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Design Tools: Hybridization, Exploring Intuitive Interaction [Loosely Fitted Design Synthesizer]

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[RE]SEARCH

SYNOPSIS

Design and Design Engineering is about making abstract representations often based on fuzzy notions, ideas or prerequisite requirements with the use of various design tools. This paper introduces an interactive hybrid design tool to assist and support singular design activity or multiple collaborative creative processing and product creation. It enables the designer or design team to work smoothly with tangible artifacts and traditional design tools. It enables them to freely and intuitively manipulate these objects while simultaneously integrating the iterations into the virtual realm. By loosely-fitting the serendipitous objects, sketches, drawings, images and other data-sets of interest into the design creation process this hybrid tool supports the intuitive interaction and stimulates the immersive experience of augmented reality.

The benefits of the system are haptic and intuitive physical interaction evoking the experience of augmented immersion during design activity. Furthermore the computational listing and repository of iterative history allows the users to access fallback choice-architecture and make full use of the hybrid environment and design synthesis capabilities.

F2F & HCI

ANALOGUE	DIGITAL
FACE-TO-FACE AND BEST PRACTICLE LEARNING	BASIC ELECTRONIC ENTERTAINMENT AND COMMUNICATIONS
frontal lobes executive function	visual and motor
working memory, logic, insight, emotion and body language	sequential-short term memory
variable tempo	faster and faster
often - delayed rewards	immediate rewards
slef - disclosure and openess	limited true self disclosure and anonymity
working memory	captivating graphics and sounds effects - stimulus bound - stimulus driven attention
working memory	simple memory
prioritizing	multitasking and continious partial attention

Comparison chart Analogue vs. Digital Interaction Environments (M.R. Hicks 2010)
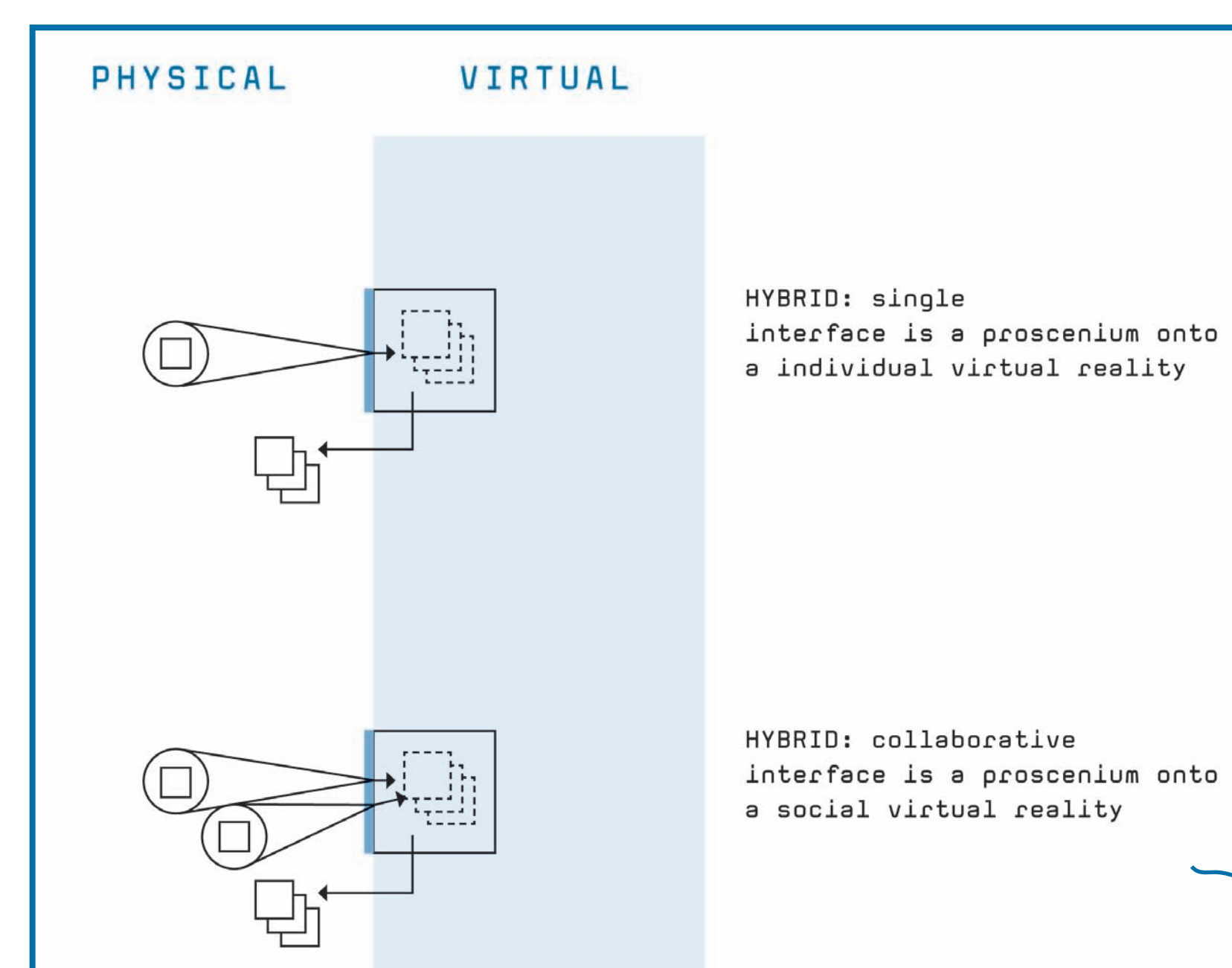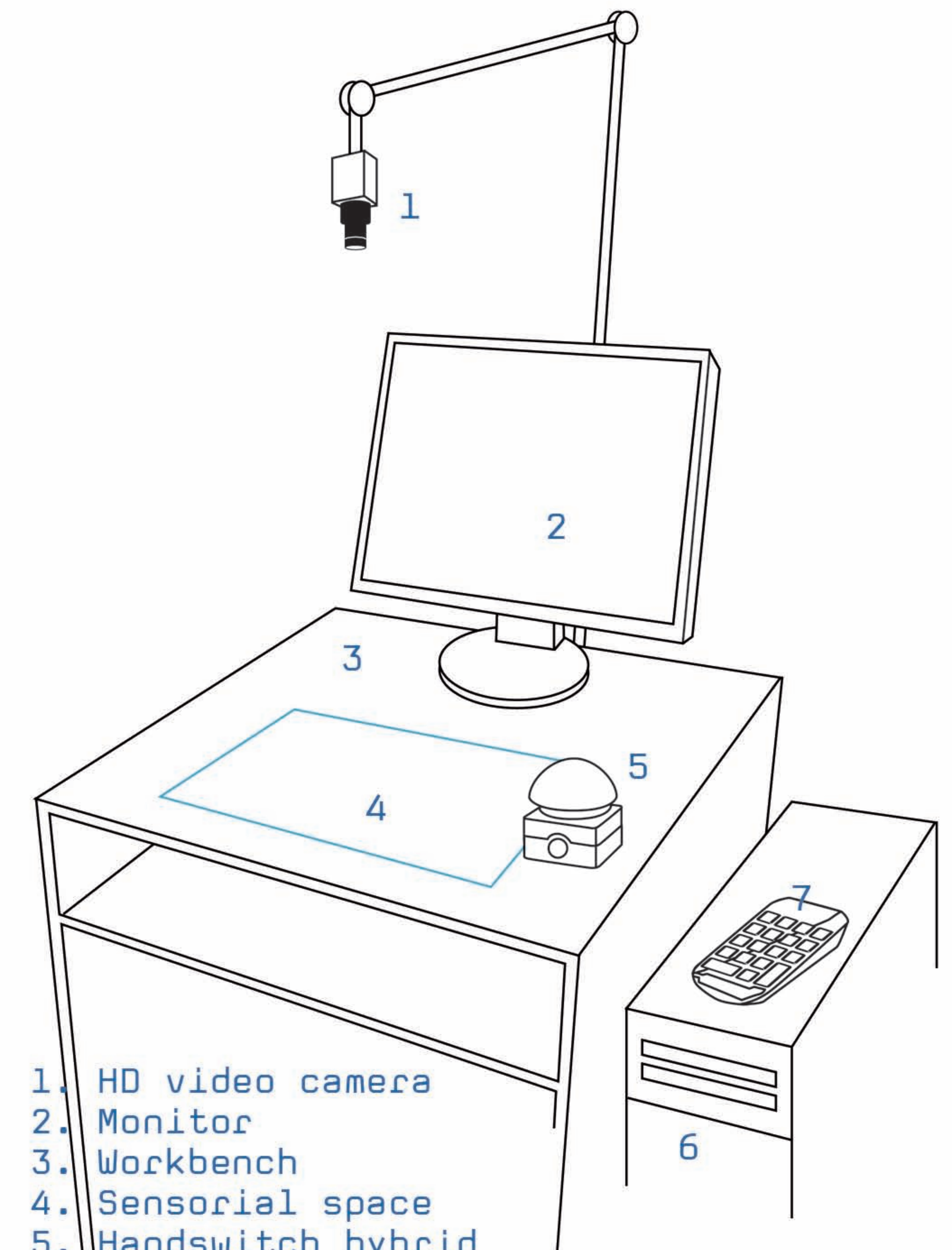
HYBRID TOOL

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[LFDS]

The hybrid interface of the LFDS with a recognizable physical work-bench and sensorial space includes digital desktop and electronic tools – intuitive haptic buttons, high-definition camera, monitor and wireless numpad. The Real World and the Virtual Reality are clearly merged. The real-time captures of the iterations simultaneously supported by the vision system affords the use of both hands during interaction. The iteration are only stored when the actor physically (button push) makes the capture. The full control lies with the actor and the system assists in the creative process.

PHYSICAL   VIRTUAL

HYBRID: single interface is a proscenium onto a individual virtual reality

HYBRID: collaborative interface is a proscenium onto a social virtual reality

TWO-WORLD CHALLENGE: Linking the Physical and the Virtual

1. HD video camera
2. Monitor
3. Workbench
4. Sensorial space
5. Handswitch hybrid
6. Standard PC
7. Numpad wireless
8. Footswitch hybrid