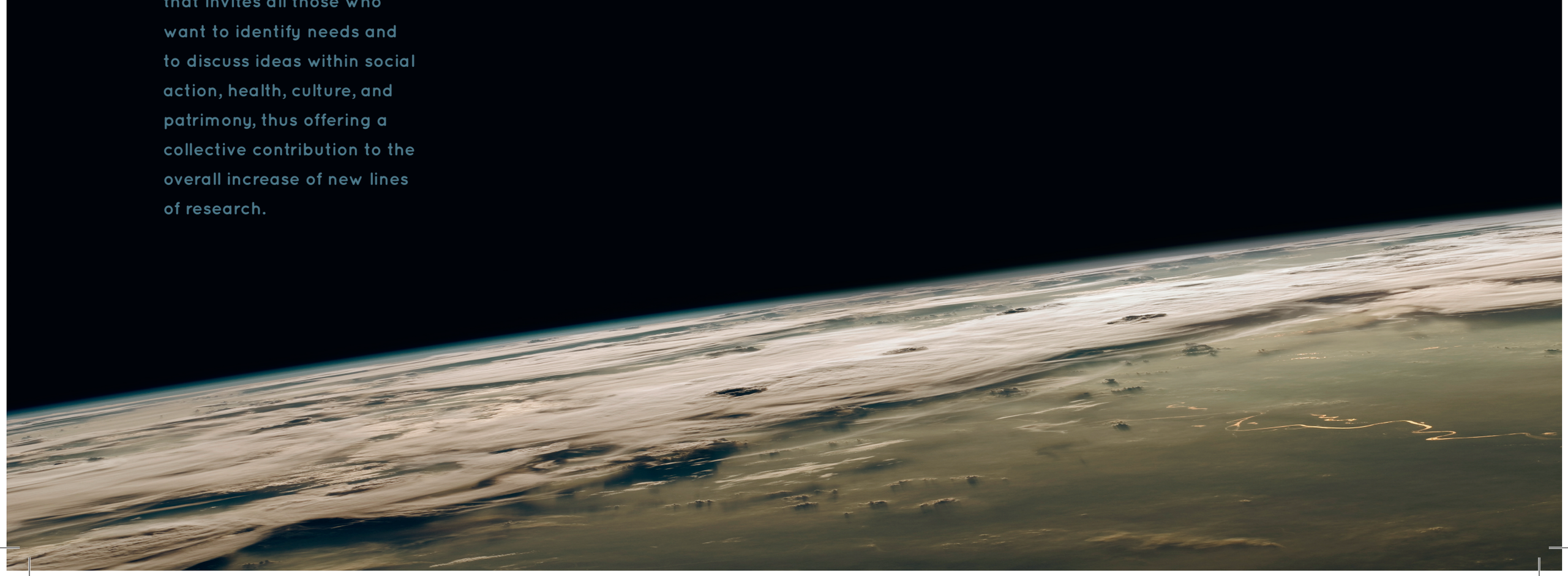

INTERNATIONAL SYMPOSIUM ON ANTHROPOLOGY AND NATURAL DISASTERS ISAND

Program & abstracts

APRIL 17TH and 18TH of 2015

Department of Life Sciences
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Program

Day one – April 17th, 2015

08.30 Registration

09.30 Opening session

10.15 Keynote Lecture - **Why Anthropology is necessary in understanding disaster**

Susanna Hoffman, University of California, Berkeley, USA

11.15 "**A New Normal" in the margins of the epicentre. Photography, memory e ethnography in the post-tsunami [Aceh, 2004 | 2005]**

Luís Costa

11.30 *COFFEE-BREAK*

11.50 **The Earth dynamics and the Natural Disasters**

Fernando Carlos Lopes

12.10 **Overcome the Impossible**

Mónica Ribeiro

12.30 *LUNCH*

14.15 **Examine definitions of social disorder through interpretations of natural disaster (Mexico - Costa Rica)**

Cloé Vallette

14.35 **Predicting the past to foresee the future: historicising disasters in Anthropology**

Miguel Loureiro

14.55 **Victims, citizenship and the state: the politicization of suffering?**

José Manuel Mendes

15.15 **Natural disasters in mainland Portugal: analysis of the last 50 years**

Adélia Nunes, Luciano Lourenço

15.35 **Social and territorial dynamics and natural disasters – territorial flood risk management and flooding in the town of Lourinhã**

Daniel Neves

15.55 *COFFEE-BREAK*

16.10 Keynote Lecture - **Identification of victims in mass casualty incidents: resilience and religious concerns**

Tzipi Kahana, DVI Unit, Israel Police, Israel

17.10 **Challenges in identification of victims of Ajnala (India) mass genocide: a forensic anthropological perspective**

Jagminder Sehrawat

17.30 **Plan of action for identifying mass disaster victim of Medical Legal Institute Nina Rodrigues, Salvador-Bahia, Brazil**

Letícia Sobrinho, Paulo Araújo, Selma Agollo, Gracie Moreira, Liz Brito, Tânia Gesteira, Eugénia Cunha

17.50 **The Hot topic of burned human skeletal remains: Coimbra's contribution to Forensic Anthropology**

David Gonçalves, João Coelho, Márcia Gouveia, Calil Makhoul, Inês Santos, Ana Vassalo, Ana Luísa Santos, Luís Batista de Carvalho, Eugénia Cunha

18.10 **Poster Session**

20.00 *OPTIONAL DINNER*

Day two – April 18th, 2015

9.00 Keynote Lecture - **Bioarchaeological responses to Natural Disasters and epidemics in Byzantine and Post-Byzantine Greece (6th-17th c. AD**

Chryssi Bourbou, Hellenic Ministry of Culture, Crete, Greece

10.00 **Past plague outbreaks in Portugal: in the interception of demography, socioeconomic and religious**

Ana Luisa Santos, Licinio Manco, Vitor Matos

10.15 **Human aspects of forest fires**
Domingos Xavier Viegas

10.35 **Public participation and disaster in Brazil**

Simone Santos Oliveira, Sergio Portella, João Arriscado Nunes

10.55 *COFFEE-BREAK*

11.30 **Portuguese Civil Protection**

Marco Martins

11.55 **Earthquakes and urbanism. Collective memory, heritage and reconstruction in Angra-Azores**

Antonieta Reis Leite

12.15 **Vulcan of emotions. Fogo' eruption: photography, memory and people (2014|2015)**

Isabel Marques Nogueira

12.35 **Chaitén the resistance of a city: some remarks of the struggle to return and resetlle the city after a vulcano eruption**

Gonzalo Díaz Crovetto

12.55 **Chernobyl survivors: natural devastation after a technological disaster. Interdisciplinary dialogue between Journalism and Anthropology**

Mariuxi León Molina

13.15 *LUNCH*

14.00 **Medical intervention in humanitarian emergency aid**

Humberto Vitorino

14.20 **Anthropogenic causes, responses and management of recent devastating floods in two Himalayan states of India: Natural or man-made disaster?**

Jagminder Sehrawat, Qutsia Tabasum

14.40 T**he redemptive function of "waters": floods and political conflict in Mozambique**

Fernando Florêncio

15.00 **(Anti-)Fragile lives: enhancing adaptation through storytelling in the Eastern Himalayas**

Alexander Aisher

15.20 **"A new normal" in the margins of the epicenter. Photography, memory and ethnography in the post-tsunami [Aceh, 2004 | 2005]**

Luís Costa

15.35 **Memory and magnitude: the 1755 Lisbon earthquake**

Maria José Carvalho

15.55 **Earthquakes shaking worldviews: some reflections of a social psychologist on the Lisbon 1755 disaster**

Maria Luísa Lima

16.20 *CLOSING REMARKS*

16.35 *PORTO DE HONRA AND COIMBRA FADO CONCERT*

Poster Presentations

1 | Activity and body mass as an individualization characteristics

Maria Alejandra Acosta, Charlotte Henderson

2 | The intervention of the Forensic Science Laboratory of the Polícia Judiciária within the Forensic Anthropology and Natural Disasters

Carlos Farinha, Fernando Viegas

3 | Pioneering the Collection of Identified Burned Skeletons

David Gonçalves, Maria Teresa Ferreira, Eugénia Cunha

4 | Accuracy of age estimation methods used in Forensic Odontology: a meta-analysis of published studies from 2010-2014

Monika Singh, Jagminder Sehrawat

5 | Sex determination from discriminant function analysis of odontometric measurements of Northwest Indian subjects: a forensic anthropological study

Qutsia Tabasum, Jagminder Sehrawat

ABSTRACTS

Why Anthropology is necessary in Uunderstanding disaster

Susan Hoffman[1,*]

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Given the rising numbers of people both vulnerable to and affected by disaster worldwide, the importance of utilizing the understandings of anthropology to the study of calamities has become increasingly clear. In this overarching introduction I will detail the some of the reasons why, beginning with definitions and how anthropology covers the intersecting planes that are the nexus of disaster. Discussed will be the crucial importance of anthropology's core concept, culture. Culture in the anthropological sense has been identified as the essential underpinning in the construction of vulnerability, successful or unsuccessful disaster recovery, preparation, mitigation, and risk reduction. Everything about human life rest upon culture, including all the factors that go into calamities. Detailed will be the four environments in which people live and their intersection with physical adaptation. I will illustrate how culture determines the ways people perceive danger, create vulnerability, and provides the world views that convey models of and models for disaster that a people hold. I will address how culture defines the organization of space, time, along with ideologies and symbols of nature and more that effect disaster construction, experience, and recovery. Also covered will be place attachment and human terroir, as well as such factors as social structure, class, ethnicity, and gender. While culture may be shared on a macro level of history, religion, and language, utterly critical to disaster work is local knowledge and variation, and why even when most places are articulated in a larger world, local self-help and determination are primary.

Key words: Anthropology, disaster, culture, environments, ideology

Identification of victims in mass casualty incidents: resilience and religious concerns

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One of the most difficult aspects of the medicolegal investigation of mass casualty incidents is balancing the religious requirements of the diverse societies living within the country while maintaining the required standards of forensic investigation. Ascertaining the identity of the victims and perpetrators, clarifying the cause of their death, and reconstructing the event are some of the tasks carried out by diverse groups of forensic experts from various agencies, based on protocols devised to minimize the time in which the public can return to normal life, thus preserving the high resilience of the population. Throughout the short history of the state of Israel, the religious makeup of the country has influenced crucial legal decisions regarding the management of victims of mass disaster, of sudden unexpected death, and of death under suspicious circumstances. The three main monotheistic religions Judaism, Christianity, and Islam, are deeply rooted in Israel. Although the State of Israel was created as the homeland of the Jewish people, the basic laws that rule the country grant freedom of religion to all its citizens and the protocols for identification of victims from mass disasters reflects these basic laws. During the presentation, the main issues of religion and forensic practices in mass disaster will be discussed.

Key words: mass casualty incident, DVI, religion

Bioarchaeological responses to Natural Disasters and epidemics in Byzantine and Post-Byzantine Greece (6th-17th c. AD)

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Our understanding of how natural disasters and epidemics have affected past populations is an integral part of bioarchaeological studies, which attempt to identify aspects of the millennia-long affair between humans and a continuously changing environmental context. Part of the difficulty in undertaking such studies lies in being able to identify subtle or strong signatures of such phenomena, given that the archaeological record is relatively silent and/or that few populations' analyses have specifically demonstrated the immediate or longstanding impact of these changes in the living conditions and health and disease patterns. Working with historic populations the researcher enjoys a great advantage, that is, the availability of abundant documentary data, which often include information on the subject. This presentation, using bioarchaeological studies from the Byzantine and Post-Byzantine Greece (6th-17th c. AD), aims to present the current state of play in the attempt to identify and track the impact of these phenomena to the development of specific pathological conditions or dietary shifts, and further to establish a framework for bioarchaeologists to utilize in future studies.

Key words: Byzantine/post-Byzantine; Bioarchaeology; Greece; Natural Disasters; Epidemic

Activity and body mass as an individualization characteristics

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Forensic anthropology has played an important role in the identification of people killed and missing as a result of natural disasters. Due to the number and complexity of cases, the main contribution of forensic anthropology is to categorize people by narrowing them down based on bone characteristics. In this sense, activity levels and body mass index (BMI) reflected in bones add individualization characteristics that support the identification process. A sample of 24 males from Coimbra Identified Skeletal Collection (CEIMA), aged between 19 and 25 were selected. Body Mass Index (Ruff 1991) and cross-sectional properties of the femur (Wescott 2006) were estimated and analyzed to determine the relationship between activity levels and BMI of individuals. Four entheseal changes were recorded using the Villotte absence and presence method (Villotte et al. 2010): semimbranosus origin, iliopsoas, triceps surae insertions and plantar fascia origin. The evidenced demonstrates that the lower the BMI, the greater presence of entheseal changes (EC) (unbiased Cohen's d effect size 0.81 Nakagawa and Cuthill 2007), supporting the hypothesis that activity levels can be used to differentiate groups of people. Six outliers (25% of the sample) presented with characteristics which could potentially be used in identification processes.

Key words: entheseal changes, identification, activity, Body Mass Index

(Anti-)Fragile lives: enhancing adaptation through storytelling in the Eastern Himalayas

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Anthropologists and social scientists have long discussed 'resilience'. But in a world riven with uncertainty and unpredictable, high impact 'black swan' events (Taleb 2007) does resilience suffice? This paper challenges the social scientific focus on what it means to be 'resilient' and instead proposes that anthropologists turn attention to what it means to be 'antifragile' (Taleb 2012), a concept which emphasises the creative and regenerative response of living entities to stress and disorder. Based on longterm ethnographic fieldwork with the Nyishi tribe in the Eastern Himalayas, this paper explores oral accounts by Nyishi hunters and cultivators of the tragedies and social-ecological crises of their ancestors. The paper argues that the local effects of such oral narratives not only challenge Taleb's critique of narrative forms of understanding as "dangerous", but also suggest that narrative may in fact uphold the 'optionality' and 'trial-and-error learning' at the centre of Taleb's portrait of what it means to be antifragile. Out of this emerges a clearer portrait of critical dynamics at work in an "Integrative process-based model" (Feola 2013) of human responses to natural disasters.

Key words: resilience, antifragile, creative and regenerative response, Natural Disasters

Memory and magnitude: The 1755 Lisbon earthquake

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This oral presentation, part of the International Symposium on Anthropology and Natural Disasters, which aims to discuss the impact of natural disasters on human life, cannot help but to recall the impact of the Lisbon Earthquake. On November 1st, 1755, Lisbon was hit by an earthquake of such magnitude (8.7?) that it was carved in the memory and imagination of many, for years to come, as the paradigm of the natural disaster. According to Luisa Pais, the scale of this catastrophe produced a large cultural impact in Europe: having resulted in a multitude of illustrations, testimonies, letters, discussions and works of reference authors such as Teodoro Almeida (1722-1804), Immanuel Kant (1746-1778), Goethe (1749-1832), and Voltaire (1694-1778). According to several authors, the first to address the issue was Voltaire who published in 1756 the "Poem on the Lisbon Disaster". It is our intention to recall in this presentation some of these works and words whose subject is the tragedy of the Lisbon earthquake.

Key words: memory, Natural Disasters, 1755 Earthquake, Lisbon, documental resources

"A new normal" in the margins of the epicenter.
Photography, memory e ethnography in the post-tsunami [Aceh, 2004 | 2005]

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On the 26th of December of 2004, the world was struck by the occurrence of a devastating tsunami in Southwest Asia. The occidental coast of Banda Aceh (north region of Sumatra) was the closest location to the epicentre of the earthquake. The aftermath of the destructive wave brought along a new, different wave: The affluence of humanitarian missions, in which I was fortunate to take part (May-August, 2005). This period yielded the opportunity to capture, through the eye of an analogic camera, the reality and the "exotic" devastation, the surreal landscape of a city moulded by the gigantic mass of water, and the human frame, shrouded in grievance and loss. Most of all, an attempt was made to zoom into the "new normal" of living imposed in the city, the "new normal" that forced the reconstruction of a new life, tainted by the dramatic loss of family and possessions. The present communication aims to revisit Banda Aceh in a time post-natural disaster, based on a personal photographic archive, including ethnographic notes, and memories. As such, photography emerges as a memory in itself and as a memory trigger, developing itself as a representation/projection of the wave. This is a visual exercise that envisages to map the different gazes of the camera as means for the a translation and exposition of the reality resulting from the devastation, a transversal look into the several aspects of the social and cultural life in Aceh in the aftermath, focusing on the gazes towards rebuilding, hope in the future, and the reconstruction of a new normal of life

Key words: tsunami, Aceh (Indonesia), photography, memory, Ethnography

Chaitén the resistance of a city: some remarks of the struggle to return and resetlle the city after a vulcano eruption

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This paper explores some backgrounds and information relating to the eruption of Chaitén volcano (Chile, May 2008) and the subsequent flooding of the Rio Blanco that affected the inhabitants of the homonymous city (located at 1400 kms south of Santiago and had a population of approximately 6000 people before the disaster). However, I focus specifically on the controversial process that was experienced by some of its inhabitants against government policies around the possibilities to return to the city after the disaster. During this period we can see how risk categories are placed by the Government while questioned by the "rebels"; the people who were recognized in the media for strugglind to come back to the city and stay there although the dificulties they experienced. There are three field of dispute between the “rebels” and the government: 1) a judicial battle at the court, 2) the attempts to re-settlement and 3) a mass media strugle. Therefore, i explore some relevant aspects aspects of each of these fields of conflict; all of them. associated with post-disaster periods, emphasizing the intersections between state policies and the affected population. The information I present comes from an ongoing ethnographic research

Key words: Chaiten, vulcano eruption, risks, state policies, resistance

The intervention of the Forensic Science Laboratory of the Policía Judiciária within the Forensic Anthropology and Natural Disasters

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The Forensic Science Laboratory (LPC) of the Polícia Judiciária, was created in 1957 with the main of creating a structure of technical / scientific support to the criminal investigation within the Portuguese Criminal Investigation Police. Currently the LPC is the authority at national level that most forensic specialties focuses on producing scientific evidence to support the judicial system. It comprises three main areas, Biotoxicology, Physical Document and Criminalistic, it is this last which centers its activity in support of criminal investigations in the field of human identification through fingerprints. Under the Forensic Anthropology filed LPC centralizes its operations mainly in supporting the criminal investigation more precisely at the research and exhumation of corpses interred by applying essentially non-invasive techniques including using the Georadar (GPR – Ground Penetrating Radar equipment) and when required lifting of said corpses through excavation and survey techniques based on the principles of forensic archeology. Also comes to the reconstruction of the unidentified individuals face when necessary, by appropriate software for this purpose and executes human identification work through craniofacial superimposition techniques. As regard to Natural Disasters their work centers on primarily on Human Identification, either by using digital impressions or by comparing DNA profiles, also collaborating in any activity of criminalistics, to apply in these situations ranging from the correct survey photographic, video, etc., of the places where the bodies were found, to the exhaustive description of their belongings, tattoos and distinguishing marks that allow an easier identification. The work is always done through the international standards currently in force, in particular through the procedures issued by INTERPOL. The background of LPC experts who are assigned to this area of forensic science, is very diverse, starting from the training received at the Judicial Police School and later in complementarity training by renowned national experts from the Universities of Lisbon, Coimbra and Aveiro. Also added internationally training. In the course of this presentation will be presented case studies at national level where the application of these valences of forensic science was decisive importance for the discovery of the facts and to identify people.

Key words: Judicial Police, forensic service, laboratory, Natural Disasters

The redemptive function of "waters": floods and political conflicts in Mozambique

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In this presentation, I intend to demonstrate that the 2000's floods in Mozambique, despite the adverse and tragic impact it had, would eventually appease an effervescent political climate and potentially dangerous for peace, in force in the country since 1992. Following the general and presidential elections, in December 1999, Renamo did not accept the results and prepared to resume a campaign of political destabilization, that could most probably rekindle the armed conflict in the country, between Renamo and Frelimo: moved its national headquarters to the city of Beira; the party's President announced the formation of alternative government; a "communiqué" circulated in the city of Beira calling for the uprising of the populations of centre and north vs south; in the city of Chimoio war veterans of Renamo wrote an open letter to the party's President calling to the "return to arms". At the same time, according to a certain "popular vision", the phenomenon of the floods would not be directly related to climate events, but rather to a political causality. It was believed that the floods were a curse of Ndau spirits, "commissioned" by Renamo against the people of the South, assigned to Frelimo party. The floods of February and March 2000, which gradually reached the south and the centre of the country, causing a tragic human and material disaster, however had a soothing effect of political and military tension, the focus in the country by the "international community" and it's massive presence withdraw from national and international agendas the perspective of an armed conflict and simultaneously re-legitimize the new Mozambican government, removing space and manoeuvre for Renamo's warmongering .

Key words: calamities, war, floods, Mozambique

The Hot topic of burned human skeletal remains: Coimbra's contribution to Forensic Anthropology

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Completely skeletonised burned human remains are often found in forensic contexts. Their importance for investigations like the ones related with mass disasters is unquestionable as can be seen from the Victorian bush fires in 2009 that caused numerous victims. However, forensic anthropologists have problems working with this kind of remains due to heat-induced changes that interfere negatively with the application and reliability of bioanthropological methods. This problem has been lately at the centre of the investigation carried out by a team of researchers of the University of Coimbra. The objective of this presentation is therefore to describe our most recent efforts regarding this topic and to discuss future research pathways. The investigation carried out in Coimbra benefits from the compilation of partially burned skeletons stemming from the new CEI/XXI identified collection being assembled at the Department of Life Sciences. The latter is mostly composed of skeletons from individuals who died during the 21st century. Since their age-at-death and sex is known, selected bones from some skeletons and recently extracted teeth collected in dental clinics are being subjected to burnings under controlled conditions. This allows us to better document the effect of heat on bones and teeth and to develop and test new methodological approaches. Our current projects focus on age-at-death and sex estimation, 3D bone reconstruction, skeleton individualization in commingled remains and bone taphonomy. Expectantly, this ongoing research will be a stepping stone for practice improvement in biological anthropology and therefore has clear implications for forensic investigation in natural disasters.

Key words: Biological Anthropology, victim identification, HOT project, heat-induced changes, bone taphonomy

Pioneering the Collection of Identified Burned Skeletons

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Forensic anthropologists face several problems when dealing with burned remains because the applicability and reliability of standard methods for estimating the biological profile are impaired by heat-induced changes affecting the human body. Often, the extent of heat related changes may be difficult to evaluate further complicating the selection of the analytical procedures that should be undertaken. Although investigation in this field is increasing, one fundamental research tool is still lacking – a collection of identified burned skeletons. This is now being addressed at the University of Coimbra (Portugal), where abandoned skeletons from the 21 st Century Identified Skeletal Collection are being partially subjected to controlled burning. This allows for the control of both intrinsic and extrinsic variables (e.g. sex, age at death, cause of death; inhumation period; heat intensity). The main objectives are: 1) to achieve a better understanding of heat-induced changes to improve the evaluation of the burned remains; 2) to test the reliability of current methods for assessing the biological profile, when applied to burned skeletal remains; and 3) to develop new analytical methods more specific to burned skeletal remains according to the extent of burning. This new resource is a stepping stone to advance the forensic anthropology of burned skeletal remains which is becoming increasingly frequent due to the also increasingly number of situations involving fire, such as mass victim disasters (e.g.: airplane crashes, terrorist attacks). In this presentation, we will describe the procedures regarding the preparation of the skeletons and discuss the potential of this collection.

Key words: Forensic Anthropology; identified skeletons; burned bones

Earthquakes and urbanism.
Collective memory, heritage and reconstruction in Angra-Azores.

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Thirty five years ago, a big earthquake stroked the Azores islands. Angra do Heroísmo, a city in Terceira island (dating back to the last quarter of the Sixteen century) was almost entirely destroyed. About 80% of its buildings fell to the ground and the ones remaining were badly damaged. A strong dynamic emerged from this tragedy. Powered by the resilience of the population and by a young and heartiness regional government (the first one democratically elected), a rebuilding strategy was rapidly imposed. Within four years, and after three UNESCO missions to the island, Angra managed to get the classification of World Heritage, the first urban area in Portugal to achieve that status. In order to regulate the town reconstruction, new legislation was introduced, and a new municipal department created, charged with the supervision of the plan. These extraordinary circumstances also led to new approaches regarding Angra´s urban history. In part to support the UNESCO candidacy, new studies started to emerge, all of them emphasizing the exceptional character of Angra's urban plan - one of the first to be established by the Portuguese in its overseas -, and all trying to justify the need to restore its urban fabric and its buildings. To this, one must add the strong sense of collective memory. In fact, one of the most remarkable aspects of this strategy was how, for the first time in Azorean history, there was no population exodus after a large catastrophe. Guide by the remembrance of 1980 s' earthquake, and Angra s' World Heritage classification, this paper aims to critically reappraise the reconstruction process integrating it in a vaster historical perspective, namely by comparing it with other processes and other strategies implemented in similar catastrophic situations.

Key words: history, urbanism, land ordinance, Angra-Azores, 1980 earthquake

Chernobyl survivors: natural devastation after a technological disaster. Interdisciplinary dialogue between Journalism and Anthropology

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Ten years after the explosion of the Chernobyl nuclear power plant, 8,000 people affected by radiation decided to exile themselves to Argentina. There they arrived with a card that categorizes them as "survivors". A record which basically indicates their life expectations for something they absorbed, but never got to see.

The research, conducted between October 2007 and March 2008 as part of my thesis to obtain my Master's degree in Journalism, aimed to show how some of them experience the countdown of their days and how the nuclear disaster became their number, name and ID. Now, as part of an update of knowledge this study intends to demonstrate not only the impact of a disaster on human life, but to discuss how the inquiry transited the limits of two branches of the social sciences: Communication and Anthropology. These two subjects, although not explicitly encountered during the preparation of this research, have areas of common ground which we can discuss and from which we can rethink the approach to the matter.

Key words: devastation, Journalism, Social Anthropology

Earthquakes shaking worldviews: some reflections of a social psychologist on the Lisbon 1755 disaster

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This presentation analyzes firsthand accounts of what happened following the 1755 Lisbon earthquake and seeks to interpret them with the concepts and theories used to understand the lay thinking on seismic risk nowadays. It describes how earthquakes are seen today and it compares this analysis to the eighteenth century descriptions. In particular two theoretical perspectives to frame these comparisons. First of all, it will use cognitive adaptation theory (Taylor & Brown, 1988) to analyze the way people manage the fear associated with the seismic threat, developing illusory beliefs of control, with individual advantages of decreasing anxiety. Then, we will use some concepts of cultural theory (Douglas & Wildawsky, 1982) to show how these forms of illusory control are linked to socially shared world views. We will contrast, the hierarchical and rational view imposed by the prime minister at the time with other (probably more widespread) world views, such as the religious, egalitarian or individualistic ones. In this process, we highlight the functional aspects of the conflicting interpretations of this disaster and of the Nature to strengthen collective identities.

Key words: earthquake, Lisbon, 1755 earthquake, cognitive adaptation theory

The Earth dynamics and the Natural Disasters

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Earth is a geologically active planet with a rocky, agitated and violent inner world, and an aqueous and gaseous, unstable and turbulent outside world. The internal and external dynamics of the planet causes the rise and fall, the fracture and folding, the flood, the erosion, the creation and destruction of large areas of its surface. The processes involved in these dynamics may show up as earthquakes, volcanic eruptions, landslides, tsunamis, floods, storms, rises and falls of sea level, ice ages, changes in the magnetic field. The interval timescales of the dynamic processes can be of the order of seconds, in the case of abrupt seismic events, weekly in the case of storms, annual to decadal in the case of coastal erosion or secular variation of the internal magnetic field, or even several million years in the case of orogenic, sedimentary, igneous and paleomagnetic events. The energy released in the earth's surface can be of such size and so sudden, which expands the destructive and deadly ability of these processes, converting them into natural disasters. Throughout Earth's History, there were many natural disasters that devastated vast areas of the earth's surface and have profoundly altered the course of life. However, despite the drama that caused these events are an inevitable part of the natural cycle of destruction and renewal in which we all operate, as inhabitants of a living and dynamic planet.

Key words: Internal Earth Dynamic, External Earth Dynamic, Earth Surface, Natural Disasters

Predicting the past to foresee the future: historicising disasters in Anthropology

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In what way do disasters impact social change? I use the case of the earthquake that struck Pakistan-administered Kashmir on the 8th of October 2005 to argue that disasters are critical moments that highlight the continuity of change. This argument is based on the idea that it takes moments of acute sudden change to put slow and chronic change in sharp contrast. In this paper I analyse how two competing discourses – of rupture and dramatic change on the one hand, and slow, continuous change on the other – play out in a rural bazaar in Pakistan-administered Kashmir. I argue that while the narratives at the bazaar posit the earthquake as a point of rupture in their confabulated stories, from which their collective memory dates its movement towards becoming modern and global, these changes have their origins instead in 'bigger' stories of modernisation and globalisation that pre-date the earthquake. These 'bigger' stories also highlight and emphasise more continuous processes of change that have been occurring over a longer period of time. I argue that by historicising disasters we come to see their impact as manifestations of continuously changing social systems; and by bringing the concept of continuity of change into disaster research and practice, we can better prepared for their aftermath during relief, reconstruction, and rehabilitation stages.

Key words: earthquake, social change, Kashmir, Pakistan

Portuguese Civil Protection

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Civil protection in Portugal is understood as an activity with the aim of preventing collective risks associated with accidents, emergencies and disasters, attenuating its effects, protecting people and the environment and assisting those in danger. The Integrated System of Protection and Relief Operations (Law No. 72/2013 of 31 May) is the set of structures, rules and procedures to ensure that all the civil protection agents and entities with special duty of cooperation, act in operational terms, under a single command. To respond to events resulting from major accidents or catastrophes, Portuguese civil protection produces a set of "tools" that are aimed at prevention and emergency response. These tools are the emergency plans, (in national, district and municipal/local levels). They are crucial instruments to the success of emergency response. To respond to more severe specific events, as for example earthquakes and tsunamis, there are special emergency plans that correspond geographically to the metropolitan area of Lisbon and its surrounding municipalities, and the Algarve region. No country in the world is fully prepared to respond by itself to major natural and / or technological disasters. Because of this, the help of international level organizations that can provide an adequate and efficient response to international major disaster events is very often required. In this context, the Portuguese National Authority for Civil Protection participated in the 2010 Haiti earthquake relief operations effort, with a joint civil protection force. To finish it is important to say that we are all civil protection.

Key words: system of protection, emergency response, natural disasters, Portugal

Victims, citizenship and the state: the politicisation of suffering?

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This paper proposes an analysis of the role of victims' support associations in the social production of a collective memory and social identity of individual victims, that circumvent the production of invisibility after catastrophes.
It is argued that collective memory is fostered through the constitution of affective communities and the rituals and practices of victims' associations, and that social identities are constructed through emotional communion that allows for the re-establishing of bonds with others based on specific communicative and speech dispositives. The comparison will be based on the empirical study of Portuguese and French victims' support associations. The definition of victims and the recognition of their rights depend on political and cultural contexts. In the case of France, mainly after the terrorist attacks of 1995 in Paris, there is an institutionalisation of the victim status in a national sovereignty approach (belonging to the nation) and the full implication of the State in the process. Two main logics can be discerned: integration and reparation logic by the French State; and, prevention and preparedness for future events. In Portugal, by contrast, there is an *ad-hoc* logic where the State acts to expiate past failures and circumvent the presence of victims in the public space. Beyond a culturalist approach to trauma and the postulate of the emerging of societies of victims, the paper shows how victims become citizens through the legal and institutionalized dispositives available in different national contexts.

Key words: extreme events, trauma, victims, state, citizenship

Accuracy of age estimation methods used in Forensic Odontology: a meta-analysis of published studies from 2010-2014

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Being hardest tissue of human body, teeth can better resist taphonomic conditions to get preserved by storing wealth of forensic, bio-archaeological information. Age estimation is among the various components of human identity that can be easily established from human teeth using different morphological, molecular and elemental methods. Various maturity-indicators of human identity get impregnated into different anatomical, developmental, chemical and morphological features of tooth and a number of different studies have been conducted to estimate age of an individual by different workers in different populations worldwide. In an effort to better understand the accuracy levels of these methods, a systematic review and meta-analysis of studies published on the topic between 2010 and 2014 have been critically analysed in this paper. Article search was performed in forensic journals via various online search-engines and databases like Pubmed, Scopus, Embase and Cochrane using different keywords related with dental age. Additional data were identified through reference lists of these papers. Out of total 213 studies identified/relevant to forensic dental age estimations, 33 studies were considered for qualitative analysis; and 27 studies for quantitative meta-analysis. Though overestimation of age was a common finding but studies reported from UK, Brazil, India and China reflected age underestimation in all qualitative studies but contrary results were obtained from quantitative analysis of these studies. Statistical synthesis (forest plot) of estimated results, on average, overestimated the age of females by 0.04years (-0.02 years to +2.92 years) and males by 0.17years (-3.15 years to +0.04 years), respectively. A Turkish study was found to be accurate enough in age estimation for individuals of all ages and two sexes. Almost all the methods overestimated the age of the subjects by approximately more than half month and; hence experts are cautioned of using these methods of age estimation for a particular population group. This reveals the need for formulation of population-specific standards to better estimate age of an individual from human dental remains. The present paper will highlight major findings of meta-analysis of different age-estimation methods.

Key words: forensic odontology, population-specific, age estimation methods, meta-analysis, overestimation and underestimation

Social and territorial dynamics and Natural Disasters – territorial flood risk management and flooding in the town of Lourinhã

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Natural disasters, caused by floods and inflows of bodies of water, have been increasing as a consequence mainly due to the developmente of urban sprawl on floodplains. Human occupation of these areas has been reflected in the increase of the damage caused by floods, that even in non-natural, regulated basins, continue to occur and cause extensive flooding, which lead to the loss of lives and substantial material losses. Over the past decades, attempts to minimize the effects of these extreme events have been marked by a predominance of purely technical interventions on waterlines, completely disregarding social and geographical dynamics of areas likely to flood. Extreme natural phenomena don't necessarily represent a risk to the population and local community. These phenomena are only a risk when they evidence a threat to the normality or to the resources belonging to the community. On the other hand, societies may decrease the magnitude of the risk and its impacts, by their own territorial intervention. The analysis of flood risk and / or overflows of bodies of water and the severity of their effects are crucial when to decide the protective measures to adopt against such events. The complexities resulting from these situations are diverse, often consisting in: evacuations and the eviction of people, possible life losses; town isolation; damage to public and/or private property; submersion and/or damage to roads, other infrastructures and equipments; the destruction of farms, their products and livestock. The supply of basic goods and services such as: drinking water, electricity, telephone lines and fuel may also be interrupted, the population may need to be relocated or treatments may need to be provided to victims. During this time period there is a significant loss of production, which affects socio-economic activities, sometimes for a very long time even after the flood has occurred.

Key words: territory, risk, vulnerability, floods, social dynamics, Natural Disasters

Vulcan of emotions. Fogo' eruption: photography, memory and people (2014|2015)

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In November 23rd, 2014, the Vulcan which had been sleeping for the past 19 years, woke up in the Fogo Island, in Cape Verde, on the west coast of Africa. After a night marked by some earthquakes, the Chã das Caldeiras population living at the base of the Vulcan didn't find it strange. After all, the disruptions from 1995 were still in the mind of many. The experience taught the almost two thousand people to keep calm, perhaps too calm, once the eruption revealed to be much more violent than the last. An excess of confidence, almost indifference, which become into despair, as the days passed, along with lot's of tears and a deep and last farewell to their homes and lands. A "Vulcan of Emotions" lived and photographed since the first day. An every hour registered every single and uncertain day to day for those who didn't know where to go or if they were able to do so. The only certain issued was uncertainty. Hope was really the last one to die. Now, the restart is from zero. The surviving is, and will be, based on help coming from cape-verdeans, both national and worldwide, and also from those who doesn't know where the country is. Using photos, texts and memories, the intention of this presentation is to picture, not so much the reorganization of a population that will see a new village to be born, but more at the living, the surviving and the day-to-day of a Vulcan that insisted to remain awakened. Still today, with the Vulcan sleeping since February 8th, 2015, Chã das Caldeiras population sees the disaster with a lost look. However, there's hope, once they all remember what happened in 1951 and 1995. The show must go on.

Key words: Vulcan, Fogo (Cap Verd), photography, memory and people

Natural Disasters in mainland Portugal: analysis of the last 50 years

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Mainland Portugal is located in the extreme southwest of continental Europe, in the Iberian Peninsula. Despite its small size (89 015 km^2) important contrasts are recorded in spatial and temporal (intra and inter annual) precipitation and temperature. The average annual precipitation varies from around 2000 mm to 500 mm in the north-west (between the Minho and Douro rivers) and south-eastern areas of the country, respectively. This pattern is reversed for the average annual temperature, with the highest values registered in the Alentejo and Algarve regions, and the lowest in the northernmost territories. Despite this variability, the country as a whole reflects the seasonal pattern typical of a Mediterranean climate, characterised by cool, wet winters and hot, dry summers. With the exception of the northwest region, the entire territory has a reasonably long, dry season, lasting three to five months and increasing from north to south and from coastal to inland areas. Consequently, several regions are prone to a large number of catastrophic climate and hydrological events with loss of life, injuries, and high economic and social impacts. During the period 1960–2010, more than 30 natural disasters (www.emdat.be), including floods, extreme temperatures, storms, wildfires and droughts, resulting in almost 3450 casualties and close to 7000 million Euros in damages. The goal of the present work is to analyze and relate the socio-ecological territorial structure with the economic and socio-cultural structure, with the aim to understand the spatial incidence and the recurrence of natural disasters.

Key words: Natural disasters, floods, extreme temperature, wildfires, Mainland Portugal

Public participation and disaster in Brazil

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By highlighting the extreme events of January 2011, which have taken place in the mountain towns in the state of Rio de Janeiro, Brazil, this research intends to exemplify, in terms of paradigms, the following triad: contemporary problems/government inadequacy/low public participation, and point out some thoughts about the gap between the discourse in favor of the social participation and its absence. The goal is, by producing reflections, to become able to polemicize the technicality displayed in the scientific reports and, therefore, manage to integrate, along with the set of reflections, the major question: How may one plan more resistant localities that can be, simultaneously: socially just, economically robust, ecologically suitable, and less vulnerable to disasters? The considerations made are the result from the analysis of technical and scientific documents, newspapers' articles and interviews with members of the community movements. The choice of debating the issue concerning the relation between governmnet-science-citizens when extreme events happen is not, whatsoever, occasional or, paradoxically, evident. Nonetheless, it seems that the characteristics which, in non-extreme situations, are barely visible, taken for granted, and labeled as normal, become exposed and exaggerated during social crisis situations, generating the exclusion of those who are allegedly to be included in the first place. The considerations here presented consist in results from the analysis from technical documents of various institutions involved in the mentioned extreme-event, and from newspapers' articles with the residents of the mountain towns.

Key words: disaster, social exclusion, public policy, participation

Overcome The Impossible

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Monica Ribeiro 23, lost her parents at 13 years of age, on one of the largest natural disasters in history, a tsunami that hit Southeast Asia in December 2004. Ten years later, Monica tells everything she saw and felt on the day of the tsunami that almost took her life, what she learned from it and how she did Overcome The Impossible, name of the project she co-founded.

Key words: tsunami, Superar O Impossível, Overcome The Impossible

Past plague outbreaks in Portugal: in the interception of demography, socioeconomic and religious

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Plague is a communicable disease caused by the bacteria Yersinia pestis transmitted to humans by infected fleas and rodents. According to WHO it remains underreported even so, outbreaks were noticed in the last years in Americas, Asia and Africa. The aim of this work is to present a historiographic review about the devastating consequences and the social representations of plague during outbreaks in Portugal. In the fall of 1348 Black Death arrived to Portugal. Documental sources referred that around one third of the 1.5 million inhabitants died, provoking a demographic catastrophe. Consequently, there were not enough people to work on agriculture and several famines affected the population. The panic during the epidemic gave rise to multiple interpretations regarding its origin, such as astrological, religious and socioeconomical. Several plague outbreaks occurred in the country until late 17th century and despite the lack of knowledge about its etiology, preventive and sanitary measures were legislated to avoid contagious. In the 19-20th centuries plague sporadically emerged in Portugal. Contrary to some European countries, collective mass burial plague pits were never found in Portugal what precludes both a better knowledge of victims' paleodemographical and paleopathological profiles and the genetic characterization of the circulating strains of Yersinia pestis in the country. Additionally, future interdisciplinary studies to overcome the scarce knowledge regarding plague epidemics in Portugal will be addressed, namely those combining anthropological and peleomicrobiological analyses with historical and archeological evidence.

Key words: Black Death, famine, epidemic, Medieval, *Y. pestis*

Challenges in identification of victims of Ajnala (India) mass genocide: a forensic anthropological perspective

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Forensic anthropological techniques helps in quick investigation of genocide and mass deaths resulting from accidents, wars, murders, terrorist attacks, natural or man-made mass disasters. The mass genocide of captured rebel soldiers of British-Indian army was mentioned by an administrator in his book "The Crisis in the Punjab: From the 10th of May until the fall of Delhi". A local historian tried to convince government authorities to unravel truth about this incidence dating back to 1857. Repulsive attitude of authorities forced local untrained curiosity seekers to excavate the human remains from a bricked well in Ajnala (Amritsar), India. Unscientific excavation by untrained people resulted in recovery of heaps of broken skeletal remains along with few coins, medals, bracelets, copper rings and stone bullets. These artifacts, coins or medals are inscribed with year and the photograph of dynasty ruler of that time. The available skeletal remains are badly damaged except all dentition, four complete skulls with all teeth intact, clavicles, EAM portion of temporal skull, femur heads, talus and metatarsals etc. At the time of their initial examination, all the bones were found very brittle and fragile because of their prolonged exposer to sunlight, air, humidity and resultant photochemical reactions after excavation. The identifiable remains were segregated and preserved with application of 10% solution of polyvinyl acetate in acetone and acrolyte 'B' solution as preservative. Three of the four intact skulls have stone bullet injuries in their frontal and temporal regions (one having in-situ bullet), corroborating the historians' view of some barbaric treatments with owner of the remains. The medal and coins inscriptions show their contemporary affiliation to British army and a period of '1857', respectively. Some bones are extra-ordinarily larger suggesting their 'Pashtun' or British origins, thus, raising fingers of uncertainty about their totally Indian origin. The age, sex, population affinity, dietary status, dental pathology/trauma etc., of the victims of this man-caused disaster has been assessed with some certainty from the teeth (the only well-preserved forensic anthropological evidence in this case) and other usable elements of their skeletons. These results, along with some challenges faced by the expert group due to their unscientific excavation and ancient nature, will be discussed in this oral presentation. Some future forensic or bio-archaeological possibilities from these remains shall also be discussed.

Key words: Forensic Anthropology, Ajnala skeletal remains, biological profiling, challenges, ancient remains

Anthropogenic causes, responses and management of recent devastating floods in two Himalayan states of India: Natural or man-made disaster?

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Recent hazardous episodes of natural disasters have adversely affected the human populations worldwide. Anthropologically, a disaster is an event in which a destructive agent and a population interact in a socially or technologically vulnerable environment to cause damage or losses to a community. Recent devastating foods in Uttarkashi and Kashmir regions of India completely paralyzed life, enforcing experts to ponder over the root causes of such disasters. Thousands of causalities have been reported from these floods and more than double to that are still missing. Floods in both states have badly affected human life, their economic, social and psychological well-being by directly impacting their economies, agriculture, sanitation, environment and health conditions. The climate change due to increased carbon emissions and global warming, disappearance of natural water sponges, poor weather forecasting, insufficient disaster preparedness, poor post-disaster management and planning of resources, unheeded warnings of meteorological department etc., have been cited as the main causations for these horrific rainfalls by most environmentalists and expert committees. Illegal constructions in natural water courses and encroachments on river banks for habilitation or commercial purposes have mushroomed in last few decades here and it is thought as main anthropogenic reason responsible for these devastations. Geologically, both the states fall in greater Himalayas but anthropologically they differ as Uttarakhand is a Hindu-dominated state whereas worst affected part of J&K is Muslim populated. Though the anthropogenic causes for these floods/disasters are same, human responses to rescue efforts, reliefs, rehabilitation and reconstructive strategies etc., were different in two cases. There were lots of examples in J&k where affected people confronted with rescue personnel (mainly from Army and NDRF) thinking them belonging to a different community, outsiders to Kashmir and deputed by immune central regime. Similarly in Uttarkashi floods, tourists and local people had so deep faith in the divine spiritual powers that they took it as a curse of God and not a disaster. Skeletonized bodies of only 44 victims have been unearthed from flood deposits in Kedarnath valley and still more are expected from both areas keeping in view of list of missing persons. A forensic anthropologist can be a valuable adjunct in identification of these remains. In this poster presentation, an anthropological view of different causes, responses and impacts of these recent floods on human life and possible anthropological contributions will be presented in a scientific and objective manner.

Key words: Natural Disaster, recent floods, Jammu & Kashmir and Uttarkashi, anthropogenic causation, responses, anthropological strategies

Plan of action for identifying mass disaster victim of Medical Legal Institute Nina Rodrigues, Salvador- Bahia, Brazil.

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Presents and discusses the plan of action for identifying mass disaster victims of Medical legal Institute Nina Rodrigues of Salvador-Bahia, emphasizing the role of Forensic Anthropology. The following protocol is based on Interpol DVI Guide, but adapted to local reality. We highlight the importance the importance of good team coordination, chain of custody and morgue dynamics. The phases of ante mortem data collection and reconciliation are also crucial to stablish victim's identity. Thus, it must be established a management model, able to assure efficiently the proper execution of the work. To comply with the phases of the identification process, we propose a management model in which the forensic activities and logistical support of the entire operation to be carried out by work groups coordinated by technical and logistical Supervision, respectively, under the single command of General coordination. To make known the procedures used in Salvador-Bahia is not only contribute to the standardization of methodologies but also draw attention to the importance of these protocols in all forensic institutions.

Key words: Identification; mass disaster; Forensic Anthropology

Sex determination from discriminant function analysis of odontometric measurements of Northwest Indian subjects: a forensic anthropological study

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Anthropologists have expert knowledge of dental morphology, dental eruption patterns, nature and type of dental fillings and restorations, missing/supernumerary teeth, arrangement of teeth in oral cavity, occupational dental peculiarities, traumatic conditions, shape and size of dental arcade etc., of different individuals of diverse population groups worldwide. Teeth present as best forensic samples being the hardest and well-preserved part of human body which can better withstand various traumatic and taphonomic destructions and; are also richest sources of valuable DNA. Different anatomical, developmental, chemical and morphological features of human tooth have been used for estimating different components of biological profile of their owner including sex estimation. Eight odontometric measurements were taken on 115 (70 Male, 45 Female) human molar teeth (carious but anatomically complete and sound) collected from Northwest Indian subjects who reported to various govt. and private hospitals of the tricity (i.e., Chandigarh, Panchkula and Mohali) for therapeutic purposes and dentofacial modifications of their faces. Statistically significant differences were found in the mean values of two sexes for MD and MBDL using one-way ANOVA test for comparison of means. Present study odontometrics had different values than most previous studies including Indian ones. These variations might be because of differences in methodology or the samples itself because few of them were conducted either on dental radiographs or dental casts and archaeological samples but only a very few used modern teeth of contemporary populations for odontometric analysis. The mesio-distal diameter of molar teeth (MD) was found to be the best variable using multivariate stepwise discriminant function analysis, discriminating sex of about 62% subjects (64.3% males and 57.8% females) in original as well as cross-validation data. The discriminant function quotient (Male: -27.997; Female: -24.97) and mesio-distal molar diameter (Male: 5.336; Female: 5.025) arrived in this study can be used to construct a discriminant function equation for estimating sex (group centroids: 0.169 for males and -0.262 for females) of an unknown tooth recovered from a forensic anthropological context.

Key words: forensic anthropology, sex determination, odontometrics, molar, discriminant function analysis, Northwest Indians

Examine definitions of social disorder trough interpretations of natural disaster (Mexico-Costa Rica)

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This contribution argues that floods interpretation is an access to definitions of social disorder. We focus on two local disasters in Mexico and Costa Rica. In both cases, uncontrolled urbanisation stakeholders are blamed. The prosecution contributes to recall rules and to support social order. Ethnological investigations to inhabitants, elected members and public managers point out local disasters interpretations. Historical data put these interpretations into perspective.

In October 2005, Stan hurricane causes significant rainfalls in San Cristóbal de Las Casas. This city of Chiapas is located in a valley whose drainage basin is saturated by urbanization. Floods disturb centric districts and outlying districts. Uncontrolled urbanization associated with native land occupation after Zapatista insurrection (1994) is charged. This disaster interpretation strengthens native stigmatization as city troublemakers in a tense political context.

In June 2007, Quebrada Seca River's flood, one among many streams of the Great Metropolitan Area of San José, strikes Belén, a municipality. It interpretation challenges the classical distinction between ordinary event and extraordinary event. In spite of it description as extremely violent and unprecedented, flood isn't qualified of exceptional. It is the normal consequence of chaotic urbanization attributed to public rulers failure and prevalence of economic interests. This disaster interpretation legitimate civil groups intervention that look after urban order.

Key words: city, floods, social disorder, urbanization, blaming

Podium Presentation

Human aspects of forest fires

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Human beings are usually associated to the beginning of most forest fires, they intervene during their development and they are also at the receiving end of most fires, several times as victims of their destructive power. An account of fire occurrence in Portugal associated to human activity and to lack of risk perception is given based on statistical data.

Safety problems involving firefighters and civilians during fire suppression operations quite often involve loss of lives. Some lessons learned from these accidents and from research advances are incorporated in the training of agents of fire protection agencies.

Key words: human activity, safety problems, society, firefighters

Medical intervention in humanitarian emergency aid

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We intend to report our experience lived on the ground, following the Natural Disaster occurred in Southeast Asia more precisely at Banda Aceh on Christmas 2004, as part of the Portuguese Mission deployed to the site. We will present our vision of medical status, health problems resulting from the epidemiological situation, prevention of epidemics, psychological support and basic needs and health. We seek to identify the main constraints, barriers and ways to help overcome them, the testimonies of resilience and overcoming trauma

Key words: humanitary help, Natural disasters, Portugal

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