

Blended Spaces for Collaborative Creativity

Professor David Benyon

Centre for interaction Design
Edinburgh Napier University, UK

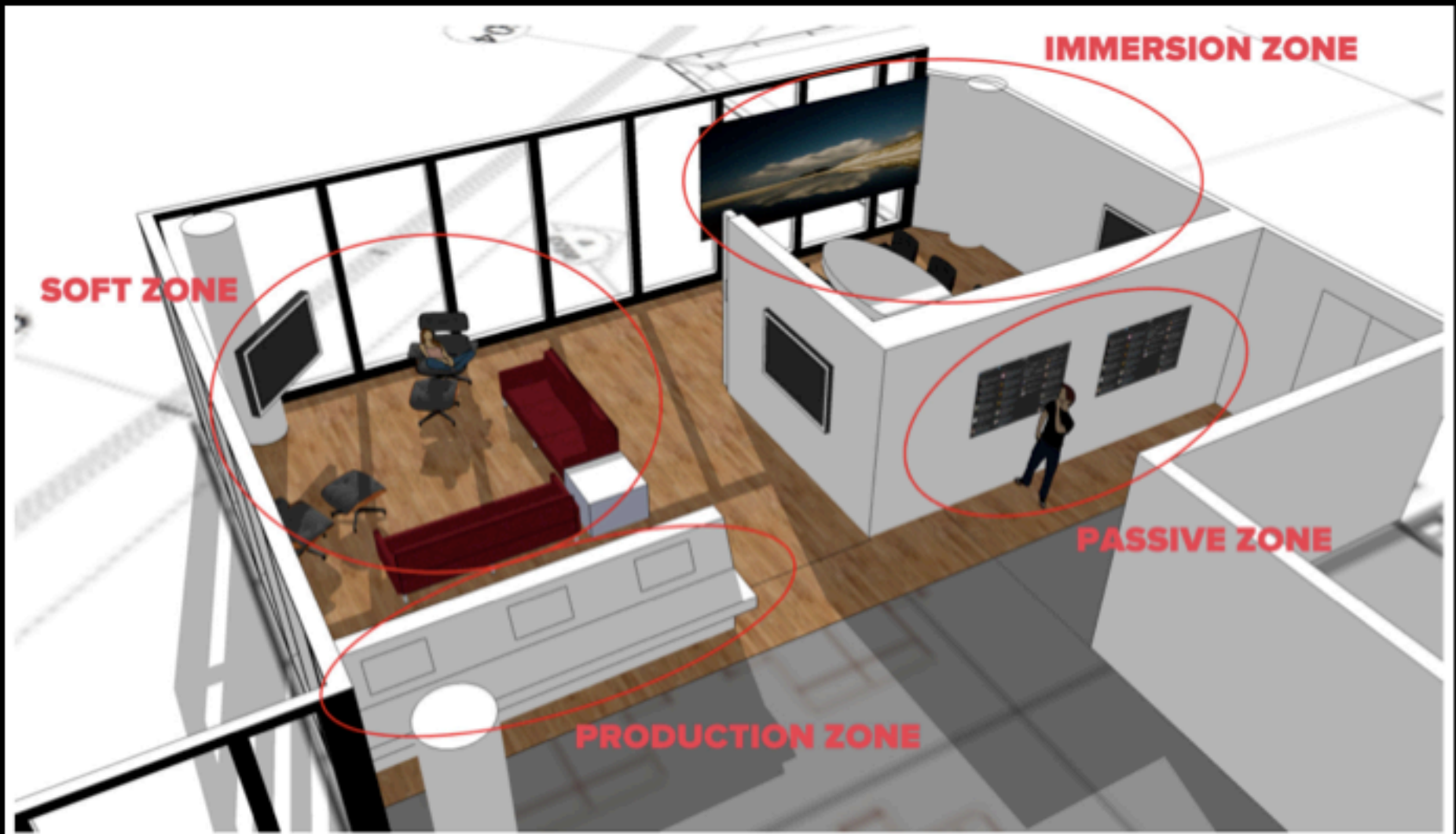
Focus

- Developing mixed reality, multi-touch environments for creative collaboration
- The Interactive Collaborative Environment (ICE) at our University
- Applications for chip manufacture, compositing, brainstorming, control.
- Consultancy on room-based environments.

The ICE



Creative hub for advertising agency



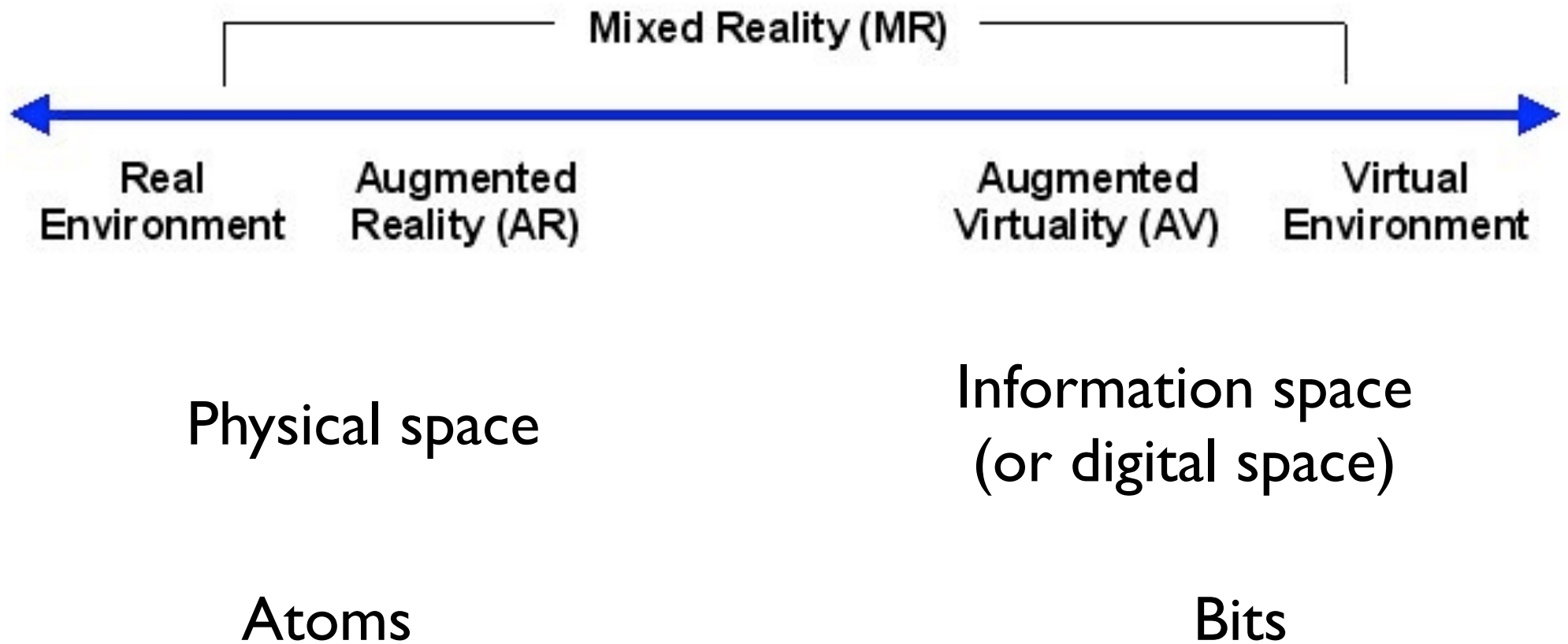
Tabletop museum app



Overriding idea is of Blended Spaces

- More than just mixing realities
- Blended spaces have a coherence and their own properties
- These are emergent properties of a new kind of space
- Spaces that deliver layers of experiences.

Mixed Realities



What are these spaces like?

- Physical space - with real world physics!
- Information (digital) space - with multimedia content
- Both spaces consist of objects, laid out in some way, including technologies (materials) to mediate interaction
- In both spaces people navigate, make meanings and have feelings

Blending Theory (from Fauconnier and Turner)

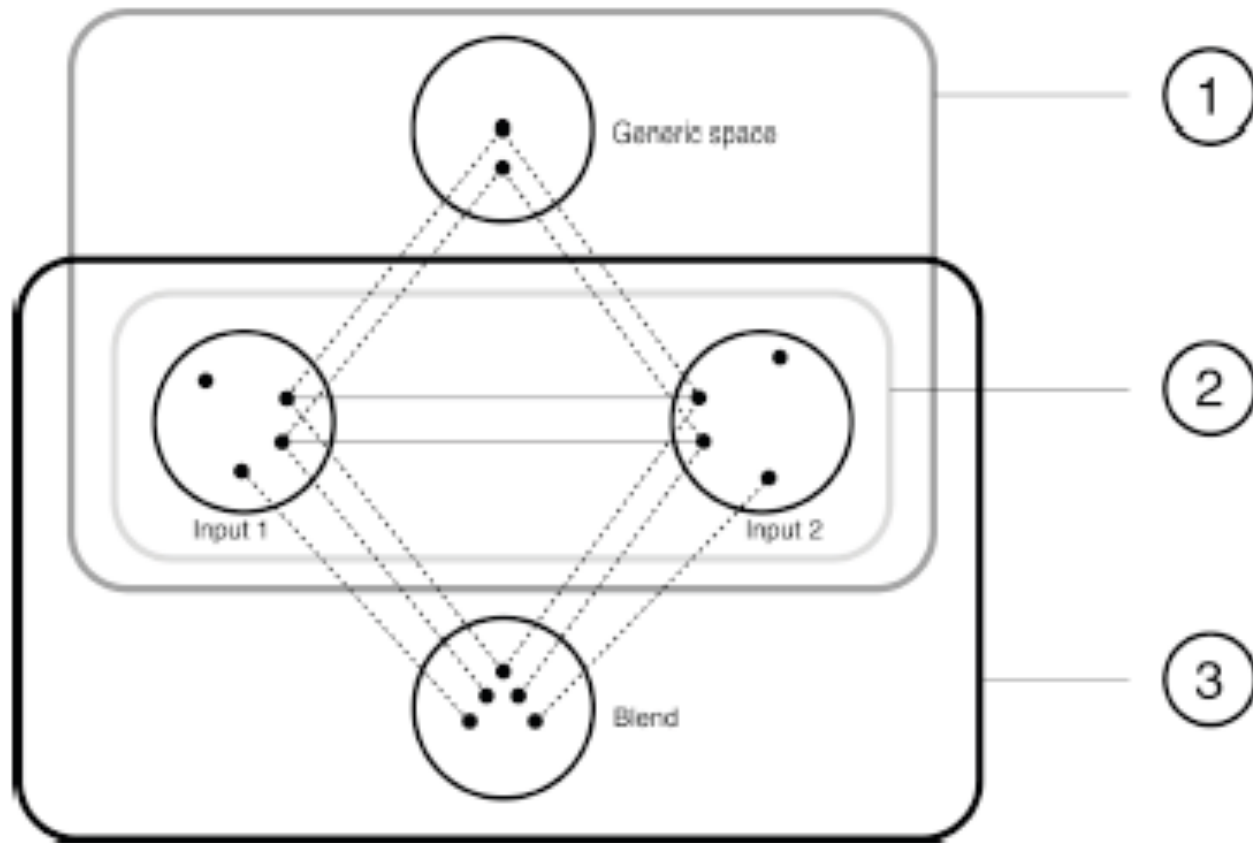
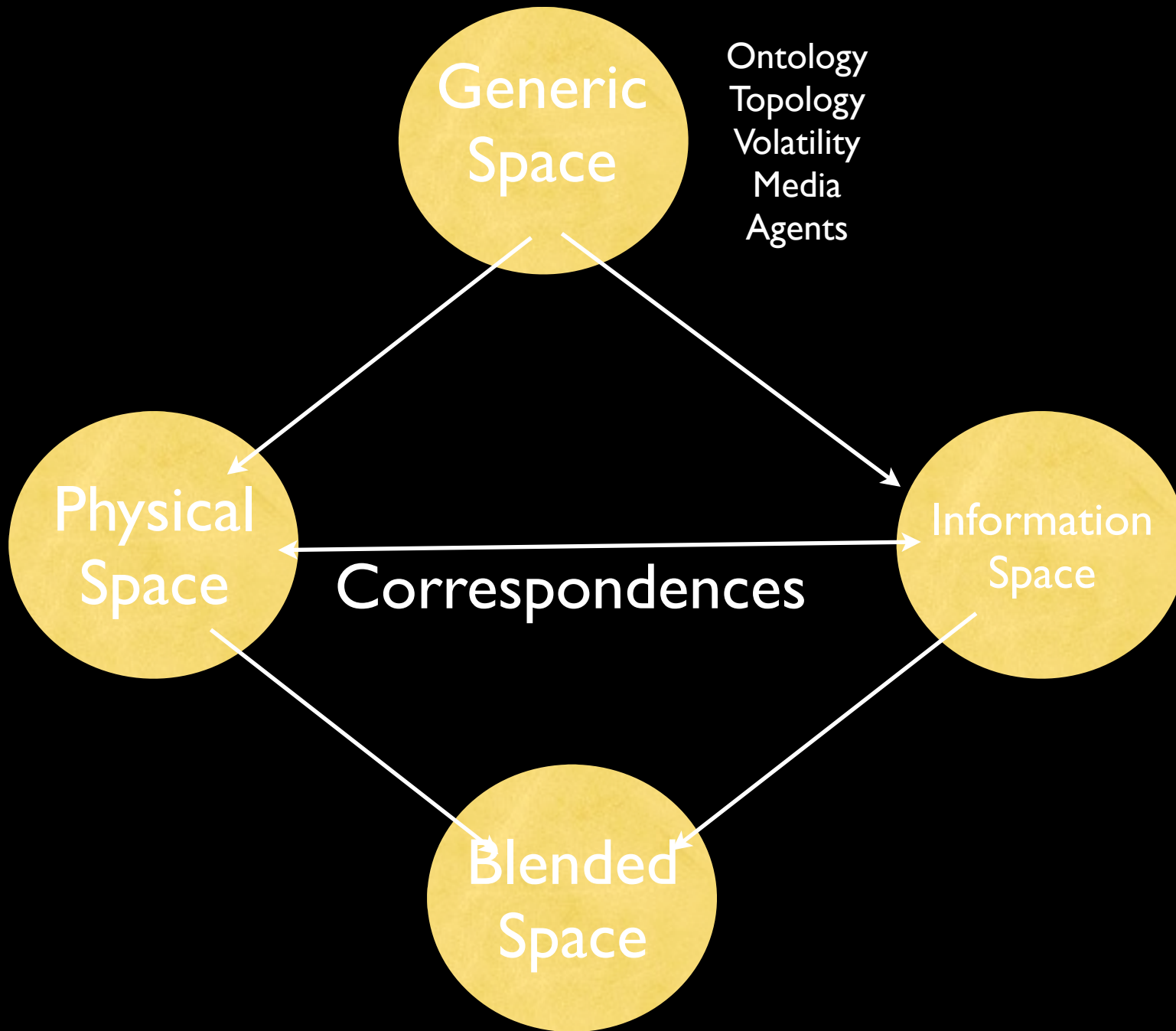


Figure 5.8 Generic space and Blended space (based on Imaz and Benyon, 2006)

Describing Spaces

- **Ontology** - what objects are in the space, their types and instances, the size of the space?
- **Topology** - how the objects are related, giving distance and direction?
- **Volatility** - how often the objects change?
- **Media** - what technologies or materials are supported in the space?
- **Agents** - are there artificial or real people in the space?



Being in Spaces

- Spaces and places are media: environments in which we act and shape the media itself
- People engage in activities in spaces
- People step back and reflect in spaces
- People act on objects through the interfacing media and technologies
- People are present in blended space

The ICE as a blended space

- Physical space = empty office, boardroom table, high stools, electronic whiteboards
- Digital space = PyMT (Kivy), windows 7, 8, TUIO interface, integrates iPads, etc.
- Conceptual space = understanding what's possible, relationships between zones, etc.

Methodology

- Identify and understand purpose
- Examine current practice
- Determine project constraints
- Determine the appropriate technologies for the space
- Model and map the spaces developing the correspondences between physical and digital

Blended Spaces - the bigger picture

- People will be living in and moving through in blended spaces
- They will be present in blended spaces
- People have implants and experience new sensations directly
- People will form relationships with agents, not simply interact
- New theories of presence, blended space and embodied and embedded interaction are required