The Transitionary Society- An outlook on the First Principles of Algorithmic Societies from the perspective of People, Phenomenon, and Power Structures

Naveen Kumar

Ph.D. Candidate, Indian Law Institute, New Delhi
naveen.kumar20@nludelhi.ac.in

Abstract

The making of cliché of a phenomenon is primarily restricted to two processes, first there can be an over usage of it, which lacks the original thought and purpose and second be the pseudo simplification of the phenomenon, wherein under the garb of integration of phenomenon with myriad disciplines of academia, the very first principles of phenomenon are shadowed by shallow notions of adaptability, acceptability, and knowledge of phenomenon at disposal. It won't be exaggeration to state that Artificial Intelligence (hereinafter AI) too suffered from the same predicament. With term 'AI' becoming a must-go-to sphere for researchers, let alone those dealing with STEM domains, the phrase 'Algorithmic Society' too witnessed surge in its usage. While sociological and ethnographic studies are silent on evolution and the first principles of these societies, research works are engrossed with lofty ideas of marvels of algorithmic societies.

The foundational blocks of societies reside in the 'static' and 'dynamic' characteristics, which are showcased through myriad intersections of People, Phenomenon, and Power Structures. Since time immemorable societies are abstracted through these characteristics and showcased the evolution through prefixes attached to them. Algorithmic Societies are no exception to these foundational principles. The paper traces the evolution of the societies from industrial age to AI age using the not so precisely delineated static and dynamic characteristics of the societies and later on, using an analytical approach put forward the first principles of algorithmic societies which at best suits the contemporary notions attached with People, Phenomenon, and Power Structures.

Keywords: Artificial Intelligence, Societies, Algorithmic Society, First Principles, Static and Dynamic Characteristics, Power Structures

I. INTRODUCTION

What is true for the phenomena that we address in our research is certainly also true for the terminology we use for our research. At a time, when new, occasionally innovative but catchy terms has become a familiar activity of researchers, academicians and policymakers alike, it has become indispensable to reflect on which of these terms are actually worthwhile, provides analytic value and describes something new– besides the fluffy rhetoric that repeatedly becomes rampant in academic discourse.[1] For past over a decade Artificial Intelligence (AI) has become a must-go-to sphere for almost all researchers, let alone those dealing with STEM domains. With this came the phrase 'Algorithmic Society', a society whose first principles were never laid down or delineated by the above-mentioned researchers but provided vivid details of technology and interactions that people are having with these technologies, as banal truism. The following sections, while tracing the core characteristics of societies preceding algorithmic society, made an attempt to analyse the very first principles of algorithmic society in an analytical manner.

The word society has its origin in Latin word "societas", which means "a fellowship, association, alliance, or partnership". It was used to describe various forms of human interaction and cooperation, ranging from partnerships in business to alliances in warfare.[2] Over time, the meaning of the word evolved to encompass the broader concept of organized human groups living together, sharing common values, norms, and interactions. The term was adopted into English and other languages, retaining its fundamental meaning of people coming together to form organized groups or communities. As societies evolved and became more complex, the term "society" came to encompass the multitude of interactions, institutions, and systems that define human communal life.[3]

Nevertheless, defining what constitutes a society in strict sense is a herculean task, as it is devoid of closed geographical boundaries, does not have a uniform and fixed set of members, and do not pose a set of indelible characteristics or social constructs. Even on the phenomenon of social change, numerous sociologists and anthropologists have different but contrasting viewpoints, ranging from the linear theory of Auguste Comte to cyclical theory of Oswald Spengler to Conflict theory of Karl Marx and many more. Admist this uncertainty over exact construct of society, it is prudent to broaden the horizons of 'what is society?' and begin with labelling and limiting society as an abstract concept, with two defining features i.e., Inter and Intra interactions, to justify the cause at hand. While intra (internal) are primarily between the members of a society, while inter (external) denotes interaction between members and external tangible and intangible elements like faith, culture, ideologies, technological developments, financial institutions, policies, politics, people of other societies, etc.

[1] Katzenbach & T. C. Bächle, "Defining concepts of the digital society" 8 *Internet Policy Review* 4 (2019).
[2] H.C. Dowdell, "What is a society?" 25 *Proceeding of the Aristotelian Society* 19 (1924).
[3] *Id.*

II. CHARACTERISTICS OF SOCIETIES

Furthering the idea of Inter and Intra interactions, every society can be broadly marked with 'Static and Dynamic' characteristics. While static characteristics, as the nomenclature suggests, are critical structural features that more or less remain the same for all societies, barring a few aberrations. E.g., social differences and interdependence, inherent class & social hierarchies, social institutions like family & religion, degree of urbanisation, economic systems, etc. These static characteristics, by and large, ensure that "Society- as a group of people, engaged in similar forms of vocation, enjoying similar economic, social and educational status, bounded by religion or culture professed and practiced by all members, and are part of a political system where each member have representation based on well-established, time-proved, and accepted legal norms, remain together to keep the structural framework of society intact.

The true composition of a society or societies never remains the same, (in reference to functional components which are outside the core skeleton/ static characteristics of society) as there always remains a perpetual influx and efflux of people as members of society. This can be attributed to bi-directional changes in the social, political, and economic status of people or changing cultural and religious beliefs to adjust to contemporary interpretations of philosophical tenets, or because of immigration or emigration due to myriad other issues. Nevertheless, all in all, these static features make sure societies stand upright, keeping their core characteristics and bearing the tests of time.

While the core of society witnesses the tests of time, but can an entity have perpetual existence without shedding the relics of bygones or adapting to the innovations of the present? For illustration, can a society be imagined where disputes settle in kangaroo courts or a society where printed newspapers are still the largest source of information or a society where telegraph still holds relevance as the fastest source of communication, or a society where computers are still an alien concept? Mere reading of these illustrations makes one realize their irrelevance in the contemporary times and will answer the above questions in negation. So, what makes a society to keep pace with advancements taking place in wide (but intersected) range of spheres? The answer lies in the 'Dynamic' characteristics of a society. The broadened 'Dynamic' characteristics of these societies are often witnessed in the prefixes attached to the word society. Furthermore, a perusal of these prefixes also delineates the transitions societies have gone through or will go through.

For illustration, a few examples of societies can be considered here, beginning with industrial society up to automated societies. The chronological transition can be mapped with the industrial society as the first society (*hypothetical case here*), moving to the Information Society and then from Knowledge Society to the Digital Society. From Digital to Algorithmic Society and finally to Automated Society (hypothetical case only, as the evolution of a society is a never-ending process). As technological innovations and advancements occur and are taken up or incorporated by members of society to a great extent as natural course of events, the prefixes keep on changing. Like agricultural society can be seen as pre-

mechanised agricultural society and post-mechanised agricultural society, depending on the advancement in other fields and their integration with agricultural society. Similarly, in the case of the Information society, where information is data and the internet alone, it can be further elevated to the status of digital society. But when data generated via internet is classified, interpreted and, analysed by making use of or deploying algorithms, to such scale where algorithms are no longer in 'sandboxes' and used by masses for mundane tasks, such society can be labelled as 'Algorithmic Society'. Further, when these algorithms are finetuned to an extent that they become capable of carrying out tasks in a fully autonomous manner and these autonomous tools are integrated and deep entrenched into the day-to-day tasks of members of society to a greatest possible extent, such society can be labelled as an automated society.

The dynamic characteristics of a society kept on changing and will keep on changing to keep pace with innovations and advancements taking place in technological, social, political, and other spheres or institutions. The result of these integrations is often seen in 'prefixes' attached to the word society. Nevertheless, it is not that a society makes forward or backward leaps in a standalone and haphazard manner. There are always building blocks that sets the pace for these forward or backward leaps. As Gilles Deleuze remarked in his book *Foucault*[4]: "When a new formation appears, with new rules and series, it never comes all at once, in a single phrase or act of creation, but emerges like a series of "building blocks", with gaps, traces and reactivations of former elements that survive under the new rules."

III. THE TRANSITION

Taking forward the case of 'building blocks' using Knowledge, Digital and Algorithmic Society as examples to showcase how the imperfections or voids within the structure of a society at a point in time pave the way for new socio-political developments and technological advancements. Further, when these developments and advancements, to a great extent, fill the existing voids in society, they start acting as building blocks for a new type of society, which at that moment is/was either imaginary or at the nascent stage.

(The following paragraphs depicting the origin of different types of societies, need to be read by keeping a broader perspective of events (foreseen and unforeseen) in hindsight- though only a few events have been taken up for the sake of understanding and refraining them to read as standalone events originating in an abrupt manner.)

The transition from industrial to information society started showing its effects around the mid-20th century when steam power (considered as a source of industrial revolution that began in the late 18th) as the force behind industrial society exhausted its potential and was replaced by more efficient and powerful gasoline engines. During the same period, new information showcasing the latest technological innovations, socio-political developments around the world and shift from traditional manufacturing jobs to computer-based skills

[4] Gilles Deleuze, *Foucault* 21 (University of Minnesota Press, London, 2006).

began holding their reach to the masses through unconventional sources of information dissemination. In information society, access to information becomes a fundamental aspect of daily life for one and all. However, such information was available even before this period, but certainly not at a scale and speed witnessed after the reach of electricity, automobiles and, electronic devices, mainly computer. Thus began the dissemination of information in society at scale, and with this, further creation, distribution, and manipulation of information play a significant role in economic, social, political, and cultural activities. While the core composition of society in terms of members, divisions and difference, institutions, hierarchy, roles, beliefs, etc. remained intact to a great extent, but the manner and scale at which information was reaching to these members and institutions of society allowed theoreticians like Ulrich Beck, Anthony Giddens, and Manuel Castells to argue that since the 1960s a transformation from an industrial society to information society has happened at the global scale.

Just like data is not information, information alone is not knowledge. Where in an information society, emphasis was primarily on disseminating information to the masses, knowledge society places a higher emphasis on the generation, dissemination, and application of knowledge as a primary driver of economic, social, and cultural progress. As stated above, no society has a standalone existence at any point in time. Thereby both information and knowledge societies existed at some point in time parallelly. While information society resides on the pillar of 'universal access of information', knowledge society keeps its weight on three additional pillars, i.e., freedom of expression, quality education for all, and respect for cultural and linguistic diversity.[5] Undoubtedly, all the four pillars as above-mentioned integrated with society in a phased manner, but without scientific delineation of time. In post-modern times, both 'Information and Knowledge' prefixes to society hold importance for the reason that, with the advent of Web 2.0 and 3.0, the internet transcends from 'Read-only' mode to 'Read-Write' and 'Interactive' mode, with users holding the rein of information generation, influx of information to them and application of same in their lives. In effect, a member of society not only generates data (information here), but simultaneously, through a dual-channel interactive medium (Web 2.0 & 3.0) decides what information he/she has to consume and the manner of its application in daily life. Information was always there for time immemorable, but its application in daily lives using cognitive faculties to take effective actions labels one 'Knowledgeable'. In general terms therefore, a society can always be termed as 'Information Society', but the same cannot essentially be per se 'Knowledge Society'. For a knowledge society to exist, its members must reflect and think critically on the information they receive and consume.

IV. PEOPLE, AND PHENOMENA

The prefixes attached to the word society are the *cumulative reflections of events* happening in a society at a given point of time, to a great extent. To illustrate this, a 'lawless society'

[5] Knowledge Societies: The forward to build a better world, *available at*: https://en.unesco.org/70years/knowledge_societies_way_forward_better_world (last visited on August 19, 2023).

does not mean that all law enforcement or democratic institutions failed in a given society, it simply suggests that a large segment of society is under the grip of anarchy. The prefix 'Lawless' reflects a majority of events *[n-(n/2) + 1 or more, n≥3, n denoting the total number of events]* happening in society at that point of time, but certainly not the whole spectrum of foreseen and unforeseen events. The nomenclature of prefix not only depicts the status of society but also acts as relics showcasing the chronological transitions through which a society went through during a time phase.

There are a great many possibilities that a prefix attached to a society at a point in time may lose its relevance in a geographical area. At the same time, it remains significant in another geographical area. For instance, South Korea is termed as a 'Cashless Society' as over 85% of transactions in economy are made using soft currency, but the prefix 'cashless' holds no relevance in the context of Japan as over 88% of transactions are in cash only[6]. While both nations share geographical proximity with a critical share in developing advanced technologies, despite this, 'other' factors together negate the technological advancements and devoid tag of a 'cashless society' for Japan.

Further, when a *significant number of members of a society* engaged in a particular vocation, activity, religious belief, cultural practice, or experiencing an unconventional/non-traditional phenomenon calls for particular a 'prefix', appropriate for that vocation, activity, practice, phenomena, etc. For ex. labelling a society as 'educated society' conveys that a *significant number of members of that society* possess basic literacy skills (according to parameters decided by national or international organisation) which they use in carrying out all sorts of transactions in their daily lives with other members of society. The same goes with 'Democratic Society'- meaning a society where ideals of democracy are cherished and followed in substance by its members- certainly with few aberrations.

In context of information and knowledge societies, the rapid development in computing & computational powers and percolation & integration of these powers in the societies ensured a further transition from a knowledge society to digital society. The developments in digital infrastructure, particularly access to high-speed internet access, data centres, cloud computing, upskilling of human resources on front of digital literacy to navigate, understand, and effectively use digital technologies, digital/e-governance initiatives by federal and state governments to ensure services more accessible and efficient, and boom in the digital economy and e-commerce has directly or indirectly left digital imprint on masses. Further, the dawn of the 21st century witnessed a society where information was generated, shared, stored, and analysed using digital means. Digital innovations are reshaping our society, economy, and industries with a scale and speed like never before[7] and the notion of digital

[6] Katharina Buchholz, "Where Cash is Still King", *available at*: https://www.statista.com/chart/19868/share-of-cash-payments-in-different-countries/ (last visited on September 23, 2023).

[7] https://libreresearchgroup.org/en/a/digital-society#:~:text=The%20notion%20of%20digital%20society,and%20speed%20like%20never%20before.

society reflects in adopting and integrating information and communication technologies at home, work, education, and recreation.

Undoubtedly technology is shaping our reality. It is due to the fact that technological innovations have reached such heights that nations have to come up with laws exclusively dealing with issues and challenges emanating from these advancing technologies. Crimes like cyberbullying, fraud, the transmission of obscene content using the internet, cyberstalking, cyber piracy, phishing, etc., are among countless misdeeds surfacing in society by mere employing computers and the internet- the two backbones of digital society. The interactions between people, technology, crimes, social institutions, and other events came alive on digital platforms to make digital society a reality.

Further, to call a society 'Digital Society' its members need to possess Digital Literacy and skills, avail of a significant number of state services using the internet, can have real-time social interactions transcending geographical boundaries, have digital inclusion and accessibility, seamless internet connectivity, robust digital infrastructure and control data and information they generate. To ensure a full-scale transition of society into digital societies, members of society are actively switching from conventional resources to digital resources, be it channels of communication or recreation tools, or modes of accessing information or the workplace. While transition on the part of members is one aspect, the core onus of making this transition successful lies on the state. The multiple facets of transition like, providing critical infrastructure like satellite and spectrum, swift upskilling, affordable access to the internet, last mile connectivity, inclusive transition by bridging digital and gender gaps, etc., ensures onus on the state outweighs that of members. To address these, nation states are coming up with a myriad range of solutions, starting with, one-stop centre for accessing the internet and availing government e-services, bringing last mile affordable internet connectivity using state-sponsored and operated broadbands, initiated digital literacy and upskilling programmes to gauge digital gap and prevent mass layoffs, launched digital public infrastructures for masses to cater evolving needs of services, at doorsteps and lastly 'personal data protection acts' to address the concerns of privacy.

Thus, in effect, acts by both members of societies and the state ensure the true transition of society into a digital society. All the set parameters like a significant number of members of society making use of technological tools to carry out tasks of their daily lives, state acting as the primary provider of these technological tools and services, all organs of state employing digital tools and services for their primary functions and numerous digital intermediaries mediating between state and society, buttress the case for the usage of prefix 'Digital' for contemporary societies.

Digital Society- a modern societal structure and environment in which digital technologies and digitalization, in particular internet, data, and smart devices, play a central and transformative role in various aspects of life. The digitization of social spheres and integration of traditional sources of information with the internet brought troves of structured and unstructured data in the public domain. With troves of data in public domain, free access

to internet and social media platforms defining reality on real-time basis, the role of humans as flaggers and content moderators became unworthy. Moreover, not only social media, but every sphere of society, be it smart cities or policing or governance, or banking sector, was emanating enormous data and thereby called for newer technology that can both cater to the evolving needs of society and simultaneously address the arising concerns from fast integration of technology in society.

V. AI AND POWER STRUCTURES

During this transitionary period of digital society, Morre's Law was fading its relevance- as computing power exceeded the limits determined by factor of time, with artificial intelligence (hereinafter AI) and Machine Learning (ML) enjoying the much spotlight. AI and its subset ML mimic human intelligence by performing tasks that include reasoning, problem-solving, learning, recognizing patterns, and understanding natural language. Today, AI and ML lag in achieving human-like conscience (causing alignment problem) in decision-making that necessarily involves emotions, subjectivity, critical thinking, and self-reflection. However, they far outweigh humans in terms of efficiency, objectivity, risk aversion, and predictive analysis. Today, both state and non-state actors (private entities here), across the spectrum of social spheres are using AI-powered tools for tasks like, policing, policy formation, governance, disaster prediction & mitigation, financial fraud detection, smart cities, IT returns, gait detection, flagging content on social media platforms, criminal profiling and calculating credit score.[8] While at personal level, individuals are using AI tools for social networking (people you may know), entertainment (top picks for user, or suggestions because you watch X movie or series), helps in enhancing objectivity by providing in-depth analysis of an issue, auto spam detection (mail and messaging services) or eliminating 'n' number of choices by providing few choices based on previous choices an individual had made (e-commerce platforms), stock trading (Buy, hold or sell option based on predictive analysis), auto labelling of photos (moments on google photos), etc.

AI is an umbrella term for all the constituents which together forms AI, namely algorithms, data, programmes, and codes. However, the brain behind AI is essentially *'algorithms'* trained on massive datasets. These algorithms, trained on datasets provides backbone to AI tools used by state actors, non-state actors, and individuals in day-to-day scenario.

Over the past decade, the power of algorithms has made itself felt in almost all of the spheres of society. This suggests that we need to think in terms of algorithms as one of the forms through which power is enacted in our society.[9] Yet, at the same time, an algorithm's power lies not just in the computer code, but also in the way that it becomes part of 'a code of normalization'.[10] This means that algorithms do not simply have power in the classical sense,

[8] 75@75 India's AI Journey, *available at:* https://www.meity.gov.in/writereaddata/files/75-75-India-AI-Journey.pdf (last visited on August 22, 2023).
[9] Marc Schuilenburg and Rik Peeters (eds.), The Algorithmic Society: Technology, Power and Knowledge 5-6 (Routledge, New York, 2021).
[10] *Id.* at 6.

as in the sovereign manner of power exertion. Rather, they constitute technologies of government as they provide 'actionable insights' for techniques that seek to nudge, manipulate or manage behaviour at both the collective and individual level. Meaning, that they do not obstruct, but – instead – provide a 'script' for action.[11] Or, in the words of Michel Foucault, algorithms 'structure the possible field of action' of others.

From algorithmic suggestions to algorithmic decisions to algorithmic predictions, algorithms have come to a far way and imbedded themselves into society to the point, where they generate, define and distort the fabric of reality in present times.

The prowess shown by AI-powered technologies defines us as specific kinds of persons whose spectrum for actions are conditions in particular ways by algorithmic tools developed by groups that determine the prevalent power structures of society. Where in agricultural societies, these structures were dominated by *zamindars* holding swathes of land or in industrial societies by those holding control over steam engines and import-export permits, today in democratic society, though the reins of society (*de facto*) may be in the popular leaders, but the actual power structures (*de jure*) lie in the corridors of technological behemoths of silicon valleys around the world.[12] The race for far advanced AI tools among these technological behemoths is essentially a race to develop advanced algorithms, which further skew the existing skewed power structures towards indirect technocracy.[13]

VI. THE OBSERVATIONS

Since time immemorial, there always remained dilemmas over classifications of societies, and so the perpetual quest to decipher the stages of social complexities. Ethnographic studies tried to define societies as hierarchical to oversimplify and generalize the complex social order of many western and non-western societies. But again, there were studies questioning the oversimplification process of hierarchical ordering, on the grounds that these categorizations lack in explaining, how different societies are related to each other, and how they blend into each other and ultimately partially replace one another.[14] With no strict delineation in sight, it is best to accept what Gilles Deleuze advanced in his book *Foucault*, "that the emergence of a new formation is not a single act, but a series of building blocks".[15] These building blocks comes from various stakeholders and actors of society, with each imparting an equal but indelible mark on whole process of evolution of society. Further, with innumerable micro activities operating at a given period of time in a society, the feasibility to record each is an impossible task and therefore come the need to have a macroscopic view of events to ensure broader categorisation of these events.

[11] *Id.*
[12] H. Akin Unver, "Artificial Intelligence, Authoritarianism and the Future of Political Systems" *Centre for Economics and Foreign Policy Studies* 6 (2018).
[13] David Beer, "The Social Power of Algorithms" 20 *Information, Communication and Society* 4 (2016).
[14] *Supra* note 9 at 193.
[15] *Supra* note 4.

In a society, three things define the operational aspects of a society. Firstly, the members of society, secondly the institutions of society and lastly, the interplay between members and the institutions or impliedly, the power structures. As stated in the beginning of this paper, use of terms like algorithms, AI, and algorithmic society has become a cliché, without dwelling into aspects like how these are affecting the key pillars of our society, such as administration, health, education, work, cities, and justice system. Therefore, to mark the transition from digital society to algorithmic society, it needs to be showcased how people, institutions, and power structures are being impacted by AI in general and algorithms in specific in a manner that give rise to new dynamics.

In context of people, it is stated above that from financial sector to entertainment, connecting with people to working remotely, etc. technical tools powered by algorithms had made in-roads way deeper into their lives and are definitely on surge. There is plethora of literature, pointing to the fact that time has arrived wherein algorithms are changing behaviours of individuals by nudging them to adopt and act on a pre-determined action plan, which is often decided by persons and entities with vested interests. Also, in context of masses, Yuval Noah Harari in his book *21 Lessons for the 21st Century* stressed that increasing adoption of AI will result into categorisation of citizens into two categories i.e., AI elites and useless class,[16] showcasing the drastic impact that AI will have on masses. In context of institutions and events, NITI Aayog report *75@75* highlighted the case, wherein almost all of the digital initiative of government of India and state governments are being taken forward using AI powered tools and that too with the partnership of private actors. Today under the umbrella of 'Digital India' almost every citizen is covered in one way of other and once every citizen has been covered under a program which operates through AI powered tools, the interaction between people and institutions becomes technical, thereby syncing with shifting realities.

The last and most important aspect i.e., power structure in society, has witnessed a fundamental shift in matters of sovereignty from governments to big technology companies. The abstract notion of sovereignty here is in relation to the 'authority to make decisions' in spheres that impact how people live, the places where they live and the things that regulate their lives. The shifting reliance of the governments of the day on private entities to develop advance technologies to regulate societies, is in essence allowing private entities to dictate what 'good governance' is, what it entails, and which class of individuals will be beneficiaries. The whole process puts the reins of society in the hands of Silicon Valley mammoths.

The three factors taken up to justify the usage of the prefix 'Algorithmic' to word society, i.e., cumulative reflection of events (phenomena), significant number of members engaged in and by specific types of events (people), and power structure (power), undoubtedly demonstrate that AI-powered tools and technologies rule over people, phenomenon and power in present times. Further putting it in simpler terms, these people, phenomenon, and power structures are the broad markers of society and a society in which inter and intra interactions among

[16] Yuval Noah Harari, *21 Lessons for the 21st Century* 27 (Penguin Random House, London, 2018).

broad markers are determined by algorithmically powered AI tools, such a society can be labelled as an ‘algorithmic society’. While weak/narrow AI using algorithms and data sets is doing marvels in present times, the case for general AI certainly lies in an ‘automated society’. In sum, all three factors taken up to demonstrate the justification of the present case, aptly justify the usage of prefix ‘Algorithmic’ or ‘Algorithmically- mediated’ for society in present times.