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# A Review of Digital Spatiality, Time, Culture and Human Communication

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**Abstract**

Communication is an important element that enables humans to be sociable animals, and even when separated by space, time and distance, human connection is still possible with the help of human-made artefacts and technologies. This paper reviews the influence of digital media and technology on how humans perceive time, culture, and space,

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## 1. Introduction

This paper is situated in how digital media and technology has influenced how humans perceive time, culture, and space, resulting in a new type of human interaction and communication (Wieser, 1991). Digital technology has become important in our lives as they influence our contemporary experience. Given its relevance, it is expedient to understand what the word 'digital' means. Digital refers to data in discrete numeric form, while digital technologies include all electronic equipment, tools and resources that generate, store or process data in the form of discrete numeric code. These includes computers, mobile devices, internet, social media, computer games, electronic music, the World Wide Web, multimedia, digital telephony, productivity applications, Wireless Application Protocol (WAP), cloud computing, as well as the various cultural and artistic responses to the digital technology, for instance sci-fi movies and Techno music. The digital and technologies are everywhere, they are radically transforming how people communicate, often by slowly penetrating without our awareness. An example is the development and penetration of mobile phones. Earlier, one has to enter a physical space designed for talking on the phone, usually a phone box, then connect to a specific physical location linked to the phone number, before speaking to someone. Today, it is possible for one to answer the phone anywhere in the world, basically any space is appropriate for establishing a phone call. Which has led to a typical question in the mobile phone paradigm of: "where are you?"

Space as a concept has been discussed within different academic fields such as architecture, philosophy, geography, physics, psychology and mathematics; however, spatiality is one of the core features and central topic in the study of digital media (Benedikt, 1992; Murray, 1997), ever since the introduction of cyberspace. Space can be defined as measurable parameters necessary for interfacing the digital and physical domains, however the perception of space is highly subjective and dependent on the senses that absorb and interpret space. Spatiality, the property that describes the human experience of physical and psychological space, is a social product that intersects social action and social relations (Massey, 1994). Spatiality, as a social product is the medium and outcome simultaneously as spatiality is "both the condition for and the symbol of, social relations" (Tonkiss, 2005 p. 148). A social space is produced via human actions and relations and every society produces its own space (Lefebvre, 1991). "Understandings and concepts of space cannot be divorced from the real fabric of how people live their lives," and this continuing discussion is imperative to the concept of space as a social construction (Shields, 1991 p. 46).

Human spatiality is built on basic spatial skills that enables communication about position, direction, shape, size, changes and relationships between objects (Smit, 1998). Without these spatial skills it would be difficult to exist and interact in space, these skills include – metrics, location, scale, zoning and crossing. Metrics is the capability to measure distance; Location is the capability to finding the "right" location; Scale is the capability to compare different phenomenon or objects with regard to their spatial resolution; Zoning is the capability to determine the limits to one's action within a spatial area and; Crossing is the capability to cross through different types of obstacles or barriers. However, the digital environments has strong impacts on these skills and then on human

 

spatiality.

The changes and developments in digital technologies has altered how humans experience space and sense of time – past, present and time flow. Digital technologies influence the cognition of humans, through the different sensory channels that creates perception. Digital technology has impacted the everyday interactions of humans by creating social spaces, influencing how "conversation" between space and the body is made and how interpersonal relationships are built. Generally, the sensory channels affected by digital technologies are the auditory and visual channels, however the overall user experience should include the influence and presence of the digital technologies in space and on the human body. The kinesthetic movements that include lying, sitting, typing, scrolling and visceral reaction to remediated signals are all part of the experience as they affect our performance, albeit we are not always aware of it. In essence, this blend between physical spaces and digital technology has somehow change our understanding of the presence, absence, location, distance and functions of space (Virilio, 1994; Munster 2006; Massumi, 2002).

## 2. The Concept of Space

What is space? Historically different concepts have been used to explain what space is – philosophy, metaphysics, religion, - and increase our understanding of space and the physical. Plato, in Timaeus defined space to be neither a form or a matter, as form is "from which it is becoming" and matter is "from which it is constituted" (Plato, 2000 48e-53c). Plato described space to be a vessel for objects to come into being. Aristotle describes space as "a limit of the containing body at which it is in contact with the contained" (Aristotle, 1983 4.212a, Book IV Delta). Aristotle also defined space to be different from form, or matter. For Aristotle, "the place of a thing is the innermost boundary of what contains it". Leibniz defines space to be "merely relative … as an order of coexistences, as time is an order of successions" (Leibniz, L111.4, AW 297b). Leibniz's relational theory was defended by the applicability of mathematical reasoning on physical and metaphysical subjects, in which he concluded that "space is nothing but an order or set of relations among bodies, so that in absence of bodies space is nothing at all except the possibility of placing them" (Leibniz, 1956 p. 9-10). To Leibniz, space is not a substance, but space only exist as the relative location of bodies, and time exist as the relative movement of bodies.

On the other hand, Newton described space to be absolute and a physical reality from the perspective of classical mechanics. He maintained that absolute space is a great void which objects occupy. Contrary to Leibniz's view, Newton describes space to be something that exists independently and distinctly from the existence of objects, he said that "Absolute space, in its own nature, without relation to anything external, always remains similar and immovable" (Newton, 1966 AW 285). Newton posited that humans can only observe relative space and time, but absolute space and time must presuppose the relative. He argues that motion is the only medium which space can be explored. His view is that "There is a real force causing real motion, which is the rotational absolute motion. If there is an absolute motion this requires the existence of absolute space" (Newton, 1966 p. 11-12).

Kant's conception of space tried to reconcile Leibniz's notion of 'relational space' and Newton's notion of 'absolute space'. Kant proposed that space and time exist at one level of reality but not at another. Kant posits that space and time is a pure form of our intuition and a priori condition of one's experience, a priori in the sense that it is known in advance of experience (Kant, 1998 A26/B42). This perspective agrees with Newton's view that space is absolute and real for objects in experience, and also agrees with Leibniz's view that space exist independently from the object. In essence, Kant's philosophy is that "space" is a concept we bring when we experience. Conversely, Heidegger rejects these traditional approaches, as he posits that space is found neither in the objective world nor in subjectivity; rather, it is grounded on the "Being-in-the-world": "Space is not in the subject, nor is the world in space. Space is rather 'in' the world in so far as space has been disclosed by that Being-in-the-world which is constitutive for Dasein." (Heidegger, 1969 p. 48-49).

Contemporarily, Henri Lefebvre (1991) has written extensively about space, with the aim to develop a theory that would combine the three "fields" of space - physical, mental, and social. He tried to "bridge the gap between the theoretical (epistemological) realm and the practical one, between mental and social, between the space of the philosophers and the space of people who deal with material things" (Lefebvre, 1991 p. 4). According to Lefebvre, theorist from different fields have divided space into a 'triad' of three characteristics - "perceived space, conceived space, and lived space — i.e., space as we see it (but also touch it, feel it, and so on), space as we design and build it, and space as something we relate to in an emotional and affective way" (Lefebvre, 1991, p. 246). However, Lefebvre posits that these three characteristics are inseparable as each characteristic affect how we represent space, but more importantly, how we experience space and the "real task of spatial thinking is

 

to try to think of the three facets of space together" (Soanes & Stevenson, 2006).

According to Lefebvre, to understand the term 'space', it is important to understand the concrete and the abstract, as space is produced by an interplay of mental, material and experiential processes (Nunes 2006). Supporting Leibniz's view of space, Lefebvre maintains "[...] a space is not a thing but rather a set of relations between things [objects and products]" (Lefebvre, 1991, p. 83). Also supporting Heidegger's view of space, Lefebvre maintains that "space does not exist in any such absolute, a priori form; it is not something that human activity fills up, but rather something that human activity produces" (Cohen 2007, p. 232). Therefore, Lefebvre defines the 'triad' as "the three moments of social space" (Lefebvre, 1991 p. 40), since his theoretical approach posits "space not as a fixed entity that "pre-exists" human interaction, but as a dynamic set of relations, actively produced through sociality, in a constantly mutating process" (Peters, 2015, p. 2).

Consequently, as described, space is a product of spatial and social interactions and the nature of space as a social product involves reproducibility (Simonsen 2005). Social space is that realm "that is subject to physical repetition in the daily cycle of interconnected rhythms and rituals" (Wainwright, 2005 p. 24). Lefebvre's basic concepts for analyzing social reality are Spatial Practice, Representations of Space and Representational Space, these realms are intrinsically connected and cannot be isolated (Lefebvre, 1991 p. 40). These concepts also describe the 'triad' - the lived, conceived, and perceived - characteristics of space. The concept of 'Spatial practice' expresses the perceived dimension of space. This concept embodies the "practices that 'secrete' the space of a particular society, 'facilitating both material expression and societal reproduction" (Halfacree, 2007, p. 126). The Spatial practice is 'empirically verifiable', as the components of space can be measured and quantified from the manifested society's mode of production, using social science methods. In essence, a social space is formed and reproduced from the daily activities/routine of the members of that society.

The second concept – 'Representations of space', or conceptualization of space is the 'conceived' space. The concept refers to relations between lived space and a conceptual framework and "tend ... towards a system of verbal signs" (Lefebvre, 1991 p. 39). Representations of space tell us what to do in certain spaces, they tell us what is allowed and what is not, where we should stand or sit, nap or congregate. This dimension of space is constructed by assorted professionals and technocrats, thus "play a part in social and political practice" (Lefebvre, 1991 p. 41). Hence it is the dominant space of any society, as it is "intimately tied to relations of production and to the 'order' those relations impose, and hence to knowledge, to signs, to codes, to 'frontal' relations" (Lefebvre 1991, p. 33). The Digital space is likewise a conceived space of select groups of increasingly more powerful specialists: coders, graphic designers, programmers, and engineers. These represented spaces operate in the digital works through instructions, measurements, plans and diagrams, as structured and symbolic orders. These orders are expressed in maps, tables and charts, still and video images, spatial metaphors and descriptions.

The third concept - Representational spaces is the 'directly lived', and therefore the 'dominated' space. This dimension of space comprises of "diverse and often incoherent images and symbols" (Halfacree, 2007 p. 126), which is the realm of material symbols and constructed architectures. The lived space, is where essential "human desires, powers and potentialities are initially formulated, developed and realized concretely" (Gardiner, 2000, p. 75).

## 3. Digital Technology and the Re-Conceptualization of 'Time' and 'Space

'Time', 'space' and 'place' are commonly used concepts that have different theoretical perspectives. According to Scannell (1996), Time can be defined as "natural time…abstract time … or experiential (phenomenological) time, with the latter being conceived as 'my time: time as experienced by me-or-anyone, my own here-and-now, my situated being-in-the world, me as a real someone someplace sometime now" (p. 152). On the other hand, space and place are concepts that are often intermixed as "it seems that space provides the context for places but derives its meaning from particular places" (Relph, 1976, p. 8). The concept of "place" is used often to describe the human experience of space. Following this logic, "place" is then "a concretion of value … it is an object in which one can dwell', whilst 'space … is given by the ability to move" (Tuan, 1977, p. 12). In essence, space where we are located, while place is where we act and reality is understood (Harrison & Dourish, 1996). Space becomes place when it acquires symbolic meaning and a concrete definition, marking the whole spectrum of identity and sense of belonging. Thus, place is also associated with the concepts of time and space.

However, Time and space are inherent and inseparable components of physical reality and in the logic of networks and flows. Time involves space and space exist in time, as "we have the sense of space because we can move and of time because, as biological beings, we undergo recurrent phases of tension and ease" (Tuan, 1977, p.

 

118). Space and time act as perceptional modes and provide the historical evidence of our existence which can be depicted through changes in time at different temporal points. Although the sense and measurement of time depends space and spatial distances, time and space are features of reality that "coexist, intermesh, and define each other in personal experience" (Tuan, 1977, p. 130).

Digital technologies have influenced how humans conceptualize and experience time, space, and place. Historically, human experience of how mediated communications has influenced the conceptualization of space and its relation to time can be categorized into five main phases. The first is the phase of oral – that constituted a local perception of space with an framed period of time, as this phase is characterized by 'unmediated' or 'premediated' – communication; the second is the scripted media production phase which increased the local perception of space by extending the spatial span of communication and its possibility in time; the third phase – print media introduced both local and national spaces, extending both but reducing the relevance of time for communication; the fourth phase - electronic media constituted a global perception of space and time; and the last phase – digital communication introduced a timeless and distance-less world. The concept of time in the digital age is 'timeless time', which is characterized by instantaneity (Bell, 2007 p. 75). Timeless time has affected our lives in many positive ways – innovations in medical technology to improve and prolong our lives, the speed of financial transactions and the speed of physical transportation and information communication. The reduced time constraints in this era of digital communication, provides a new virtual reality that 'allows "future" or inexperienced experiences to be experienced' (Lee & Liebenau, 2000, p. 50), influences how "spatio-temporal boundaries are negotiated in a mobile society" (Link & Campbell, 2009 p. 14) and affects "people's perceptions of time, and the way time is organized" (Lee & Liebenau, 2000 p. 44).

The integration of time into human's lives and the perceptions of temporality either subjectively or objectively as a measurable reality, is historically embedded in different cultural environments. Time is an important consideration that cannot be ignored in the daily lives of people, as it is closely connected to the understanding of people's cultural identities and lifestyles. In this respect, the movement of temporality along technological change demands a structural reconsideration of the old-fashioned notion of time that takes seriously into account socio-cultural drivers and media technology parameters that mediate the concept and experience of space and time.

## 4. Technology and Culture

All human society has its own trait(s) and meaning(s), and these are expressed in institutions and transmitted in learning. Where traits which refer to behavior, morals, knowledge, ideas, concepts, beliefs, symbols, norms - are "characteristics of human societies that are potentially transmitted by non-genetic means" (Mulder et al., 2006). The distribution and transmission of these traits across a population is called culture (Carley, 1991), which also agrees with the definition that "Culture is the socially transmitted knowledge and behavior shared by some group of people" (Peoples & Bailey 1998, p. 23). Culture is learned and derives from one's social environment, however 'learned' refers to combined influences of collective programming (culture) and one's unique individual experiences. Culture is therefore "an individual, psychological construct as it is a social construct" (Matsumoto, 1996 p. 18).

Technology facilitates our lives by providing "cultural information about how to use the material resources of the environment to satisfy human needs and desires" (Nolan & Lenski, 2006 p. 37). The rapid developments in technology have influenced many aspects of our contemporary life and how the society works. More specifically, digital technology is changing how human interact and communicate with each other. Digital comprises the behaviors and possibilities that are embodied within a particular technology that enables development. However, digitalization presents with cultural challenges that relates to how human's relationship to technology affects cultural context and perceptions. Culture is formed through human communications and preserved by cultural communication structures. According to Foresta, "culture is a memory, collective memory, dependent on communication for its creation, extension, evolution and preservation" (Foresta et al., 1995, p. 19). However, the process of creation, transmission and preservation of culture is enabled and facilitated by technology.

Culture and technology are connected and cannot be separated (Vannini, Hodson, & Vannini, 2009). There is no technology-free culture, as "without recording technologies of some kind (tablets, paper, wax, movable print, analogue and digital electronics and so forth), the cultures we all inhabit would not exist" (Lister et al., 2009). The effect of changes in technologies usually affects the cultural and communication model of a society because these technological changes alter the cognitive skills of any given population (Dascal, 2006). Cultural eras can be categorized according to the dominant communication technology responsible for transforming a transitional

 

era into a cultural revolution. The oral culture era entailed information transmission only via direct communication; the written culture era entailed information transmission via written messages in text and print that were sent, recorded and preserved through space. The transition from the oral to written was a cultural revolution that changed how humans obtained, retained and communicated information. The availability of the press and broadcasting technology enabled a culture where information is mass transmitted from centralized sources. "Arguably the nature of our culture is changing, providing new possibilities or dangers for the future generations" (Stevenson et al., 2002 p. 7).

In this day and age, we have the digital culture, at the heart of which is the interaction between humans and electronic devices. The digital culture which offers a range of platforms for communication have transformed the cultural scene greatly by eliminating the boundaries between cultures (Joag, 2012). While digital culture and print culture has many similarities like accessibility and information-richness, an important difference is hyper-connectivity. This is characterized by instant gratification, efficient accessibility, interactive-ness and exponential information-richness that is beyond any individual's capability and a driving force of productivity. As technology evolves and our dependence on it increases, our culture will keep on changing. As long as culture keeps changing, people experience new culture shocks. This is unavoidable.

## 5. Theoretical Framework.

### *5.1 Actor-Network Theory*

Actor-Network Theory (or ANT) is a theory within sociology developed by the Michel Callon, Bruno Latour, Annmarie Mol and John Law since its emergence in the mid-1980s, (Fuglsang 2004; Bosco 2014). Actor-network theory suggests that all entities achieve their significance through their relations with other entities (Law, 2000a). The theory provides a socio-philosophical view to how relations between human and non-human elements are formed and a theoretical approach to describe the complexities of socio-technological interactions (Law, 2009). The central concepts to the ANT are actors and networks; the actors – or actants – can be non-human or human, and the network resembles a path made up of linked points (human or nonhuman) that is arranged like a web and not hierarchical (Fountain, 1999). A network is formed through the activities and interactions between heterogeneous actors (human and non-human), a network therefore draws together actors with their own space-time, into new and different links (Murdoch, 1998).

"An actor in ANT is a semiotic definition – an actant – that is "something that acts, or to which activity is granted by another" …an actant can literally be anything provided it is granted to be the source of action" (Latour 1996, p.373; Callon & Latour 1981, p.286). Within the ANT terminology, an actor can anything (human or non-human) that has a source of agency - both broadly (a theory) and materially (a thing). ANT theorists argue that humans do not have the sole privilege of agency, non-humans can also have agency, although with different meanings, and consequently can also be actors (Sayes 2014). According to Yeung (2002), non-humans contribute to the construction of the social sphere, as they preserve the social norms and values through space and time. Actant, in the context of ANT, can be tangible (such as a computer, a file, a protocol or people), non-tangible (such as software, information or knowledge) or an interactional mediator within human and non-human interactions (Gardner & Cribb, 2016). In essence, an actor (actant) is anything that is active and performs, importantly its agency is represented (Fuglsang 2004), or otherwise attributed agency by others (Callon 1990; Latour 1996; 2005). An actor-network is therefore a network of interactions and relations between heterogeneous actors that enables the mobilization of resources (practical or theoretical) between them.

ANT was first developed to study technological artifacts as social constructs (Bijker, 2010; Pinch & Bijker, 1984) and to understand the influence of network on actors. ANT is essentially a framework used to study the roles of humans and non-humans in the constructing of networks between people, their ideas and technology for knowledge production (Farias et al. 2012; Latour, 2005; Callon, 1986; Law, 1986). The interpretation of the functional and social-cultural properties of a technology allows for flexibility and negotiation by relevant social groups because technology is socially constructed. "These groups are formed by the users and producers of the technological artifacts based on their shared or diverging interpretations of the technology in question" (Brey, 2004 p. 24). For instance, to sell an electric car, engineers have to both design the car and produce social and political networks. ANT provides a theoretical framework for discovering how ideas, values, and intentions of social actors become inscribed in technology (Akrich & Latour, 1992). Actors make networks, and networks produce effects.

Although the origins of ANT is in the study of science and technology, the theory is also applicable to the field of media and communication with a comparable focus on technology. Researchers in media and communication

 

technology have used ANT. For instance, Thierry Bardini's (2007) work in new media and cyber-culture used ANT's concepts of scripts to describe how technology "inscribes" a particular understanding of its end-user. In a similar study, Siles and Boczkowski (2012), used ANT to show that technology is extended beyond its materiality by user-generated content of new media. Researchers in other field like organizational communication have also used ANT's concept of networks to show how varieties of non-humans including technology, are at play in organizations. Studies have also shown how "documents, notes, emails, whiteboards, slide presentations, and other "technologies" contribute to organizing processes in their ability to carry speech (and the deeds that are accomplished through speech) through time and space, which allows communication to act beyond the specific situation of its production" (Bencherki, 2017 p. 9; Czarniawska, 2004).

Other application of ANT is in the misuse of technology and cybercrime (Jaishankar, 2011; McQuade, 2006; 2009); the assessment of digital inclusion (Teles & Joia, 2011); information privacy (Bonner, Chiasson & Gopal, 2009); networks of practice (Takhteyev, 2009); online newsroom practices (Weiss & Domingo, 2010); information security awareness (Tsohou et al., 2012); science journalism and communication (Besel, 2011; Fioravanti & Velho, 2010); complexity and information systems (Merali, 2006); e-government initiatives (Gunawong & Gao, 2010), and crime media effects (Mopas, 2007).

## 6. The Evolution of Human Communication.

Communication can be defined as "social interaction through messages. Messages are formally coded, symbolic, or representational events of some shared significance in a, culture, produced for the purpose of evoking significance" (Gerbner, 1964). Communication is central to any society, it is needed for formation of social groups, transmission of culture and the foundation of "being human" (Popper, 1994). Human communication is not only important, it is also rich. Humans use a variety of different senses to exchange thoughts, messages and meanings. Media, however, emerged as an extension of the human five senses, and aids humans in exchanging messages across distance, space and time. Media of communication are the means or vehicles capable of assuming forms that have characteristics of messages or that transmit messages.

Media technologies have integrated extensively into the way we live our lives, affecting the ways we communicate in different spaces. Writing and painting were the first categories of mediated communications that helped humans to go beyond their special and temporal limits. The invention of books were considered a "revolution" (Eisenstein, 1983), as well as the invention of the radio and television. These inventions transcended national borders, lead to the formation of nation states and became tools for the establishment of a global community (Anderson, 1983; McLuhan, 1964). In recent times, Internet diffusion, digital media and mobile communication have stimulated an increase in communication networks that links the global and local at any given time.

Through the path of history, all invented 'medium' from the first ancient painting to the mass-produced newspaper, the radio, the television to the telephone; each medium has enabled communication through a specific mode and sense. For instance, paintings are only visual and not heard and the telephone conversation can only be heard and not visual. Each medium was projected to disseminate a particular kind of information, but not others. Humans are then compelled to use multiple media and their networks in order to compensate for the innate limitation(s) of each individual medium.

Digitization has affected considerably humans' perception of the media, the reachability and accessibility of media, and the how time and space is utilized. Digitization transforms analog to digital by converting all information into a universal binary code which is then transmitted through digital networks, making it possible for a large amount of information to be retrieved, manipulated, and stored in a very limited space. Due to this unique method of information production and distribution, digital communication is not limited to a specific sense or mode of human interaction. All kinds of information can be transmitted through one and the same network, leading to the movement from other dedicated networks to this universal network a development termed "convergence." The consequence of this convergence is that time is compressed due to the decreased distance between spatial points, leading to perception that local, national, and global space is becoming obsolete (Harvey, 1990). The compression of time and space enabled by the convergence of new media and globalization produced a global cyberspace wherein there is an emergence of a new cultural identity in new and diverse communities that are virtual.

According to Lister et al (2009), at least six new human experiences have emerged from the convergence of new media and globalization – new textual experience; new types of relationship between the new media technologies and the human biological body; new forms of production and organization; new types of

 

relationship between the new media technologies and users; and fresh ways of representing the world. These experiences arising from the use of the new media is challenging the traditional definition of cultural and social identities by "weakening or strengthening the intensity of the relationship between people and community" (Hampton & Wellman, 1999; Singh, 2010), changing the perception of what a community is, and necessitated new ways of intercultural interaction (Chen & Zhang, 2010). In general, new global trends resulting from the convergence of new media includes – the creation of new social networks; increase in social exchanges and social relations; and the re-definition of economic, political, cultural and geographical borders of the human society (Gupta & Govindarajan, 2007; Steger, 2009).

Chen (2007) also highlighted other aspects of the human society that is impacted by the digital or new media - social effect, cognition, and aesthetics. The Social impact is the effect of demassification, which is manifested by the replacement of the traditional large homogeneous audience with a more individualized appeal that allows the audience to create and access the content that they prefer (Olason & Pollard, 2004). Cognitively, the creation of content by users and the non-linear characteristic of new media influences how humans use digital or new media. Aesthetically, new media brings a fresh visual view that is characterized by "interactivity, manipulation, the prepurposing and repurposing of content across media, deliberate creation of virtual experience, and sampling as a means of generating new content" (Chen, 2007, p. 95).

Despite all the positives impact of electronic and digital media on human communication, one may question if such an onslaught of symbols, words, sounds and images would be overpowering, and resulting in information abundance and information overload. How can media users' process information brought to them via high-speed electronic media? For instance, the average daily newspaper, magazine and books contains an average of 150,000 words and hundreds of graphic images; Each channel on the television shows on average 3,600 images a minute; a Radio station typically generate on average 100 words per minute. In retrospective, this may seem like an information explosion that stimulates investigations into individual and psychological level of dealing with informational abundance. However, with the ongoing studies on the effect of information overload, there is very little such evidence of dysfunctional information overload (Gitlin 2002; Ritchell 2010).

## 7. Conclusion.

Communication is an important element that enables humans to be sociable animals, and even when separated by space, time and distance, human connection is still possible with the help of human-made artefacts and technologies. In earlier times, the human communication space was limited to the physical reachability of the human senses. In present times, the spatial dimension of the human communication space has been expanded by technologies like writing, painting, telephony, radio, television and the digital media.

Space is inherently social, as every social processes and daily activities are mediated in space (Crang & Thrift, 2000). However, the discourse of spatiality in the digital era has turn out to be important as it has transformed the conventional human spatial experience, "how social relations are produced and reproduced" (Gregory & Urry, 1985, p. 3) and cultural development. The evolution of digital environments arising from the proliferation of technologies presents challenges that requires a set of skills - technical, emotional, cognitive, and sociological - needed to perform effectively in the society. These skills are called 'digital and media literacy' in literature (Buckingham, 2003; Gilster, 1997; Hargittai, 2008; Lankshear & Knobel, 2008). In the modern time, digital and media literacy is an important "survival skill" – that people need in order to communicate, access, analyze, engage in critical thinking and make informed decisions about issues in their everyday lives.

In an age of information overload, where most people are "constantly connected" to social networks, multiple TV channels, broadband Internet access, and mobile phones; digital and media literacy competencies have enormous practical value and relevance to their lives (Hargittai, 2008; Jones-Kavalier & Flannigan, 2006). The swift rate of change we are encountering in the development of new communications technologies and information flow is probably going to continue. Subsequently, individuals need to participate in lifelong learning starting as early as kindergarten, keeping in mind that the end goal is to be able to use evolving technological tools and resources to achieve individual, social, and cultural activities.

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