

The production of digital spaces in screenscapes

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Abstract

The screen is an inseparable and pivot across smartphones where images, texts, symbols, videos, and audio appeared in varied representations during scrolling the screen, which can be understood as screenscapes. The use of screenscapes is visible in both public and private spaces. Screenscapes blurred the boundary between public and private spaces in a sense of function, connectivity and commonality. The shown contents on screen shapes spatial experiences in terms of cognitive thinking, feelings, emotions, values, moral, ethical, behaviors, gestures and attitudes during scrolling the screen. Screen behaves as digital spatiality wherein the shown contents may be either acquaintance or non-acquaintance. The shown non-acquaintance contents can be mapped as space, while the appeared acquaintance contents can be considered as place. How do screenscapes influence the users in a spatial sense? How are digital spatiality on screenscapes linked in a spatial sense? The paper discusses the digital spatiality of screenscapes in spatial manifestations.

Keywords: Space; place; digital spatiality; screenscapes, (non) acquaintance, smartphones

Introduction

Building on Appadurai's (1996) framework of five global cultural flows—ethnoscapes, technoscapes, financescapes, mediascapes, and ideoscapes—this study introduces the concept of screenscapes to capture the increasingly pervasive role of digital screens and interfaces in shaping contemporary spatial practices and imagined worlds in the context of Indian smart-urbanism. Appadurai observed that mediascapes, as technologies of dissemination, include newspapers, magazines, television and films; and social media that shapes the flow of images and narratives about human lives. He argued that mediascapes work purposefully either as a state or private entity to disseminate narratives to shape the material and creativity.

Screenscapes represent a modern extension of Appadurai's mediascapes

in the digital era, encompassing the flow of news, entertainment, sports, serialized dramas, and financial trading—all consumed through the endless scroll of smartphone screens. Screenscapes is similar to mediated technologies where users can scroll a number of contents across social media apps to construct or deconstruct their views, narratives, discourses, ideas, emotions, and perceptions (Moinuddin, 2023a). These can be effective to locate digital experiences in varied capacities, which can be anxieties or depression or concerns or angst or, in contrast, it may be disquiet or frustrations in vivid signs and symbols. Content materialized within screenscapes may be perceived as mundane, reassuring, or lightly pleasurable, or conversely, as moments of unfiltered happiness, explosive laughter, ecstatic frenzy,

or exhilarating intensity. Daily engagement with smartphones in a sense of screenscapes is conceived following two core questions: How do screenscapes spatially influence users, and how are digital spaces within screenscapes spatially linked? It advances the spatial mapping of screenscapes in three significant ways: (1) conceptualizing screens/capes as extensions of digital space, (2) situating screens as geographically constituted “scapes,” and (3) charting spatial turns that reconfigure relations of space and place in digital environments.

Mapping screenscapes

The screen is an inseparable feature across digital gadgets in general and smartphones in particular. The screen functions as a display board that exhibits the contents of social media apps in vivid representations and interpretations. Both screenscapes and landscapes possess the distributional and locational features. The distribution and locational attributes of widgets and others, including apps shaping the screenscapes as digital spatiality, where a number of features are layered one upon another like ‘primary space’, secondary space’, and ‘tertiary space’ (Moinuddin, 2023).

The screen as materiality

The screen gives the first glimpse of functional and operational modalities and aesthetics (Chen and Catrambone, 2015; Myrberg and Wiberg, 2015) of smartphones. Jong (2015) emphasized on privacy, surveillance, power and representations. Screen can refer to material objects for communications purposes (Jensen, 2010). Screen is consisting of hard glass. Unlike traditional glass sheets, the glass used in smartphones is often aluminosilicate glass, popularly known as *Gorilla Glass*,

designed to resist shattering and scratching, even when dropped onto a hard floor or struck directly. The bottom layer is made of glass and the top layer is made of plastic film. The plastic and glass film are covered with a grid of electrical conductors. These can be fine metal wires but more often they are made of a thin film of transparent conductor material that emits lights. Nowadays, almost all digital devices have touch screens. Touch screens are made up of multiple layers of plastic and glass, coated with a conductor material called indium which is highly conductive and transparent. Indium responds when contacted by another electrical conductor, like our fingers. A user can scroll the screen by using her finger. Screens are not merely a glassy opaque electrical conductor, rather embedded with features like cultural differences in spatial understanding (Bonnemaison, 2005) and influencing the mode of communication, having mundane consequences in society (Shen & Wall, 2021). Screenscapes can be embodied as materiality as well.

The scape/content flow

Smartphone users unlock screens approximately hundred ten times a day (Thevapalan, 2020). However, the frequency of unlocking the screen of smartphones has been increasing for various purposes to check calling lists, emails, ‘WhatsApp messages’ (Jailobaev *et al.*, 2021) and other online activities. Screenscapes provide users the opportunity to engage from ‘public spaces’ (Richardson, 2021) or from private settings as ‘digital labour’ (Sevignani and Fuchs, 2013), producing a range of content in the context of global connectivity. Craine (2007) and McLuhan (1964) stress the significance of the medium, whereas Mitchell (2000) contends that messages are lived through

representations. Images have always been pivotal in geography (Thorne, 2004), closely intertwined with media and geography (Specht, 2018; Burgess and Gold, 1985), in both real and imaginative constructions (Soja, 1996), time, location, and widgets are inextricably linked to a screen. Screenscapes provides a spatial insight, as the signs, symbols, and representations displayed on the screen can be interpreted as the landscape of content flow. Smartphones are useless without having any social media apps. Smartphones allow users to access social media applications effectively. The content that appears influences users both emotionally and materially in varying degrees, depending on their exposure to education, as well as social, cultural, spatial, economic, and political knowledge. The content shapes the user's relationship with the screen when the screen functions as a platform where the displayed content manifests as a landscape in terms of the flow of information presented in diverse representations and interpretations.

The screen as a site

The spatial placement or installation of widgets, apps, fonts, date, month, time, alarm clock, notifications pop-up, network, Wi-Fi, unlock pattern/password/fingerprint/facial and display picture on screen can be considered as digital spatiality. All such widgets shape the digital spatiality and spatial representations (Robinson and Schulz, 2011; Kinsley, 2013) that are not found uniformly across the screen. Each screen has own experiences that exhibit as a site where widgets are located, shaping the spatial cognition differently in different contexts.

Screenscapes exhibit social media apps for varied dimensions wherein each app behaves as separate, isolated, unique, and

exclusive, which creates unacquaintance in a sense of nonconformity. These can be studied as digital space(s) in a spatial sense.

Spatial turn in screenscapes

Screenscapes is a new dimension of digital spaces. The cognitive spatial imaginations shape virtual spatiality wherein screen behaves as space and place differently in different positionality (Moinuddin, 2023). The traditional binary around space and place has been reproduced across geographers irrespective of their neo-Marxist, Humanistic, and feminist orientations. In a certain viewpoint, "place is thus nostalgic, regressive, or even reactionary, while space is progressive and radical" (Agnew, 2011: 319).

Digital manifestation inherits virtual mapping, however, inseparable from materialities. The hardware, software, and now AI (artificial intelligence) augment a complex process which is technical in construction and non-technical in spatial. Digital devices are constructed through a number of technical augmentations; in contrast, the device is available across the spatial. For illustration, a smartphone, a digital communication device created through a specific set of rules and processes, allows users to engage with it vividly. The personalized and customized preferences of such a device render it non-technical. For instance, a notification pop-up may cause the device to become inactive unless the user actively interacts with it; otherwise, it will remain passive.

Scrolling makes the screenscape to show two different features/contexts at the same time, whether acquaintance or non-acquaintance. If the shown contents are acquaintance, for a brief period, the user

may find pleasure in scrolling, as opposed to simply engaging with the content passively, where it functions as a place. If it is non-acquaintance in nature, it behaves like space.

Kitchin and Dodge (2001), Warf and Arias (2008), Warf (2012), Kellerman (2016), Kitchin, *et al.*, (2017) studied spatial turns in different spatial manifestations in the sense of digital spaces. Digital technologies shape uneven geography (Lepawsky, 2014) while relationships between digital and geography are a threefold categorization “produced through, produced by and of the digital” (Ash, Kitchen, & Leszczynski, 2018: 3). Digital platforms help towards rendering the spatial representations in terms of spaces, people and cities wherein aesthetic is inseparable (Lunenfeld, 1999). Digital technologies and software provide georeferenced data (Kitchin and Dodge, 2011) as digital space. Jones III, Marston and Woodward (2011) shape digital spaces as networks and scales, while Graham, Zook and Boulton (2013) mapped them as digital augmented landscapes. The networks, scales and georeferenced data are all intertwined to produce a digital spatiality in the perception of screenscapes. The spatial dimension is evident in mass communication (Lagopoulos, 1993; Jansson and Falkheimer, 2006), mass media (Adams, 2017), the internet (Warf, 2012; Kellerman, 2016), virtual spaces (Mutterlein and Fuchs, 2019; Gordon, 2008), and digital spatiality where screen is inseparable and considered a new thriving area for geographers.

The significance of ‘scape’ within the folds of geography is about to decode the flow of information that appeared across the screens: big screen (TV, Theatre, Laptop/Desktop screen) and small screen (smartphone/mobile phone, iPad and home

appliance screen) is shaping the user in varied scales. The screen is not merely a technological product rather it behaves as digital spatiality where information appears in digital spatial manifestations.

Digital spatiality of screenscapes in spatial manifestations

The user can experience both space and place on screenscapes in two different representations: acquaintance and non-acquaintance contents. The acquaintance contents that appeared on screenscapes can be considered as place, while non-acquaintance contents can be considered as space, because such contents are rarely experienced in comparison to acquaintance contents. If the users had previously seen such content, then there is a higher possibility that users may relate the contexts of such content with other previously seen contents on screenscapes. If users have not previously encountered such content, they are far less likely to be able to contextualize or make sense of what they are currently seeing. Therefore, in both situations, the contents may be the same but the experience may be different. This is due to acquaintance and non-acquaintance contents that appeared on screenscapes. The space and place duality on screenscapes shows the experience of the users in spatial manifestations. Screenscapes in this way are a notion of digital spatiality.

Digital manifestations are distinct in their construction and reconstruction, much like two individuals who may differ greatly in their inner emotions, behaviors, perceptions, psychological states, and lived experiences, despite cohabiting under the same roof as family members or as part of a society for many years. Each individual has her own capacity to conceive and perceive cognitive

knowledge about territories or boundaries or politics or humor or traditions or social-cultural-economic practices. Such cognitive thinking and perception do not experience long rather it fluctuates over time or momentarily and it may even come to a halt due to scrolling screenscapes. Similarly, there are many such perceptions and conceptions like inner feelings-sorrow, crazy, immortality, loneliness, deserted, richness, poverty, health, religiosity, traditions, customs and rituals wherein the role of screenscapes is often found critical and crucial nowadays.

Digital manifestation of screens is technological, engineered, and algorithm driven where screens are augmented to suit the operational and functional capabilities of smartphones. Digital manifestations can be discernible between two different screen users in terms of scrolling screenscape. Digital manifestations assume that 'network society' (Castells, 1996) is reaching out across digital users every day with newer dimensions, applications, utility, and content. Scrolling can influence cognitive imaginations that often swing in a sense, whether users have experienced the same or not, that vary epistemologically and ontologically as well. In case of experience, the user may stay on screen and put themselves in between the contents and think cognitively for a while or for a longer duration and as a result, it may have digital experiences, exposures, and influence the user's cognitive imaginations, gestures, attitudes and feelings. In case of not being experienced, the user may scroll continuously until found a familiar content, and pause to see the same before scrolling for the next content. Indeed, some of the appeared content might be familiar or first-time viewing on screenscape. Screenscape spatially connotes

both tangible and intangible knowledge and reflect a lived moment having potential to shape thinking, impressions, experiences, feelings and emotions in terms of space and place. The tangible part of screenscape is the screen while the intangible side is 'scapes'.

The present study used four social media apps: Facebook, WhatsApp, Instagram and YouTube to map the spatial dimension in screenscapes. These four social media apps are often inbuilt in smartphones. This study considered these apps in order to map how do screenscape influence the users in a spatial sense. Smartphone users often shift from one social media app to other apps while scrolling screenscape. The user may experience boredom due to unfamiliar content or other reasons, the user switches from one app to another while navigating through the screen interface. Such shifts during scrolling screenscape from one social media app to another can be understood in terms of place and space in a spatial manifestation. The dualism of space and place inherits characteristics unlike coin having two different sides where each side has its own spatial representation. One scroll on screen shows new image and similarly, the number of scrolling shows number of images. The screenscape exhibits as place when the user is getting acquaintance in a perception of interesting, binding, informative and motivating contents from different social media apps during each scroll. Similarly, the screenscape experiences as space when the appeared contents look alike as unacquaintance in a sense of boring, repetitive, monotonous and recurring.

How do digital spaces on screenscape are linked together in a spatial sense? The considered four social media apps have their own digital spaces in terms of account,



Fig. 1: Digital spaces of screenscapes

login, profile, accessibility, etc., which behaves as space and place in two different manifestations. The apps are individual, separated and customized in varied features and characteristics. For illustration, the number of familiar apps will be apparent on the screen when the user unlocks the screen

(Fig. 1); such appearance may give an imprint that the user is verse with all such apps, can be perceived as place. However, each app has different domain, feature, characteristics and purposes. The user using the same to achieve a specific purpose in different contexts, meaning, representations and apps behave differently in different contexts, and can be mapped as space (Moinuddin, 2021). However, the dualism of space and place remain apparent on screenscape with varied dimensions of spaces. There are four different ways to locate digital spaces on screenscapes: (i) place of places, (ii) place of spaces, (iii) space of places, and (iv) space of spaces. The classification is based on how social media apps are shaping space and place differently in four different digital cognitive manifestations.

Place of places

This type of digital space occurs on screenscape when a user is engaging with particular content on their screenscape based on interests. The AI algorithm of social media apps provide similar contents unless the user shows different and diverse interests. Similarly, when the user is about to join the specific app for specific purpose (whether WhatsApp for chat or YouTube for entertainment or else specific information, etc.), it can be treated as place. However, when the specific app is showing number of contents in terms of video, texts and audio, it also behaves as place(s) where the user is following such contents on a regular basis or in each scroll the chance of appearance of acquaintance contents is higher due to AI algorithm. For illustration, watching *yoga* practices or fitness exercises or practicing e-religiosity by following some specific web pages on social media or subscribed

channels on YouTube or other platforms to get prescribed contents can be understood as place of places.

Place of spaces

When a user is preparing to intentionally access a particular social media application to examine its content results in a digital space classified as place of spaces. But the appeared contents on a specific app allows the user to make comments to get more interactive across the users from the help of AI algorithm, to facilitate the user a better feature. For illustration, Facebook started a new feature to make replies/comments on a post by doing ‘tap and hold like’, it means users are supposed to take help from Facebook AI algorithm in this regard or just make their own comments different from suggested comments/reply. The use of a suggested comments from Facebook is AI based tailored comments that often helps the user to reply the same without much deliberation, can be perceived as place. In circumstances where the suggested comments are not followed because the user is unhappy with the choices provided by Facebook, it is feasible to designate space(s). Facebook introduced a new feature that enables the user either go through it or customize accordingly to create a pure and genuine response in response to the appeared contents can be understood as place of spaces.

Space of places

This digital space appears when the displayed content is entirely unfamiliar, there is subsequently an opportunity or an option offered by the platform to modify it accordingly to user preferences because of the AI algorithm. For illustration, Instagram suggests pages with options: ‘use as

template’, ‘why you’re seeing this post’, ‘not interested’, and ‘report’. The third and fourth given options give a choice to unfollow such contents which users often found against his/her fervor. The user can move ahead until they find interesting contents to hold for a while. In that perception, the first appeared contents on screensapes may be space in cognitive imagination while in next scroll it may be acquaintance contents in a sense of place, can be understood as space of places.

Space of spaces

This type of spaces emerges when the content that appears is neither familiar nor unfamiliar, it suggests that the user is shifting from one app to another, either on purpose or by accident, in an effort to eliminate the emptiness. This often leads to intermittent screen checks for notifications or unnecessary scrolling through screens during times of loneliness, travel, boredom, or while waiting for another person. “Abstract space is not homogeneous and it does not admit of any such homogeneity; rather it has homogeneity as its goal, its orientation, its ‘lens’. It thus arrives on the scene already fragmented, already fragmented by the division of labour. It is found in multi-form guise — geometric, visual, phallic, etc. These ‘formants’ are complementary only in their antagonism” (Lefebvre, 1991: 287). “Abstract space is not only an arena of practical action; it is also — and even primarily — an ensemble of visual signs, of images and symbols” (Lefebvre, 1991: 288). In such manifestation, scrolling screensapes without proper uses or unintentional or unnecessarily engaged with screen may be mapped as space where it embodies with other space(s). It can be understood as space of spaces.

Conclusion

The spatial notions across the digital gadgets in general and smartphones in particular is shaping and reshaping in the sense of space and place. Adams (2011) mapped mass communication and geography in terms of 'place in media', 'media in places', 'media in spaces' and 'spaces in media'. Dando (2013) explored communication and spatial in historical and cultural understandings while Urry (2002) and Robins (1997) used discourse and representation methods for communication and spatiality altogether.

The digital production of spaces is expanding everyday with new features and contexts. Screenscapes are a dimension of digital spatiality and inseparable from daily lives irrespective of spatial divisions. Digital experiences are inseparable from digital devices in general and smartphones in particular where the internet, webs, gadgets, algorithm, software, AI and networks are shaping and reshaping user's digital identities, emotions, values, faith, beliefs, consumption, utility and commonality in spatial sense.

Screenscapes help users to get rid of busy schedule or loneliness. Screenscapes is promoting digital loneliness, when a smartphone user prefers to maintain a certain distance from others while scrolling their screenscape. It is usually experienced by every smartphone user who prefers to move a nearby surrounding place where the user realizes that the place where he/she is scrolling is not comfortable to scroll their screenscape because it may compromise privacy or for other reasons. People make such decisions to move to a safer place for scrolling either consciously or unconsciously, but not randomly. Such decisions shape spatial negotiation in digital cognitive manifestation

which needs another research to map the spatial contexts in digital loneliness.

Competing interest

The author declares that he has no conflict of interest.

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