Chapter 11
Language-Barrier-Free Room for Second Life

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Abstract A three-dimensional (3D) online virtual space, such as Second Life, becoming a familiar communication medium is a possibility because of the widespread use of the Internet. Some people view Second Life as the successor of the Internet. However, as in the real world, in the virtual world also language differences pose significant barriers to intercultural communications. We can consider a virtual space to be the simulated environment of a real space. We consider the Language Grid to be the multilingual language environment of the future that can include a variety of language resources. We have developed communication support systems that facilitate multilingual chat in Second Life, called language-barrier-free rooms. The objective of this study is to develop a communication support system in virtual space that is identical to a system in real space. We will use the findings of the experiment to enhance the communication support systems in real space. From the results of the experiments and those of the trial experiments of the communication systems, we obtained the following result. In virtual space where communication similar to that in the real world can be simulated, we observed that human adjustment of the machine translations is necessary.

11.1 Introduction

Some people view Second Life and other so-called metaverses, which are virtual worlds in three-dimensional space (3D), as the successors of the Internet. These virtual worlds are not games, and they are receiving considerable attention as people have started perceiving them as being potentially far more profound than any other online pastimes. Second Life can be a prospective platform for a completely new 3D network that could offer more socializing opportunities and communication channels than the real world.
Most of the current computer technologies can be easily used in virtual space. Therefore, the use of complex combinations of technologies is also possible in virtual space. We can consider a virtual space to be the simulated environment of a real space. The number of user accounts on Second Life has increased to more than 13 million. Approximately 43% of these users are English-speakers, and English is used even in chats with non-English speakers. However, there are many users who cannot speak English fluently, and therefore, language becomes a communication barrier in the virtual world as it is in the real world.

Several studies have proposed methods that support communication in a virtual space (Isbister et al. 2000). These studies aim to enable communication through verbal conversations between persons speaking a common language. Thus far, no research has been carried out on communication support systems for facilitating multilingual chatting in a virtual space. The Internet and technologies supported by high-performance computers have enabled communication in the virtual world for the first time.

Currently, most of the communication between remote environments is carried out using a PC and keyboard by machine translation. In the future, the development of speech translation technology will enable communication between people who cannot speak in a common language in a real space. However, this technology has unresolved problems.

The following two steps were carried out in this study:

(1) We performed simulation of a virtual environment to facilitate communication between people who cannot speak in a common language in a real space. The results of the simulation were used to enhance communication support systems in real space.

(2) We compared the results obtained for communication through machine translations in real space with those obtained for the communication system developed by us for a three-dimensional virtual environment.

The ultimate aim of communication support for facilitating multilingual communication is to support communication between people who cannot speak in a common language in a real-life activity. We studied human behavior by using a three-dimensional visualization space that was the simulation of a real space in a complex environment. We have developed conversation-component-visualization systems powered by the Language Grid. The Language Grid provides certain types of multilingual resources that are easy to use and also facilitates multilingual processing. We consider the Language Grid to be the multilingual language environment of the future that would include a variety of language resources. The purpose of this study is to develop a system that imitates a real space in a virtual space, and we obtain our findings from the comparison of this and a real space.

In the study described in this chapter, we have developed communication support systems in Second Life, called language-barrier-free rooms. First of all, we have developed two types of multilingual communication environments: fixed-type and portable-type environments. We proposed the use of the back-translation

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1Second Life Virtual Economy Key Metrics (BETA).