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CULTURAL KNOWLEDGE AS A DESIGN DRIVER

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Abstract

This paper explores the concept of cultural knowledge as a design driver in the creation of products and experiences. Cultural knowledge encompasses the collective understanding, values, and traditions of a particular culture or community. By integrating cultural knowledge into the design process, designers can create products that resonate with the target audience, cater to their unique needs, and promote cultural inclusivity. This abstract highlights the significance of cultural knowledge as a design driver, emphasizing the importance of understanding cultural nuances, symbolism, and context. The paper discusses the manifestation of cultural knowledge in the man-made world through examples of design-driven innovations. It also explores the potential impact of cultural knowledge as a driver on future design practices and the evolution of human civilization. By recognizing and leveraging cultural knowledge, designers can foster meaningful connections, promote cross-cultural understanding, and create products that enrich people's lives while honoring the diverse tapestry of human cultures.

Key Words: ***Culture, Design process, Design driver, Nature, Man-made, Future.***

Introduction

What is knowledge? According to the Dictionary, knowledge is the fact or condition of knowing something with familiarity gained through experience or association. Experience is what is essential in the case of gaining knowledge. On the other hand, when we compare science with knowledge, we understand that science is a systematic enterprise that builds and organizes knowledge through testable explanations and predictions about the universe. Although they seem similar, the knowledge we would consider in our discussion is the raw and unorganized experience we get in our day-to-day lives.

The term "belief" is often bought as a synonym for knowledge, which would be far from the truth; for example, we may believe a person. He told us that the bus would arrive at 10.30, and we believed him, though it came half an hour earlier, and we missed it ("Lecture 3: Belief and Knowledge - Belief", n.d.). Knowledge is backed up by evidence.

Seven core types of knowledge work together to shape the way we exchange information and learn new concepts (Pettersen, n.d.). Below are the types of knowledge.

When systematically written and shared through different mediums, knowledge is called explicit knowledge; one example could be the religious scriptures of different religions. When the knowledge provided in these scriptures is implied to live life in a particular way, gain experience and slowly get better at it, when you gain lessons from the explicit knowledge to solve other problems, it becomes implicit knowledge.

Tacit knowledge, on the other hand, is a thing that is understood without any documentation; an example of this would be if a person in Indian culture would not get up when his food is served or when his plate is having food as it is considered disrespectful towards the food as well as the cook.

Cultures with specific food and the steps involved in the creation of specific masalas and recipes for the pickles are passed on from generation to generation in the form of procedural knowledge. Knowing how to perform the activities is taught from person to person through a live demonstration of actions.

Declarative knowledge, in simple terms, could be interpreted as a documented understanding of an incident or reporting of an incident. Indian Epics could be considered declarative knowledge where the incidents are depicted in extreme detail and could be recreated if required from the scriptures.

Posterior knowledge is the type of knowledge one gain from their individual experience; people listening to the same story might end up with different knowledge as the people personally tend to focus on different things in a story. The lessons learnt by people from the same incident would be dependent on their perspective of the incident.

Prior knowledge, as the name suggests, is the ability to gauge what would happen in the future based on the experience the person had earlier. People know that rain is followed by winter, which is further followed by summer based on all the previous experiences of the people around as well as themselves.

Meaning of Cultural Knowledge

Cultural knowledge **is the information known by an individual not because of formal education but as a result of living everyday life,**

talking to relatives, observing surroundings, or practising family traditions. Knowledge of this kind is often subconscious. Culture, at its core, is like a protocol that we follow in certain environments. We understand what is right, wrong, acceptable, and not acceptable based on our upbringing. We behave differently at each stage of a social gathering. For example, a group of people who are work colleagues acts differently in the workplace, and as soon as they are out of the workplace, their behaviour changes. At times cultural knowledge can be unrecognized by those who hold the knowledge and (can be) undervalued by those who rely more heavily upon scientific or academic reasoning to make a decision.

The mental components of culture, such as beliefs, laws, and attitudes, are included in cultural knowledge. The components of cultural knowledge are norms & values, symbols, reality constructs, and worldviews.

1. ***Norms are guidelines on how members of a particular culture should conduct themselves. Norms define what acceptable and usual behaviour for individuals is; values are conceptions of how individuals wish to live and the kind of life they seek.***

2. Symbols are something that represents something else. For example, when driving a car, the red light means stop. The red symbolizes the concept of "stop."

3. People make mental maps of things and divide everything into categories. This is called the cultural construction of reality. For example, people are divided into family, friends, and strangers.

4. ***Worldview is the way people interpret reality and see themselves and the world around them. For example, some cultures see themselves as conquering nature, while other cultures try to live in harmony with nature.***

A huge part of the culture is a form of Tacit Knowledge. Something which is not written but understood by people, there is a common understanding that everyone agrees to and adheres to the same. One the most simplistic example one could think of is the game of "gully Cricket," a sport which is supposed to be played on open grounds and is changed as per the surroundings and resources available. Players of "gully cricket" have a common mind; if you look at the game's setup, it is the most amazing scene of quick negotiations for rules and agreements among the players. Things move smoothly and swiftly considering the game setup; although some weak players do crib regarding some aspects, the conflicts are quickly resolved. Incidents during these games prompt the players to change the rules as the game progresses. These players of gully cricket have a great understanding of teamwork; no matter which "gully" these players are, they know how to play with changing players and terrain. There is an appreciation and a sense of competition which helps the players push each other and improve their skills. Even though, at times, there are intense emotions involved during the game, all is forgotten and forgiven after the game.

Even though we see this as just a sport, these people's values and behavioural aspects are reflected in other aspects of life, such as Work and Social elements, when it comes to the common development of the people.

Manifestation of the driver in the manmade world

During the implementation of the knowledge, we do not focus on the why part of the knowledge. Knowing that things fall down and hence we implement things in that order rather than focusing on why it happens. The why portion is left for the development of the implementation in the longer run.

In the manmade world, when space exploration would seem difficult or far-fetched, there would be people turning towards virtual reality and creating a culture of their own to develop, build and live in this virtual world. We can see these elements already being initiated through tech giants using the term "metaverse" to create virtual worlds for people. Even in a virtual world, there would be a culture based on real-life products such as cult films, games, etc. People tend to form closed groups where they can gather and talk about their mutual interests, create canons and explore their imagination.

As society grows, it develops habits similar to individual developing habits; these habits then convert to a certain set of rules to which people adhere in common understanding. There is a reason why people living in different regions of the world have different cultures. These cultures are developed over human evolution, influenced by geography, socio-political changes, and migration of people from place to place. Such migration of people tends to create a mixed culture where one would find elements of many different cultures fused together.

Culture as a design driver acts as an inspiration as well as a limitation during application in the human world, which contains all these mixed cultures with its variation.

Ice Stupas - Ladakh

The glaciers of Ladakh, India, have decreased due to climate change, and temperatures and rainfall are unpredictable. Barley, apples, and other crops require to be watered in the spring, but the glacier melt only occurs in the summer. Sonam Wangchuk, an engineer, has developed a method to transport the glaciers to the people in order to spare farmers a barren harvest. According to him, the concept of religion needs to be modernized in order to

address issues like global warming. The recent formation of an "ice stupa" raises the possibility of a fresh framework for climate-adaptive design thinking. The region's decreasing glacial meltwater supply has prompted the development of an innovative water management approach that uses community engagement, ecological understanding, and religious imagery to maximize a finite natural resource. The purpose of artificial glaciers is to freeze and store water that continuously flows and evaporates throughout the winter down streams and into rivers. Rather, this ice will thaw in the spring, just as the fields require irrigation. Artificial glaciers are a familiar idea in Ladakh. In the highest parts of the Alps, their distant ancestors practised a technique known as "grafting glaciers." It resembled the religious mud buildings known as chortens or stupas in the area.

Here, the ice stupas of Ladakh show a nuanced reaction to social, environmental, and cultural limitations beyond merely serving as a water store for agricultural use. By doing this, the project offers a practical model for water management in northern India as well as insightful information on the developing field of planning for climate change.

Using Cultural knowledge, the designers called these artificial ice towers "stupas," which led to people accepting the change positively and even helping in building these structures more dedicatedly, which impacted the local lifestyle.

Living roots bridge - Meghalaya

A large portion of the state benefits from the frequent heavy rains, but the indigenous Khasi people, who inhabit the dense woods of Meghalaya, have long faced difficulties. The normally calm rivers that meander through the state's deep valleys turn into powerful, rain-fed torrents from June through September during the monsoon

season, making them impassable by foot. The Khasi tribe used to construct bamboo bridges over swift-moving streams. But the strong monsoons were too much for the buildings to handle. They would decay and crumble, trapping the residents. The Khasi elders came up with an alternative approach some 180 years ago. The hollow canes of the Areca nut palm were used to assist the roots of the rubber tree in meeting halfway across the stream. Years of attentive care and meticulous nurturing allowed the roots to gently reach the opposing bank and build the skeleton of a bridge strong enough to support a person's weight. In the matrilineal society of the Khasis, after marriage, the husband relocates to the village of the wife, and the children take their mother's last name. The bizarre, robust network of entwined root bridges can take 15 to 20 years to connect the two banks. In contrast to conventional buildings, Meghalaya's root bridges never need substantial maintenance or reconstruction; the oldest and sturdiest of these bridges is over a century old. Building these living bridges, however, has become less common during the last 25 years. Today's builders span the streams and rivers of Meghalaya using steel rope and contemporary construction techniques rather than spending years making living walkways.

Dabbawallahs - Maharashtra

In his paper "Culture as the Designer," Prof. Lalit Kumar Das tells us about the culture of "dabbawallahs." The "dabbawallahs" are only found in Mumbai and have been providing delivery services for over a century. Five thousand delivery personnel transport roughly 175,000 dabbas (lunches) in tiffins (segmented tin boxes) from suburban homes to educational institutions, workplaces, and mills throughout the city and its environs. Their clients are middle-class people who depend on the "dabbawallahs" to serve a home-cooked lunch because of cost, hygiene, caste, dietary restrictions, or just

because they prefer healthful cuisine from their homes. Each lid of a tiffin carrier is coded using a sophisticated system: Each suburb and specific area of the downtown core is denoted by a different colour. The street, the building, and even the floor where the Dabba will be delivered and ultimately returned to its source are marked with dashes, crosses, and dots. The system is a fantastic combination of the end user's needs and the carrier's capabilities. Only ten to twenty tiffins, which he can quickly identify and organize at the origin station, will be chosen by one person to give to the owner. Additionally, the delivery team is aware of which floor in a specific building to deliver to. On the floor, individual owners can easily identify their own tiffins. There is often just one error made by the delivery staff every two months or one error for every sixteen million transactions. Therefore, according to Forbes Global, a global business journal, this performance is "6 Sigma." This one provides another illustration of how a low-cost, effective system can function. (Das, n.d., 49)

Manifestation of the driver in the biological world

It was widely believed that culture, or conduct picked up from others, was unique to humans until the early 20th century. However, evidence suggesting animals may learn and pass on behaviours has been accumulating at an ever-increasing rate, beginning with the identification of a few species. There is no denying that culture is present in many animal species, including terrestrial and marine vertebrates and invertebrates. Both social learning and the genetic transfer of habits contribute to the development of this culture. Animals use imitation to learn social behaviour. Even animals from different species imitate one another to accomplish a task. Teaching is another method. Killer whales have been observed to "deliberately beach" themselves so they can capture and consume seal pups that are laying eggs on the sand. By

forcing their calves onto the sand and urging them to attack and consume the prey, mother killer whales instruct their calves on how to catch pinnipeds. This is an example of teaching, and cultural learning since the mother killer whale is changing how she behaves to assist her young. Along with Primates, many sea creatures, rodents as well as birds tend to form a culture, especially when these animals stay or travel in a group. Such cases of cultural transmission of knowledge change the way these animals behave. These animals adapt to their changing environment and develop new habits.

Representation of Animals in Culture:

Every culture has a unique perspective on animals, birds, and sea creatures. People in India have viewed all animals as their friends and partners with whom they share the earth for millennia. They have been shown in artwork in lovely shapes as divine companions, symbols of strength and beauty, or just as ornamental accents. The Romans believed that for humans to survive, it was necessary to slaughter or subdue animals. The Greeks viewed them as powerful symbols which existed in a different world. However, ancient Indians perceived them as they ought to be perceived: kind, devoted, and graceful. Animals haven't changed significantly regarding their appearance or behaviour, but how people perceive them has evolved over time. Animals, birds, and sea creatures are used as religious symbols of strength, elegance, beauty, dignity, luxury, and wisdom. They are shown in sculptures, paintings, dance, fabric printing, and other arts, as well as in architecture. (Patil, n.d. https://www.esamskriti.com/e/Culture/Indian-Culture/Animals-in-Indian-Culture-create-an--colon-inclusive-universe-colon--1.aspx)

The plethora of findings about animal cultures in recent times offers an intriguing starting point for more in-depth investigations. Do animal civilizations develop over time in the same way as human cultures have over the previous aeons? How significantly does the impact of culture across an animal's lifetime alter our perception of behavioural ecology and the underlying principles of evolution in general? How similar do people today think that animal and human cultures are, and where are the biggest gaps still present? (Whiten 2021, https://www.science.org/doi/10.1126/science.abe6514)

How could the driver impact design in extended space and time?

Cultural Evolution

Cultural evolution is essentially just the change in culture over time if we define culture as "knowledge capable of changing individuals' behavior that they learn from other members of their species through teaching, imitation, and other types of social transmission." The essential tenet of cultural evolution is that cultural development is an evolutionary process that, while fundamentally similar to genetic evolution, also differs from it in important ways. As a result, both genetic and cultural evolution have influenced human behavior. The same may be stated for a wide variety of other animal species, such as chimpanzee tool use, Caledonian crow tool use, or the intricate social structure of ant, bee, termite, and wasp hives. ("What is Cultural Evolution", n.d. https://culturalevolutionsociety.org/story/What_is_Cultural_Evolution)

Richard Dawkins' 1976 book The Selfish Gene proposed the concept of the "meme", which is analogous to that of the gene. A meme is an idea replicator that can reproduce itself by jumping from mind to mind via the process of one human learning from another via

imitation. Along with the "virus of the mind" image, the meme might be thought of as a "unit of culture" (an idea, belief, pattern of behavior, etc.), which spreads among the individuals of a population. The variation and selection in the copying process enable Darwinian evolution among memeplexes and therefore is a candidate for a mechanism of cultural evolution. As memes are "selfish" in that they are "interested" only in their own success, they could well be in conflict with their biological host's genetic interests. Consequently, a "meme's eye" view might account for certain evolved cultural traits, such as suicide terrorism, that are successful at spreading memes of martyrdom but fatal to their hosts and often other people. (Fontanive, n.d. https://en.wikipedia.org/wiki/Memetics)

Cultural particularism dominated popular thought for the first half of the 20th century before American anthropologists, including Leslie A. White, Julian H. Steward, Marshall D. Sahlins, and Elman R. Service, revived the debate on cultural evolution. These theorists were the first to introduce the idea of multilinear cultural evolution. Under the multilinear theory, there are no fixed stages (as in the unilinear theory) towards cultural development. Instead, there are several stages of differing lengths and forms. Although individual cultures develop differently and cultural evolution occurs differently, multilinear theory acknowledges that cultures and societies do tend to develop and move forward. Leslie A. White focused on the idea that different cultures had differing amounts of 'energy'; White argued that with greater energy, societies could possess greater levels of social differentiation. He rejected the separation of modern societies from primitive societies. In contrast, Steward argued, much like Darwin's theory of evolution, that culture adapts to its surroundings. 'Evolution and Culture' by Sahlins and Service is an attempt to condense the views of White

and Steward into a universal theory of multilinear evolution. ("Cultural evolution", n.d.https://en.wikipedia.org/wiki/Cultural_evolution)

Smart Cities & Cultural Heritage

The Kingdom of Saudi Arabia is creating the smart city of NEOM along the Red Sea coast as part of Vision 2030. This ground-breaking initiative aims to diversify the Kingdom's economy, welcome a million people from the Kingdom and abroad, establish itself as the new benchmark for urban sustainability and put residents' livability, health, and well-being first. Although NEOM is still under development, the blueprint thus far suggests it can address some of the issues that hampered earlier smart cities. The villages along "The Line," a belt of live-work communities that don't rely on conventional roads or automobiles, will be connected by cutting-edge housing and mobility systems. The city's economic and industrial engine, the massive floating structure known as Oxagon, will draw in top talent from around the world to help NEOM develop into an incredibly efficient port city with an abundance of cultural attractions. Oxagon is powered entirely by clean energy. Plans by NEOM include previously unheard-of advances in the utilization of big data. In addition to networked infrastructure and mobility systems, biometric and health data may be used to protect inhabitants' safety and health as well as provide real-time access to the services they require. If it works, NEOM's integration of large-scale data functions with environmentally friendly urban planning might usher in a new era of smart cities.

Risks linked with sociocultural diversity, such as how the culture of newcomers from abroad affects the local population or the other way around, are present in cities with a diverse population. An observation was made that there isn't much literature on the

dangers of developing new cities. However, research has revealed risk variables that relate to urban infrastructure and other sub-projects that can be connected to the dangers of creating new megaprojects, like NEOM. Most current cities, like Silicon Valley in the United States, took years of effort from the government, investors, businesses, entrepreneurs, and the populace to develop a metropolis with a varied range of cultures driven by entrepreneurship and innovation in order to accomplish such a difficult goal. Since Saudi culture differs from other countries in the West and South, integrating a million people from various backgrounds, social classes, and socioeconomic status is a significant challenge. It calls for significant easing of societal norms and rules. (Algumzi, Areej. 2022. Risks and Challenges Associated with NEOM Project in Saudi Arabia: A Marketing Perspective. Journal of Risk and Financial Management 15: 381. https://doi.org/10.3390/jrfm15090381, n.d., #)

As time progresses, Human society would develop to fade its Cultural boundaries in small areas, which would again tend to grow bigger to form a culture as a planet as the Technologies develop. And people start commuting/migrating at a faster rate. The societies would start merging their cultures to form a new one, keeping elements of the old and developing new traits. The restrictions present in old cultures of societies would become insignificant, and designers would have to tend to a larger group of users.

If humans migrate to other planets, the environment tends to create a separate culture from that of Earth. This society would have different needs and requirements. There would be elements of culture from the earth that would need to shift to a different planet to keep the connection alive. Although the Designs made for Earth would not be used as is on other planets, Products Designed for

other planets should be inspired by the original culture on Earth at the start. As Human society Progressed to more and more planets, the culture restricted to local areas or land would be changed to the culture of the planet as a whole.

CONCLUSION

Consideration of Sociocultural Needs

When utilizing the human-centred design method in brand-new emerging economies, the majority of designers tend to neglect the users' sociocultural needs. Any new product or service must consider user culture because it affects how well the target market receives them. Additionally, it is asserted that designs developed from a sociocultural perspective may give users cultural significance that aids adoption. Product responses frequently result in a blend of inner and external meanings. Products, services, or Sustainable Design: An Introduction Systems are no longer only functional objects; rather, they are now understood for the meaning, associations, and contributions they provide to the development of a user's self-image. As a result, it is important to consider the user's sociocultural demands in the early phases, when the design is still evolving. This allows for a deeper understanding and analysis of the user's culture. This kind of design is anticipated to result in the development of high-calibre user experiences that enhance the symbolic worth of goods, services, or systems as well as the lives of their users. This can help designers build or design value and think of culture as a resource for their work. In order to include social and cultural issues, as well as individual requirements, desires, and aesthetic reactions, the study of human factors should go beyond the conventional physical and cognitive fit between products, services, or systems and consumers.

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