

## Chapter XXIV

# Virtual Reality, Telemedicine, and Beyond: Some Examples

Franco Orsucci

Institute of Psychiatry and Clinical Psychology,  
Catholic University of Rome, Italy

Nicoletta Sala

Università della Svizzera Italiana, Switzerland

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## Abstract

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*This chapter introduces virtual reality and telemedicine as instruments inserted in a path of medicine. It argues that virtual reality, combined with communication technologies, offers potential help to doctors and psychiatrists in overcoming physical and geographic barriers, and examining patients in remote locations. The authors describe two examples for better health and therapy. They hope that understanding these technologies and their use in the field of the medicine will help doctors use them in their future work.*

## Introduction

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The implementation and integration of new communication technologies within organizations creates complex changes in communicative practices. Advances in telecommunications and digital technology allow organizations to extend their boundaries beyond physical and geographic barriers.

Within healthcare settings, telemedicine applications allow physicians to examine patients at remote locations via various types of telecommunications technologies. These telecommunications connections allow psychiatrists and patients to be present in a new way. This chapter explores implications of this presence in the context of a psychiatric exchange.

## Background

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The concept of presence is defined as: "...the fact or condition of being at the specified or understood place" (Kim & Biocca, 1997). Kim and Biocca (1997) suggest that the experience of presence oscillates around three senses of place: the physical environment, the virtual environment, and the 'imaginal' environment (for example, daydreaming). In a traditional face-to-face environment, the physical environment is relatively transparent to the interaction. Many information cues present in the physical environment can be incorporated into a communication exchange without the conscious awareness of the individuals involved. For example, a physician may notice that a patient seems to walk into an examining room in a reticent way. These nonverbal cues may aid the physician in formulating a diagnosis. When videoconferencing technology is used to bridge remote locations, a virtual environment is created. Many information cues present in the physical environment are not available in the virtual environment. This virtual environment can create a sense of telepresence. Telepresence describes the subjective sensation of being in a remote or artificial environment, but not the surrounding physical environment (Kim & Biocca, 1997). Lombard and Ditton (1997) suggest that telepresence creates an "illusion of nonmediation" where a person "fails to perceive or acknowledge the existence of a medium in his/her communication environment and responds as he/she would if the medium were not there." This illusion of the absence of mediation may suggest to the participants that they are receiving all information cues relevant to interaction, when in fact they are not.

## Focus Upon the Doctor and Patient Dyad

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Telepsychiatry has been explored for over 40 years through a wide range of technologies. Research has compared the telepsychiatry interview to the traditional face-to-face

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