

Places as Media of Containment

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1. Introduction

While computational approaches to place and location, such as gazetteers, use simplistic data models (Janowicz and Keßler 2008), the important notion of *place* encompasses a large variety of meanings, ranging from spatially referenced locations, e.g., the Royal Observatory in Greenwich, through objects such as vessels, to point-like experiential spaces (Couclelis 1992), and social handles such as the notion of home (Cresswell 2004).

The main hypothesis underlying our proposal is that many of these crucial aspects of place can be grounded in affordances, i.e., perceivable action potentials in the meaningful environment of an observer (Gibson 1979). Places can be conceived as a graded subcategory of a perceived medium in Gibson's sense. We argue that this approach may serve as a robust basis for geo-ontologies. It also offers insights in categorization and identity criteria for places (Gangemi et al. 2001). While we build on the ideas of Jordan et al. (1998), our work takes the various dimensions of place into account and demonstrates how place affordances differ from other kinds of affordances. We discuss conceptual requirements for a non-reductionist account of place, compare these with properties of media, and point towards a concise notion of place.

2. Requirements for Non-reductionist Accounts of Place

The ambiguity of place was explored recently in GI Science (Bennett 2007 and Winter et al. 2009), but it has been a core topic in human geography for many decades (Cresswell 2004). Authors such as Relph, Tuan, Thrift, and Seamon emphasized the phenomenological aspect of place and added important ontological dimensions to the scientific discourse. In the following, we summarize these under the heading of a “non-reductionist account”.

Places are located, but are not locations. It seems to be rational that every place can theoretically be located, i.e., referenced in space and time. However, places are not the same as their locations. For instance, vessels and even city centres are non-stationary places that may change their location in time, while still being identifiable on another ontological tier (Janowicz 2009). Locations, in contrast, need a spatial reference system to be identified in experienced space. Particular coordinates are referenced with respect to some conventional but stable phenomenon, such as the prime meridian mark in Greenwich. Consequently, as geographic maps are based on spatial reference systems, they can carve out locations – not places.

Places are primary categories of human experience and social constructs. The possibility of identifying locations anywhere is also the reason for their relative meaninglessness to human observers (Relph 1976). Places, in contrast, are not only meaningful aspects of human experience, but involve emotional attachment and social

identification. Relph argued that human consciousness is always directed towards something in its place, which means that places are meaningful building blocks of human perception, like cupboards for cups and garages for cars. Humans establish, i.e., *construct*, places as social entities by the pure act of reference. Referencing includes naming and identification, but also establishes place instances in the environment with social consequences. Cresswell (2004), for instance, argued that homeless people are sensed as “out of place” in family neighbourhoods.

Places have stabilizing functions that afford insideness. There seem to be characteristic functions associated with a place. Tuan (1977) has argued that place has a sense of *stopping, resting, and becoming involved* with other people, whereas space is associated with *motion* and *unrest*. Seamon (1980) argued that places are embodied, in the sense that they are constituted through complex *ballets* of habitual body movements, which produce “existential insideness” (Relph 1976) by stabilizing behaviour in space, such as visiting a market or going to lunch. Both actions, resting and spatially stabilizing movements, fix mutual expectations among people, allowing them to meet and communicate. The stabilizing function of places also makes them useful means for localizing bodies: We often anchor the location of objects, e.g., of a rare butterfly species, not directly but relative to places, e.g., relative to a forest (Hood and Galton 2006).

Places have material settings (surface layouts). Places always have a concrete identifiable material form, they are made from walls, buildings, roads, and so forth. Even imagined places have what Gibson (1979) called a *surface layout*.

3. Places as Special Kinds of Media

Gibson has argued that affordances are action potentials in the human environment, which constitute substance, surface, and medium as basic categories. However, we divert from Gibson’s objectivist account in recognizing affordances as ‘perceived’ action Gestalts which are not impenetrable to cognition or social conventions (Turner 2005). For example, they can be conceived as *simulated actions*. A medium can then be considered as a maximal unit of the environment whose location affords a certain kind of movement from every part to every other, is filled with illumination (affords seeing), and affords (vertical) orientation (Scheider et al. 2009). Media surfaces can be conceived as the boundaries where seeing and moving stops, while substances as everything beneath. A body is a kind of a substance - an identifiable unit which is not traversable. Affordances give rise to different kinds of media in geographic space: *navigable by boat* gives rise to a water medium while *drivable* gives rise to a support medium, e.g., a road.

Places satisfy all characteristics of media. Media can be traversed, but can also be located, and can move themselves if the perceived affordance that constitutes them appears or disappears at some location. For example, water as a medium for organisms can move across river banks. Furthermore, as Gibson (1979) has argued, media are primary categories of perception, and as such can be also considered subjects of human affection and identification. Finally, media are bounded by a surface, and their affordances are interwoven with its layout.

We argue that places are special kinds of media, since they are constituted from special affordances (Figure 1). We propose to conceive place as a containment medium. Containment has been identified as an essential image schema for specifying locations and related geospatial categories (Kuhn 2007 and 2004). It is a metaphorical schema that allows for different precisifications in experience besides its prototypical sense, like water being “inside” a bottle. When we say *a place contains a body*, we

conceive of this place as a referenced medium which affords (1) a body to move (2) within a certain fixed perceivable spatial relation to an (3) identifiable piece of surface. The location of the place medium as a whole is the sum of all locations connected by the afforded movement, and the identity of the place is established through connectivity. The reference surface is often socially established, and therefore place affordances are usually social-institutional affordances (Turner 2005, Raubal 2001). This place category is prototypical and leads to graded kinds of place depending on what kinds of body, perceivable relation and surface is considered.

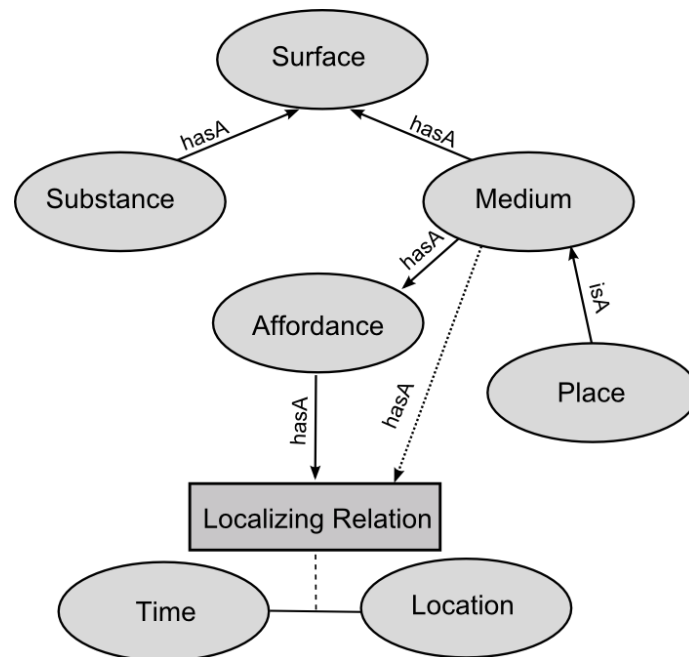


Figure 1. Places are localized through their affordance.

4. Examples

Prototypically, places afford containment for human bodies. Buildings, for example, are places because people can come to rest or remain within a certain distance to its inner surface, whereas the walls of the building are bodies, not places. Markets are places that afford people to move in meeting or communication distance to vendors. In this case, the identifiable surface is made of a configuration of other human bodies and the perceivable relation is one of meeting distance, while the location of the market place is the maximal sum of all locations one can move through in meeting distance to those vendors. These examples correspond to small stationary kinds of places which could be used to describe POI, for example by specializing their affordances to capture city halls (contact to administration), post offices (drop mailings), shopping areas and the like. Cars and boats are non-stationary kinds of places since they afford people to move within stable bounds relative to each other and the interior surface. For example the place where Horatio Nelson died during the naval battle at Trafalgar is the deck of the H.M.S. Victory. As this place is defined relatively to the surface of the deck, it is now located at Portsmouth harbour, England, whereas the location of Nelson's death was at Trafalgar (Janowicz 2009).

Administrative regions are relevant kinds of places for GIS with conventionally established borders. They have enduring histories during which their locations often changed, split or merged, as in Germany during the last decades (Kauppinen and

Hyvönen 2007). Administrative areas allow their inhabitants to satisfy their needs in interaction with inner “central places” (Christaller 1933), and thus to persist within the area's bounds. The affordance is one of moving to central goods, e.g. obtaining a passport, without crossing the identifiable border surface. Non-prototypically, the body can be inanimate. In this case, a cup contains water since water movement is stabilized inside of it with respect to the cup's inner surface.

5. Conclusion

Places are media of containment referenced by humans; they are maximal units that afford a body to move in relation to a referenced surface. This grasps essential dimensions of the term in a concise way, and could therefore be used as a starting point for developing sound non-reductionist data schemas for places in GIS and gazetteers.

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