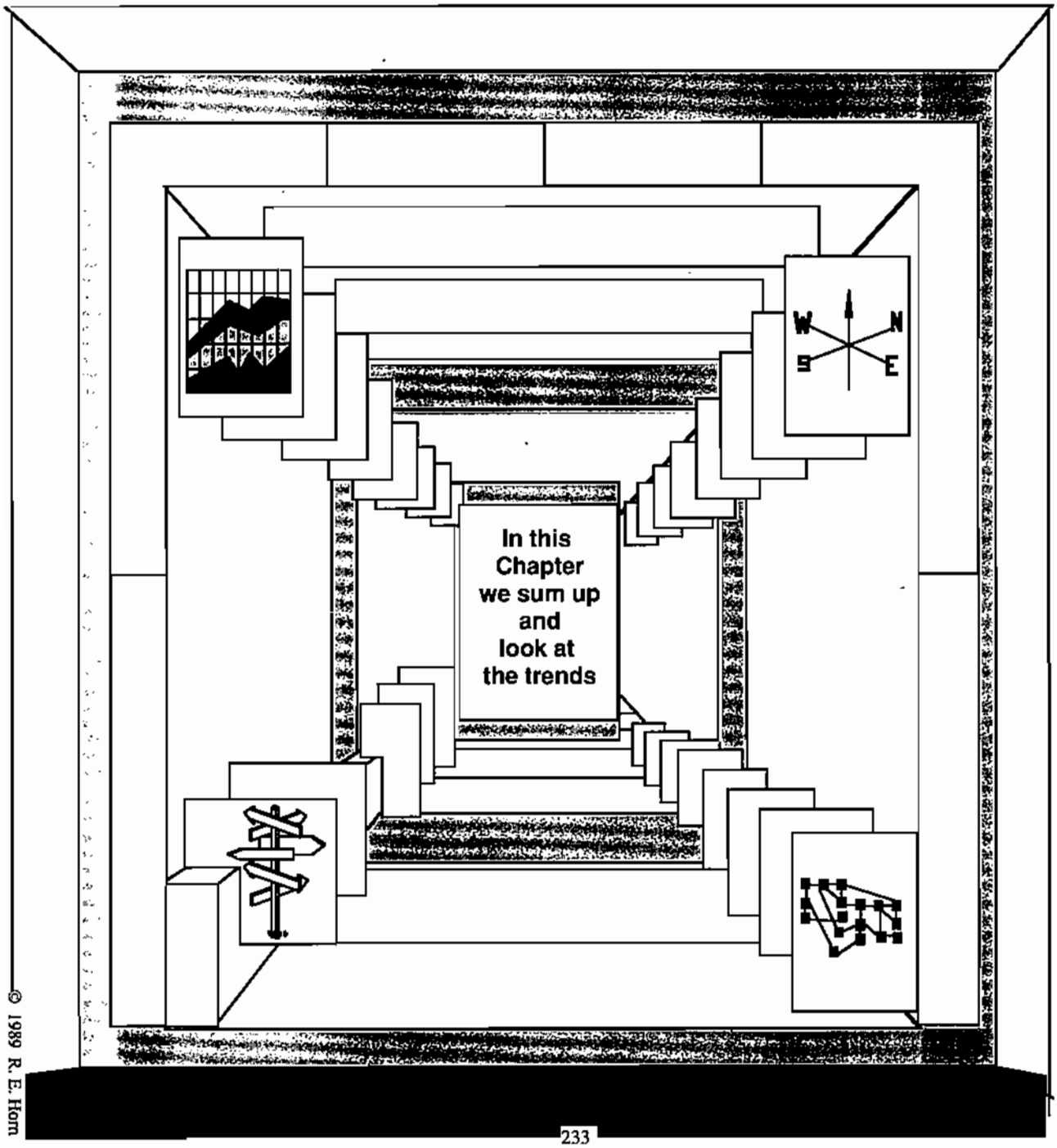
Chapter 9

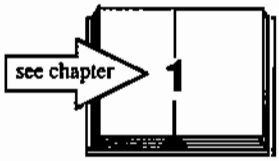
Mapping Future Infospace: Summary and Trends

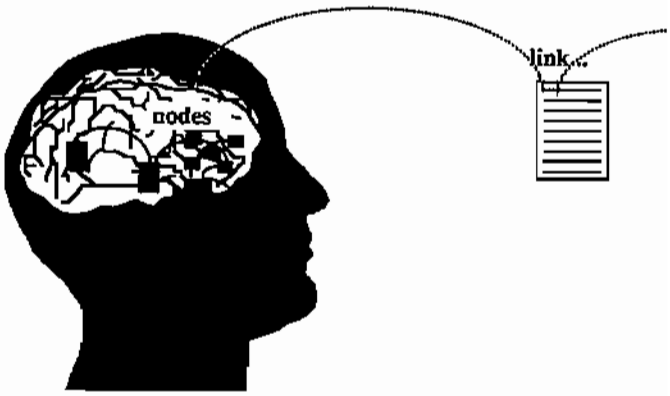


Summary of the Argument

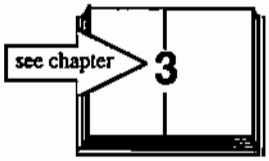
We have made the case in this book that

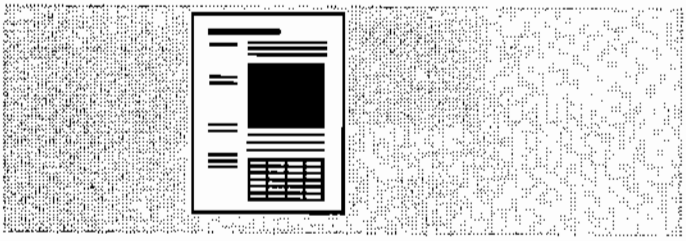
Hypertext will help us get our on-line text organized in a new way, following associative trails that are more like the way human memory operates.



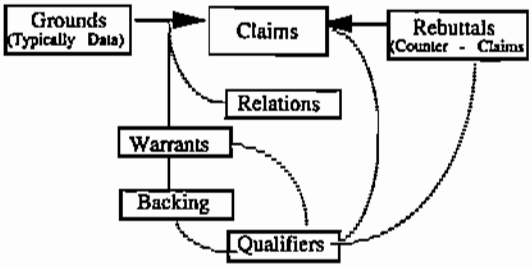


Information Mapping's method is mature technology for analyzing, organizing, writing, sequencing and formatting of information. We have shown how it forms an appropriate rhetoric for the writing of hypertext and hypermedia databases.

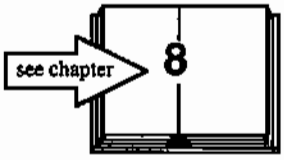


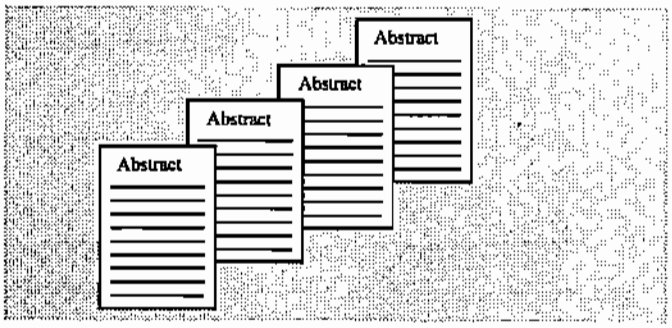


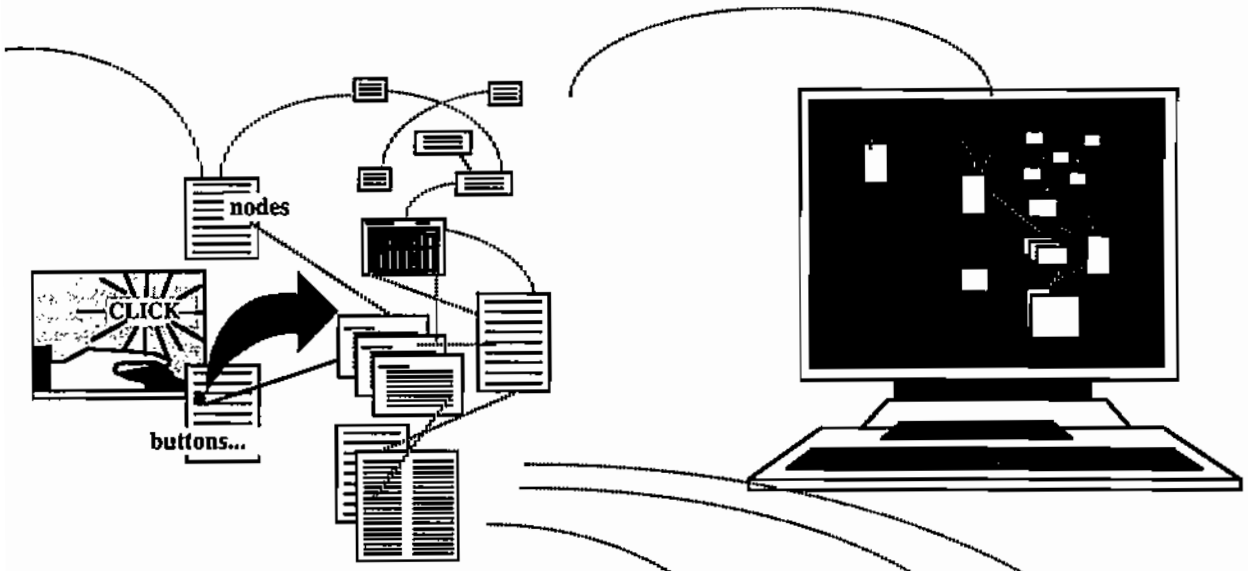
Argumentation analysis, a still evolving methodology of understanding disputes, helps in particular ways when we are looking at important issues.



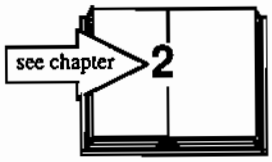
Putting these three emerging technologies together may very well help the science information system with its problems of complexity and information overload.







We have also shown that there are a number of problems that emerge out of the technology of hypertext, problems such as...

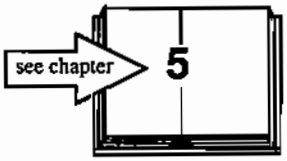


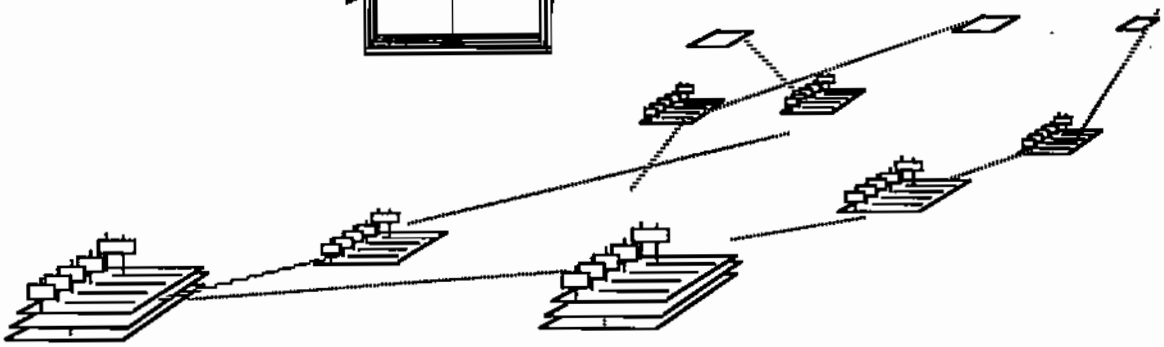
What shall the nodes contain and the links represent?

Overchoice and Cognitive Overload

Labor-Intensive Maintenance

And we have shown how Information Mapping's method resolves some of these problems.

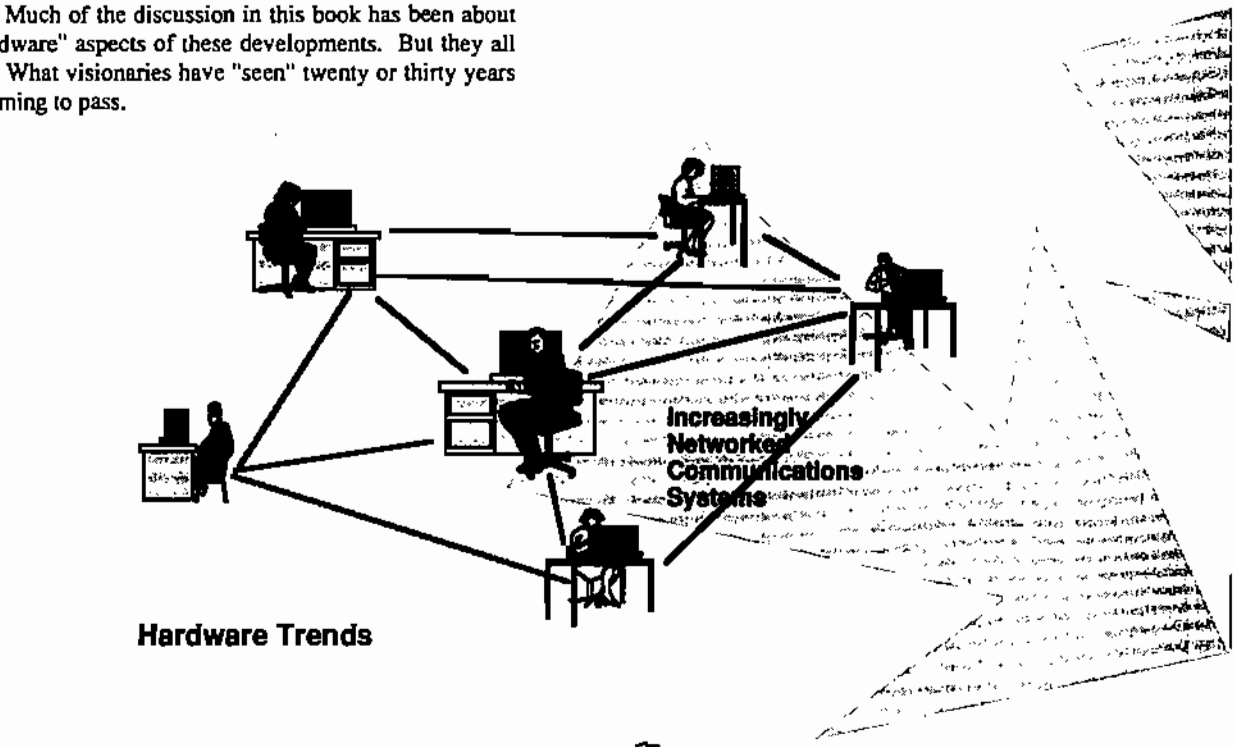




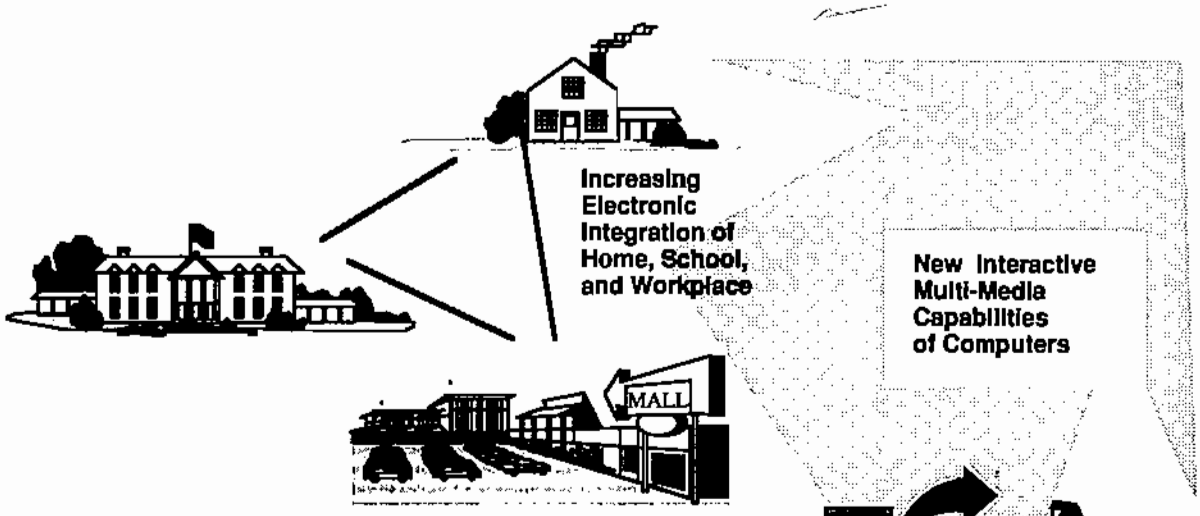
Trend: Integrate Communication and Computing

Introduction

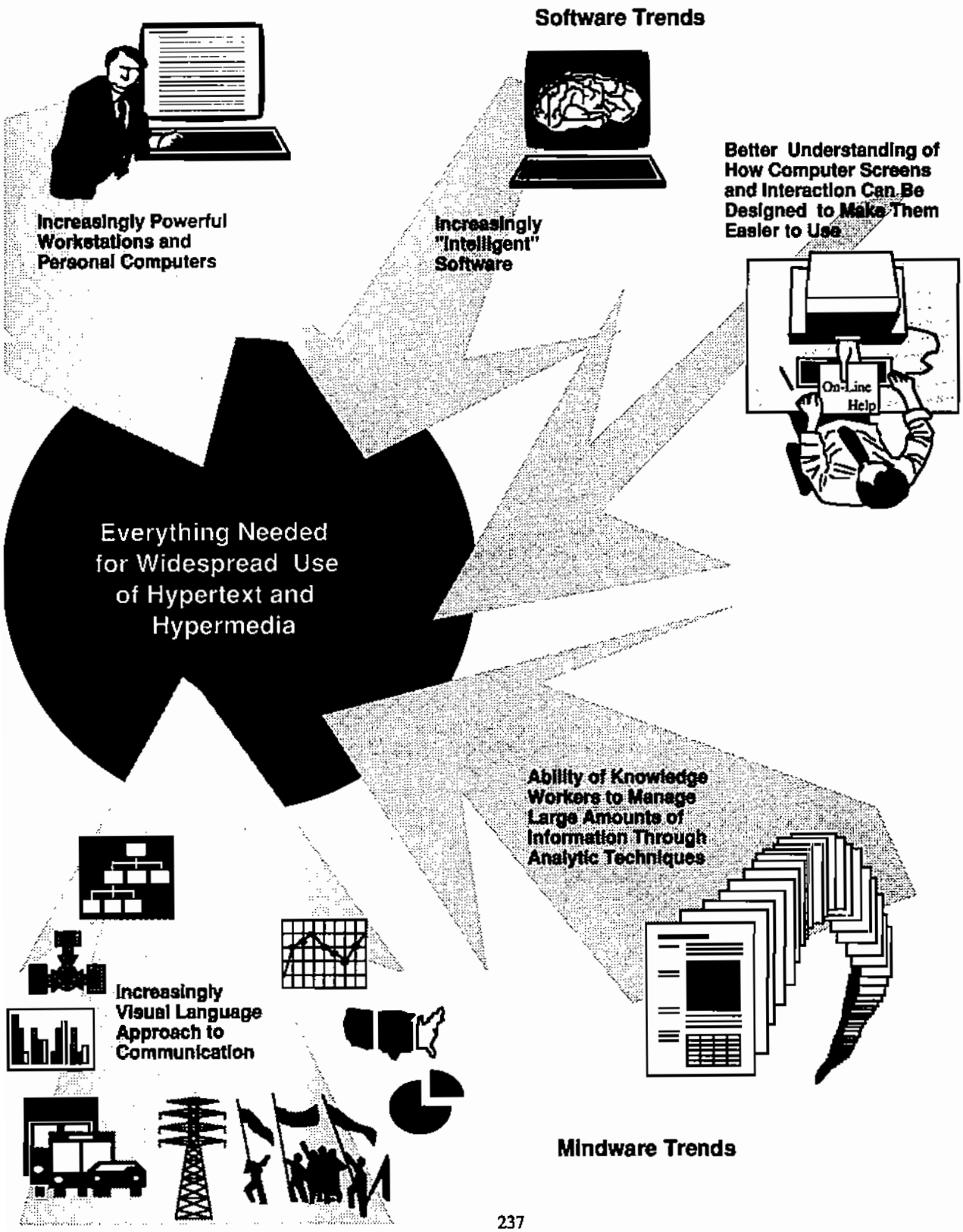
We can see the increasing integration of a number of technologies, hardware, software, and "mindware" that will bring about a much more flexible, convenient, and fertile medium for knowledge workers in the next decade and beyond. Much of the discussion in this book has been about the "mindware" aspects of these developments. But they all interact. What visionaries have "seen" twenty or thirty years ago is coming to pass.



Hardware Trends



New Interactive Multi-Media Capabilities of Computers

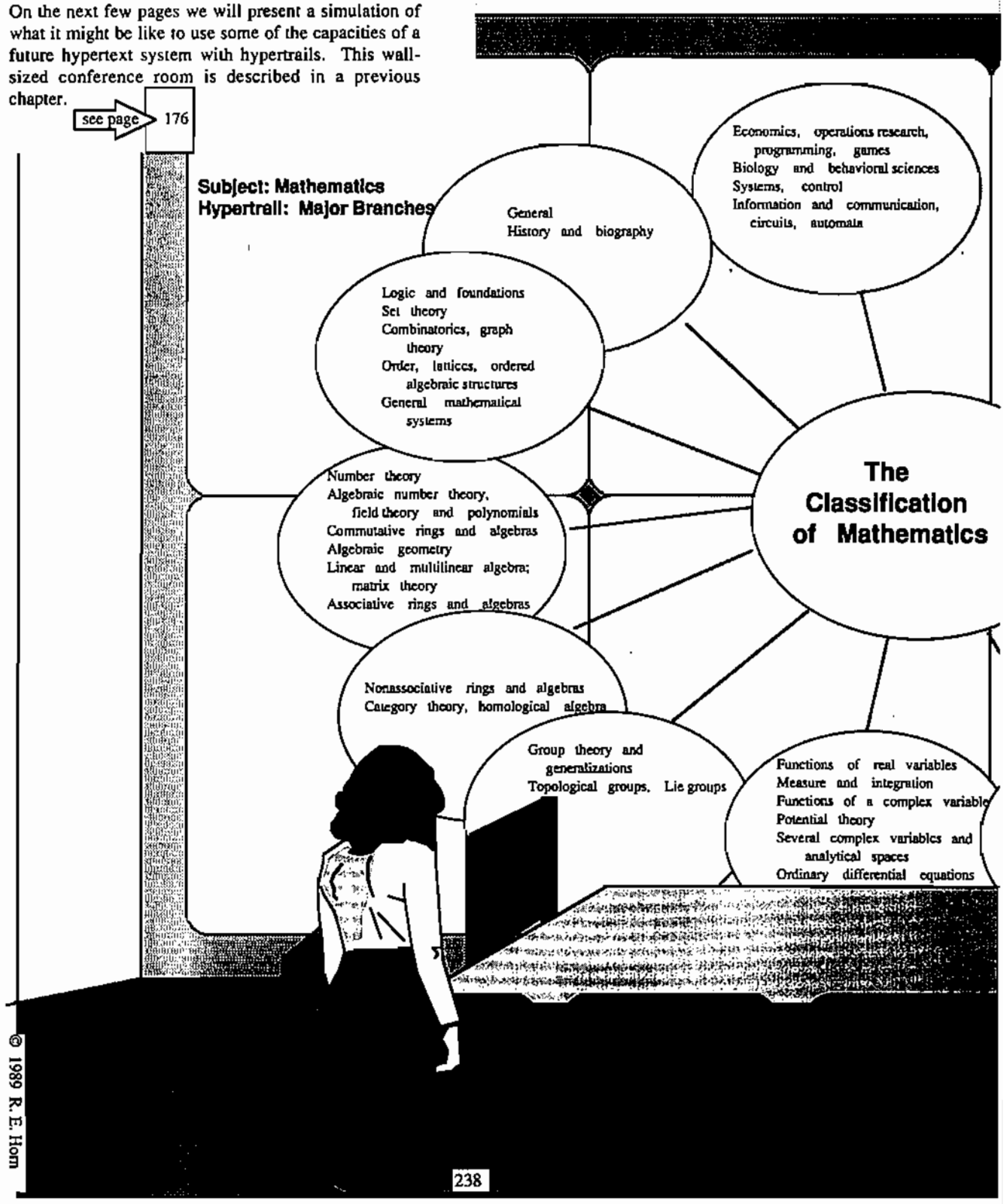


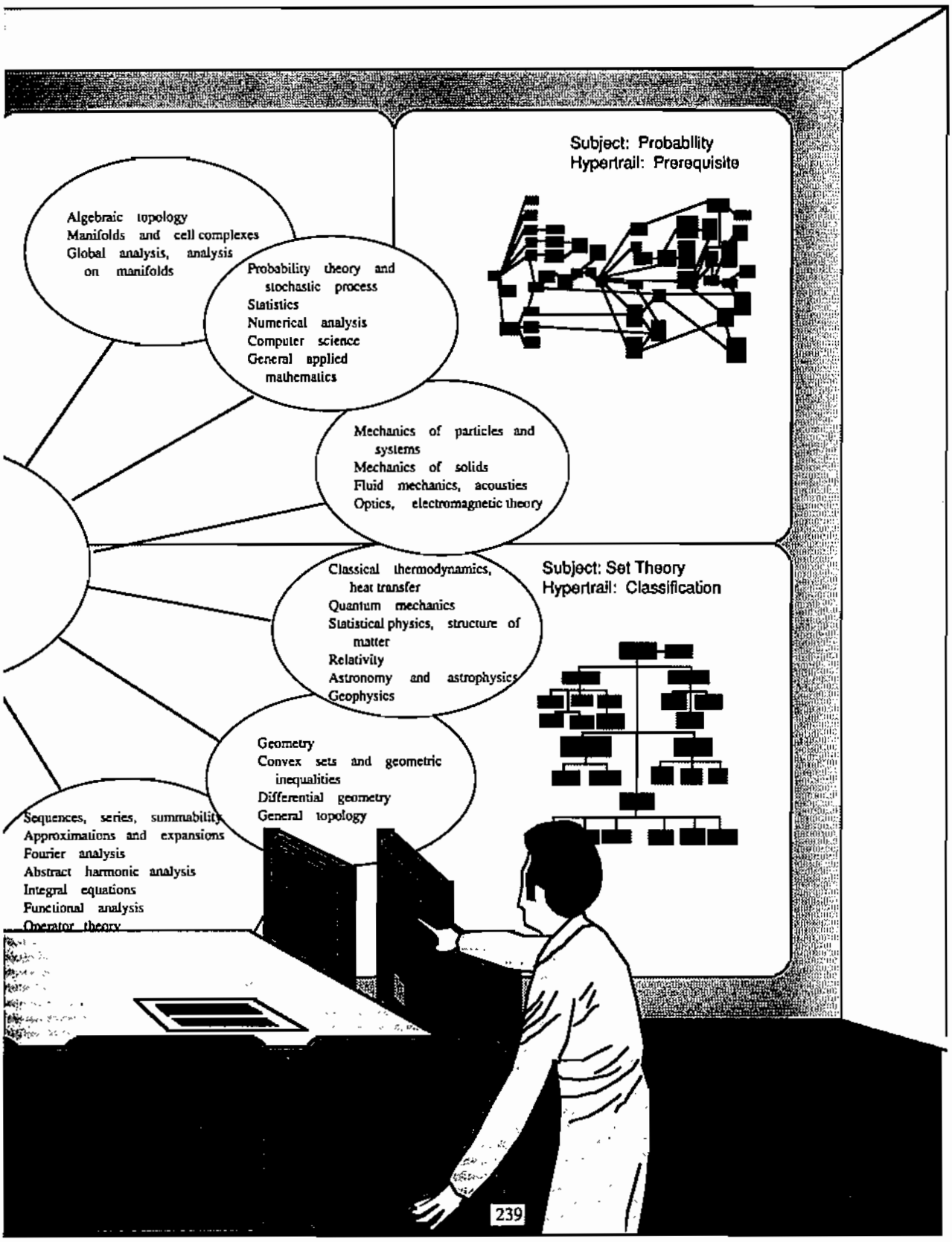
Navigating Through Whole Subject Matters

Introduction

On the next few pages we will present a simulation of what it might be like to use some of the capacities of a future hypertext system with hypertrails. This wall-sized conference room is described in a previous chapter.

see page 176



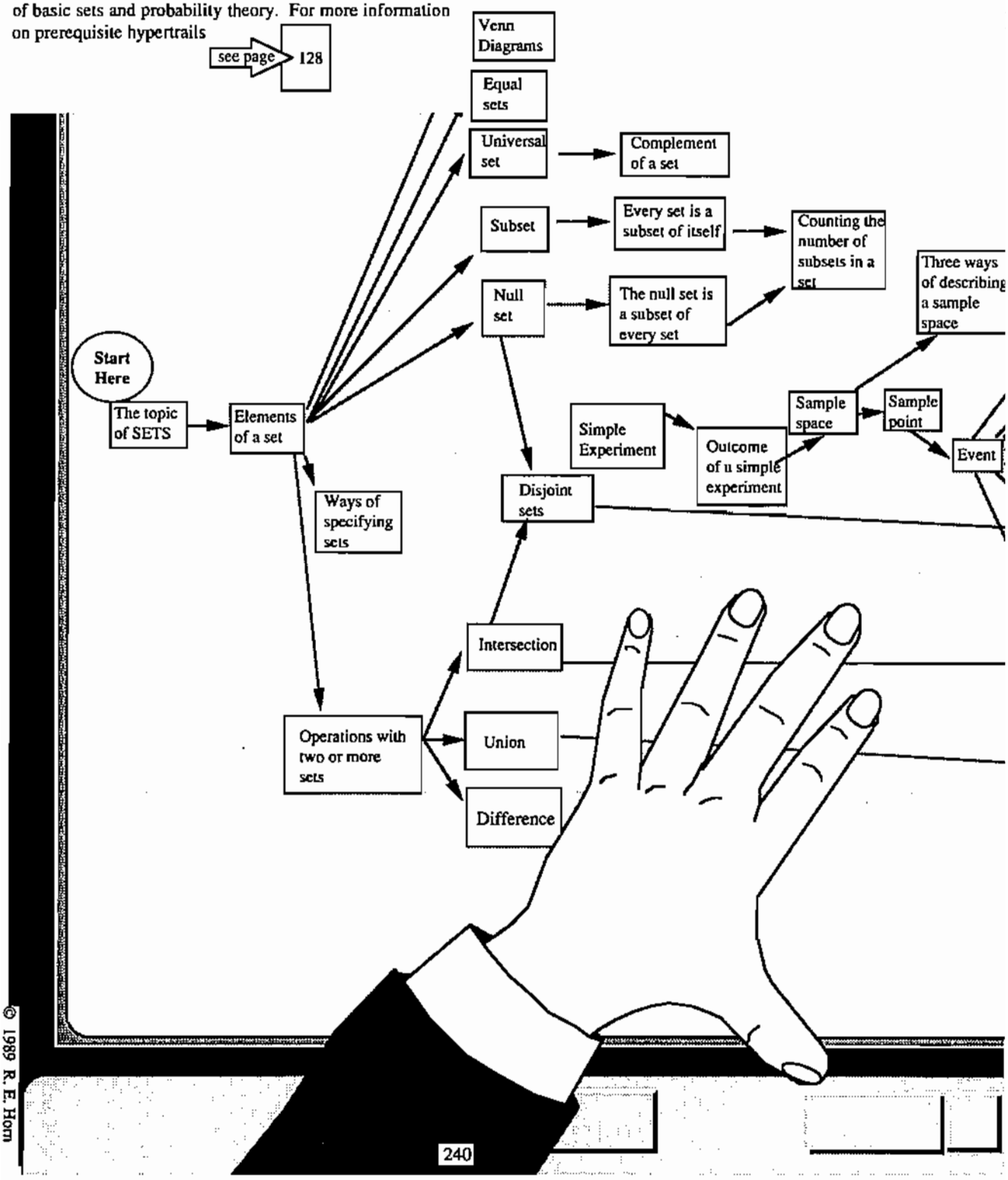


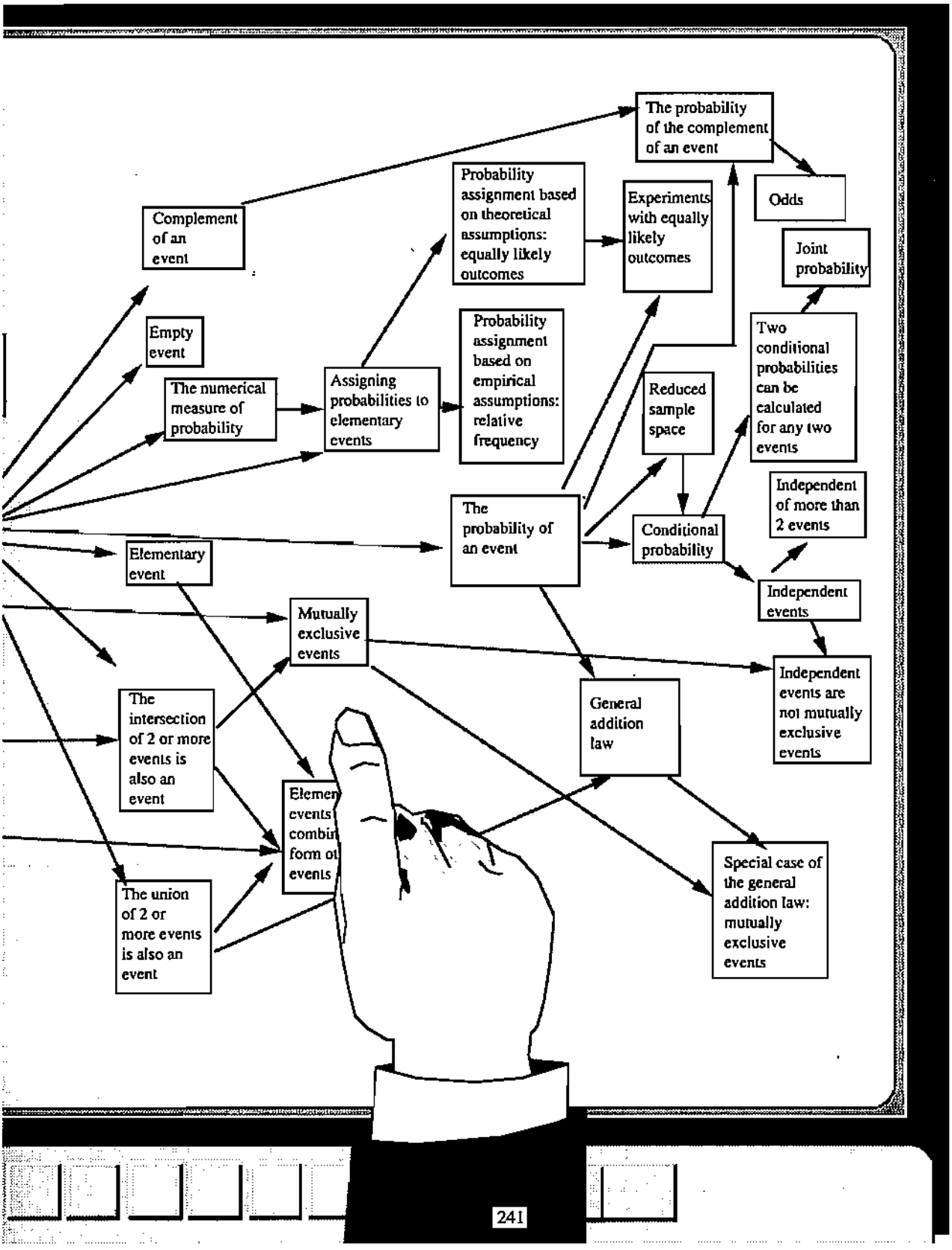
Navigating Along Hypertrails

Introduction

This is a prerequisite hypertrail of part of the subject matter of basic sets and probability theory. For more information on prerequisite hypertrails

see page 128





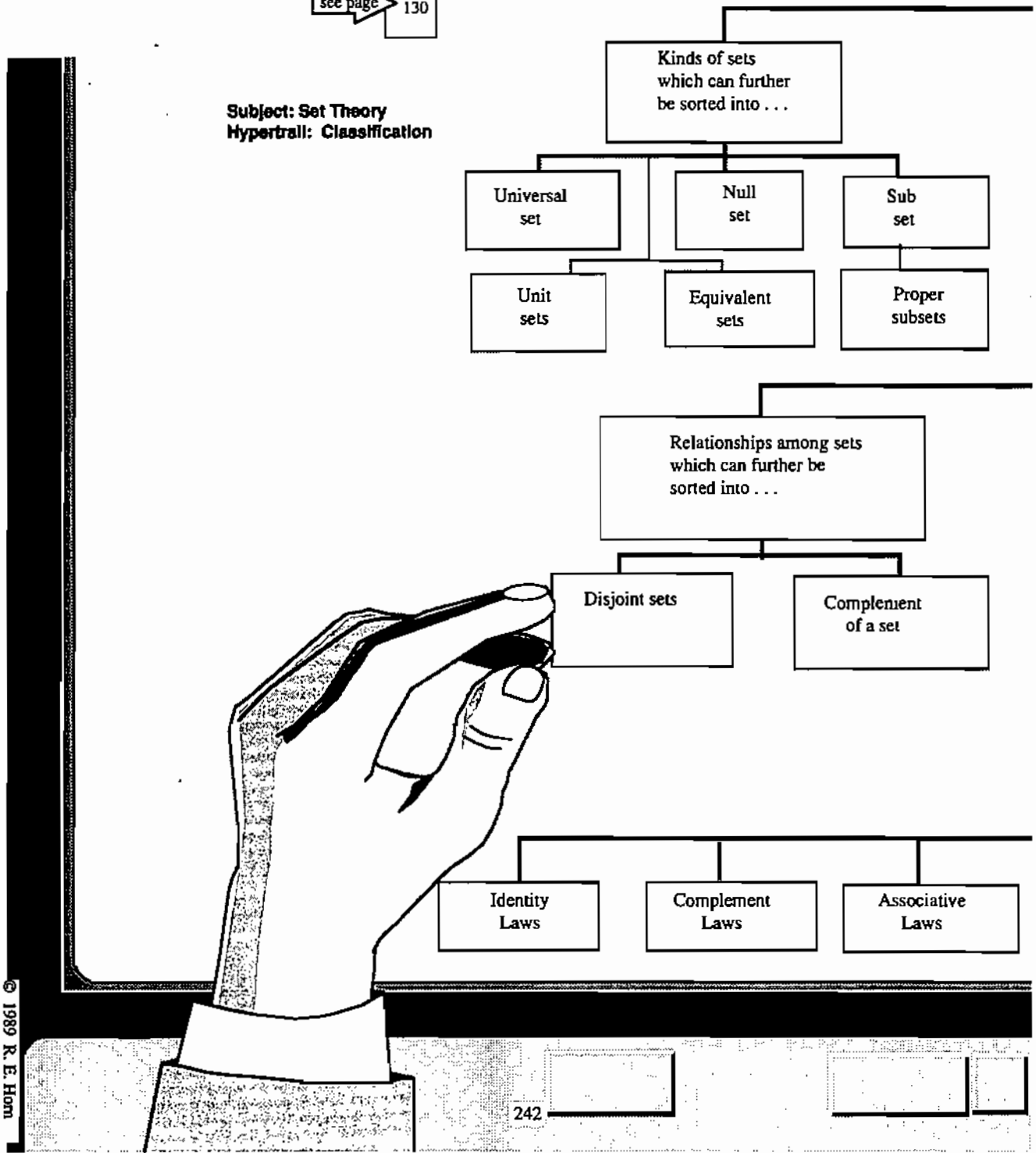
Looking from Multiple Points of View

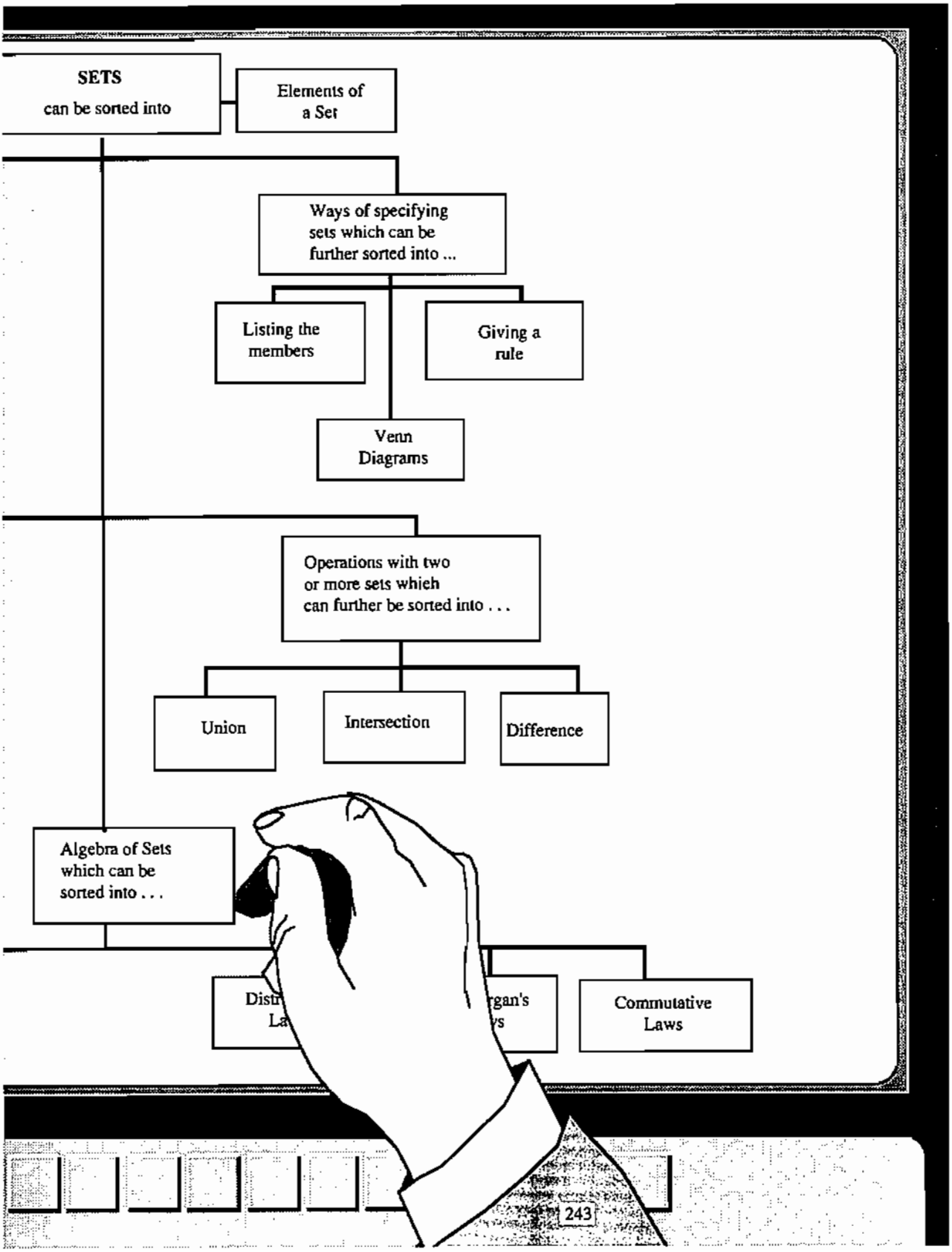
Introduction

This is a classification hypertrail of part of the subject matter of basic sets and probability theory. For more information on classification hypertrails

see page 130

Subject: Set Theory
Hypertrail: Classification





Virtual Reality -- A New Tool

Human-Computer Interaction

Virtual Reality is another newly emerging technology which will significantly change the way people interact with computers. Still in the prototype stage, virtual reality interfaces will impact the design of hypertext and hypermedia systems.

Virtual Reality -- The Basics

Virtual reality provides the illusion to users that they are inside a three dimensional world rather than observing an image. The minimum virtual reality hardware-software system consists of

- stereoscopic screens mounted in front of the eyes that project computer created images in 3-D
- a sensing system that recognizes the user's head position and as the head turns, rapidly updates the picture
- some means of interacting with virtual objects that appear in the virtual space (in one such system a gesture glove is worn by the user and appears as a hand-like object moving in virtual space). Several versions of virtual reality hardware are available today. Illustrated here are the helmet and the glove.
- a navigational system which can be as simple as pointing gestures with the glove.

Inexpensive displays of reality currently are "wire frame" representations (shown here). But technicolor geometric shaded solids are also available in much more expensive versions.

Virtual Reality -- The Next Step

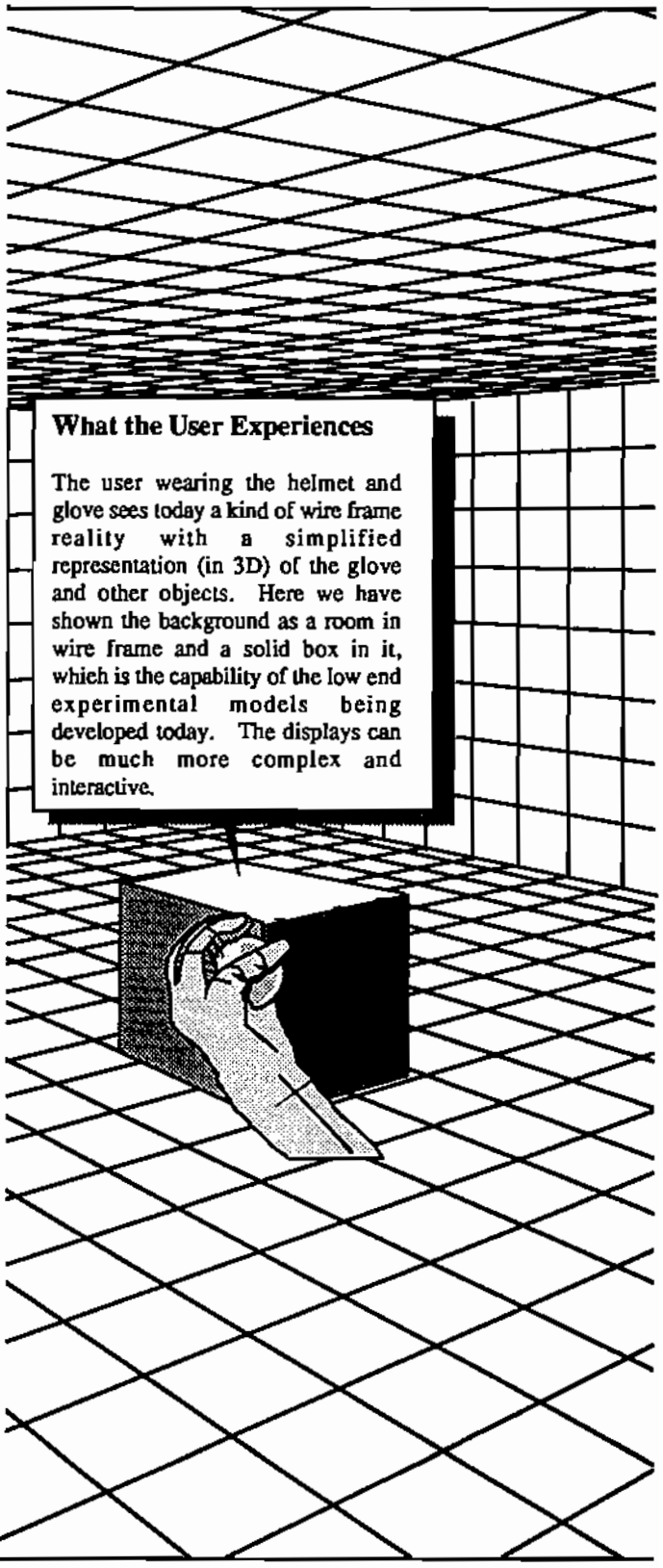
You put on goggles, earphones, and a glove and you are suddenly transported into another reality. Whatever you can imagine can be made to seem real ... literally anything. As John Walker, a founder of Autodesk, the CAD firm says, virtual reality "is an amusement park where anything that can be imagined and programmed can be experienced. The richness of the experiences that will be available ... can barely be imagined today."

And these virtual realities can be shared by more than one person interactively, the so-called "reality built for two" experience. We will experience Alice in Wonderland and beyond!

Examples

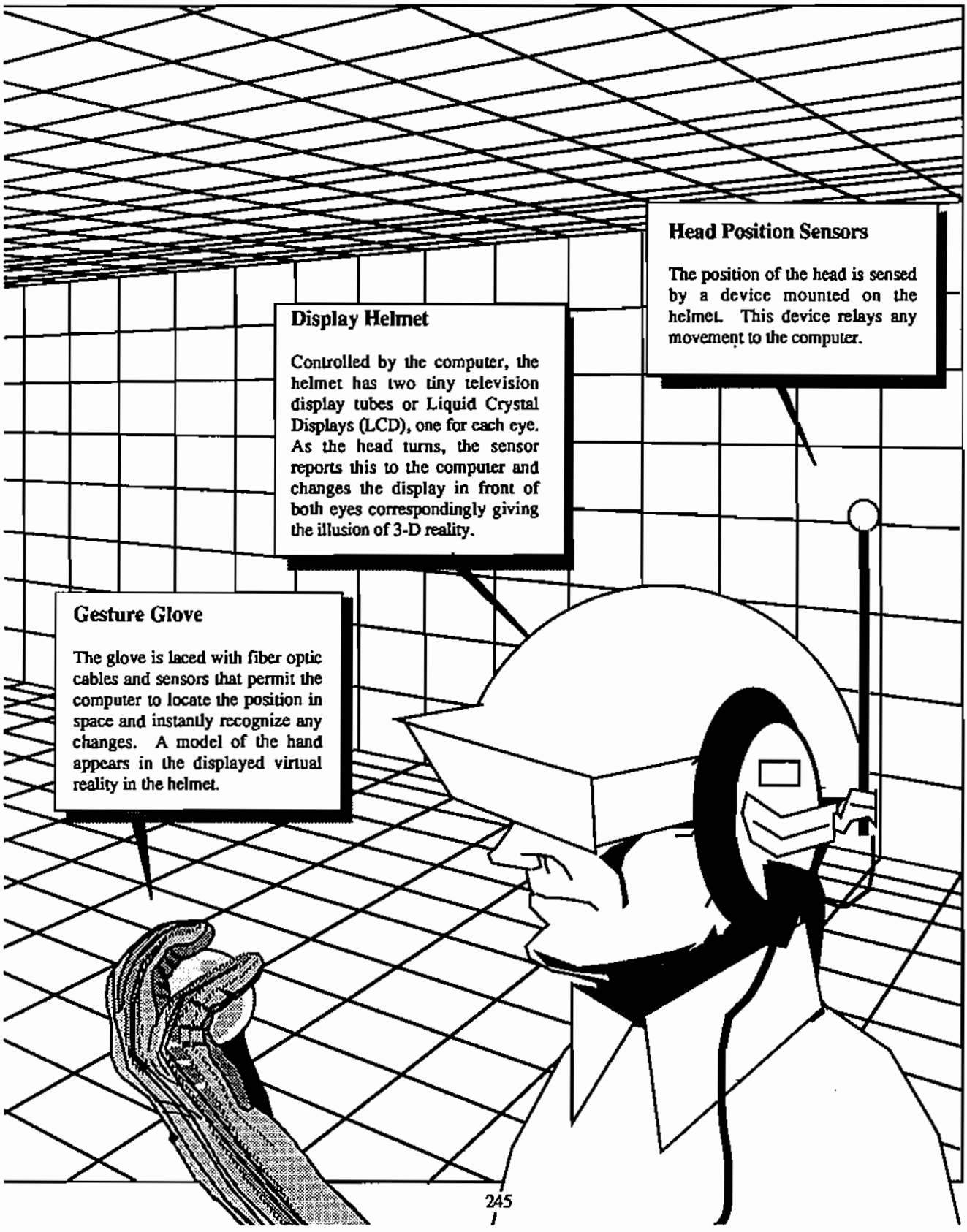
We will soon be able to display large networks of structured information mapped by visual landscapes in virtual reality and we will be able to move around in them.

see page 246



What the User Experiences

The user wearing the helmet and glove sees today a kind of wire frame reality with a simplified representation (in 3D) of the glove and other objects. Here we have shown the background as a room in wire frame and a solid box in it, which is the capability of the low end experimental models being developed today. The displays can be much more complex and interactive.



Travelling in Large Visual Landscapes

Complex Systems Require Adequate Displays

Comprehending the important interrelationships of complex systems requires increasingly more sophisticated display. Virtual reality spaces that portray 3-D models of projects, organizations, development of produet lines, markets and processes will be developed.

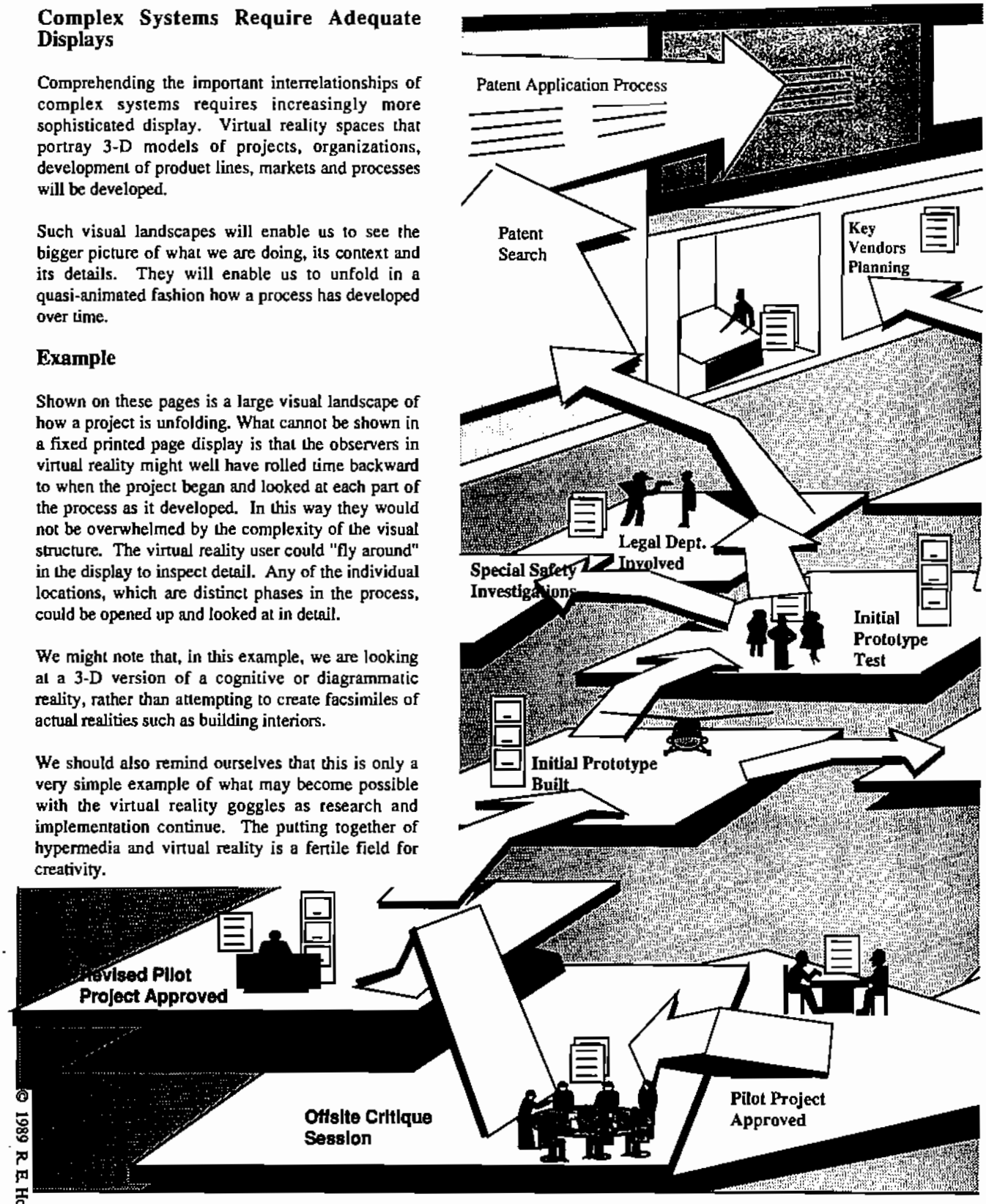
Such visual landscapes will enable us to see the bigger picture of what we are doing, its context and its details. They will enable us to unfold in a quasi-animated fashion how a process has developed over time.

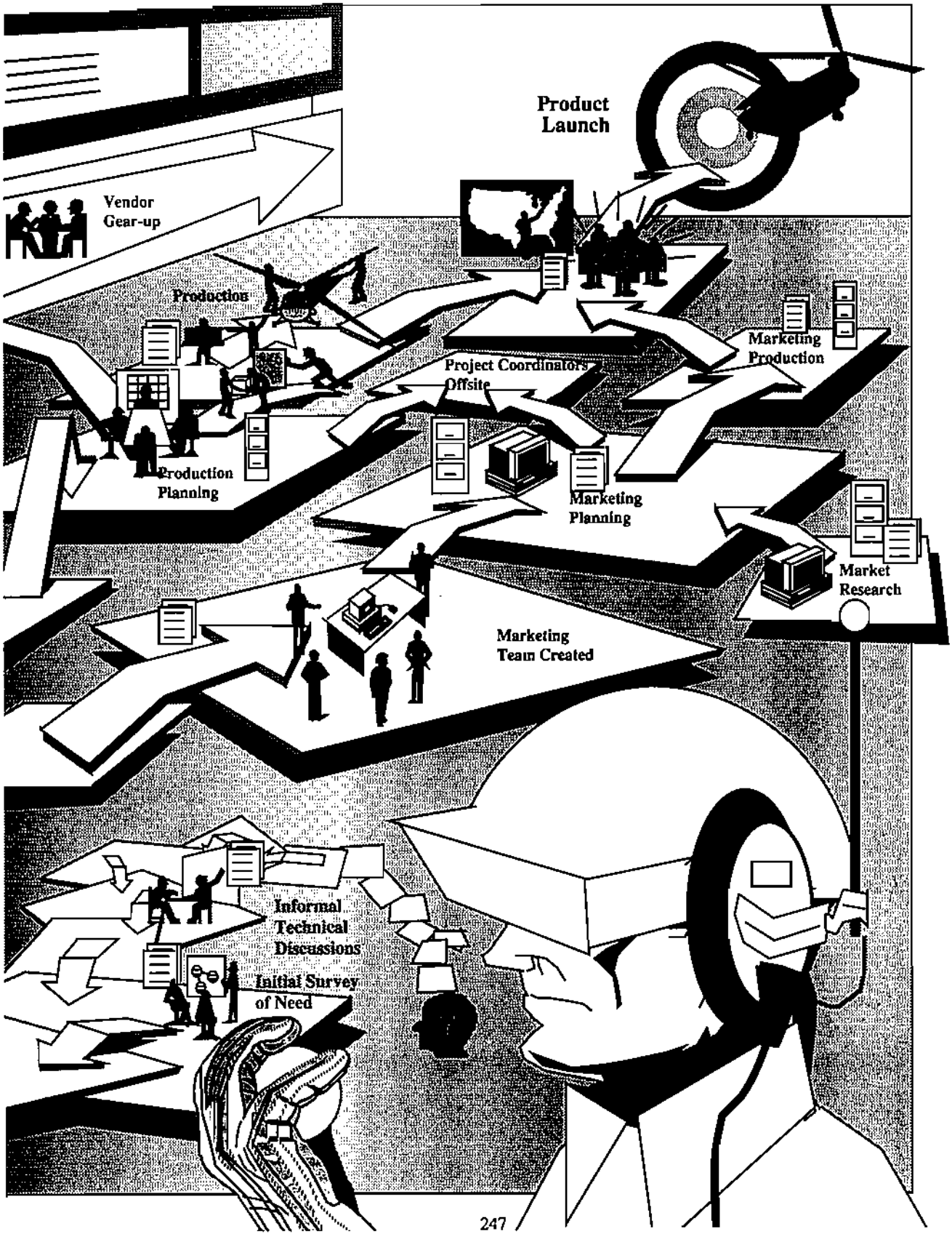
Example

Shown on these pages is a large visual landscape of how a project is unfolding. What cannot be shown in a fixed printed page display is that the observers in virtual reality might well have rolled time backward to when the project began and looked at each part of the process as it developed. In this way they would not be overwhelmed by the complexity of the visual structure. The virtual reality user could "fly around" in the display to inspect detail. Any of the individual locations, which are distinct phases in the process, could be opened up and looked at in detail.

We might note that, in this example, we are looking at a 3-D version of a cognitive or diagrammatic reality, rather than attempting to create facsimiles of actual realities such as building interiors.

We should also remind ourselves that this is only a very simple example of what may become possible with the virtual reality goggles as research and implementation continue. The putting together of hypermedia and virtual reality is a fertile field for creativity.

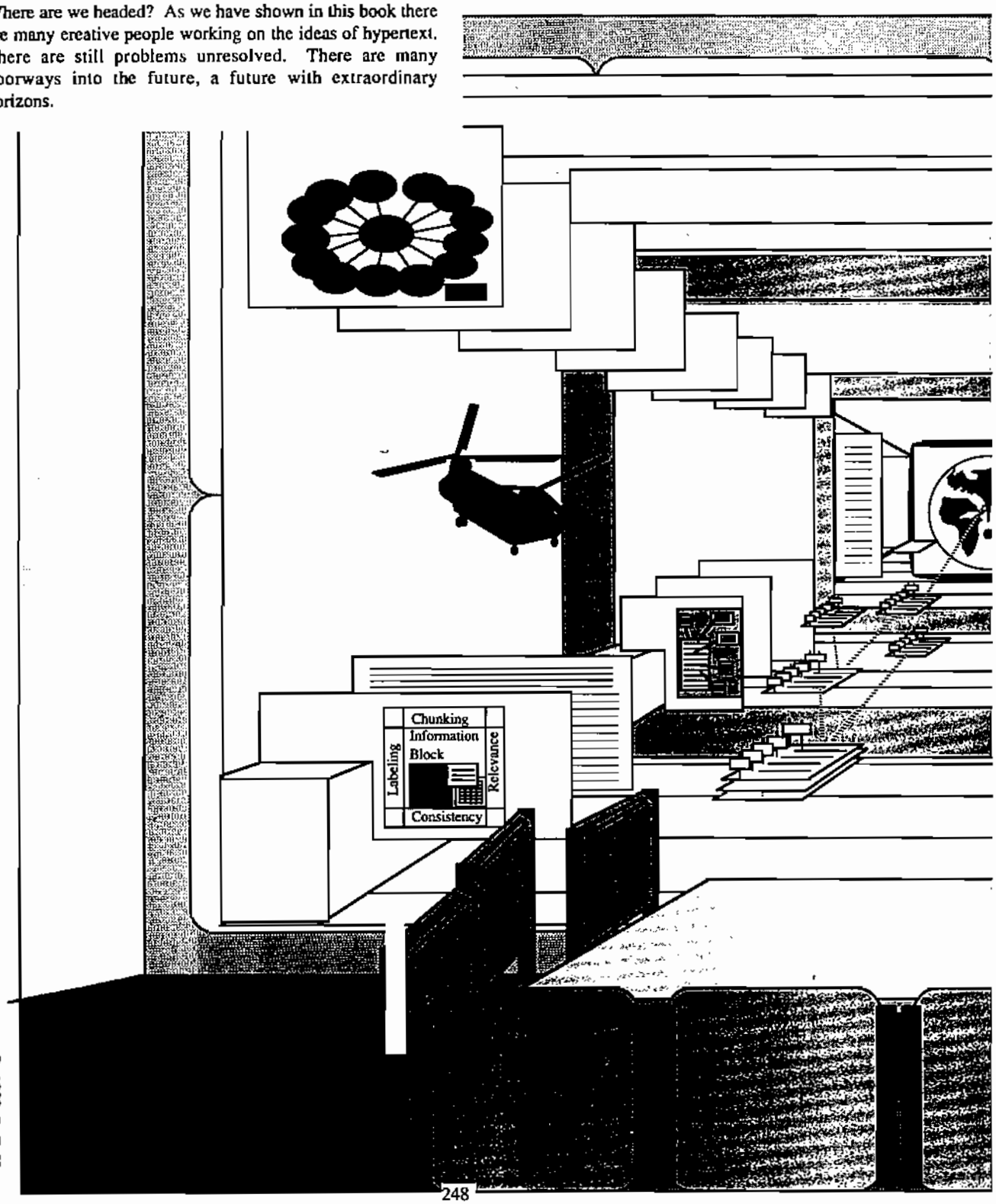


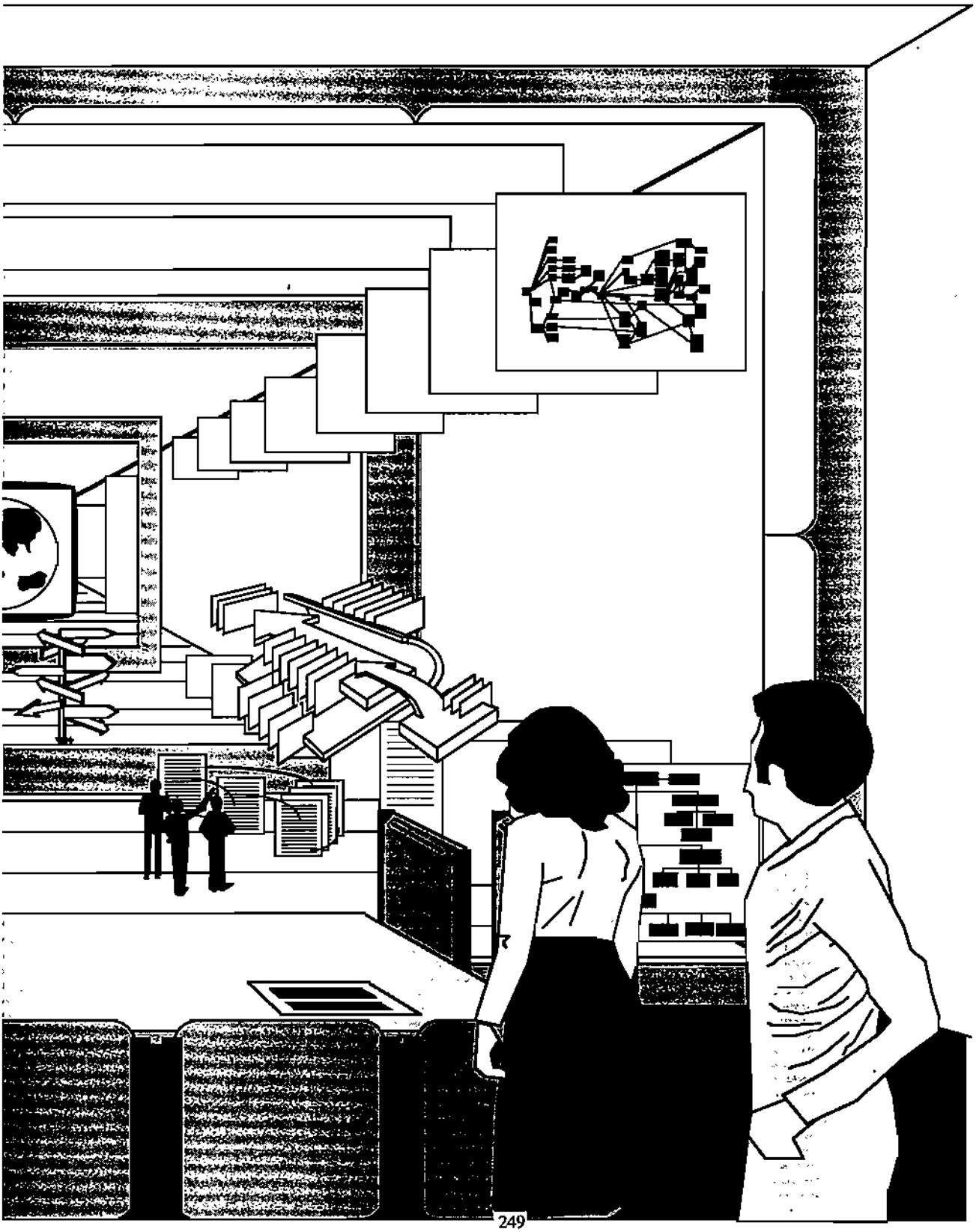


Heading into Future Information Landscapes...

Introduction

Where are we headed? As we have shown in this book there are many creative people working on the ideas of hypertext. There are still problems unresolved. There are many doorways into the future, a future with extraordinary horizons.





Appendix A: Some Historical Notes