

# Collaborative Virtual Environments: Digital Places and Spaces for Interaction

(Book Review)

## Reviewer:

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## Textbook Details:

Collaborative Virtual Environments: Digital Places and Spaces for Interaction  
Elizabeth F.Churchill, David N. Snowdon and Alan J. Munro (Editors)  
2001, Springer-Verlang  
ISBN 1-85233-244-1

This book is an anthology of fifteen articles examining the subject of Collaborative Virtual Environments (CVE) from different perspectives. It offers a comprehensive reference volume to the state-of-the-art in the area of CVE design and development. Capitalizing on an excellent mix of forty-seven co-authors from academia and industry, the book provides up-to-date insight into the latest technological advancements, the best practice working examples and the current research topics in the field.

The volume is organized into six parts.

In Part 1 (“*Collaborative Virtual Environments: Histories, Perspectives and Issues*”), the Editors provide an introduction to the topic of CVEs, as online digital places and spaces where individuals and groups can socialize and work, even from geographically distant worlds. Key design considerations are examined and the themes covered in the volume are discussed.

Part 2 (“*Technical Issues and System Challenges*”) comprises three chapters. Chapter 2 (“Extending the limits of CVEs”) deals with the extensions of CVEs to include more people and more objects in more media. Issues such as multiple media in the full sense, *awareness* of others and their activities across media and *scalability* are discussed and some application examples are examined. Chapter 3 (“System Challenges for CVEs”) outlines some key challenges for designers of CVE software systems in their attempt to support real-world applications. Chapter 4 (“Understanding the Network Requirements of CVEs”) focuses on the network and communication requirements of CVEs in relation to several aspects of their design, implementation and use.

Part 3 (“*Bodies, Presences and Interactions*”) incorporates three chapters. Chapter 5 (“He’s Behind you: the Experience of Presence in Shared Virtual Environments”) presents an ethnographic study aiming to develop an understanding of the nature of presence in VEs from real-world exploration of (a) how presence is manifest in practice within VEs and (b) the means by which users experience VEs. Chapter 6 (“All That is Solid Melts into Software”) highlights some of the problems with the representation of users in collaborative spaces by avatars. The *Symbolic Acting* concept is introduced and two different working systems that apply the symbolic acting ideas are examined, namely, the Forum developed by BT Adastral Park and the Nessie World developed by GMD-FIT. Chapter 7 (“Virtually Missing the Point: Configuring CVEs for Object-Focused Interaction”) focuses on collaborative virtual reality systems that use a combination of 3D graphics and audio to enable people to interact with a virtual setting towards a synchronous remote working environment. The authors highlight on the ability to manipulate virtual objects and share them with remote partners.

Part 4 (“*Sharing Context in CVEs – Or, I Know What I See, But What Do You See*”) consists of two chapters. Chapter 8 (“How Not To be Objective”) concentrates into 3D visualizations of abstract data, such as the contents of databases or other discrete data, claiming that in order to afford useful work such an environment must allow *subjective* representation of data. A prototype implementation of a VE that allows 3D data visualization with subjective or viewer-dependent presentations is discussed. Chapter 9 (“Supporting Flexible Roles in a Shared

Space') describes Kansas, a flat 2D multi-user world which provided different views to different users operating on the user inputs to the interface.

Part 5 ("*So, Now We're In a CVE, What Do We Do?*") incorporates three chapters. Chapter 10 ("Designing Interactive Collaborative Environments") discusses various aspects of interfaces to CVEs and design approaches for presenting information, as well as, supporting collaboration within virtual environments. In particular, the Web Planetarium application is investigated as a 3D depiction of a web-based exploration and a 3D collaborative storytelling tool for children, Klump, is examined. Chapter 11 ("Designing to Support Collaborative Scientific Research Across Distances: The nanoManipulator Environment») deals with the design, development and evaluation of a distributed collaborative, environment aimed to support multi-disciplinary scientific research across distances utilizing a specialized set of scientific instruments (in this case, the nanoManipulator). Chapter 12 (« Tele-Immersive Collaboration in the CAVE Research Network») discusses a number of environments developed within the CAVE Research Network for collaboration between remote participants within immersive virtual reality systems.

Part 6 ("*The Emerging and Existing Cultures of CVE Communities*") builds upon three chapters. Chapter 13 ("Designing an Emergent Culture of Negotiation in CVEs: the DomeCityMOO Simulation") presents the design of the DomeCityMOO, an experimental intercultural social-process simulation created to allow participants to safely explore feelings of power and powerless while interacting with each other in a computer-based environment. The chapter emphasizes on the notions of *virtuality* and *anonymity* as important design criteria for creating experimental simulations in CVEs that support *intercultural understanding*. Chapter 14 ("Waterfall Glen" Social VR at Work) discusses the design of Waterfall Green, a text-based MOO that is used to maintain work and social relationships within a distributed working group, and presents systematic observations from its use. Chapter 15 ("The Role of the Personal in Social Workspaces: Reflections on Working in Alpha World") describes how a virtual office allows the author to make himself available to others in ways not previously possible.

Overall, this book offers an excellent reference for the postgraduate student, the researcher and the practitioner who needs a comprehensive approach to the topic of Collaborative Virtual Environments. In a readable style, it provides an overview of the key issues related to the CVEs design and development. The Editors have done outstanding work in collecting fifteen chapters from an interdisciplinary group of scholars and compile a single volume, which I strongly recommend as a useful and informative source of material for those interested in learning more on Collaborative Virtual Environments.