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Controversial Cuisine: ...



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SARChI
MEAT SCIENCE
GENOMICS TO NUTRIOMICS



Outline



- Introduction
- Methodology
- Dog
 - Demand
 - Supply
 - Controversy
- Horses/equids
- Kangaroo
- Marine mammals
- Non-human primates
- Rodents
- Reptiles
- Conclusion



- Meat's image
 - Supreme food
 - Complete nutrients
 - Meal centre piece
- Top echelon of foods
 - Power
 - Prestige
 - Virility & muscularity
- But also taboo





Introduction (cont...)



- Strong aversion to killing & consuming certain animals
- Which species?
 - Cultures
 - Place
- Why?
- Two theoretical perspectives
 - Functionalists
 - Symbolic



www.awf.org



Functionalists



➤ Utility – restrictions based on

- Practical
- Health-related
 - Pork
- Ecological purposes
 - Indirectly promote sustainable/efficient use





Symbolic perspective



- Specific animals not consumed
 - Emblematic connotations
 - Meat unacceptable
 - Based on issues of purity pollution
 - “sacred”/“profane”
 - Traditional tribes/religions
- Also beliefs that promote consumption of certain animals





Third dimension?



- As pertaining to food taboos, both theories overlook
 - Underlying logic
 - Emotional reasoning processes
- Cultural proscriptions – psychological coping mechanisms
 - Moral responsibility for killing & eating animals
 - More applicable in modern first world countries
 - Issue of humane slaughter and slaughter environment



Third dimension? (cont...)



- Unlike great apes, humans are:
 - Unique in expressing compassion & sympathy for suffering
 - Feel guilt/remorse imposing harm without cause
 - Moral repercussions of consuming fellow animals
 - Middle/upper Palaeolithic transition (40,000 years ago) developed Zoocentric sympathy & anthropomorphic thinking
 - Self knowledge to infer similar mental states to other animals
 - Reticent to kill & consume animals they perceive as intelligent, capable of suffering, similar to themselves
 - Chief predictors of disgust
 - Eating a companion animal/pet
 - Barbaric & morally corrupt



Methodology



- Comprehensive literature review
- Search terms & Boolean search operators
- Published & peer-reviewed literature
- Bibliographic databases SCOPUS, Google Scholar, Science Direct, EBSCO Host, Web of Science
- List of key words
- Limited to English
 - Asian, Spanish,
 - Arabic, African

The following search string was utilised in order to maximise the return of relevant literature sources: (dog* OR canine*) OR (equine* OR equid* OR horse* OR donkey*) OR (kangaroo* OR marsupial*) OR ("marine mammal*" OR cetacean* OR pinniped* OR sirenian* OR whale* OR whaling OR dolphin* OR manatee* OR dugong* OR seal* OR sealing) OR (primate* OR monkey* OR ape*) OR (rodent* OR rat* OR murine OR capybara OR nutria OR guinea pig OR cavy) OR (reptile* OR Crocodylia* OR Squamata OR Testudine OR crocodile* OR alligator* OR caiman* OR snake* OR lizard* OR turtle* OR tortoise*) OR (bush meat OR bushmeat OR wild meat) AND (consumption OR eat* OR demand OR nutrition* OR composition* OR production OR hunt* or harvest* OR farm* OR captive OR trade OR export OR import OR accept* OR pre-fer* OR aversion OR prohibit* OR proscription OR forbid* OR religion OR spirit* OR taboo OR totem OR cultural OR tradition* OR ethnographic OR belief OR magic* OR medicinal OR sustainability OR threatened OR envi-ronment* Or conservation OR campaign* OR protest*).



Dog



➤ Demand

- Consumed for millennia (500 BC)
- Polynesia, Latin America
 - Seldom in Europe
- 25 million dogs consumed per annum
- Popular traditional food parts of Korea, China & Northern Vietnam
- Other countries
- Some countries illegal
- Easily digested protein, high PUFA & vitamins

➤ Supply

- South Korea
 - Bred on farms
 - 2002 – 765 000 farms
 - 50% of 2.2 million dogs for human consumption
 - Nureongi breed



Source:
<http://captainandclark.com/>



Dog (cont...)



➤ Controversy

- Communities who consume dog meat
 - Tradition
 - Strong symbolic value
 - Nigeria: taste & medicinal properties
 - Asian cultures: fragrant, nourishing, libido-enhancing
 - Frequently male activity



Dog (cont...)



➤ Controversy

- Most Western (and some individuals in dog-consuming countries) – entirely taboo & repugnant
- Partly due to health/zoonosis – rabies
- Religious/cultural banishment
- Most – strongly emotion based
 - Attacks by “civilised” against “barbaric / archaic” culture
 - Fuelled by www photos



Dog (cont...)



➤ Controversy

- Most – strongly emotion based
 - Eating man's best friend/part of family
- Animal welfare
- Bans – trade undercover
 - Control – diseases, welfare
 - Pride amongst consumers against “Western” interference





Horses (equids)



➤ Demand

- Humans ate long before domesticated (10 000 years BC)
- For 3000 years following domestication – accepted
- Today horse/donkeys consumed with varying degrees of acceptance in continental Europe
 - Italians, French, Belgians, Germans, Dutch
- Highest in China, Kazakhstan & Mexico
- Dark, lean, higher PUFA, ω -3 FA



➤ Supply

- Historically horses at end of work lifetime
- Modern – specific for meat, younger animals
- Horses/donkeys – extensive & intensive
- 2013: 997 000 tonnes
(0.3% global meat production)
 - China primary producer (38%)





Horses (equids) (cont...)



➤ Controversy

- Jan 2013 DNA in SA products
- Same day: Irish Food safety authority – horse meat in burgers
- Media, public & Government outcry
 - Phenylbutazone
- Strong emotional response
 - Betrayal, anger
- Four paradoxes
 - Sacred vs. profane
 - Culinary delicacy vs. worthless food
 - Human-like vs. animal-like
 - Ethical vs. unethical



Horses (equids) (cont...)



➤ Controversy

- Sacred nature intertwines historical, religious & mythical attachments
- Regional
 - UK & USA – aversion
 - Italy & France – healthy & nutritious
 - Kazakhstan – processed products
 - China & Africa – donkey
- Role they play in peoples' minds



➤ Demand

- Consumed by aboriginal Australians
>40 000 years
- Niche market
- >70% exported to EU & Russia
- Pet food



➤ Supply

- Most macropod species prohibited to hunt
- Certain species hunted
 - Strictly controlled guidelines
 - Humane slaughter
- Meat & hide

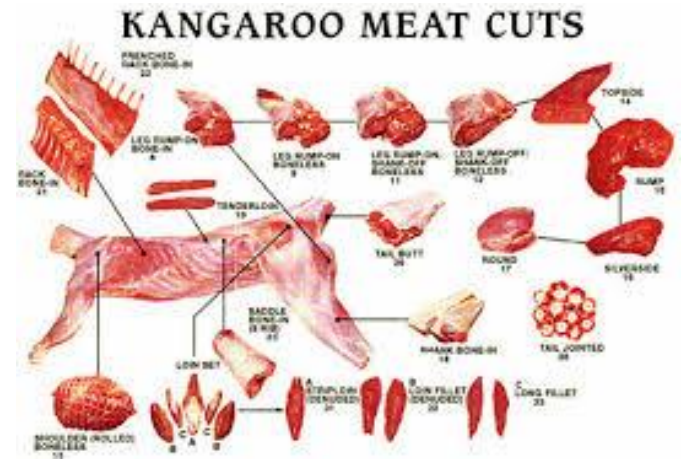


Image: Calorielab.com

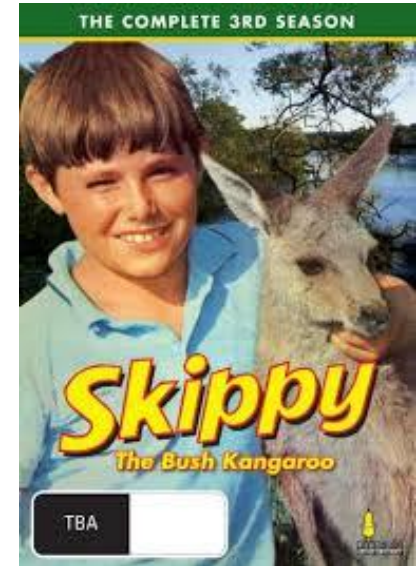


Kangaroo (cont...)



➤ Controversy

- Most Australians divided
 - Beneficial use of natural resources
 - Reluctance to eat iconic animal
 - Emotional – “Skippy”
 - Image of “pest” and field slaughter – unhygienic
 - Welfare/ethical – lack of knowledge of how produced/harvested
 - Negative perception of sensory attributes





Marine mammals



➤ Demand

- All species consumed throughout history
- Harvesting methods become more sophisticated
- 87 species in 114 countries
 - Northern latitude
 - Japan





Marine mammals (cont...)



➤ Supply

- Traditional – subsistence
- Modern commercial – nearly wiped out whole trophic level
- 1980 – moratorium by International Whaling Commission
- Human food still in Japan, Iceland & Norway
 - 54 countries trade in food products derived from marine mammals
- Aboriginal harvesting
- Large numbers of seal
 - Scandinavia, Canada, Namibia





Marine mammals (cont...)



➤ Controversy

- Most contentious environmental issues
 - Sustainable use vs. conservation & welfare
 - Whale: Japan
 - Rooted in reflection of sacred, human-like, totemic status
 - Super whale myth, captive orcas, dolphins show parks
 - Status, religion, cultural heritage



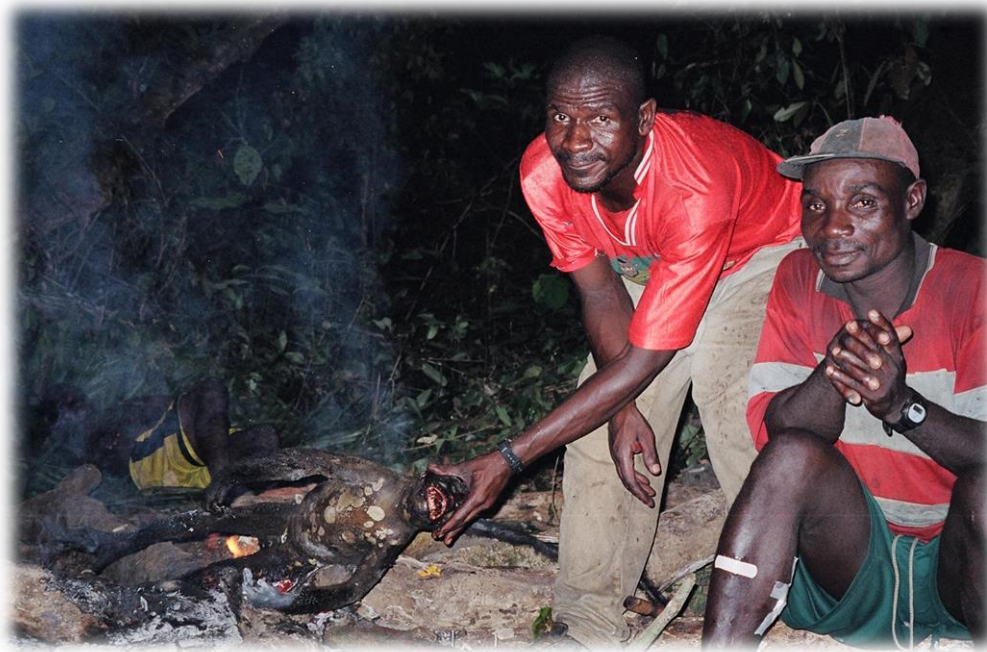


Non-human primates



➤ Demand

- Hunted since origins: 400 000-700 000 years ago
- Bushmeat – mainly tropical forests





Non-human primates (cont...)



➤ Supply

- From the wild: subsistence & trade
- Preference for larger species – more meat
 - Varies from tribe to tribe & region to region
- Use of more modern guns
- Life-history traits lead to over exploitation
 - Habitat loss



Photo: Bonobo & Congo Biodiversity Initiative



➤ Controversy

- Western societies – considered inedible
 - Reasons unclear: unavailable, zoonosis, “human-like”, threatened
- Where consumed – web of religious, spiritual beliefs, traditions define which species are edible or not
- Religion major determinant
- Emotional – www photos

➤ Demand

- Largest order of mammals – 2200 species
- Food throughout ages, especially in time of food shortages
 - Cavy – food in Andes 3 000 years
 - Food throughout tropics where larger mammals depleted
 - West/Central Africa: rodents 12% harvested bushmeat & 40% carcasses on local markets
 - 20-90% of protein consumed in rural Africa
 - Delicacies



➤ Supply

- Backyard production is increasing “mini livestock production”
- Peru: 64 million cavies slaughtered annually
 - 20 000 tonnes meat
- Numerous species suitable for farming
 - Cane rat: 13 kg body weight
 - Capybara
- Draw on wild stock for broodstock
- Could become invasive



Farm raised cavy have a dressing percentage of 65% and the meat contains approximately 21% protein and 8% fat

➤ Controversy

- Western cultures view consumption with scepticism
 - Commensal rodents shunned – association with disease
- Religious reasons
- Traditional taboos



➤ Demand

- Consumption high in tropical & sub-tropical regions
 - Also for skins, eggs, blood, bones & shells
 - Demise in populations
- Meat crocodylians
 - Africa, Asia, USA
 - Bushmeat
- Squamates
 - Pythons
- Testudines
 - Most heavily exploited
 - 60% of 335 turtle & tortoises species threatened/extinct





Reptile (cont...)



➤ Supply

- Due to heavy exploitation, crocodylian CITES Appendix I or II
- Commercial rearing of crocodiles success
 - ~1000 tonnes meat per annum
- Snakes farmed – Asia (pythons)
 - Skin with meat as by-product
- Iguana farming widespread in Central America
 - Pet trade & meat trade
- Smaller amounts of Testudine species farmed





Reptile (cont...)



➤ Controversy

- Appear acceptable in Western world
- Religion
- Entangled in cultural heritage groups
 - Sacred, totemic, taboo





Conclusions



- Meat consumption in modern societies controversial where nature & culture converge
- Paper shows where different species has different overlapping/contradictory meanings to different actors
- Reasons for avoidance
 - Few functional – human health related
 - Overshadowed by symbolic & psychological reasons
- Animate nature of some species – attractive for emblematic & magical reasoning
- Taboo higher mammals perceived similarity to man
 - Morphological/genetic
 - “human-like” qualities
 - Iconic fauna



Conclusions (cont...)



- Anthropomorphised perceptions
 - Higher environmental awareness
 - Cost?
 - Animal protectionists – do not always consider historical legacies & current day appreciation
 - Symbolic attachment to nature – activists morally engage all activities to mother earth: interferes with livelihoods & daily practises people living far away
 - Perception of the handling/slaughter procedure influence our decision?
 - Fuelled by images on the www



My own thoughts ...



- We tend to eat what our parents ate
- Other influences:
 - Age – “what’s in”
 - Gender
 - Level of education
 - Perceptions
 - Welfare
 - Hygiene
 - Healthiness & wholesome
- Ethnicity
 - Backlash to “Westernisation”





**With an empty
stomach, you do
not have the
luxury of
criticising
agriculture!**

Thank you to the organisers
for allowing me to share
some of my thoughts with
you and I wish you a
prosperous research future



Cawthorn, D.-M. & Hoffman, L.C. (2016). Controversial cuisine: A global account of the demand, supply and acceptance of “unconventional” and “exotic” meats. *Meat Science*, 120, 19-36. <http://dx.doi.org/10.1016/j.meatsci.2016.04.017>.