IS CYBERSPACE A SPACE?

A preliminary exploration of the spatial phenomena in the internet

CHIEN-HUI WONG, YU-TUNG LIU, SHENG-CHIH CHEN, KUO-WEI CHANG, TE LAI AND HUI-LIN LEE
National Chiao Tung University
Taiwan

AND

YU-YING CHANG
University of Michigan
USA

Abstract. This study attempts to join the current interdisciplinary discussion on the issue of “space”, and to obtain new definition as well as insightful understanding of “space”. As a preliminary exploration, the main objective of this study is to discover the elements involved in Internet space creation and to examine the relationship between human participants and Internet spaces. In addition, this study also attempts to investigate whether participants from different academic disciplines define or experience Internet spaces in different ways, and to find what spatial elements of Internet they emphasize the most. We hope that our findings would ultimately be also useful for contemporary architectural designers and scholars in their designs in the real world and virtual world.

1. Introduction

“Space,” which has long been an important concept in architecture (Bloomer and Moore, 1977; Mitchell, 1995, 1999), has attracted interest of researchers from various academic disciplines in recent years (Agnew, 1993; Benko and Strohmayer, 1996; Chang, 1999; Foucault, 1982; Gould, 1998). Researchers from disciplines such as anthropology, geography, sociology, philosophy, and linguistics regard it as the basis of the discussion of various theories in social sciences and humanities (Chen, 1999). On the other hand, since the invention of Internet, Internet users have been experiencing a new and magic “world.” According to the definitions in traditional architecture theories, “space” is generated whenever people define a finite void by some physical elements
(Zevi, 1985). However, although Internet is a virtual, immense, invisible and intangible world, navigating in it, we can still sense the very presence of ourselves and others in a wonderland. This sense could be testified by our naming of Internet as Cyberspace -- an exotic kind of space. Therefore, as people nowadays rely more and more on the Internet in their daily life, and as more and more architectural scholars and designers begin to invest their efforts in the design of virtual places online (e.g., Maher, 1999; Li and Maher, 2000), we cannot help but ask whether there are indeed sensible spaces in Internet. And if yes, these spaces exist in terms of what forms and created by what ways?

2. Methodology and Steps

In order to achieve a more comprehensive understanding of the spatial phenomena in Internet and to overcome the subjectivity of the members of the research team, the research design of this study was divided into two stages.

At the first stage, we conducted literature review to study existing theories of space (which are based on observations and investigations of the physical world). We also conducted online search to analyze the rationales behind several design projects of “virtual places” (e.g., Li and Maher, 2000; website of the 2000 Far Eastern International Digital Architectural Design Award). Based on this background understanding, we established a preliminary framework for our further observations. With this framework in mind, we then adopted a commonly used research method in social sciences -- participant observation (Milroy, 1987) -- to start our systematic navigation of different “genres” in Internet, such as BBS, homepages, chatrooms, MUDs, MOOs, and online games. After two months of observation and participation in various Internet activities, we selected several target websites to collect data (both textual and graphical) for a thorough and systematic analysis.

At the second stage of this study, we recruited 8 Internet regular users to approach this topic from different point of views, and to see whether people with different academic training would define and experience Internet spaces differently. Since at present the design of Internet is largely textual and graphical, as a preliminary study, the subjects we recruited were from linguistics (text-based training) and visual communication (VC), industrial design (ID), and architecture (graphical training). We first invited them to navigate different websites which we selected at the first stage. As they were navigating, we begun to ask questions and observe their reactions.
3. Analysis and Discussion

Because of the space limitation, this study only presents the findings of the visual/graphical elements of Internet space. For a thorough discussion of the verbal elements, please see Liu (2001). The major analysis and discussion of this study focuses on the visual/graphical elements involved in the construction of Internet space, and on the different spatial perceptions of Internet participants with different academic training.

<table>
<thead>
<tr>
<th>TABLE 1. The factors of sense of space</th>
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<td>real image</td>
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<td>perspective</td>
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<td>move/action</td>
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<td>color</td>
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<td>music/sound</td>
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<td>framework</td>
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<td>map</td>
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<td>interaction</td>
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◎: spatial elements the participant emphasize the most
○: spatial elements they have ever presented

Based on the visual analysis by the 8 participants, we found a list of visual elements which can be divided into the following four categories (for the detailed list, please see Table 1):
1. real-world experience connection
2. essential elements of physical space
3. intensive elements of sense of space
4. elements involved in the representation of virtual space

As can be seen in Table 1, “move/action” (i.e., the action or movements of the objects shown in the screen) and “interaction” (interaction between the Internet users and computer interface) are the two element reported by all the 8 participants. The appearance of 3D objects is another most frequently reported element.
In the following section, we will discuss the differences among participants from different academic disciplines in their perception of the Internet space.

2.1. THE LINGUISTICS, NON-DESIGN TRAINING

According to the data, their sense of space comes from the visual connection with real-world experiences or the action of objects shown in the screen (e.g., 3D object, move), rather than from the conversion of sensory perception. In other words, they experience and perceive Internet space in direct and intuitive ways, not by “imagining” or “mapping”.

2.2. OTHER DISCIPLINES WITH DESIGN TRAINING

In addition to the connection of real-world experiences, participants with design training experience and define space through “conversion”, and this conversion is related to their own academic training.

2.2.1 Architecture

Architecture designers, the creators of the physical world, concern more about the essential elements of space construction. For example, the orientation of space, and relationship of space etc...

2.2.2 Industrial Design

The scale of industrial product is smaller than that of architecture space. Industrial designers put emphasis more on the manipulation of products and consider more with the viewpoint of users. Therefore, as perceiving these virtual spaces, they emphasize more on whether the framework of virtual space is clear and whether it could be realized as a real space which can be used easily and freely.

2.2.3 Visual Communication

The traditional painting theories proceeded with 2D graphics, and the computer monitor is also a 2D plane. According to their academic training, when representing 3D solid in a 2D plane, visual designers work mainly by the traditional painting rules. Therefore, they tend to “see” the space and “see” the depth whether in the 2D computer monitor based on these painting rules. (e.g., up/down, front/back, light/shade etc.)

4. Conclusion

The major results of this study reveal a list of factors (visual/graphical elements) involved in the creation of a sense of space. It is also found that
participants with different academic training do experience and define Internet space differently. For example, when experiencing and analyzing Internet spaces, architecture designers, the creators of the physical world, emphasize the relationship and orientation of space, while participants with linguistics training focus more on subtle language usage. Visual designers tend to analyze the graphical elements of virtual spaces based on traditional painting theories; industrial designers, on the other hand, tend to treat these spaces as industrial products, emphasizing concept of user-center and the control of the computer interface.

The findings of this study seem to add new information to our understanding of virtual space. It would be interesting for future studies to investigate how this information influences architectural designers in their real-world practices in this digital age. In addition, to obtain a fuller picture of Internet space, further research is needed to study the same issue by examining more Internet participants who have no formal linguistics and graphical training.

References


Chang, Y. Y.: 1999, 'It's so crowded here!' Creating a sense of telepresence in a virtual chatroom, 12th World Congress of Applied Linguistics (AILA), Japan, Tokyo.


