

# Navigation

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## Domains of Navigation

A brief sketch of the concept along the lines of agency, means and topology in navigation processes as they are used in other domains and discourses

### Explorative orientation-based navigation.

The majority of encyclopaedia entries refer to marine history, including means for providing orientation at sea and in the sky, through unknown terrain. Navigation is defined as “the act of moving about from place to place”<sup>1</sup> by “determining the position of a ship, plane or other vehicle, and guiding it to a specific destination”.<sup>2</sup> The employed vehicles carry the human navigators. This characterisation is deeply rooted in a kind of voyaging that becomes consolidated

with the degree to which people succeed in rendering in geometrical terms the surroundings in which the navigation takes place. A culturally evolved geometrical reference system allows for optimised navigational guidance.<sup>3</sup> Accordingly, typical recurring aspects include reference points, horizons, degrees, distances, longitude, latitude, relative position, routes, mathematics, trigonometry, stabilising a spatiotemporal framework, pinpointing locations and directions, recognising visual markers, and identifying them on maps or charts. Mapping this reference sys-

tem to the environment is assisted by wayfinding tools such as maps, compasses, astrolabes, callipers and satellite-based and earth surface-based devices (Global Positioning System) which usually have to be operated by a professional.

### **Sensor-based implemented navigation.**

Some mobile machines (robots, cars) are designed to function without a human's mastery and ability. This capability is implemented using "navigation algorithms" which are necessarily coupled to a "world modeling" feature.<sup>4</sup> Here, it is the system that is the expert and operates itself.

### **Spiritual navigation.**

In the spiritual domain souls are sent on a journey into

uncharted territory. Contrary to ocean navigators who are professionally trained in the craft of piloting, souls may have only one shot at success and much is at stake. As we know from Greek mythology, a lot can go wrong on the way to and from Hades' underworld. Thus, a variety of religions implement precautionary measures to stabilise and secure this unsettling transition phase between life on earth and the afterlife. In Ancient Egypt, for instance, heaven was imagined as being 'watery' and thus the buried shared their tomb with a small model boat; Tut'ankhamun had a fleet of thirty-five model vessels, others got life-sized ones with one or two steering oars.<sup>5</sup> The Aztecs had the custom of cremating the deceased's personal property because they believed the items would be helpful in navigating Mictlan [Land of the Dead].<sup>6</sup>

## Prosaic navigation.

In social studies' papers, the word navigation is often used to indicate the mundane need to develop strategies and manoeuvres for mastering a jungle of regulations or pitfalls that are part of advanced societal or bureaucratic domains (curricula, norms, inconveniences, beginners' challenges, puberty, everyday-life difficulties etc.)<sup>7</sup> while sustaining the least possible damage. At times, this understanding indicates an idea of zones of in-between-ness.

## Poetic navigation.

Finally, in the 21st century, there are texts that deal with intellectual cultural forms, particularly the ones where a kind of narration is instated, such as literary texts, comics, and interactive transmedia projects constructed across various platforms. Here, the hab-

itual line-by-line reading proves inadequate, and navigation is employed for artworks with a "networked perspective"<sup>8</sup> of the narrative, implying navigation through the textual space by skipping "across surfaces of images and text".<sup>9</sup> The term "poetics of navigation" is used as an analytical concept in literary criticism.<sup>10</sup> If a media form is larger than the interface of the (mobile) device through which it can be accessed, a participatory activity called 'navigation' becomes essential – otherwise the user will be unable to "get the whole picture".<sup>11</sup> In VR environments with avatars, it is the act of 'navigating' that renders the user a subject in the virtual world which thus has a close relationship to 'performing'.<sup>12</sup> In the contexts of art and culture, therefore, 'navigation' indicates the reception strategy and progress through the work.<sup>13</sup>

## Controlled navigation.

When it comes to the Internet, the jargon of website design offers new combinations, some of which reveal implicit ideals and norms: The expression “navigational freedom”<sup>14</sup> (supposedly always already granted) implies that someone is fully in control or in charge of the underlying structure and, consequently, of what users can do and to which degree when navigating. And who is that? An early guideline states: “The designer is responsible for supporting both the user’s departure from the current node and the user’s arrival at the destination node.”<sup>15</sup> Here, it is expected that the intellectual provider has the requisite mastery of navigation. Fast and efficient navigation is rendered as the highest priority in commercial user experience design, which is one example of where this power to guide is

predicated on ideology. “Navigational menus” are said to increase the usability of homepages.<sup>16</sup> In this case, it is mainly links and navigation bars that organise how we get around. In contrast, the term “invisible navigation”<sup>17</sup> refers to the absence of standard guidance (arrows, buttons and maps) for navigation.

- 1 Stephen Robinson: Navigation. In: Encyclopedia.com, <https://www.encyclopedia.com/science-and-technology/technology/aviation-instruments-etc/navigation> [Accessed 2-11-2021].
- 2 Anonymous: Navigation. In: National Geographic Resource Library, <https://www.nationalgeographic.org/encyclopedia/navigation/> [Accessed 2-11-2021].
- 3 Cf. David F. Tyler & Hewitt Schlereth: The Norton Encyclopedic Dictionary of Navigation, New York 1987.
- 4 Cf. Pavel Davidson et al.: Navigation algorithms combining building plans with autonomous sensor data. In: Gyroscopy and Navigation, vol. 6, 2015, pp. 188-196.
- 5 Cf. Dilwyn Jones: Model Boats from the Tomb of Tut'ankhamun. Oxford: Griffith Institute 1990, pp. 3-4; cit. R. Drew Griffith: Sailing to Elysium. Menelaus' Afterlife ("Odyssey" 4.561-569) and Egyptian Religion. In: Phoenix, vol. 55, no. 3-4, Autumn-Winter 2001, pp. 213-243; here: p. 215.
- 6 Molly H. Bassett: Wrapped in Cloth, Clothed in Skins. Aztec Tlaquimilolli (Sacred Bundles) and Deity Embodiment. In: History of Religions, vol. 53, no. 4, May 2014, pp. 369-400, here: p. 380.
- 7 Cf. for instance: Robert Crosnoa: Fitting In, Standing Out. Navigating the Social Challenges of High School to get an Education. Cambridge: Cambridge University Press 2011; Catrina Christiansen, Mats Utas & Henrik E. Vigh (eds.): Navigating youth, generating adulthood. Social becoming in an African context. Uppsala: Nordiska Afrikainstitutet 2006; Monica Forret: A Balanced Scorecard Approach to Networking: A Guide to Successfully Navigating Career Changes. In: Organizational Dynamics, vol. 31, no. 3, 2002, pp. 245-258; Leonard B. DuBoff: Navigating the Maze of Music Rights. In: TechTrends, vol. 51, no. 3, 2007, p. 10.
- 8 Lisa Swanstrom: Terminal Hopscotch. Navigating Networked Space in Talan Memmott's Lexia to Perplexia. In: Contemporary Literature, vol. 52, no. 3, Fall 2011, pp. 493-521, here: p. 495.
- 9 Ibid.
- 10 Cf. Jiayan Mi: Poetics of Navigation. River Lyricism, Epic Consciousness, and Post-Mao Sublime Poemscape. In: Modern Chinese Literature and Culture, vol. 17, no. 1, Spring 2007, pp. 91-137, here: p. 93.
- 11 Oguzhan Üzcan & Mary Lou O'Neill: Invisible Navigation (or Impossible?). In: Leonardo, vol. 46, no. 1, 2013, pp. 90-91, here: p. 91.
- 12 Mary Flanagan: Navigating the Narrative in Space. Gender and Spatiality in Virtual Worlds. In: Art Journal, vol. 59, no. 3, Fall 2000, pp. 74-85, here: p. 75.
- 13 It is interesting to think about forerunners and types of artifacts where an attitude of navigation could be applied, such as paintings (Kurt Badt's assumption of a "sequential image composition" [folgerichtiger Bildaufbau] is based on how a viewer's gaze is guided through the picture) or book layouts (with typeface [Schriftbildlichkeit] the philosopher Sybille Krämer emphasizes also techniques of spacing that render reading in a non-linear fashion, cf. Oliver Reichenstein: Web Design is 95% Typography. In: iA Blog, 19.10.2006, <https://ia.net/topics/the-web-is-all-about-typography-period> [Accessed 29.3.2022]); Kurt Badt: "Modell und Malar" von Vermeer. Probleme der Interpretation. Eine Streitschrift gegen Hans Sedlmayr. Cologne 1961; Cf. also: Lorenz Dittmann: Kurt Badt. "Modell und Malar" von Vermeer. Die wissenschaftsgeschichtliche Situation. In: Kurt Badt: "Modell und Malar" von Vermeer. Probleme der Interpretation. Eine Streitschrift gegen Hans Sedlmayr. Cologne 1961, pp. 147-165.
- 14 Jiunde Lee & Yu-Chen Hsu: Web Navigation. The Role of Metaphor, Concept map, and Individual Differences. In: Philip Barker & Samuel Robelsky (eds.): Proceedings of ED-MEDIA 2002 - World Conference on Educational Multimedia, Hypermedia & Telecommunications, pp. 1100-1101. Denver, Colorado: Association for the Advancement of Computing in Education (AACE) 2002, <https://www.learnlib.org/primary/p/10719/> [Accessed 28.2.2022].
- 15 David K. Farkas & Joan B. Farkas: Guidelines for Designing Web Navigation. In: Technical Communication, vol. 47, no. 3, August 2000, pp. 341-358, here: p. 342.
- 16 Cf. Kristina Faulkner & Clive Hayton: When Left Might Not Be Right. In: Journal of Usability Studies, vol. 6, no. 4, August 2011, pp. 245-256.
- 17 Üzcan & O'Neill, p. 91.