Research on spatial features of streets under the influence of immersion communication technology brought by new media

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Abstract. The rapid development of new media has exacerbated the complexity of urban street space's information interaction. With the influence of the immersion communication, the streetscape has constructed a special scene like 'media convergence', which has brought a huge challenge for maintaining the urban streetscape order. The Spatial Visual Communication Research Method which should break the limitation of the traditional aesthetic space research, can provide a brand new prospect for this phenomenon research. This study aims to analyze and summarize the communication characteristics of new media and its context, which will be helpful for understanding the social meaning within the order change of the street's spatial and physical environment.

1. Introduction
The world is entering a new age permeated by information and network. The evolution of information technology greatly facilitates the development of media. Information and network has become the prevalent technological paradigm in modern society.

New media is a relative and unceasingly developing concept. For the moment, it mainly refers to the information communication in the support of multi-media technology, mass data and network, which breaks the barriers of time and space. Compared with traditional media, new media is featured by mobility, interactivity and integration. Its development has subverted traditional concept of space and has exerted a profound influence on design concepts and methods. Pure functionalism and aesthetic order no longer work in providing a clear illustration on the dramatic change of street scenes. Thus it’s of great necessity to introduce the topic of “new media” into the traditional dimension of city image and to reexamine this phenomenon.

2. Research on the Characteristics of Immersion Communication
In the support of new media technology, the modern media offers a brand-new platform for interpersonal contact, bringing about dramatic revolution. “The second media age” proposed by Mark Poster can no longer accurately define the present spreading mode. New media has formed a dynamic information communication mode, a ubiquitous and unprecedented “immersion communication mode” that operates by unceasingly blending new technology and imaginary space. Media and environment have integrated with each other, forming a new information communication mode that has penetrated into our life.

2.1. Dynamic communication and Multipoint Information Exchange
Traditional media mainly adopts linear static scenes as the narration mode. But the overwhelming emergence of new media brings about a revolutionary transformation to the way of information...
communication; information carriers featured by rigidity, accuracy and authority are undergoing a continuous evolution towards a mode of greater mobility. New media breaks the traditional one-way information communication, the conventional “one-point to multi-point” mode is beginning to disintegrate; the centralized structure has transitioned to a decentralized open-ended one, and continues its way to a multi-point to multi-point reticular communication mode. Audiences can search, sort and customize media information as they want, which marks a transformation from passive receiving to active acquisition, and the communication environment is shifting to a customized one.

2.2. Optical Space and Virtual Information Environment
Paul Virilio proposed the concept of “optical space” long ago, which is a perspective technique in the field of optoelectronics brought by videos, marking a breakthrough of geometric perspective in the general sense. New media takes advantage of modern technology including information network, modern digital image and smart mobile terminal, bringing information receivers a special experience with its various features of virtual scene, augmented reality, mixed reality and so on. This accessible experience is characterized by strong infection and is changing the way we receive information.

Virtual reality contains interactive three-dimensional dynamic vision featured by multi-source information fusion, offering users access to the given environment. Mix reality technology creates new visual environment by combining real and virtual world, where physical and digital objects can exist side by side and make real-time interaction. Augmented reality applies virtual information into a real world, where real environment and virtual objects exist simultaneously through superposition in the same scene or space.

3. Street Scenes under the Influence of Immersion Communication
With new media applied in streetscape, the visual system of street scenes is featured by increasing openness, information pluralism and complexity of value orientation. As the traditional street aesthetics is stripped of its mystery, traditional mode of one-way narration is transformed into an interactive narration between men and space, and “Aesthetics of Engagement” brought up by Arnold Berleant has become the dominant cultural context in street space.

3.1. Self-media Communication and Personal Show
Nicholas Negroponte argues that “in the digital age, I am what I am, rather than a data in the demographic statistics.” In the self-media age, the dissemination of information is featured by full participation; individual-centered media has long since walked into everyone’s daily life, publicizing personal affairs.

Street artists project thought-provoking images onto the walls, and street scenes become the tool for anti-hegemony. “Traditional order” collapses in front of absurd, game of space and individual ecstasy brings about self-indulgence. As proposed by French sociologist Michel Maffesoli about Le tribalisme and Nomadisme in the digital age, when the mass own rights of “encoding”, they are free to take on a flight of imagination in the street scenes like heroes, realizing visual decoding of personal fulfillment in the struggle between graphic signs and spatial ontology.

3.2. Decorated Cities and Wanderers’ Participation
Harold Adams Innis and Marshall McLuhan suppose that media is also an environment. Media together with places constructs the way people contact each other, and the rapid mobility of information blurs the limitation of physical places and media places. Since the moment when the equipment of new media is installed in public places, it has become a platform for cultural medium and communication as well as a ceremony in our daily life, fulfilling the tasks of cultural spreading and cultural integration.

The information flow of media breaks through the geographical barriers, thus exotic film signals frequently enter the urban daily life, generating new social scenes. The landscape constructed by new media makes everyplace platforms, which radically deconstructs and subverts the traditional narration of logic and time. In the street campaign, “Europe is just next door”, launched by SNCF and TBWA,
several dimension doors are set in streets of Paris with names of some European cities marked on. These doors will show you real-time exotic scenery shot by remote cameras when open them.

3.3. Recombination of Street Space in Screen Window

New media accelerates the reshaping of new perceptual models. It has become a noticeable trend in the development of modern urban landscape that electronic screens are removed to urban open areas, while constructions in cities perfectly function as screens, redecorating the public space of streets, promoting the generation of new forms and new places of social activities. As Paul Virilio believes, this is a "pervasive architecture-style" [5]; dazzling outer screens, like the windows in “Electronic Gothic” churches, discreetly grasping the morals and thoughts of urban citizens.

Such an experience-based landscape promotes the integration of men with scenes in street space by highlighting the positive perception of humans. For example, on the glass tower of Crown Fountain in Chicago, US, are played 1000 smile faces of Chicagoans. Lummo Blocks from Lummo project tetris onto the giant screens, and the public are free to overturn tetris by their movements in the square. Nina Valkanova, an interactive designer from Barcelona, Span, together with architect MoritzBehrens, works out Smart Citizen Sentiment Dashboard, which provides a tool for urban dwellers to express their emotions [6].

4. Trend of Immersion Communication Impacting Street Space

A high-degree interaction is created through the mutual effect between physical environment, digital environment and street campaigns, namely "intermediary interaction" [7] coined by John B. Thompson. This kind of interaction dramatically overturns the traditional urban cognitive structure, obviously bringing tremendous shock to traditional street landscape. On one hand, it breaks the existing barriers, investing new vigor into street space; on the other hand, it aggravates the risks of fragmentation of street space.

4.1. Information Integration Fuels the Media Convergence of Street Interface

With the constant emergence of new technology and new materials, artist forms with more freedom and pluralism featured by patterning, integration, medium, complexity spring up, which deviate from the bondage of mechanics and functionality. Super Flat, Media Architecture, Printed Building and Sculptural Architecture rise to prominence in architectural practices.

Under the influence of interactive spreading brought by new media, streetscape take on a tendency of multifunction and integration, Media Convergence [6] gradually coming into shape. Everything in the street, diversified scenes including featured landscape, outdoor screens and behavioral pattern are endowed with media attributes of more abundance. New materials and microelectronic technology born with the new age, together with projection facades, window raster animation, display facades and voxel facades influence work together to display the characteristics of street in a more prominent and complicated way.

4.2. Street Flowing Scenes Created by Visual Image

The interactive experience in street scenes accelerates the information communication, and the transient time-space relationship is regarded as the main characteristic of post-modern urban scenes. Inextricable components begin to be movable, traditional structure of street landscape formed by points, lines and surfaces collapses and the surface has transformed from solidity to a flowing data pool. “It looks like we have entered a new metropolitan super space, namely City Of Bits, E-tuopia and The Cyborg Self and the Networked City” [7].

The high-speed information mobility brought by new media fiercely impacts people’s load-carrying limit. Messages get replaced so quickly that they can’t even show up in front of people’s eyes. Streets have become a flowing network of visual transformation, dotted by electronic footprints and scattered data collection. Manuel Castells points out that the space of flows centered with social practices has gradually replaced traditional space and created “Stream City” [8].
4.3. Collage Breaks the Visual Centralization of Street Space
Non-linear network structure of new media further aggravates the collapse of traditional elite values. Self-discipline of elite aesthetic culture as well as lofty mask of aesthetics gradually erodes. Aesthetics is no longer the paradigm of value education in the traditional sense, but has sneaked its way to everyone’s daily life.

Aesthetic culture in the new media age walks out of pure aesthetics. As media technology develops, aesthetic cultural products get dramatically enriched in their number through bulk copy, and the coding of aesthetic culture gains popularity and simplicity. The mass spreading in urban street marches its way to disintegration, breaking the traditional pattern of being visual centralized and displaying its morphological characteristics of being porous. Street space no longer has intact and clear boundary, scenes with no relations penetrating into each other.

4.4. The Third Space Generated by Time-Space Condensation
New media which breeds information grafting on the global scale generates time-space condensation of street scenes. One image shifted to another, fragmentation is easily found among images arbitrarily shifted, since there is no inner logic in image convergence at all. The “speed of the virtual” breaks through the limitation between the real and virtual world. Virtual space crushes the real space, giving rise to a sense of time-space tense. Increasingly frequent shift of tasks leads to shorter endurance of memory.

Against this background, “the third space” is put forward by Edward W. Soja, who thinks that beyond the real and imaginary space, there exists a discrepant space[9]. The order of events, taking place in the past, at the moment and in the future, becomes blurred. Real time and delayed time get mixed, as supposed by Virilio. People living at the moment can’t affirm their identities; they have neither memory about the past, nor the future yet to come. The breakage of time and the prominence of the present strip everything of their inherent links, leaving them pieces in isolation.

5. Summaries
Information communication influences people’s livelihood, while people’s livelihood changes the way of information spreading. The immersion spreading mode bred by the development of new media integrates human power, materials, capital and knowledge together, reshaping the street pattern with its great mobility. With the promotion of new media, the modern urban street space is deviating from the traditional rationalism and the influence of traditional aesthetics of space is eroding, gradually shifting to a sensational form centered with graphs and videos.

Only by responding to the arrival of new media age with a positive mindset, widening horizons and introducing the concept of media into the research on urban space aesthetics can the various issues on visual scenes displayed on urban streets be clearly seen. The author hopes that this research can serve as an introduction in promoting a deeper exploration on the emerging spreading mode that has a profound influence on our daily life.

Note
1). The concept of “New media” was first brought up by Goldmark in CBS News in 1967. It has quite a few definitions, but in general it refers to all media forms that come up in the support of new technology.

2). He divides mass media age into two time periods, the first media age, when the Internet didn’t popularize, and the second media age, when the development of electronic technology and Internet radically transform the communication habits of the mass.

3). It was brought up by Jaron Lanier in the early 1980s and was improved by Kevin Kelly, who extended its definition that it was a simulation system where computers generate interactive virtual environment.

4). Arnold Berleant, an environmental aesthetician supposes that Aesthetics of Engagement breaks the traditional principle of observing from the sidelines, laying more emphasis on sensual experience, which provides a new angle of research for modern aesthetic appreciation on a daily basis.
5). In the traditional sense, media is supposed to have undergone three stages, elite media, mass media and individual media. These three stages represent agricultural age, industrial age and information age respectively. Self-media age marks a new stage of media, when a great number of individuals take full advantage of modern media technology and spread personal information just-in-time.

6). Media Convergence was first brought forth by Professor Paul from University of Massachusetts Institute of Technology, who argued that various media are featured by multifunction and integration.

7). E-topia, City Of Bits and The Cyborg Self and the Networked City, written by Willian J. Mitchell, are considered trilogy inspired by the penetration of information technology in daily life.

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