

On the Cartographic Communication of Places

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Abstract

Maps are excellent as a medium for communicating spatial configurations at geographical scales. However, the communication of thematic qualities of geographical features is constrained by the traditionally assumed strict classification of features on the map and the strong focus on spatial representation. This is despite the fact that places are central aspects of everyday life that we use to structure our experiences and thus the need to include them in many maps. This paper explores how places can be communicated through the map medium. In particular, it addresses the question of the extent to which places are mediated or merely referenced, and the extent to which maps already communicate places through its inherent spatial and thematic aspects. This is followed by a discussion of how maps not only communicate but also shape places. In perspective, this contributes to a better and more targeted representation of places, especially through maps, but also advances our understanding of how places are conceptually entangled with spatial and thematic aspects.

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1 Introduction

Places are fundamental to our everyday lives because they are among the basic units we use to structure geographical space. In this context, ‘home’ and ‘work place’ take on central roles, which is why they are also referred to as first and second place, respectively [25]. This structuring role is also evident in narratives, which usually engage in one or more places. Previous research has investigated how narratives can be communicated by means of maps [28, 4, 14, 34, 17], especially also in relation to places [20, 7, 6], and what systematic problems exist in this regard [23]. Notwithstanding the results achieved related to the map medium, the content-related communication of narratives and places often resorts to the text or image medium because it would be difficult to do so with traditional, cartographic means [23]. This is despite the fact that maps contain many indications that refer to places.

Before resolving this apparent contradiction, we first delineate the terms ‘place’, ‘Point of Interest (POI)’, and further ones (Section 2). A discussion of the stylistic devices to communicate places in maps and other data sets follows (Section 3). This train of thought resolves the apparent contradiction between the numerous reference to places contained in the map and the simultaneously existing problems of communicating places cartographically. Subsequently, we argue that the communication of places by means of the map medium is not at all unidirectional but also possess performative qualities (Section 4). The paper concludes with a summary of the resulting consequences for maps and places (Section 5).

2 Place, POI, and Related Terms

This section engages with the concept of place and adjacent concepts to create a basic understanding for the framework of this paper. The explanations must not, however, be regarded as definitions of these very concepts, because the latter cannot be exhaustive due to the brevity of this section and could thus only be inadequate as a definitions.

Absolute or geometrical space refers to the physically measurable structure of space, as is represented by the mathematical concepts of Euclidean space and manifolds, e.g., in relation to the surface of the Earth. The *geographical or socially constructed space* is distinguished from this, since it is not given by the physical properties in the sense of a container space but only constructed by the geographical features and the being lived of these. It is thus mostly conceptualized as a *relational space*. Terms of absolute space such as ‘location’ and ‘area’ make sense only to a limited extent here, because they cannot be transferred without further ado. In geography, many further concepts of space are used in addition to these [30].

The concept of place is complex. Although there is agreement about its meaningfulness and basic idea in many respects, many different characterizations exist [5, 2]. These have in common that they ascribe meaning to a place [29], which makes it experienceable as an entity in its own right. Place are often (though not always) understood in the context of everyday behaviour and routine. Some places are socially constructed and shared, while others emerge individually without social influence. Place identity [26, 27], place attachment [35, 18, 33], sense of place [35, 15], recurring patterns of behaviour (place ballets) [31, 32], and further qualities are used to characterize places. This complexity in the description of a place without reference to absolute space distinguishes the concept of place from a *Point of Interest (POI)*.

In a way, the concepts of region and of place can be considered similar in that both refer to characteristics of geographical space. A region focusses on the common characteristics of all sites within that region that make possible the demarcation from surrounding regions, while the concept of place seeks a more holistic understanding. The latter thus commonly refers to its essence, such as its identity, place attachment, and alike. In this sense, a region refers to an extended part of space, while a place exists as such in space.

3 Places Are Communicated Through Maps

Maps reference places in many ways, despite traditionally following the absolute space paradigm [24]. Among such reference are, most prominently, place names, but many further indications of such reference exist. To better understand the nature of these indications, we introduce below two dimensions to describe and categorize them, followed by examples.

When considering maps as spatial arrangements of symbols interpreted by the map reader, maps only represent and mediate places but they cannot contain them. A distinction can be made here between two prototypical cases that represent the ends of a spectrum rather than a collection of discrete categories: the *referencing* and the *mediation* of a place [22]. In the first case, what is displayed on the map affords to establish a relationship between the map content and a place without, however, going into more detail about its qualities. This relationship only refers to the place as a whole. This is in contrast to the second case, in which some of the qualities of the place are conveyed, thus enabling the map reader to gain an impression of the place even without (or with little) previous experience of it.

The referencing and the mediation of a place is demarcated by the extent to which the qualities of the place are referred to and conveyed. The mediation refers to at least some of the qualities of the place, as opposed to the referencing. These qualities of the place referred to must, in turn, be conveyed in the map through appropriate references themselves, because platial qualities can only in very few cases apply to a map or its elements themselves. The map will hardly constitute the identity of a place, nor will it evoke the same emotions without according reference, et cetera. In the end, the concepts of referencing and mediation seem not to be qualitatively different; they only represent different levels of referencing – with regard to the place itself, or, in the case of mediation, with regard to its qualities.

Table 1 Typical examples of place representations in a map, categorized by the two dimensions referencing/mediation and intentionality.

	referencing	mediation
intentional	<ul style="list-style-type: none"> ▪ label with a place name ▪ icon indicating a Point of Interest (POI) 	<ul style="list-style-type: none"> ▪ signs indicating a place ballet ▪ use of colours and symbols to convey emotions
unintentional	<ul style="list-style-type: none"> ▪ representation of a geographical feature that is reminiscent of an individually constructed place 	<ul style="list-style-type: none"> ▪ social entities and locale represented ▪ structure and arrangement of features in the map

The communication of places can also be characterized by the *intentionality* to reference or mediate the place. Place name labels, like most symbols, are consciously and intentionally¹ added to a map. Yet, whether a symbol is understood as a reference to a place depends on the map reader. A building or lake depicted on a map may, e.g., remind the reader of his or her home or favourite bathing spot. Such communication of a place can be despite the original intention to communicate other types of information. Combining these two dimensions – referencing/mediation and intentionality – results in four prototypical cases (Table 1).

Place names and POIs are prominent examples of intentional reference to places. Corresponding labels and icons serve as reference to the place, but without being a place themselves. In particular, a POI can be seen as a proxy for the communication of a place, although it is itself conceptually significantly different from a place.² It is interesting to note that the labels that refer to place names as well as icons that represent POIs are point features. Despite places having spatial characteristics and their cartographic communication often being intentional [13, 36, 8, 9], these spatial characteristics are not well represented in maps apart from the indication of a location. This demonstrates that spatial characteristics are often not considered to be among the relevant key characteristics of these places represented.

The intentional mediation of places through the map medium is difficult to achieve, which is why most attempts resort to other media such as texts, photos, and videos. Only few refer to the qualities of places, such as embodied experience (by using the human sensory system) [20], emotions [11, 3], the inner structure of a place [8], and place ballets [10].

Practically every geographical feature displayed on the map can unintentionally become reminiscent of a place. In particular, when a place is not socially constructed and thus not shared, the map maker cannot have intended to reference or even mediate the place as it is experienced exclusively by the map reader. Examples include the road bend where I stop every day to feed the ducks; and my favourite spot at a nearby hill to which I use to retreat when I want to be alone. In many cases, the qualities of a place are mediated by the composition and spatial arrangement of the associations to the geographical features represented, and the locale and the represented socially lived features define a structure

¹ Intentionality is always accompanied by conscious communication. Conversely, non-intentionality often but not necessarily means unconscious communication of the place.

² If the map maker includes, e.g., a ‘fish & chip’ shop as a POI, then he or she (intentionally) refers to the affordance of buying fish and chips at this location. Such affordance can be assumed to be of rather long-term nature, suggesting that individuals live and experience this location as a place. In this respect, it can be assumed that not only the POI but also the place is referenced to some degree.

reminiscent of relational and thus also geographical space (cf., space syntax; [12]). An example is the partially reflected public–private space dichotomy [19]. Also, the familiarity with a place can be conjectured to potentially influence the way it is represented.

4 The Map Creation–Conceptualization Creation Cycle

Given the difficulties to communicate places through the map medium, one might assume that the latter has little influence on the communicated place itself. Many use cases, however, utilize the performative qualities of maps [1] and thus their potential influence on how we conceptualize and, ultimately, shape and live places. Maps used in urban planning represent, e.g., often a not yet existing state of the urban environment that is to be planned, evaluated, and actively shaped. Besides rendered photography-like images, the spatial arrangement and type of planned features depicted in the map provide an idea of how the place *might* feel in case of later realization, its identity, et cetera. This, in turn, can influence the to-be-developed place, thus creating a feedback loop from our mental conceptualization of the place to the map and then back to the conceptualization. In this sense, maps can serve as ‘place shapers’.

Maps can generally be assumed to have much less influence on the shaping of a place if they have not specifically been created for this purpose. In extreme cases, however, a map can make entire places come into existence, as was the case with the ‘paper town’ of Agloe, NY. A corresponding point symbol with attached label was depicted as a copyright trap on a map without such a place actually existing in reality. If someone were to mistakenly reproduce Agloe when copying the map without permission, the appearance of the place name on the new map would be an indication of copyright infringement. After another map that included Agloe actually appeared, it turned out that the place indeed existed. The place name had served as the name-giver for a petrol station and a supermarket that had only been built afterwards [16].

5 Consequences and Conclusion

Maps can communicate places by referencing or even mediating them. We have argued the latter to be particularly difficult when certain qualities of the place shall intentionally be emphasized in the map. In the following, we discuss three consequences of this fact.

First, the limited ability to convey places by means of traditional maps implies that that narratives can hardly be spanned when using this medium. Places and narratives become, in turn, more relevant when employing non-traditional map paradigms [7, 6], suggesting the exploration of alternative modes of representation beyond the traditional map paradigm [23].

Secondly, maps have limited affordances to convey platial qualities, especially idiosyncratic or socially constructed ones. The reason behind is that maps are geared to absolute space and therefore afford particularly well those tasks that refer to such space. Although many of the tasks we perform with a map *seem* to primarily relate to abstract space, they often refer to socially constructed space and places. In this sense, the tasks we actually perform with a map while employing an abstract space paradigm often need to be considered simplifications of, and thus proxies for, more complex tasks. Route finding tasks in the context of sight seeing or during ones holidays, e.g., refer to places and their characteristics rather than to pure distances and directions in absolute space, because the route chosen from one sight to another should, ultimately, not lead through filthy streets or industrial areas.

Thirdly, the map maker is in a dilemma. Places impact map creation such as in terms of how geographical features are spatially and thematically represented. This influence impairs readability as it is often obscured by thematic and spatial generalization and thus rarely evident to the map reader. If, however, a multiplicity of individualistic places without strong generalization were included, this would reduce readability as well. The emphasis on spatial aspects (as opposed to individual, platial qualities) must therefore inevitably limit readability.

The three consequences discussed demonstrate limitations when it comes to the cartographic representation of places, which is despite the need for better communication of these. This is in line with the larger picture of Platial Information Systems (PISSs) and Theories of Platial Information (ToPIs), which face similar problems: the difficulty to represent the thematic diversity of places (strength of a PIS) and the difficulty to enable a high complexity in the formal reasoning about places (complexity of a PIS) [21]. Maps cannot fully solve these problems but may yet play an important role through building a bridge between formal data and human cognition. If alternative map paradigms make the qualities of places accessible to human cognition, this can contribute to solving the aforementioned problems of PISSs.

Beyond the outlined consequences related to the cartographic communication of places as often individually and emotionally shaped geographical features, the question arises whether the nature of the map medium in itself has an influence on our conceptualization of places. Accordingly, the Sapir–Whorf hypothesis [37], which originally stems from the theory of linguistic relativity, can (and should) be posed here with regard to the map medium: how does the structure of a map used according to the traditional map paradigm influence our conceptualization of places and ultimately also the places themselves?

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