



AIAS SYMPOSIUM
**The Human Biology
of Migration**
Annual Meeting of
the SSHB2016
30 Nov-2 Dec 2016



AARHUS
UNIVERSITY

AARHUS INSTITUTE OF ADVANCED STUDIES

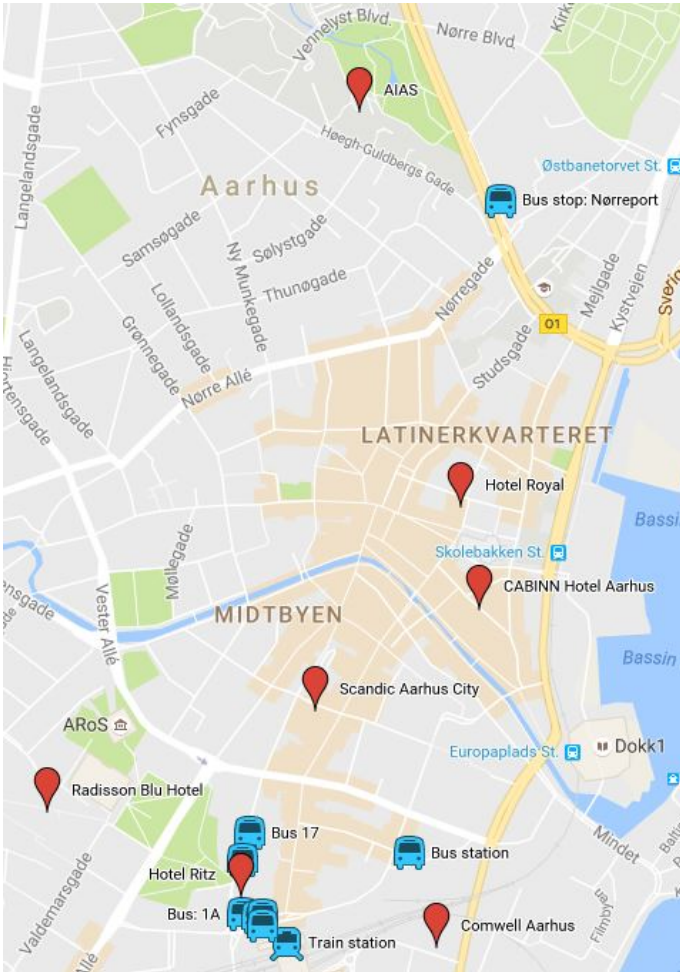


Taylor & Francis





@SocStudyHumBioI @AIAS_dk #SSHB2016



CONFERENCE VENUE
Aarhus Institute of Advanced Studies, AIAS
Buildings 1630-32
Høegh-Guldbergs Gade 6B
DK-8000 Aarhus C
Denmark

Welcome to SSHB 2016

We wish you a warm welcome in Aarhus and are delighted to host the first Society for the Study of Human Biology (SSHB) symposium in Denmark.

We wish to thank our generous sponsors: Taylor and Francis for providing funds for the public reception and the Aarhus Institute of Advanced Studies (AIAS) for invaluable financial, practical and logistical support.

Further thanks go to all the AIAS staff and student assistants and to Dr **Luseadra** McKerracher and **Charles** T.G. Clarke

We hope you enjoy the symposium and your stay in Aarhus!

Best wishes,

Djuke Veldhuis and Simon Underdown,
SSHB 2016 Symposium organizers



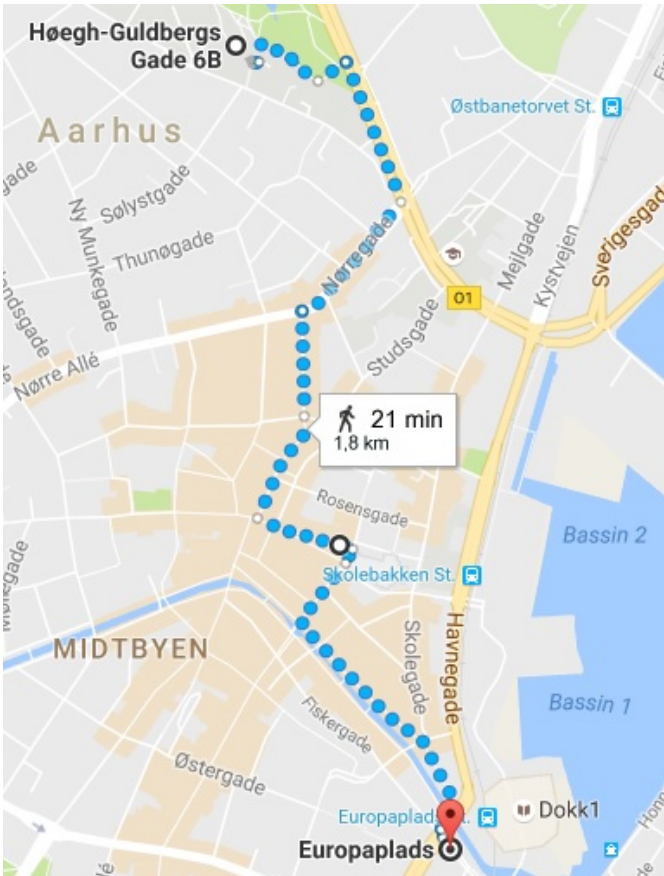
@DjukeVeldhuis and @sunderdown

SSHB ETHOS

Our symposium is dedicated to providing a harassment-free conference experience for everyone, regardless of gender, gender identity and expression, age, sexual orientation, disability, physical appearance, ethnicity, religion, status or technology choices. We encourage lively and spirited communication and debate, in an inclusive and welcoming atmosphere, throughout all sessions and social events associated with the symposium.

We are proud to endorse and put into practice the principles defended by the **Athena Swan Equality Challenge Unit**, the **Not There Yet Initiative** and the **#HeForShe** Movement.

DINNER THURSDAY, 1 DEC AT 7:30 PM



Wine/ beverages will be served with dinner and there will be an opportunity to buy drinks too. We have use of the venue until 10:30pm. It is a pleasant 20-minute walk to the venue through the centre of Aarhus or a short 10 minute taxi ride

VENUE: NO16

Europaplads 16, 8000 Aarhus C: <http://www.sechzehn.dk/da/>

WEDNESDAY, 30 NOVEMBER

- 15.00 - 15.45 Registration
- 15.45 - 16.00 Introduction
- 16.00 - 17.00 **Opening keynote: Michael Bang Petersen: 'The Biology of Anti-Immigration Politics'**
PUBLIC LECTURE: OPEN TO ALL
- 17.00 - 19.00 Welcome reception
- 19.00 Venue closes

Need a break?

For your convenience, small lecture rooms have been booked for taking a break, having small meetings, etc.:

Thursday 1 December - meeting room 203 (opposite main lecture theatre on the 1st floor) and meeting room 101 (to the right hand side of the AIAS main hall. Both available from 9.00 - 16.00 hours each day.

Friday 2 December - as above but from 9.00 - 14.00 hours.

THURSDAY, 1 DECEMBER

Morning session chair: Simon Underdown

- 08.30-09.00 Registration
- 09.00-09.05 Welcome: Morten Kyndrup, Director of AIAS
- 09.05-09.15 Introduction to SSHB 2016: Simon Underdown & Djuke Veldhuis
- 09.15-09.55 **Keynote I: Yorgos Athanasiadis (Aarhus University): 'High school students help unravel Denmark's genetic past'**
- 09.55-10.15 **Simon Underdown** (Oxford Brookes University): 'Neanderthal Pathology as a Proxy for Human Success - Evidence of atypical or typical human hunter-gatherer movement?'
- 10.15-10.35 **Theya Molleson** (Natural History Museum, London): 'Those feet in Ancient Times'
- 10.35 -11.00 Morning coffee
- 11.00 -11.20 **Marcello Mannino** (Aarhus University): 'Neolithic migrations and their health consequences for the first Mediterranean farmers'
- 11.20 -12.00 **Keynote II: Charlotte Houldcroft (University of Cambridge): 'Germs on a journey: what human pathogens can tell us about population movements and human evolution'**
- 12.00-12.20 **Anna Rivara** (University of South Florida) and Sabrina Paiva: 'The interactions of immune functioning and fertility in American and Brazilian quilombo populations: determining how ecology and evolution are directing IgE profiles'
- 12.20-13.15 Lunch
-

THURSDAY, 1 DECEMBER

Afternoon session chairs: Djuke Veldhuis and Babette Zemel

- 13.15 - 13.20 Introduction
- 13.20 - 14.00 **Keynote III: Christian Wejse (Aarhus University): 'Infectious Diseases in refugees and asylum seekers'**
- 14.00 - 14.20 **Claudia Hartman** (Oxford University): 'The construction of unskilled care work: the case of migrant workers in social care for older people in the UK'
- 14.20 - 14.40 **Laura Goodwin** (Cardiff University): 'Immigration and continuing inequalities in maternity outcomes; exploring the midwife-woman relationship for migrant Pakistani women in South Wales'
- 14.40 - 15.00 Coffee & cake
- 15.00 - 15.05 Introduction
- ~~15.05 - 15.45~~ ~~CANCELLED: **Keynote IV: Michelle Holdsworth (University of Sheffield): 'Dietary transitions in African Cities'**~~
- 15.05 - 15.25 **Luseadra McKerracher** (Simon Fraser University), Mark Collard and Pablo Nepomnaschy: 'Immigration affects at first birth and age at weaning in an indigenous Maya population from rural Guatemala'
- 15.25 - 17.00 **Posters session** (and wine reception)
- 17.15 Venue closes
- 19.30-22.30 **Dinner at NO16**,
Europaplads 16, 8000 Aarhus C
<http://www.sechzehn.dk/da/>

FRIDAY, 2 DECEMBER

Morning session chair: Simon Underdown

- 09.30-09.40 Introduction to Tanner Memorial Lecture
- 09.40-10.30 **Tanner Memorial Lecture - Nick Mascie-Taylor** (University of Cambridge): 'From genes to latrines'
- 10.30-10.55 Morning coffee
- 10.55-11.15 **Marios Poulas** (University College London), Jonathan Wells, Mark Saunders and Mario Cortina-Borja: 'The association of El Nino Southern Oscillation with intra- and inter- generational changes in height and weight of people born in India'
- 11.15-11.35 **Helen Liversidge** (Queen Mary University London) and Fadil Elamin: 'A comparison of permanent mandibular molar timing in several African groups'
- 11.35 -12.00 **Michael Hermanussen** (University of Kiel), Christiane Scheffler and Barry Bogin: 'As tall as my peers - similarity in body height between migrants and hosts'
- 12.00-13.00 Lunch
- 12.30-13.00 **SSHB Annual General Meeting** (voluntary): Room 203; first floor.
All welcome - members encouraged to attend
-

FRIDAY, 2 DECEMBER

Afternoon session chair: Helen Liversidge

13.00 - 13.10 Introduction

13.10 - 13.50 **Keynote V: Sarah Salway (University of Sheffield): 'Towards healthcare equity for migrant populations: conceptual and operational challenges'**

13.50 - 15.00 Discussion & closing remarks

15.00 - 16.00 Closing reception - refreshments and snacks

16.00 Venue closes

OPENING KEYNOTE: OPEN TO ALL



Opening keynote

Michael Bang Petersen

Professor, Department of Political Science,
Aarhus University, Denmark

michael@ps.au.dk Twitter: @M_B_Petersen

'The Biology of Anti-Immigration Politics'

Across the Western world anti-immigration sentiments is flaring. The "migrant crisis" calls, in the view of some, for harsh solutions in terms of increased policing, the building of walls and the closing of borders. These views are fuelled by emotions of anger, contempt and disgust. Yet, others react differently. And expressions of solidarity with and compassion towards migrants have been seen across countries. How can we understand the strong emotions being ignited by immigration, and how can we understand why different people react so differently?

In this lecture, I will start from an often-unappreciated fact in the context of immigration politics: that waves of migration are nothing new. Over human evolutionary history, migration has been the norm rather than the exception and it is likely that natural selection has sculpted a range of psychological mechanisms for navigating meetings between groups. I will provide a range of examples of how the evolved mind influences modern views on immigration politics. And I will argue that because of differences between ancestral and modern environments, this influence sometimes propels people towards excessive anti-immigration sentiments for irrational reasons.

KEYNOTE SPEAKERS



Keynote I

Yorgos Athanasiadis

Postdoctoral researcher

Bioinformatics Research Centre, Aarhus University, DK

athanasiadis@birc.au.dk Twitter: @Yorgos_a

‘High school students help unravel Denmark’s genetic past’

Scientific outreach delivers science to the people. But it can also deliver people to the science. In this talk, I will report our experience from a large-scale public engagement project promoting genomic literacy among Danish high school students with the additional benefit of collecting data for studying the genetic makeup of the Danish population.

Not only did we confirm that students have a great interest in their genetic past, but we were also gratified to see that, with the right motivation, adolescents can provide high-quality data for genetic studies. I will also present the main conclusions regarding Denmark’s genetic past and its position in the genetic landscape of Europe.



Keynote II

Charlotte Houldcroft

Lecturer in Human Molecular Genetics

Division of Biological Anthropology, University of Cambridge, UK

ch504@cam.ac.uk Twitter: @DrCJ_Houldcroft

'Germs on a journey: what human pathogens can tell us about population movements and human evolution'

The biology of human migration can be observed from our co-evolutionary relationship with infectious diseases. While many pathogens – bacteria, viruses and parasites – are brief, unpleasant visitors to our bodies, others have the ability to become life-long human passengers. The story of a pathogen's genetic code may therefore provide an insight into the history of the host – us. The smaller genomes of pathogens often evolve an order of magnitude faster than our own genomes, meaning that in a short time frame our pathogens may become highly geographically and genetically distinct, while our own genomes have not yet had time to accrue enough differences to tell the same story.

I will present three African stories of germs on a journey, each an order of magnitude older than the last. The first is the story of HIV's spread on the back of colonialism and the train networks laid down to facilitate the movement of people and goods across sections of sub-Saharan over the last 150 years. The second story is the spread of *Schistosoma mansoni*, a parasite which shares its history with the trans-Atlantic slave trade, the spread of farming across Africa, and the origins of freshwater fishing. Finally, I will present some results from my own research on the hominin origins of herpes simplex virus 2: a virus which causes disease ranging from silent infection, through genital ulcers, to encephalitis.



Keynote III

Christian Wejse

Professor, Department of Infectious Diseases
Aarhus University, Denmark
wejse@ph.au.dk

'Infectious Diseases in refugees and asylum seekers'

An unprecedented rise in the number of asylum seekers and refugees was seen in Europe in 2015 and mass migration to Europe may be a reality in the years to come. Several studies have tried to estimate risk of infectious diseases associated with migration, but these studies rarely distinguish reasons behind migration of workers, students, as well as refugees. They are all assumed to have the same disease epidemiology. A common disease epidemiology across very different migrant groups is unlikely, so in this review of infectious diseases in asylum seekers and refugees, we describe infectious disease prevalence in various types of migrants.

We have found that refugees in general have a high risk of tuberculosis, hepatitis B and HIV. There have been recent reports in European countries of cutaneous diphtheria, louse-borne relapsing fever and shigella in the asylum seeking and refugee population. There was low risk of malaria and hepatitis C. Much of the increased risk can be attributed to poor living conditions during and after migration – this is supported by the fact that several of the infectious diseases seem to spread along the different migration routes. Even though we see high transmission in the refugee populations there is very little risk of spread to the autochthonous population. These findings support the efforts towards creating a common European standard for the health reception and reporting of asylum seekers and refugees.



Keynote IV

Michelle Holdsworth

Professor, Section of Public Health, ScHARR (School of Health and Related Research)
University of Sheffield, UK

michelle.holdsworth@sheffield.ac.uk Twitter: @ProfMHoldsworth

'Dietary transitions in African cities'

Africa is experiencing a nutrition transition with changing dietary habits and sedentary lifestyles related to urban demographic change. As a consequence, obesity and related non-communicable diseases (NCDs) are rapidly increasing and becoming an important public health problem. The trend is most evident in African women, who are affected across all socioeconomic groups, and increasing most in less educated women. The overconsumption of unhealthy food and beverages is implicated in the onset of obesity/NCDs including foods rich in fats, oils and/or sugars with a high concentration of calories to nutrients, e.g. sugar-sweetened beverages, desserts and fried snacks.

This presentation will shed light on what we know about the factors in the social and physical food environments of African cities experiencing nutrition transition that drive consumption of unhealthy food and beverages. It will explore how we can use this information to develop context-relevant interventions to promote healthier diets.



Keynote V

Sarah Salway

Section of Public Health, ScHARR, University of Sheffield
s.salway@sheffield.ac.uk Twitter: @ScHARRPubHealth

'Towards healthcare equity for migrant populations: conceptual and operational challenges'

Despite its long history of migration, and established identity as a multicultural society, the English response to migrant health needs has been patchy and incoherent. At national level, apparent commitments to delivering equal care for equal need, and to tackling health inequalities, sit uneasily alongside repeated legislation aimed at curbing migrant use of NHS resources. At a local level, service innovations are found, but these are often isolated and short-lived, without broader system-wide impact. In this presentation, I first draw on various illustrations from research in England to describe service responses to migrant health, many of which are framed in terms of working towards 'health equity'. Then, in exploring the obstacles to more consistent policy and practice, I argue that a key problem is a failure to get to grips with the conceptual, political and operational challenges of delivering 'equitable' care for migrants and minorities.

Fundamental questions remain unaddressed about how we: understand migration and its links to health; decide what is fair; and agree what is feasible and desirable action. I suggest that making progress on these tricky issues will require much greater inter-disciplinarity and deeper engagement with the general public.

TANNER MEMORIAL MEDAL

Jim Tanner was one of the most important figures in 20th Century Human Biology. He was a key member of the pioneering group of scientists who developed ‘... the new Human Biology ...’ from the ‘... Physical Anthropology of old...’. With Jo Weiner, Derek Roberts, Geoffrey Harrison, Arthur Mourant, Nigel Barnicot and Kenneth Oakley, Jim was to form the Society for the Study of Human Biology in 1958. He was the editor of Human Biology in the US and the first editor of the Annals of Human Biology - the SSHB’s journal.

The development of human biology over the next 50 years was shaped by the expertise and diversity of that group of visionary scientists who conceived the scientific discipline of ‘human biology’ in which biology, behaviour and social context define the human species.

The **SSHB Jim Tanner Memorial Medal** is awarded annually in his honour to those who have made a substantial and sustained contribution to the study of human biology.

Tanner Memorial Medal Winner 2016:

Nick Mascie-Taylor, University of Cambridge, UK



Tanner Memorial Lecture

Nick Mascie-Taylor

Professor of Human Population Biology and Health
University of Cambridge, UK
nmt1@cam.ac.uk

'From genes to latrines'

My initial research was in Population Genetics and I used both humans and fruit flies to study how migration (both geographic and social mobility) can modify the genetic structure of populations. Post PhD I made extensive use of the British National Cohort Study - 14,000+ children born in 1 week in March 1958 and studied periodically thereafter, as well as the 1970 cohort. Research on the cohort included the study of assortative mating, regional variation in height, epidemiology of asthma, the biology of social class and ethnic differences in IQ. Since 1985 I have worked more on nutrition and disease control in developing countries. Initially in Sudan conducting a post-famine nutrition survey in which we measured nearly 80,000 children in 1 year, followed by control of Schistosomiasis. A number of projects have been funded by WHO - use and interpretation of anthropometry, setting up of a global database on adult BMI, and new BMI cut-offs for obesity in Asians. World Bank and WHO projects include intestinal parasite control in Bangladesh and development of MPhil and PhD nutrition programmes in Iran. Extensive long term UKAid projects in Bangladesh and Nepal have been on poverty/nutrition related issues; an eight year asset transfer project in Bangladesh has just finished and 1.2 million people have been moved out of extreme poverty. A number of these projects will be reviewed.

SPEAKERS IN ALPHABETICAL ORDER

Laura Goodwin, Cardiff University, UK

'Immigration and continuing inequalities in maternity outcomes; exploring the midwife-woman relationship for migrant Pakistani women in South Wales'

In 2014, 27.0% of births in England and Wales were to mothers born outside of the UK. Compared to their white British peers, migrant women are at a significantly higher risk of maternal and perinatal mortality, along with lower maternity care satisfaction. Although existing literature highlights the importance of midwife-woman relationships in care satisfaction and pregnancy outcomes, little research has explored the factors contributing to this relationship for migrant women. A focused ethnography was conducted to explore relationships between migrant Pakistani women and midwives in South Wales; focusing on the factors contributing to these relationships, and the ways in which these factors might affect women's experiences of care. Semi-structured interviews were conducted with 10 migrant Pakistani participants and 11 practising midwives, alongside fieldwork in the local migrant Pakistani community and local maternity services, observations of antenatal booking appointments, and reviewing of relevant media, such as news reports of issues relating to migrant individuals.

Thematic data analysis identified a number of social and ecological factors which influenced the midwife-woman relationship; including family relationships, culture and religion, differing healthcare systems, authoritative knowledge, and communication of information. However, differences were seen between midwives and women in the perceived importance of these themes. Findings therefore suggest that in order to understand how midwife-woman relationships are created and maintained for migrant women, more needs to be done to recognise and address these differences. Findings from this study provide new theoretical insights into the complex social-ecological factors at play during maternity care for migrant Pakistani women.

Claudia Hartman, School of Anthropology and Museum of Ethnography, University of Oxford, UK

'The Construction of Unskilled Care Work: The Case of Migrant Workers in Social Care for Older People in the UK'

This study investigates how care work for older people in the UK is discursively constructed as a form of devalued labour and low-skilled migration in both official and individual level narratives. Based on a feminist standpoint that values reproductive labour, it proposes a phenomenological approach to skills as a useful theoretical companion to existing theoretical frameworks on the devalued and low-skilled nature of care work. An analysis of UK policy documents, grey literature and local job descriptions reveals dominant narratives that establish a horizontal occupational hierarchy based on a cognitivist account of skills that determines migration privileges. This study argues for an alternative to these dominant narratives by engaging with migrant workers' own accounts obtained through interviews with migrant care workers in Birmingham. This alternative phenomenological approach promotes a focus on the body as a locus for understanding how occupations that are institutionally ranked as low-skilled require a complex array of skills performed through bodily intellect.

Prof. Michael Hermanussen, University of Kiel, Germany (Co-authors: Christiane Scheffler and Barry Bogin)

'As tall as my peers - similarity in body height between migrants and hosts'

Social identity theory focuses on that portion of an individual's self-concept that is derived from perceived membership in a relevant social group. "Group identification" and "identity signalling" facilitate in-group favouritism, and shape common goals and social norms. Social identity theory originally considered human behaviour, but also biological characteristics such as physical growth and child and adolescent maturation can be subject to social pressure (e.g., social networks for obesity). In view of the biological concept of phenotypic plasticity, and the importance of identity in human social networks, we reconsider the motives for migrants to become similar in height to their host population in light of the community effect on height hypothesis.

Methods: We review the body height and height distribution of historic and modern migrant populations. We tested the hypothesis for a community effect in the

distribution of height.

Results: Migrants tend to adjust in height towards height of their host population. The shift in height distribution is detectable in the first generation. Multiple observations of these changes in height and height distribution have been reported since the beginning of the 20th century. Most reports claim that changes in migrant nutrition are responsible for the observed changes in child and adolescent growth, but there is little convincing scientific evidence for this.

Conclusion: Social integration and perceived membership in relevant social groups within the new host population appears essential for re-targeting body height of young migrants. The current data strengthen the concept of connectedness being involved in the regulation of human height.

Dr Helen Liversidge, Queen Mary University London, UK (Co-author: Fadil Elamin)

‘A comparison of permanent mandibular molar timing in several African groups’

The timing of tooth formation stages varies considerably within groups and the pattern of difference between African groups is unclear. The aim of this study was to quantify the differences in the development overlap of permanent mandibular molars in west, north and south African groups. The sample consisted of archived radiographs of dental patients aged 2-23 years: 800 Nigeria, 428 Senegal, 1650 Northern Sudan, 1248 Western Sudan and 775 South Africa with the reference groups white and Bangladeshi children in England. Mean ages of some molar stages was calculated and compared between groups. The percentage of third molars developing at selected first and second molar stages was compared between groups.

Results showed that mean ages of some tooth stages differed between groups with no clear pattern. The percentage of third molar formation at reference stages showed differences between the African groups and this pattern was different to the reference groups. This suggests an advancement in third molar formation relative to first and second molars in sub-Saharan African groups compared to the reference sample.

Dr Marcello A. Mannino, Department of Archaeology, Aarhus University, Denmark

'Neolithic migrations and their health consequences for the first Mediterranean farmers'

Ancient DNA studies undertaken in the last decade have shown with increasing certainty that the spread of the Neolithic from south-western Asia across the Mediterranean Basin was largely the result of the migration of early farmers across vast territorial expanses. In the case of the central and western Mediterranean this was probably achieved through voyages at sea over distances of up to hundreds of kilometers. These migrations and consequent colonization episodes targeted areas where hunter-gatherers had severely declined in number or were altogether absent. Conflict and trauma was, thus, probably not as frequent and intense as it was in the spread of farming groups across other regions, where foragers were still numerous, such as central Europe. The greatest challenges for Mediterranean Neolithic migrants to overcome in their maritime diaspora were, thus, to be able to settle in a new territory and to achieve biological success by importing agriculture. We know that the colonization by early Neolithic farmers was successful, given that production-based economies soon became the prevailing subsistence and dietary strategies. What is not entirely clear, and will be discussed in this talk, is the effect of these early purposeful maritime diasporas on the health of the migrants and of their descendants.

Luseadra McKerracher, Centre for Interdisciplinary Research in Mathematics and Computational Sciences (IRMACS), Simon Fraser University, Canada (Co-authors: Mark Collard and Pablo Nepomnaschy)

'Immigration affects at first birth and age at weaning in an indigenous Maya population from rural Guatemala'

Migrant populations bringing exogenous food cultures into already-populated regions can expose indigenous populations to radical changes in nutritional ecology. Evidence indicates that such changes in nutrient abundance can impact the life histories and demographics of indigenous peoples, which has obvious implications for several public policy sectors. However, the nature and the extent of these effects varies, suggesting a need for study in a wide range of ecological and cultural contexts.

With this in mind, we investigated the impact of a recent wave of immigration on the

timing of two key life history variables in an indigenous population. Specifically, we compared the central tendencies of age at first birth and age at weaning between two Maya villages in rural Guatemala, one of which has been directly interacting with immigrants from North America and Europe for the last ~15 years and the other of which has not. We also compared the nutritional ecologies of the two villages using a number of measures, including recalled diet, two biomolecular markers of dietary protein source, and Body Mass Index (BMI). We found that first births occurred ~two years earlier in the village more heavily impacted by immigration and that breastfeeding duration was ~six months shorter in the same village. Unexpectedly, however, we were unable to detect any differences between the two villages in any of our measures of nutritional ecology.

So, our study suggests that immigration indeed impacts life histories in this population. That said, it is currently unclear whether increased nutrient abundance associated with immigration is among the proximate factors contributing to reduced age at first birth and reduced breastfeeding duration. We hypothesize that other immigration-related factors such as changes to women's role in the village's economy or the village's management of infectious diseases may instead account for the changes in life history.

Dr Theya Molleson, Natural History Museum, London, UK

'Those feet in ancient times'

Phyllis Jackson, a practicing chiropodist, noted that the foot-shapes of many of her patients were of two types. She followed up her observations with a study of archaeological skeletons, concluding that the two types corresponded to the shape of the foot bones from Saxon and Pre-Saxon sites although both could occur at any site. Her observations were non-metric. The objectives of this study were to quantify and define the shape of the two types of foot using the cuboid bone; and to evaluate their presence in Neolithic to Medieval times with particular reference to Newark Bay, Orkney, where historically (Saxon) migrants from Norway had followed earlier (Pre-Saxon) Pictish/Celtic settlers. Measurement of the medial and lateral lengths of the cuboid in the Newark sample showed the distribution of size and shape (index: L/M) to be Gaussian. The limits of the range were used to establish arbitrary definitions of the Saxon (index ≤ 50) and Pre-Saxon types (index ≥ 70). Distributions of the shape index in samples from Neolithic, Iron Age-Romano-British and Medieval sites were all distinctive, apparently reflecting the migration history of the times.

While both documentary and modern genetic studies generally supported these inferences some discrepancies served to highlight differences either in provenance or occupancy of the Norwegian Saxon type migrants in Orkney. In conclusion the morphology of the cuboid and potentially other bones of the foot can illuminate the histories of past migrations.

Marios Poullas, University College London, UK (Co-authors: Jonathan Wells, Mark Saunders and Mario Cortina-Borja)

‘The association of El Niño Southern Oscillation with intra- and inter- generational changes in height and weight of people born in India’

Migration often involves major changes in environmental exposures. It is not always easy to identify which period of development is more sensitive to such changes. We used El Niño Southern Oscillation (ENSO) effects as a quasi-experimental exposure, to understand more about intergenerational transmission of ecological stresses. ENSO, one of the most extreme climate phenomena worldwide, alters international weather patterns causing natural disasters, such as floods or prolonged droughts. This, in turn, has numerous consequences for public health. India is one of the countries that face extreme fluctuations in the country’s weather patterns due to ENSO. Therefore, we used India as an example to investigate the effect of this phenomenon on health by exploiting a large sample size dataset from that country, obtained from DHS.

The height and weight (used as health indicators) of women born during ENSO-related periods were compared with those of women born during non-ENSO-related periods, while inter-generational effects were also assessed by investigating the anthropometric data of the offspring of those women. The outcomes demonstrated that early-life exposure to El Niño is linked to women growing up significantly shorter and lighter, while exposure to La Niña is linked to them growing up significantly heavier, and these links were stronger for women being 6–12 months of age when the ENSO event took place. The results were less clear for inter-generational effects of ENSO but there were strong indications that they can exist, with male offspring appearing more sensitive to the La Niña event. As the current consensus is that ENSO will continue to occur in the future, public health outcomes will continue to be associated with this phenomenon. Our findings suggest that the age at which individuals migrate into new ecological settings will have important effects on the biological consequences and their transmission across generations.

Dr Anna Rivara, University of South Florida College of Public Health, USA (Co-author: Sabrina Paiva)

'The interactions of immune functioning and fertility in American and Brazilian quilombo populations: determining how ecology and evolution are directing IgE profiles'

Immunoglobulin E (IgE) antibodies are produced in response to extracellular threats including macro-parasites and allergens, and to a lesser degree in women during the later stages of pregnancy (McFadden et al., 2015). In western populations, IgE is expected to decline with age, but remains elevated in populations living with endemic macro-parasitism (Tanaka et al., 2014; Black et al., 2010). This study tested fertility's impact on IgE levels in American and Brazilian women facing vastly different pathogen exposures, and socio-ecological conditions. Data from women 18 years and older (n=1520) from the National Health and Nutritional Examination Survey 2005-2006 (NHANES), and from women over 30 years old from the Kalunga quilombo (n=108) in Goiás, Brazil were analyzed.

The Kalunga's ancestors faced forced migration to Brazil; presently, the population experiences impoverishment, increased pathogen exposures, and malnutrition. ANOVA tests were conducted using SAS v 9.4. Differences were found between the interactions of IgE and parity in the two populations. IgE levels significantly varied for the US women based on their fertility, independently of age ($p \leq 0.0001$). IgE levels, did not significantly vary for the Brazilian women based on their fertility ($p=0.524$). Both populations experienced fluctuations in IgE levels between the numbers of live births experienced. However, in American women, IgE increased in women with the highest fertility. Kalunga women with the highest fertility experienced the lowest levels of IgE of the Brazilian women analyzed. These results both support and negate the positive association between household size and higher pathogen, or allergen, exposures (Strachan, 1989). Additionally, the fluctuation of IgE in the two different populations suggests IgE does not experience simple linear declines with age in women. The cross-cultural differences found indicate that while IgE may have evolutionary importance in reproduction, socio-economic and ecological disparities are controlling IgE levels in women.

Dr Simon Underdown, Department of Social Sciences, Oxford Brookes University, UK

'Neanderthal Pathology as a Proxy for Human Success - Evidence of atypical or typical human hunter-gatherer movement?'

The orthodox view of the Neanderthals largely remains one of a "cognitively inhibited" hominin lacking the behavioural and biological adaptations that allowed *Homo sapiens* to prosper. On-going research and excavation is showing this outmoded view to be ever more unsustainable. Using data drawn from the pathological record I will argue that the Neanderthals, far from being the lumbering, injury prone idiots of lore, were in fact typical of many human hunter-gatherer populations. Using comparative pathological data I will show that the injury patterns found in Neanderthal fossils are the result of a wide-ranging hunter-gatherer movement pattern and not the result of maladaptation, cognitive inferiority or hunting technique. Ultimately using badly devised comparisons is just as disingenuous as the arguments made for the Upper Palaeolithic Revolution.

POSTER PRESENTATIONS IN ALPHABETICAL ORDER

Andreas Halgreen Eiset, Department of Public Health, Aarhus University, DK (Co-authors: Christian Wejse, Morten Frydenberg, Marie Nørredam, Morten Sodemann)

'A life course approach to the changing health in migrants'

With an increasing number of asylum seekers in the EU, new disease epidemiology is introduced into healthcare systems. To handle the needs of a new as well as the autochthonous population, insight into the accumulated exposures affecting the health status of refugees in the different stages of migration is needed. This research project will allow for in depth analysis of health implications of the migratory process itself based on a life course approach.

Methods

Health assessments will be carried out at three points in the migratory process: Before migration from the region of origin, at arrival to the destination and after residency in the host country for years. Inclusion criteria are adult asylum seekers/refugees from low- and middle-income Middle Eastern countries. Exposure is time living as asylum seeker/refugee; outcomes are selected non-communicable diseases,

communicable diseases, mental health and selected risk factors (type 2 diabetes, tuberculosis, PTSD etc.). Data will be collected from databases, examinations and validated questionnaires in three settings: a) Danish demographic and disease registries, b) asylum centres in Denmark, c) refugee camps in the Middle East. Thus, our study follows the recommendations for future studies put forth by WHO to strengthen the evidence on health issues for refugees and asylum seekers.

Results

We will produce estimates of the measured health parameters in each stage of the migratory process. We compare the estimates to analyse shifts in the health care needs.

Conclusions

We will analyze how migration and living as a refugee affects health. We will present data on the health needs of refugees and asylum seekers throughout the migratory process thus greatly contributing to both the individual and the public health by allowing early and appropriate health care. The study may help qualify decisions on what and how health care actions should be implemented in the migrant population.

Milly Farrell, HOPE Research Group, Oxford Brookes University, UK

'The Lure of London: An osteological comparison of mid-nineteenth century populations from differing social strata in London'

This project will assess the health and social status of two culturally distinct groups who lived and died in mid-nineteenth century London, through comparing and contrasting their skeletal remains. One group was interred in St Mary and St Michael's Cemetery in East London during the famine years and the remains are of known Irish ancestry (Henderson, 2013). In interpreting this osteological evidence of the Irish in London, a comparative assemblage will be studied in order to form conclusions on demography and social hierarchy in Victorian London. This second cultural group comprises the skeletal remains of a higher socio-economic population, buried in St Brides Crypt, Farringdon in the early to mid-nineteenth century. These two assemblages will be studied alongside the literary historical evidence, to form interpretations of the health and social status of Irish immigrants who settled in London during the mid-nineteenth century. Evidence will be further supported by the extant biographical data and burial records of the deceased, through coffin plate

information and cemetery logs. This project will therefore be a novel interpretation of two previously uncomparing populations, where ancestry is known and on occasion age, sex and cause of death have also been recorded. Through assessing the skeletal remains and biographical data, an unprecedented investigation can be made comparing the lives of the Irish immigrants and wealthy Victorian Londoners. This will impact on the greater understanding of Victorian life in London and reveal information on the accuracy of palaeopathological methods used in contexts where biographical information is lacking.

Anne Mette Hvass, Clinical Institute of Medicine, Aarhus University, UK (Co-authors: Christian Wejse)

‘Systematic screening of migrants in Denmark: A cross sectional study of infectious diseases in a population of newly arrived refugees’

The worldwide estimate of migrants in 2010 was 214 million of international migrants. The estimate for 2050 is 400 million. The most vulnerable group of migrants are the refugees, and currently Denmark experiences refugees arriving in increasing numbers. The majority of migrants come from countries with higher prevalence of infectious diseases.

Material/methods: We here present preliminary results from an ongoing Danish study performed in the city Aarhus. All refugees granted a residence permit are offered a health assessment. A history is taken, including the family background, education, medical history, self-rated health, a physical examination and a general blood sample screening including parameters on hepatitis, HIV, TB (interferon gamma release assays (IGRA)), diabetes, and thyroid disease. A report with suggestions for an individual health plan is sent to the family doctor and the patient's social worker.

Results: Currently approx. 50 % of the refugees offered the screening, has participated. From October 2014 to March 2016 we have screened 452 refugees. 69/452 (15 %) had a positive IGRA test (TB). The patients with a positive IGRA had a median age of 35.5 years [7;74 years] and 64% were male / 36% were female

Conclusions: Our study shows that infectious diseases among refugees is prevalent and needs to be taken serious. A large proportion of the IGRA positives are from Syria. To care for the refugees and to stop the spread of infectious diseases it is important to find these infections early after arrival and start treatment.

Kim Hankook, Department of Sport, Exercise, and Health Science, Loughborough University, UK (Co-author: Ines Varela-Silva and Emily Petherick)

‘An investigation into the body fatness size and shape using Healy and Tanner’s method (NHANES iii data)’

The main purpose of this study was to investigate both overall fatness and regional fat distribution of a broad age range of the representative U.S. population. NHANES iii dataset was chosen. The dataset is a cross-sectional design and contains various skinfold measurements (triceps, subscapular, suprailiac, and thigh) of 33,995 participants. The three major race-ethnic groups (white non-Hispanic, white Mexican-American, and black Non-Hispanic) in the U.S were compared to investigate the race-ethnic differences. Healy and Tanner’s statistical method which divides a single outline data into uncorrelated size and shape data was employed. To divide single fatness value to two different numeric values which are size and shape, firstly, all single skinfold measurement was transformed into natural log. Then, the size of fatness was calculated by averaging the four log-transformed skinfolds. Lastly, the differences between each log-transformed skinfold and the size of each individual was calculated to assess the shape. The main findings were: 1) the similar regional fat distribution of males and females shows two different patterns after the early teenage period, 2) regional fat distribution significantly decreases during puberty development, 3) after the early teenage period, males stored more fatness in the centre (subscapular and suprailiac) than extremity (triceps and thigh), and females stored more fatness in the thigh area than the other upper body areas, 3) race-cultural differences in both fatness size and shape were observed, but not constant, and 4) body mass index is not associated with both fatness size and shape of children and adolescents.

Florian van Leeuwen, Department of Political Science, Aarhus University, UK

‘Is human coalitional psychology calibrated by migration?’

Research in the social sciences has focused on the advantages of immigrants integrating or assimilating into their new society. However, puzzles remain: Why is antipathy towards immigrants often stronger in regions with less immigrants? Why do young male immigrants have more problems assimilating than young female immigrants? Why do immigrants often hold on to their collectivist values rather than adopt the individualist values of their new environment? We argue that consilience is required to answer these questions. Evolutionary psychology provides a framework

for explaining these puzzles. We propose that individuals that remain in their natal ecology (and remain near kin) face different adaptive problems than individuals that leave their natal ecology (and leave their kin). These adaptive problems may be distinct for males and females due to differences in parental investment and parental uncertainty. An evolutionary psychological perspective suggests that species characterized by individual migration might have evolved traits that develop contingent on sex and the experience of migration. Such traits may involve behavioral strategies for solving problems typically faced by males and females separated from kin. We propose that this model explains some puzzles of immigration. Individuals separated from kin may develop strong motivations for bonding with individuals that provide social support and opportunities for investing in indirect fitness. Male immigrants might be particularly motivated to seek social support from others that display cues of kinship. Foreign-looking males with part of a dense social network might be particularly threatening to native individuals who (a) are individualistic and lack a dense social network, and (b) have had little opportunity to habituate to cues of foreignness.

Lu Yi, University College London, GOS Institute of Child Health, UK (Co-authors: Dr Anna Pearce, Dr Leah Li)

'Ethnic differences in height growth trajectories from 3 to 11 years: evidence from the UK Millennium Cohort Study'

Height growth in childhood is a marker of early life circumstances and is associated with health in later life. Existing evidence also suggests ethnic differences in health outcomes, including risks of cardiovascular disease and diabetes. Little is known how growth patterns in childhood differ by ethnicity.

Aims: To investigate whether height trajectories from 3y to 11y differed by ethnic groups.

Methods: We used data from the UK Millennium Cohort Study, which follows infants born in the UK 2000 -2002. Children's heights were measured by trained interviewer at age ~ 3y, 5y, 7y and 11y. We applied cubic growth models with random effects to singletons (N=15,979) and estimated height trajectories by ethnic groups (White, Black, and South Asian).

Results: Compared to White children, ethnic minority children were taller at age 3y.

The difference was 2.18cm for Black boys and 3.06cm for Black girls, while smaller differences of 0.42cm and 0.58cm were seen for South Asian boys and girls respectively ($p < 0.05$ for all differences). Thereafter, Black boys and girls grew faster on average by 0.25cm ($p < 0.001$) and 0.32cm ($p < 0.001$) per year than White children between 3y and 11y, respectively. There was little difference in the rate of growth during this period between White and South Asian boys, while South Asian girls grew slower by 0.12cm ($p < 0.001$) per year. By 11y, there was little difference in height between South Asian and White children, while Black children were 4-5cm taller than White children.

Conclusions: In a contemporary representative UK sample, ethnic differences in height were already established at 3y, with ethnic minority (particularly Black) children being taller. Black children also had a faster rate of growth between 3y and 11y. Further research is required to explore the possible determinants for the different growth patterns between ethnic groups.

NOTES:



VENUE

Aarhus Institute of Advanced Studies, AIAS

Buildings 1630-32
Høegh-Guldbergs Gade 6B
DK-8000 Aarhus C
Denmark

www.aias.au.dk

LOCAL ORGANIZERS: Pia Leth Andersen, Lena Bering, Djuke Veldhuis

PROGRAM COMMITTEE: Simon Underdown, Djuke Veldhuis

AWARDS COMMITTEE: Silvia Costa, Simon Underdown, Djuke Veldhuis

SPONSORS



AARHUS
UNIVERSITY

AARHUS INSTITUTE OF ADVANCED STUDIES