

Food for Thought: Is It Human Evolution or Feeding Evolution?

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Introduction: Inter and Intra Species Differences

Roughly, Modern Human beings are walking over this planet for the last 2 lakhs years (Foley, 2003). For the sake of debates, 'human beings are considered to be different from animals' but truly it is 'different from other animals' and their characteristics of developing art, culture, language and machines separates humans from other animals (Tomaselo, 2003). Looking at the ways of how humans are similar and different from other animals apart from their creating abilities, they all together share similarity in the way they are born, grow, mate, reproduce, raise and die. But one thing that is significant is the qualitative differences in this evolutionary process. This qualitative evolutionary process differentiates from that of animal species and within the human species itself. The reason could be that humans have created accumulative cultures and languages that their influences are seen in all the things they do. This creativity has its foundations on intelligence which evolved over seven million years (Klug, Cummings & Spencer, 2012).

Feeding Behaviour

Apart from intelligence what makes humans different from other animals is the way humans feed even though their nutritional needs are not so different from other animals (Schmidt-Nielsen, 1996). As intelligence started to evolve over millions of years, the feeding behaviour and feeding habits started to evolve. Qualitatively, nutritional requirements across species remained the same except for changes in one or other components (Prosser & Brown, 1968). According to Zucoloto (2008), living beings are different from one other based on their size, temperature, physical activity and various factors. As intelligence evolved hominins (human ancestors) became more and more emotionally empathetic the aggressive behaviours started to wane and as a result socialization became more possible and mate selection became exchanged based. And this became progressively evident over millions of years, the feeding preferences and feeding habits still remains the same for other animals till date unless there is unavailability of preferred food (Zucoloto, 2011). In spite of availability of the preferred food, what is consumed, how it is consumed has seen a drastic change due to the cultural advancements.

Unlike other animals, humans have spread, survived and established across all the geographical areas of earth due to the cosmopolitan nature. As other animals still maintain the food preferences unchanged when they move across the places, but humans have retained their traditional food preferences even after immigration to other regions. Local and regional foods like vegetables, fruits, bulbs, tubers, grains and meat were part of traditional cultures and different populations

maintain this tradition even after migrating to other regions of the world where there is unavailability of these, they tend to cultivate or rear.

Carnivorous or Herbivorous Debate

In the gamut of food habits, the fundamental question that keeps researchers engaged in answering is the question whether humans are vegetarians or not? Is homo-sapiens herbivorous or carnivorous? Looking at the evolution of feeding habits, the control of fire (*~ one and half million years before*) brought in a great change in feedings habits and behaviour.

Apart from changing the feeding practices, fire also gave the warmth and protection from predators. What led to the human brain development? Is it the consumption of meat or consumption of nuts and cheese nuts? Those who argued that humans were essentially carnivorous postulated that increased meat consumption was the reason behind human brain development and those who believed that humans were herbivorous in nature argued that nutritionally rich nuts were the reason behind brain evolution. According to Diamond (2001), the debate became more complicated with the invention of agriculture some eleven-thousand years before as it changed the direction of the feeding habits as humans learned the art of food cultivation than being a nomad and passively or aggressively dependent on what they got in their environment. Knowing to control fire, and inventing to cultivate modified the way humans lived their life which changed from nomadic culture to settling culture. Fire and agriculture further brought humans closer as social gatherings and lead to shared feeding behaviours (Mazoyer & Ronadart, 2009). Agriculture introduced grain in the human diet like oats, barley, rye, wheat etc and learning to rear animals alongside agriculture which made them to survive in fixed places. This has led to further development of cultures and modifications in their feeding habits. It can be concluded that humans are neither exclusively carnivorous nor herbivorous but omnivorous. As the species survived both in tropical as well as in Polar Regions of the earth, the omnivorous feedings habits would have helped them survive and sustain. Ideally, humans consumed more of vegetables than of meat in tropical regions and it was vice versa in Polar Regions.

Nomads Becoming Settlers

In modern age, apart from culture, the social, life style and economic factors also decide the nature of feeding behaviour and habits. As nomadic tribes, they constantly kept moving and always had accessibility to abundant food but, periods of starvation appeared only after the implementation of agriculture (Cordain, Miller, & Mann, 1999) and food was easily found when there was no population expansion. The hunter-gatherers had a variety of foods to eat unlike the agricultural period which was tied down to a few varieties and moreover agriculture augmented population expansion and people became sedentary. Further, the man produced food always had lower nutritional value than the ones found in nature. Sedentary life style due to agriculture was the cause for obesity (Prentice, 2005). Researchers found that those humans who were fed larger quantities of calories thrice a day developed fat accumulation than those who were fed smaller quantities at

shorter intervals. This reveals the difference in hunter-gatherer's life style and that of settlers' life style on obesity (Blundell, Cotton, & Lawton, 1993). This also explains the metabolic differences in human body due to life style influence. The genetic makeup is such that the human body requires physical exercise (12 kms walk approx.) and feeding from variety of sources and less of human population. But today's life style is sedentary with chemically cultivated vegetables and meat with highly saturated fat which is unsuitable for human nature (Zucoloto, 2008).

Food and Religion

Of many factors that influence our feeding behaviours, religion has added to the complexity of understanding our natural feeding behaviours. There is a genuine need to understand that religion and food are related to one another and religious differences are stressed in the way of beliefs related to a) food creation and production, b) food consumption and c) food distribution (Giorda, Bossi and Messina, 2014). In some religions, having food is a way of connecting to God. What is consumed and how it is consumed, with what and what not and how it is prepared, and who prepares in what occasion, and when and how abstinence or fasting is practiced are all the contributions of religious beliefs and practices. More the religious faiths more are the complexity in feeding behaviours. Religions are divided across the carnivorous, herbivorous and omnivorous lines and further there are certain foods that are preferred, restricted and banned. In Hinduism according to Bhagavad Gita (9, 27-28; 17, 8-10) food is classified into three 1) *food of goodness*; dairy products, grains, fruits and vegetables which increases the life and purity of life 2) *food of passion*; bitter, sour, salty, pungent, dry or hot and causes distress and 3) *food of ignorance and putrid*; meat, fish, poultry and causes pain, disease and bad karma. In Islam, food is divided into 1) *Halal*; meaning permissible i.e., meat of domesticated animals and 2) *Haram*; meaning impermissible i.e. pork. The most minimalistic restriction on food comes from Christianity and anything that is healthy can be consumed with no adverse consequences and abstinence is recommended during certain time like Ash Wednesday and Holy Friday (Giorda, Bossi & Messina, 2014).

Human Evolution or Expression of Selfish Gene and Brain

Tracing the human evolution from hominins (7 million years ago), Palaeolithic age (200,000 years ago), Neolithic age (11, 000 years ago), Bronze and Iron age (Megalithic age) to present, humans have evolved, and their feeding habits have also changed very different from their ancestors. Even though it is convenient to conclude that human's discovery to control fire, agriculture, culture, language, religious and life style factors have contributed to what is in our food plate and what has become our present-day feeding behaviour, one important factor that needs attention is the evolution of the human mind itself. As we try to understand all the factors that has influenced our feeding behaviour, it is the human mind that has created all these things and this needs careful consideration. The moot question to researchers is why did humans change their feeding behaviour from that of their ancestors particularly from the Palaeolithic period? Is there a corollary between human evolution and evolution of feeding habits? There answer could be in the explanations in Selfish Brain phenomena and Selfish Gene phenomena. The Selfish Brain theory developed by Achim Peters (1998) explains that the brain behaves selfishly in regulating the energy intake as it first covers its own requirements before distributing to other organs and similarly the Selfish Genome

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theory developed by Dawkins (1976) says that competing genes work as a unit and promote themselves from one generation to another generation. Logically, feeding behaviours have evolved to suit the natural requirements of the species and only those feeding behaviours that help the species to survive in their situation have been passed onto the next generation.

In the evolutionary process, hominins gradually separated from primates, but their food habits were very similar to that of their primate ancestors. As the species became more and more distinct from the ancestors, the feeding behaviours has also modified leading to an intricate situation unclear of what drives the change in feeding behaviour i.e., is it the genome, or the brain or the species. As genome and brain is the core of human existence, naturally leads the direction of thinking that human evolution and feeding evolution as one and the same outcome of genome and brain functioning for existence on earth.

Conclusion: Evolution Now and Devolution Next?

In the long history of humans on earth, food habits and feeding behaviours catered to the mostly physical functioning and lesser cognitive functioning. As time and space has moved forward, the human species has become more and more intellectually driven than physically. This has led to the sophisticated life style of convenience and comfort than bodily effort and strain. It has come to a point where machines assist humans not only in physical work, but also in intellectual pursuits and man has become more than a biological creation. Likewise, the feeding habits have changed and have its tell-tale signs on the increasing number of diseases and fertility issues. Many human-like species have emerged from hominins and gone extinct and with the present rate of health issues, it is only clearer that homo-sapiens have moved beyond biological species and makes one to wonder whether it has begun its devolution before becoming extinct. This makes one to wonder whether it was more than a coincidence for Claude Lévi-Strauss (2005) the father of modern anthropology, to know the end of the human evolutionary journey and stated “My only wish is a little more respect for the world, which began without the human being and will end without it - this is something we should always keep in mind”.

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