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Image – Action – Space
Situating the Screen in Visual Practice

With the improved capability of imaging, sensor and display technology, screens have become mobile or touchable and, most recently, transparent. While a visualization on-screen is not necessarily related to the spatial context beyond the screen, transparent displays allow users to see simultaneously the physical space behind the display and a visualization on-screen. The two observers on the cover of this volume look at a future construction site through the transparent display of a head-mounted device that superimposes an architectural model on their view (fig. 1). Its rendering coincides with the scale of the actual building, and the visualization adapts to the observer's point-of-view in real time. While a juxtaposition of building and model on a separate screen would require continuous comparison between image and object, the head-mounted display combines them in a joint perceptual space. The missing offset between image and object puts forward a new practice of interacting with spatially related information: users can navigate through space by superimposing a transparent mobile interface onto their field of view.

This example shows how screen-based media transform the way we see and act: transparent displays constitute a form of images that only *work* when they are situated. They shift focus onto the *situation* rather than to the result of an imaging process. Of course, screens are always embedded in the context of a situation, particularly those visual practices that require the linking between screen-based visualization and physical space. A smartphone mapping app that indicates one's current location and orientation, for instance, requires that users situate themselves in space based on a two dimensional map. During a surgical intervention, to give another example, surgeons must cope with the limiting architecture of image display in the operating room, in which information on screen may not align with their perspective on the patient's body or with the scale and orientation of relevant anatomy. Accordingly, surgeons must ascribe an image of the patient, for instance a computer tomography, to the patient's body cognitively in order to *act* appropriately in a particular situation. Even a regular television screen on a living room shelf creates a specific viewing situation. But this situation is not adaptive to the images on-screen – it does not correlate image and space.

An example for the way in which screen-based visual practices dissolve the distinction between image and space, creating a hybrid and adaptive form of visuality, is the location-based augmented reality game *Pokémon Go*. The application encourages users to explore physical space in order to catch virtual figures displayed within the camera stream of a mobile phone (fig. 2). By aligning camera image and physical space, *Pokémon Go* players perform operations both within and beyond the boundaries of the screen. What seems to be a simple moment in a game is actually an intri-

cately structured visual practice: The in-game view layers photographic and animated elements depending on the player's location and within the camera's field of view. The mechanism of merging image, action and space in *Pokémon Go* transforms *viewing* into *using* and emphasizes an active role of the image in guiding a user's action and perception.

The visual practice of *Pokémon Go* points to the methodological issue of how to analyze and theoretically frame the situation and situatedness of screens. By shifting the focus towards their "screenness", we intend to examine visual practices by asking what a screen *does* rather than asking what a screen *is*.[1] From this perspective, the question is less about what becomes visible, or what can be seen, but rather about how the interaction with and through screens structures action and perception. The terms *image*, *action* and space serve as analytical reference points for investigating how screens engender a situated and dynamic relation between them.

This volume draws on the evolving debate about the screen as "a concept in progress", which has started to inquire its defining status.[2] While the screen "has become

convenient catch-all used to describe the research and study of what we access through screens, perpetuating the idea of the screen as passive conduit", is only until recently that screen studies have started to investigate the impact and application of screens in particular situations and with regard to its actionability and material affordances.[3] Concepts from media theory and visual studies, such as dispositif, spatial images, operative images or mobile screens help to scrutinize *screenness*.[4]

The authors analyze how screens are situated in visual practices by scrutinizing the dynamic, transformational and performative characteristics of screen-based media with regard to image, action and space. By focusing on their dynamic yet deterministic relations the volume presents an approach to *screenness* that focuses on the *actionability* of screen-based media in all their different hardware and software configurations. Speaking of actionability emphasizes the way in which multiple forms and configurations

1 Lucy Suchman proposes looking at the socio-material practices surrounding the application of screens by using the term "screenness". Brit Ross Winthereik, Peter A. Lutz, Lucy Suchman, Helen Verran, Attending to Screens and Screenness. Guest Editorial for special issue of Encounters, in: *STS Encounters* 4.2 (2011), pp. 1–6. In a different vein, Lucas Introna and Fernando Ilharco develop the notion of screenness for their endeavour of introducing a "Heideggerian phenomenological analysis of screens". Lucas D. Introna, Fernando M. Ilharco, On the Meaning of Screens. Towards a Phenomenological Account of Screenness, in: *Human Studies* 29 (January 2006), pp. 57–76, DOI: 10.1007/s10746-005-9009-y.

2 Dominique Chateau, José Moure, Introduction. Screen, a Concept in Progress, in: Dominique Chateau, José Moure (eds.), *Screens. From Materiality to Spectatorship – A Historical and Theoretical Reassessment*, Amsterdam: Amsterdam University Press, 2016, pp. 13–22. See further Stephen Monteiro (ed.), *The Screen Media Reader. Culture, Theory, Practice*, London: Bloomsbury, 2017; Workshop "Touching the Screen", University of Oslo, 2015; PhD course "Framing Screens: Knowledge, Interaction and Practice",

IT University Copenhagen, 2010; Workshop "Screen Operations. Conditions of Screen-based Interaction", Humboldt University Berlin, 2016; Conference "Situation Space. How Spatial Images Define the User's Disposition", Humboldt University Berlin, 2017.

3 Monteiro 2017 (as in fn. 2), p. 3.

4 Giuliana Bruno, *Atlas of Emotion*. *Journeys in Art, Architecture and Film*, New York: Vers, 2002; Frank Kessler, Dominique Chateau, José Moure, The Screen and the Concept of Dispositif – A Dialogue, in: Dominique Chateau, José Moure (eds.), *Screens. From Materiality to Spectatorship – A Historical and Theoretical Reassessment*, Amsterdam: Amsterdam University Press, 2016, pp. 264–271; Miriam Ross, Stereoscopic visuality. Where is the screen, where is the film?, in: *Convergence. The International Journal of Research into New Media Technologies* 19.4 (2013), pp. 406–414; Jens Schröter, *3D. History, Theory and Aesthetics of the Transplane Image*, London: Bloomsbury, 2014; Aud Sissel Hoel in this volume, pp. 11–27; Erkki Huhtamo, Elements of Screenology. Toward an Archaeology of the Screen, in: *ICONICS. International Studies of the Modern Image* 7 (2004), pp. 31–82; Nanna Verhoeff, *Mobile Screens*. *The Visual Regime of Navigation*, Amsterdam: Amsterdam University Press, 2012; Ramón Reichert, Annika Richterich, Pablo Abend, Mathias Fuchs, Karin Wenz (eds.), *Mobile Digital Practices, Digital Culture & Society (DCS)* 3.2 (2017).
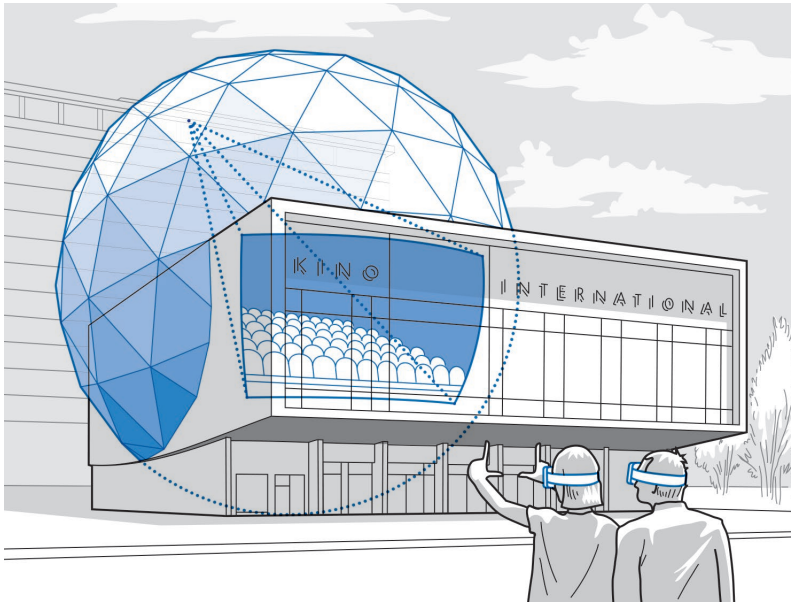
1 Mixed reality in architectural planning superimposes building and model.

2 Augmented reality game merging image and place according to user sight-line.

of screens challenge users to integrate imaging techniques and visual information into their action routines, viewing habits and working processes.

Foci of investigation are: first, the analysis of codes, data and software that form the technological basis for both acquiring and displaying visual information that already define and structure action as well as decision-making. Second, the exploration of interface design that constitutes both conceptual and epistemic considerations that render interfaces and their affordances as a screen-based space of its own. And third, the perceptual level and the investigation of how the screen intertwines human senses, cognitive capacities and physical actions. These analytical perspectives on

screens and screenness stem from the idea of a pragmatic and theoretical triangulation of image, action and space, which stresses the adaptive and situated alignment of visualization, operationality and spatiality.

Figures

1 Malte Euler, Creative Commons, Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), 2018.

2 Picture alliance, REUTERS, Chris Helgren, 2016.