Food as Code: An Anthropological Perspective on Classification of Food

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Abstract: The classification of food plays a crucial role in the evolution of human subsistence by reflecting both cultural and symbolic meaning of diet. The dimensions of food classification are dynamic as it reveals various elements of food culture of different ethnic groups on basis of origin, source, components, properties, qualities and composition of food items. The foundation of earliest food classification systems was established in ancient civilisations of Greece, China, and India on basis of humoral theory, temperaments, balancing forces (yin and yang) and medicinal properties that resulted into different folk taxonomy framework. The dietary pattern of ancient population was also coded with the impact of holy verses of different religions. With passage of time, modern system of classification has emerged through combination of scientific research, industrial processes, healthcare policies and standardised guidelines that has transformed localised qualitative knowledge into systematic quantitative models. The universal forces of globalisation and modernisation has changed the dimensions of traditional and modern food habits of different cultures that resulted into constant need of integrated system of food classification. The Anthropological research helps to understand the culinary reservoir of traditional classification system so that it can shape the modern food grouping framework. The present study critically analyses the trajectory of food classification system embedded within different cultures and provides the anthropological perspective to construct integrated framework of complex structure of food.

Keywords: Food classification, food categorisation, food taxonomy, food and culture, cultural classification of food.

Introduction

Food is a material substance that acts as a biological necessity and cultural object providing vitality through its deeply embedded set of knowledge accustomed in a culture. It is a complex system of symbols in forms of cuisine addressing culinary language of a community. Anthropologically, it is the deepest expression of human culture universally available in every community but having different appearances in form of dishes or meals. It is collection of cultural meanings expressing status, wellness, identities and heritage of an individual but the order and manner in which it is defined in any society is dynamic (Stajcic, 2013; Fieldhouse, 2013). The meaning and significance of considering one food item in one culture may vary to another as one food item edible at one place may be inedible at the another, for instance in Cambodia and Vietnam, people eat locusts, larvae and other insects, in Australia and Africa, the consumption of snakes is common and in other part of world these food items are considered peculiar and unfamiliar (Stano,2016). Thus, the understanding of distinguishing what is edible and inedible is important as desired food item may cause harmful effects on individual's body. The edibility defines the digestive and nutritious nature of food without causing any harmful effect on individual whereas inedibility reflects the harmful or toxic nature forming indigestible complex. This concept forms a complex structure in a culture as anthropologically edible food items are those that are acceptable or appropriate to eat with respect to its nutritional value and inedibility is defined on basis of prohibition, avoidance or taboo associated with the local believes, traditions and knowledge (Doshi,1995). The pig is considered aa a symbol of prosperity and fertility in Balinese societies which make it sacred whereas the consumption of pig is prohibited in Islam, Jewish and Christianity due to different religious reasons. The traditional knowledge of any community of forming complex system of food depends upon its ecological, environmental and socio-cultural factors and its surviving capacity through the course of time (Sulistyawati, 2023; Douglas, 2012).

In order to comprehend the multifaceted aspects of food in a community, it is important to understand the true essence of it as cultural meaning varies on basis of the knowledge, beliefs, notions and traditions. The cultural meaning includes the social and symbolic structure of classifying food in the system of categorization engraved in the folk knowledge as sacred/profane, clean/unclean, fit/unfit and pure/impure etc. Arbit, 2017 defines "food as the degree to which people see their food as having significance and being connected to or embedded in a person's life

world." Aktas-Polat and Polat, 2020 presented common attributes that is helpful to define the meaning of food in any society-such as consumption, transfer and identity. The consumption of any form of dietary product to satisfy the hunger based upon cultural connotation classify food into hedonic and symbolic meaning such as the consumption of noodle is done in many parts of world but in China, it represents longevity, unity and prosperity, in Korea it represents long life and relationships, in Italy it means the family and comfort etc. Thus, the same food item holds different meaning and connotations based upon the consumption and classify it in different ways. Besides this, transfer of culture, emotions and values through food to strengthen the bond and emotional connectivity across boundaries also help classifying food based upon transference function, emotional connectivity, pleasure, taste, nationality or cultural heritage etc. The identity defines the socio-cultural contexts of individual or nation while classifying food such as comfort foods of individuals and national cuisines of a country. Thus, the food meaning diagram was formulated to understand the analytical and theoretical meaning of food in different disciplines (Aktaş-Polat and Polat, 2020). The understanding of these forms are important to encompass the complex socio-cultural and symbolic meaning of food classification system. These classifications are deeply intertwined with cultural knowledge, believes and ideologies; anthropologists study these classifications from various perspectives to analyse the cultural significance of food in different societies.

The classification of food is the process of conceptualizing, categorising and organising food into groups and sub groups on basis of various factors such as origin, perishable properties, nutritional values, nature, processing and consumption pattern etc. that influences the dietary practices of natives. It formulates comprehensive cultural guidelines for the inhabitants of a group to explain the manner in which food items to be consumed. The process of classifying and categorising food is multidimensional as it encompasses not only nutritional or biological aspects of food system but also focuses on symbolic, ecological, cultural and social aspects of it (Monteiro et al, 2023). It is a dynamic framework that had played fundamental role in development of food culture and survival against the ecological forces during evolution. The classificatory system has stored the information of human experiences across different historic time periods. Thus, the current study focuses on analysing the different classification systems across the centuries focusing on traditional and modern food organisation models. It includes the oldest classification systems found

in various civilisations along with dietary rules found in different religion on one side and modern classification of food on the other. The anthropological perspective is provided on basis of anthropological studies conducted in different communities to gain the holistic view of these systems. The strength and weakness of both the systems are addressed in challenges faced by these food grouping systems with suggested future recommendations. The voyage of exploring earliest classification food system is found in earliest civilisations as delineated below-

Earliest classification system of food

The course of finding and differentiating what should be consumed or not to be consumed on basis of edibility has been emerged in the beginning of hunting, gathering and scavenging societies. The process of accepting and rejecting food was predominantly controlled by the availability and accessibility of resources in the surroundings. The foragers diet was primarily plant based that has also exerted a pressure on genetic or cultural profiling of early humans. The consumption of meat has also played a major role in the evolution of consumption (Waldstein,2018). The drastic change occurs in diet with the change in living pattern from foraging to agricultural and horticultural societies. The change in role of food collector to food producer has increased the variety of food with diverse eating pattern, cultural practices, associated beliefs and notions for preparation, consumption and distribution of food (Capocasa and Venier,2024). The simple subsistence system to complex one has led to the formation of oldest classification system in different civilisations in order to frame the complex food systems in a structure and hierarchy. The food in these civilisations were deeply intertwined with health, medicine, culture, superstition, taboos, religious beliefs etc. The hot and cold classification of food in various part of world such as China, India, Latin America is one of the examples of oldest classifications to co-operate with the socio-economic, ecological and cultural changes.

Ancient Greece Classification (Humoral Theory): Hippocrates (460-380 BC) has started the system of medicine on basis of principle that body is made up of four basic elements- water, air, fire and earth and four qualities-cold, hot, wet and dry which give rise to four humours-phlegm, yellow bile, blood and black bile. Health is the harmonious balance of these humours and diseases is the imbalance or disorder of this (Sebers, 2016). In ancient Greek humoral theory, food is classified on basis of inherit qualities-cold, hot, wet and dry, its natural properties and effects

on body's four humours. The detailed classification has been provided on how food shows influence on body based upon age, season, constitution and health status for instance, lettuce (cold and moist) reduces excess heat, spices as hot and dry that counteract cold and phlegmatic stress, milk as cold and wet that sooth dryness and heat etc. (Manderson, 1981).

Unani Classification of food: Food is classified on basis of temperaments (Mizaj)-hot, cold, dry or moist etc. It is originated from Greco-Arabic medicine system but with more systematic classification ways to restore humoral balance and formulated therapeutic dietary regimes (Ilaj bil Ghiza). The Unani system is more individual's diet specific that provides the complete guidelines to a patient in form of diet therapy to treat specific illnesses by regulating, managing and eliminating certain kind of food items from consumption (Akram and Quddusi,2020).

Traditional Chinese Food Classification: The food is traditionally divided on basis of Traditional Chinese Medicine system in which food is classified as hot, cold, slightly cold, cool, warm, slightly warm and neutral which were later grouped as hot, cold and neutral. The classification is done on basis of properties as hot food items have higher calories in terms of protein, fats and pro-inflammatory compounds cold food items are rich in fiber, water and anti-inflammatory properties. Neutral food items creates the balance and neutralises the body temperaments. It also includes food categorisation on basis of flavour such as sour, sweet, salty and pungent that will help to form the balance between forces yin and yang (Liu et al,2012; Zhao et al.,2021)

Tradition Mexico Classification of food: It is multi-layered system encompasses of hot-cold system of food, folk taxonomies and social-cultural classification of food over the period of time. The complex system uses term "*criollo*" to denote locally or native food items based on origin, production methods. The food is classified by blend of indigenous classification such as Huastec Mayan (Tenek) and Mixtecs use detailed taxonomies to classify plants with distinguishing varieties, species etc. Zapotecs classify food as hot (*calente)* and cold (*frio*) for instance chile as hot, beans cold etc. (García-Hernández, Vargas-Guadarrama and Vibrans, 2023)

Ayurvedic Classification of food: In ancient India, *Ahara* (food) is considered as a medicine playing the major role in health. Ayurveda divides the food into various categories on basis of several key attributes such as *Rasa* (Taste)- sour, salty, sweet, astringent, pungent and bitter with specific effect on body. Potency (Virya) also define the cooling or heating effect on body, qualities (*Guna)* such as lightness/heaviness,

oiliness/dryness etc. Charaka Samhita and other classical texts has categorised food into twelve categories such as *Shukadhanya* (cereals, grains), *Mamsa varga* (meat), *Shami dhanya* (Pulses/legumes),*Jala varga* (waters), *phala varga (*fruits), *taila varga* (oils), *Krutanna varga* (prepared foods),*Kshira varga* (milk and dairy), *Harita varga* (green leafy vegetables), Shaka varga (vegetables), *Ikshu varga* (sugarcane products) and *Krutanna varga* (prepared foods) (Rai and Verma, 2022; Sharma et al., 2022).

Religious Classification of Food

Food classified in the religion often reflects cultural and spiritual values embedded in the verses of divination. It helps to practice sacred and healthy lifestyle based upon dietary guidelines mentioned in holy texts and scriptures. The religious dietary guidelines individuals to recognize fit or unfit food items on basis of moral and ethical principles and also to maintain community strength and sense of belongingness. The classification may have categorized as temporary and permanent based upon beliefs, practices, occasion, kind of abstinence, seasons or religion, for instance there are specific fasting days in Islam, i.e. Ramadan (lunar month of Islamic Calendar) that causes temporarily abstinence from food and drinks till dawn on the other hand, Kosher dietary law in Judaism provides information regarding the consumption and prohibition of food as a permanent lifestyle. The food classification in different religions is delineated below-

Hinduism: Food is often classified as *Sattvic* (vegetarian), *Rajasic* (stimulating) and *Tamasic* (impure) based upon its properties and qualities. The *Sattvic* food items are pure, durable and juicy in nature that increases purity, strength and longevity, *Rajasic* food is spicy, sour, bitter and hot that brings unhappiness, diseases and sorrow and *Tamasic* (dull, heavy) food includes indigestible, dried or decomposed food items that brings emotional imbalance, lethargy and dullness. This classification of food often helps to maintain the balance between mind and body. It also helps to provide offerings in different occasions, seasons, festivals and ceremonies etc. (Menon,2016)

Judaism: Kashrut **(**Kosher dietary law) provides religious dietary guidelines that defines food is considered as fit or proper for consumption inscribed in the Hebrew Bible of Jewish. It defines what food items to be consumed and served based upon clean or unclean properties. It is a complex system of laws having core principles that permit or prohibit food items, for instance only those animals can be consumed that have split hooves and chew cud like sheep and cow etc. The consumption of

fish with fins and scales is kosher (fit) but the shrimps, lobster and crab are not fit for consumption. The process of slaughtering (*Shechitah*) is also provided for careful handling, cleanliness and spiritual discipline for consumption, for instance the killing of animal must be done by shocket (Trained Jewish slaughterer) with sharp, smooth knife with uninterrupted cut. Kosher dietary law regulates ethical behaviour of community, create social cohesion and foster discipline in consumption (Brumberg-Kraus, 2024).

Islam: The Islamic food classification is outlined primarily on concepts of halal (permitted) and haram (prohibited) written in verses of Islamic texts. Halal food items are permissible for consumption that are free from contamination according to Islamic rites such as seafood, vegetables, mutton and lamb etc. Haram food includes pork, bacon, ham, lard, carrion and blood as it includes intoxicated substances and forbidden ingredients that are harmful for mind and body. Islamic dietary law also promotes hygiene, safety, purity and wellbeing of an individual (Gul and Begum 2024).

Buddhism: Buddhists do not follow strict dietary rules but it often categorizes food on principles of spiritual and ethical mindfulness, wellbeing and principle of non-harm (*ahimsa*). There are different school of Buddhism (Theravada, Mahayana and Vajrayana) that includes different principles for consumption associated with traditions and region, for instance Orthodox Buddhists do not consume fish and meat but there is no restriction maintained in the consumption of animals by Tibetan Buddhists. (Kwon and Tamang, 2015)

Jainism: The dietary laws of Jains are deeply embedded in the principle of non-violence, i.e. ahimsa and avoidance of all those food items that deteriorate the mental and spiritual purity and causes laziness, aggression or negative qualities in an individual, for instance meat, alcohol, fish onion and garlic etc. (Shah and Gumaste, 2019)

Christianity: There is no particular strict dietary pattern observed in Christianity but they also follow Old Testament regulations to distinguish clean and unclean animal consumption at some part of world. The dietary laws are mostly associated with consumption of certain items and abstinence from other during auspicious occasion, for instance the abstinence of meat, fish, wine on Great Lent in Eastern Orthodox Christianity and Fasting on Ash Wednesday and Good Friday.(Resnick,2011)

Sikhism: The Sikh dietary rules generally encourages the vegetarian food but do not follow strict dietary regime. The prohibition of alcohol and meat consumption

is maintained for ethical and religious beliefs. The act of eating together (*Langar*) is practiced for social and humanity services (Chouraqui et al,2021).

The change in time often lead to change in classification system from older to modern time period. In modern Era, the dimensions of classifying food have been changed in different societies as food can be classified on basis of origin, composition, properties, commodities, time period and processing etc.

Classification of food in Modern Era

On basis of origin

The classification of food on basis of origin generally categorizes food into plant based and animal based food with distinct characteristics, nutritional value, authenticity and food composition. Food code created by Food Agricultural organisation/World Health organisation, i.e. Codex Alimentarius has categorised plant based food on basis of botanical characteristics, climatic adaptation, life cycle, edible part etc. and animal based food as basis of source such as hunting, poultry and sea food etc. Plant based food include vegetables, fruits, grains, nuts, legumes and seeds while animal based food include eggs, meat, fish and dairy products etc. Codex food classification system categorises these foods into hierarchical groups and sub groups to create a framework for universal reference system. It will help to create standards for ensuring food safety based upon additives, contamination and pesticide residues etc. and clear communication for standardized technology. (Monteiro et al., 2023)

On the basis of composition

Food is classified on basis of nutritional content such as levels of fat, protein, fibre, vitamins, carbohydrates, minerals and bioactive compounds. INFOODS (International Network of Food Data Systems), 1991 has formulated guideline to describe food into simple (single) and compound (Mixed/Multi-ingredient) on basis of composition. Simple food is classified on basis of criterion- food found in natural state with removal of inedible or rejected parts, food with single main ingredient such as dried fruits, food with main key ingredients including minor ingredients that doesn't change or impact its energy value and a part of food from which edible food is removed through processing such as white wheat flour etc. and food that is processed (with or without removal of edible portion). Compound food is multi-ingredient foods or mixed food having raw materials with ingredients from different sources such as bread and cakes etc. It will help in clarification of food

labelling, nutrient intake estimation and harmonization of standard terminology for simple and complex food items. (Truswell et al., 1991)

On the basis of Properties

On basis of properties, food is classified in terms of innate qualities of the food such as hot, cold and neutral food items. The classification of all these substances are done based upon the region, community and culture from where the classification of food items are analysed as description may vary from one ethnic group to another. Hot food items are generally high in calories that increases the body temperature such as spices, nuts, seeds and condiments where as cold food items have smoothing and calming properties to reduce the higher energy levels such as apples, watermelon and bananas. Neutral food items create balance and moderate the body level of organism such as fig, plum, honey, rice etc. The classification on basis of properties is significantly taken from the oldest classification of food from different civilisations. (Liu et al., 2012)

On the basis of Food Commodities/groups

On basis of commodities, food is classified into different groups based upon cereals, grains, legumes, pulses, nuts, fruits, vegetables, fats, oils, starchy roots, tubers etc. by different pioneers such as Passion and Bennett (1943) classified food in three Forms-Core food, Secondary food and Peripheral foods etc. Core food is staple food of any community such as wheat, rice and maize etc. that is widely consumed whereas secondary food items are consumed on regular intervals or events like on festivals and family gathering etc. Peripheral food is expensive and prestigious food of any community such as offerings to God, modern food items etc.

Aykroyd et al., 1966 classified food on basis of proximate principles i.e. the carbohydrates, proteins, minerals, vitamins, fats oxidised or burnt in body for production of energy and vital functions. Food is classified on basis of this energy and nature of food into groups of cereals, nuts, pulses, milk, vegetables, milk products, flesh food etc. Chang (1977) has classified food into different groups on basis of Chinese culture and philosophy. Simmons (1991) has classified cereals, fruits, legumes, pulses, grains, vegetables, fruits, edible nuts, dairy products, eggs into eleven food groups on basis of specific Chinese culture of food consumption.

Several pioneers in different era has formulated variety of classification of food groups based upon the cultural knowledge, time period and resources (food

products) of that region. In 1998, World Health Organisation has finally created food based dietary guidelines (FBDG) having different food groups to provide proper information and classification that can be implemented globally. These food groups include vegetables (13 terms), fruits (8 terms), cereals (52 terms), sugar (22 terms), legumes (11 terms), fats and oils (28 terms), dairy products (20 terms), food from animals (64 terms) and others (17 terms). It tries to organise food with similar qualities and nutritional components to provide complete information for balanced diet (Monteiro et al.,2023). Many countries have tried to adapt these universal guidelines with slightly variation with different names and models such as five food groups in USA MyPlate, five food groups in UK Eatwell Guide, six food groups in Chinese Food Pagoda and five food groups in Japanese Food Guide etc. In India, National Institute for Nutrition also drafted the dietary guidelines to address nutritional needs of Indian population including both traditional and modern food groups explicitly designed for all nutritionally vulnerable population (Manual,2011; Uruakpa et al., 2013)

On The basis of time period

Time Period play an important role to distinguish food groups to understand the fluidity and adaptability of socio-cultural and economic changes that has influenced the food classification evolving from traditional dimensions to the modern one. The classification encompassing cultural knowledge, practices of considering ethnic or traditional food to modern foods having new ingredients, innovations and change in trends. The process of considering what is traditional, modern or ethnic food is also shaped by socio-cultural forces of any region.

Traditional Food/Ethnic Food

Traditional food is considered those food items of a particular culture that has been passed down from generations to generations in terms of cuisines and recipes. It includes specific characteristics that act as a cultural marker of specific region because of the ingredients, techniques, the process of making, processing and consuming. The information of traditional food is passed down orally with at least 30 years of established period based upon the geographical location and historical context (Trichopoulou et al,2007; Galli,2018).

Ethnic food is cuisine of particular ethnic group that act as an identity of their unique culture through its process of making, and consuming based upon their

taste and preferences. The consumption of these food items are also associated with the different religious ceremonies, special occasions, customary beliefs and notions. For instance, Maori food from New Zealand, Masai food from Kenya, Hindu food and Thai food etc. (Kwon and Tamang, 2015).

Modern Food

Modern food items are those food items which are prepared with the use of modern ingredients, industrial processes, advanced technologies and mostly influenced by global forces of urbanization and modernisation. Modern food items are the product of complex pre-industrial and industrial food modified through various processes to alter and preserve the nature, taste, nutrition and components of food. It includes various types of food such as instant food, convenience food, ready to eat food, fast food, junk food, fortified food and functional food etc (Cohen, Kideckel and Zeide, 2021)

On the basis of Processing

The food item that have undergone any kind of alternation in order to change its nature and extent shelf life is termed as processed food. It involves different methods, processes and techniques that alters the natural state to fulfil the nutritional needs. There are various systems of classification that categorises variety of processed food based upon the place and purpose of processing in order to understand the extent and nature of change. Each classificatory system provides different amount of information in different countries such as NOVA (Brazil), SIGA (France), IARC-EPIC (European) and IFIC etc. on basis of degree of processing and divides groups into different groups such as there are five groups in IFIC, four in NOVA and FAO group, IARC-EPIC has three group etc. It includes processed foods, ultra-processed foods, highly processed food, minimally processed, unprocessed food and high salt, sugar and fat food category etc. The different countries use different marker and ways to categorised the modern processed food items (Abdallah, 2024).

Anthropological Studies on classification of food

Anthropological work of food has been started in 19th century when Malley explored the food practices, eating customs and meal rituals in Manners and Meals (1888) and William Robertson Smith wrote The Religion of the Semites (1889) examining the significance of sacrificial rites, communal eating and religious aspect

of food. It explained the practices of ancient semites, the symbolic and religious characteristics of meal, the offerings or abomination of certain edibles . Malinowski (1922) has also elucidated the social meaning of food among the Trobrianders by explaining functional characteristics of meal through Taro and Yum. Richard has given the first complete account of nutrition among the Bemba of East Africa in her studies "Hunger and work in a savage tribe: a functional study of nutrition among the southern Bantu (1932)". She explained the nutritional needs for survival and how food shapes the social relationships of tribals. Powdermaker (1932) has also conducted studies in Melanesian societies of New Ireland in which she has considered eating as a social institution in this society where food plays a central role in most communal rites and non-ritualistic ceremonies. Food is always defined in its socio-cultural context (the rank, caste and relation, inclusion or exclusion properties, animity or unanimity, affinity or distance). These variables are encoded in the cuisine that helps for classifications -high cuisine or low cuisine based upon culture. The studies of understanding the socio-cultural context of food in different communities along with its cultural classification and significant meaning through different approaches is always being the centre of anthropological studies.

The studies of food classification in anthropology has been started mainly when Levi-Strauss (1964) constructed culinary triangle (raw, rotten and cooked) by giving structural meaning to food addressing the transformation of food from nature to culture on different axis of a triangle by placing different societies with illustrations. He has examined the symbolic aspect of food by categorising food through binary opposition, for instance natural/cultural, pure/impure, boiled/roasted, rotten/cooked etc. Douglas (1966) has also examined the food through dietary laws of Hebrew explaining symbolic meaning of food as clean/unclean, sacred/profane, pure/impure. She has explained the underlying reasons and associated beliefs for classifying moral and forbidden food. She has also codified food in a systematic structure on basis of meals, days, weeks, events and occasions reflecting deeper pattern of social hierarchy through inclusion and exclusion (Douglas,1972). Goody (1982) has provided the deep insight into food classification by comparing food system of largescale complex agricultural societies with small scale societies and the role of class and literacy leading to codification of complex cuisines structure. Harris (1985) explained the belief system of food preferences and taboos as a product of social utility, ecological and economic factors across different societies. The consumption and prohibition of any food item and its classification in a culture

depends upon its historical and ecological background, for instance Cow is sacred but also more valuable while alive for dung, fuel or milk rather than as meat.

In Modern and industrial society,) Mintz (1985) also classified food as everyday food and luxury food on basis of societies, hierarchy, power relation and historical dynamics. He has studied the historic expedition of sugar and its transformation as a luxury food item to widely accessible everyday food item. Appadurai (1988) has also classified food through culinary texts or cookbooks based upon the class, regional, national or international boundaries. Counihan (1999) has classified food based upon gender and energies such as masculine food and feminine food. Thus, the study of classification of food plays a central role in anthropology to help in defining the group identities through edibles reflecting ideologies, beliefs and cultural nuances.

Importance of Anthropological studies for the classification of food

The classification of food holds significant meaning in every society as people assign different names to a food item based upon its edibility, innate properties, qualities, medicinal values or nature. The organisation of food reflects characteristics of socio-cultural and physical environment of a community in which an inhabitant survived. The classification of food is culturally constructed such as categorisation of sweet/sour, healthy/unhealthy, vegetables/fruits etc. but also delineates the ecological, economic and social settings of a native. Anthropologists has always provided the emic perspective of inhabitants of different societies by examining the cultural classification of food through ethnographic studies in different eras. It provides a lens to uncover the underlying cultural connotations that shape the dietary practices, socio-political structures and social organisations of a community. The studies of food classification not only provide the identity markers in terms of edibles or cuisines but also help to understand the dietary evolution and historical perspective of food habits in a community that has survived through the course of time (Messer, 1984; Ross & Murphy, 1999).

Anthropological studies of food classification uncover the hidden factors of how food has build the political, economic and social structure of society. It helps to understand the social hierarchy, cultural practices, kinship ties, group identities distinguished from one community to another in form of food items and cuisines (Waldstein,2018). It helps to examine how dietary pattern is governed by the religious law such as Kosher in Judaism, Ayurveda in Hinduism, halal/haram in Islam etc. in

any ethnic community till today and how oldest classification systems (hot and cold classification of food) is still practicing. It helps to understand how classification of food is not only a system or social order but a rich reservoir of information of health and nutrition. In early times, the classificatory systems were the enriched account of deep ecological, religious and medicinal knowledge of the natives reflecting their dietary pattern, awareness about the resources, medicinal and nutritional knowledge of edibles, the nature-nurture ties with environment etc. These systems also include the cultural knowledge, religious dietary guidelines, traditional practices, associated beliefs of permission or prohibition and their transmission over time (Fardet el al,2015). Anthropologists examine these traditional, cultural and ethnic aspects of classification and try to unbind the interwoven threats of food, culture and nutrition. The cross-cultural comparison of these descriptive studies and their classificatory system helps to decode the pattern in which a modern or traditional classificatory system is build. It allows to understand the change and resilience of classificatory system towards the environment (Doshi,1995).

The food classification system are the means of cultural preservation in a systematic order as it acts as an intangible form of cultural heritage. Anthropological framework of cultural classification of food helps groups to express their cultural identity and designate their knowledge for sustainable practices. The process of "heritagization" by UNESCO preserves everyday food practices to recognise cultural heritage. The food ways including these classificatory systems in modern times revitalize the traditional practices and help to formulate better policies (Beer,2016; Zocchi et al.,2021). Thus, the anthropological studies of classifying food provide ethnographic framework for understanding how edibles are found through different socio-cultural, religious and ecological processes that take the shape of dietary pattern of any community. The complex diet structures are always on verge of alteration with changing seasons, different ecological processes, change in environmental conditions or exposure to global forces (urbanisation or modernisation). Thus, it is important to document the food classification system through ethnographic studies of different cultures.

Challenges and Future directions for better food classification system

The system of classification in every era is dynamic as it includes folk categorization, culinary taxonomy and food group assemblages based upon their knowledge towards edibles/inedible present in surroundings. The harsh conditions, limited

resources and challenging environment has given rise to detailed accounts of knowledge in form of oral and traditional verses. These verses took the shape of folklore, oral traditions, epics, dietary texts, ancient food manuscripts in different communities. The need for survival in available resources has formulated ancient food classification system that categorize food based upon survival, productivity, availability and resources. In ethnic communities, food acts as a drive for kinship ties, family relations, social organization and communism etc. The knowledge associated with proscription or prohibition, avoidance and acceptance of food items give rise to complex culinary structure of diet (Capocasa and Venier,2023). The sustainable or resilient food systems has survived due to its practices across generations, traditional knowledge of food as medicine, dynamic approach towards health and nutrition, integrated system of food and medicine in dualism, the harmonious nature towards environment. The food classification systems are the dietary guidelines of food and healthcare practices. Anthropologists study these ancient and traditional food classification system of large scale and small scale societies to understand and document the sustainable food practices, the coping mechanism of food system, diet diversity of health and nutrition etc. (Fardet et al,2015)

In modern era, there are variety of food classification system in traditional and modern forms but having its own challenges of applicability on global scale as the traditional and modern food classification systems are situated at opposite points of same pole. The traditional systems are rooted in ethnic communities' cultural and ecological knowledge whereas modern systems are rooted in scientific and contemporary knowledge. Traditional food classification systems are culturally build specific to particular region and modern systems are formulated on basis of composition, processing levels and standard nutritional information. The ambiguous nature of both the system have their own hurdles for large scale documentation and universal acceptance, for instance the ethnic group classification are often misunderstood and misinterpreted by outer agencies and there is a lack of documentation in these systems. The traditional classification systems of food are sustainable incorporating environmental and medicinal factors but lacks scientific validation, standardization and often struggles with global usability. On the other hand, modern classification system is unclear and inconsistent in providing vague information associated with food processing levels, nutritional values and food technology addressed in system. The modern food classification system (NOVA) are used in related policy formulation but conceptual framework of health outcomes

is not adequate. The diverse dietary pattern and distinct culinary practices worldwide makes it difficult for universal acceptance (Guiné et al., 2021). Besides the differences, both system provides information regarding the food commodities, its nutritional value, preparation techniques and preservation methods. The systems are often constructed by available knowledge, accessibility, convenience and efficacy. The integration of food commodities based upon origin (plants and animal), agricultural diversity, adaptive environment is common in both the systems. Thus, the modern and traditional methods occupy their own place in food classification system (Sproesser et al,2022).

In present times, the better classification system of food is required that can be achieved by integrating local and global systems of food through better ethnographic or descriptive studies. The dynamic processes of globalization and modernization has diluted the boundaries of food culture across the borders by giving rise to complex food systems. These complex systems of modern times can only be understood by integrating indigenous knowledge with the modern scientific methods through better classification schemes and models providing concise and accurate information. The descriptive data of modern food and ethnic knowledge of classification can only be standardized through coding, machine learning and digital tools by governance. The layers of classification system should be organized in hierarchy by digital methods for better nutritional and health outcomes. The collaboration of various agencies, specialists, policymakers and international platforms could be beneficial for refined and efficient classification systems. The sustainable dietary guidelines by considering diverse socio-economic and environmental factors for better understanding of categories of food can be formulated. The food can be codified in system on basis of ingredients, uses, processing, region and different categories through AI models and digital platforms. The codification of food should be done in such form that it will connect with the ethnic or regional systems of classification for diverse applicability and awareness among these communities so that they will better utilize their knowledge and information provided by government agencies. Thus, future systems should address the problems of ambiguous and perplexed data of classification into more efficient, transparent and ordered form by the unification of sustainable traditional methods of classification with the modern advanced system of codification. The harmonized and balanced classification system would play a major role in abolishing malnutrition and health problems of modern world through better dietary guidelines and health policies.

Conclusion

The present study delineates the importance of evolutionary transition from earliest systems of food classification to the modern ones. It reflects how food is systematically embedded in core of culture from centuries providing abundance of knowledge for health and nutrition. It is arranged in layers and hierarchies in everyday culinary practices of food acquisition, preparation and consumption. In every civilization, vast majority of holy texts, scriptures and sacred verses narrates the importance of food in terms of verses, oral traditions and tales. Food is often considered as divine form of subsistence that fulfils the physical or psychological needs of individual but every food item could not be beneficial for all human consumption as one man's meat is another man's poison. Thus, each community have its own cultural approach towards the arrangement of complex food network present in its surroundings. The dynamic system between food, culture and nutrition is interwoven in form of diet and anthropologists provides the pathway to understand this tangled relationship of traditional and modern systems.

The traditional classification systems are shaped by cultural beliefs, religious texts, environment availability and culinary practices through centuries. It merges with the system of local and ethnic groups present in the surroundings for its continuous and sustainable progress. It includes various forms of earliest classification such as hot and cold food, folk taxonomies of different regions along with the dietary codes present in different religions. It describes the historical contexts of not only what people eat for centuries but also the reason associated with their choices over time. On other hand, the modern methods of classification are also included on basis of origin, composition, properties, processing, commodities and time period. It includes the contemporary system of classification prioritizing advanced and standardized criteria for large scale outcomes of public health policies. It often incorporates industrial methods and techniques but overlook social and cultural perspective that also play major role in influencing dietary behavior. Thus, the need of forming a bridge between the two classificatory system is important by integrating both system of classification. Anthropologists conducts the in-depth studies to provide the understanding of how food should be perceived, valued or categorized across various countries for global health outcomes. Thus, the current study tries to describe and critically evaluate the gap between the applicability of different systems of classification. The anthropological perspective is provided for the need of better understanding of classification system as food should not be considered as a source of nutrients but as an essential component of culinary culture.

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