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How Maps Shape Information in Design Research: A Study of Five Method Collections

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Abstract: Maps have a rich history in design and design research. However, to date, their use and application have not been systematically studied. This paper proposes a model that classifies maps into four main types depending on how they help designers to visualize information: arranging entities on a plane, organizing content, synthesizing content and making sense. We use the model to systematically analyze and categorize maps from five design methods collections. Out of 399 methods in these collections, we identified 65 methods that were based on mapping. We found that the primary use of maps in design is to organize content on a two-dimensional plane. Through the proposed model, the paper provides designers with a tool to choose the right methods for their specific design situation and to scaffold designers towards more complex thinking.

Keywords: maps; design research; information; dataset construction

1. Introduction

Merriam-Webster defines “maps” as a representation usually on a flat surface of the whole or a part of an area, a representation of the celestial sphere or a part of it, or a diagram or other visual representation that shows the relative position of the parts of something. As a verb, it defines “mapping” as making a map of, delineating as if on a map, making a survey for or as if for the purpose of making a map, or assigning (something, such as a set or an element) in a mathematical or exact correspondence.

This paper reports on the use of maps as tools in design research and practice. It studies design maps and classifies them according to how they organize information and embed it into design processes. Maps are ubiquitous in design research and practice and the range of their uses is massive. Some uses of maps are in line with geographic and scientific analyses of space. Others borrow from urban planners. Some uses are close to how social psychologists have applied maps to understand space. The philosophical range is similarly massive. It ranges from a realistic epistemology through critical theory to outright artistic, where reality does not matter. Maps shape the ways in which we see many types of objects, including users and their networks, social capital, places, technologies, processes, collaboration, empathy, mental constructs, genomes, future, algorithms, systems, tools, services, reflections, and so on (Dalsgaard et al, 2008; Ferreira et al., 2015; Frich et al., 2019; Gould & White, 2012; Ding & Li, 2022; Lynch, 1960; McArthur, 2018; Parker, 2006; Richards, 2017; Stappers & Sanders, 2003).

However, there is very little discussion about the methodological aspects behind design maps as tools. The paper addresses this gap by analyzing how maps shape information for design. The paper analyzes maps from five popular design method collections (Tomitsch et al., 2020; van Boeijen et al., 2020; IDEO, 2002; Martin and Hanington, 2012; Kumar, 2012). Our scope rules out holistic methodologies, such as context mapping, mapping studies of research Yamamoto et al., 2020), technical and scientific work on, for example, interactive and self-organizing maps (Kohonen et al., 2000), broader studies of visualization, which covers diagrams, histograms, visualizations in talk and so on, and forms a much wider category than maps (Tufte, 2001; Wood, 2010), and maps as participatory devices (Ferreira et al., 2015; Kohonen et al., 2000; Lucero, 2009; Reves-Garcia et al., 2012; Sevaldson, 2018).

The paper makes two contributions to the field of design research and practice. First, it provides a model of how maps shape information, following the precedent of human-centered design by Giacomin (2014). Second, it presents a systematic examination of design maps based on a review of five design method collections.

2. Maps as information organizers: A four-layered model

Critical cartographers have argued that maps are conventions that perform a few basic operations on the world (Crampton & Krygier, 2005; Harley, 1989; Kitchin & Dodge, 2007). The first set of operations consist of decontextualization of entities from their empirical real-world richness into disconnected entities on usually a plane. Another set of operations assigns the relationships of these entities on the plane. A third set of operations give the space meaning – usually by quantifying the underlying space. In design literature, the space may have quantitative properties, but it may get its meaning qualitatively instead. The space may have three or more dimensions, but it is usually flat and has only two dimensions. Regardless of dimensionality, maps in design use space to create an image of interdependencies and co-variations between entities. Maps in design decontextualize entities from their real-world connections and represent them in a new set of relationships.

Layer 1 – Arranging entities on a plane: At the most elementary level, design maps create an arrangement of these entities and their relationships by stating that other relationships in the original context are irrelevant. These entities can be almost anything from words to drawings, icons, photographs and video cards. In the simplest maps, the space between these entities carries no meaning, however: it only separates the entities. Entity A is different from Entity B because there is space between them, but this space does not carry information.

Layer 2 – Organizing content: Many maps go further by organizing content through assigning the space between entities a meaning. Distance and direction become expressions. For example, a map can claim that Entity C that is far away from Entity A has a different kind of connection – probably weaker or more distant – than Entity B that is closer to A. The distance can carry meaning even when it is not precisely measurable with a ruler. The direction may also assume a meaning. For instance, placing entities on the left side of a map may mean that they come before entities on the right side to denote the operation of time and causality, and hierarchy may function similarly; entities at the top may carry more weight than entities at the bottom.

Layer 3 – Synthezing content: Maps that synthesize content pack even more information into the plane. Design maps routinely use several devices to define the relationships between entities, including: various types of nodes (for example circles can be different from diamonds and squares); various sizes of nodes (large ones usually mean more weight or more entities); various types of lines and arrows as well as line strengths and line values (often plus and minus signs); various types of encapsulated space markers like circles, squares and rectangular shapes to denote interdependencies and subsets between entities. A creative combination of these elements affords capturing several types of information into a complex relational map.

Layer 4 – Making sense: Some design maps turn space into a sense-making tool, supporting complex thinking through visually mapping out elements and connecting them to a theoretical basis. The space and its direction may be given values, as in double dichotomies in which x-axis and y-axis capture quantities and create a space of four quadrants that shows how these two quantities interact. Through these operations, double dichotomies organize the quadrants into a theoretically meaningful system. An example of a double dichotomy is Ansoff's growth matrix in Section 4.4.

As these notes suggest, behind the simple basic act of decontextualizing entities from their real-life connections onto a plane that re-contextualizes these entities in a novel network of connections lie several strategies. These strategies shape information, and if the maps play a role in design, it is important to be aware of how the shaping occurs. The model was developed by the authors using critical cartography as a starting point and iteratively refined as the analysis proceeded.

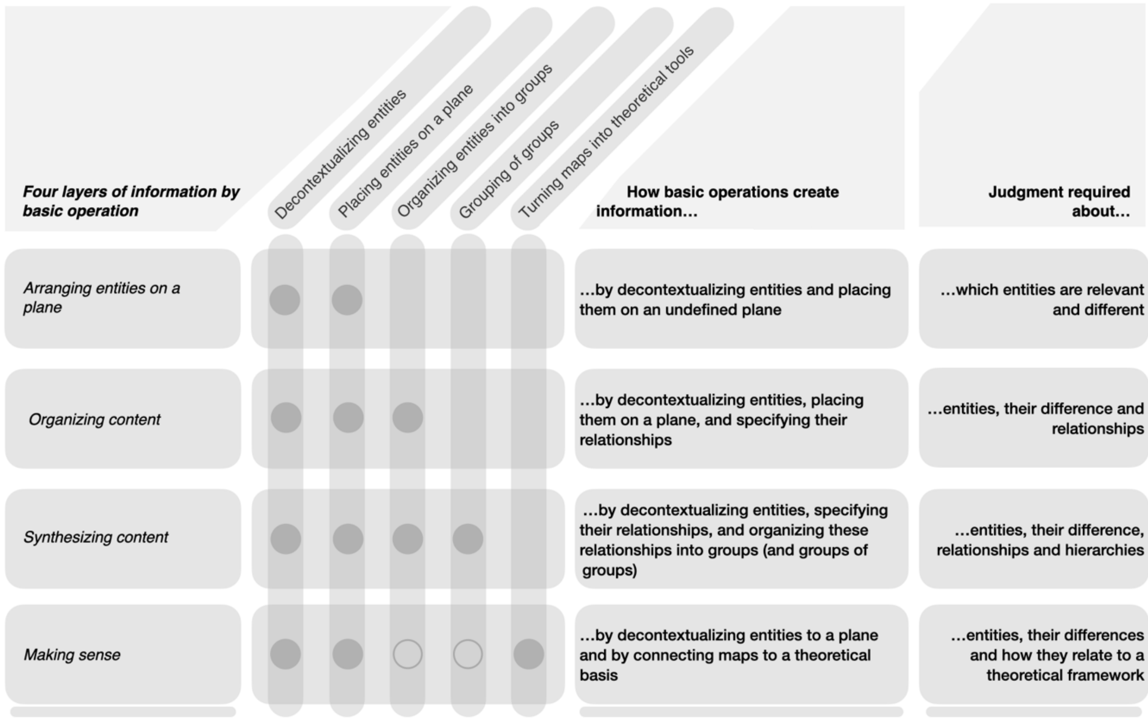

Figure 1 Maps as information organizers. Full circles show a necessary element at each level. Empty circles show elements that sometimes occur but are not essential for maps that make sense of data.

3. Methodology: Mapping maps

This paper analyzes maps by systematically reviewing five popular collections of design methods covering a total of 399 methods (Table 1). The paper refers to those collections as: Tomitsch et al. (2020), van Boeijen et al. (2020), IDEO (2002), Martin and Hanington (2012) and Kumar (2012). These five collections formed a compact body of work that focuses on supporting design practice and have a physical form that creates a stable corpus. We also considered other methods based on a Google search for "design methods books", however, they were either based in the field of engineering, did not add any additional data or focused on a particular subdomain of design (e.g., new forms of design such as design thinking, strategic design, service design, social design, design fiction).

We analyzed the data from the collections in a five-step process. In the first step, we divided the 399 methods from the five collections between the two authors; each author reviewed their assigned methods marking those that involved maps. Rather than just searching for methods that included "map" in their name, we systematically reviewed each method entry since some methods labeled as maps turned out not to be maps, and others were maps without saying so. Some were borderline cases – for example, we had to study each instance of matrices to see whether they are highly abstract maps or simply mathematical tools. Any ambiguous cases were flagged for subsequent discussion and resolution.

In the second step, we compared our analysis, reviewed each other's classifications, and resolved ambiguous cases. Three methods (segmentation-targeting-positioning, social network analysis, tree/semi-lattice diagramming in the Kumar collection) involved some element of mapping, however, arranging data points was not their focus. We decided to still include those methods for further analysis, resulting in a total of 74 methods. After removing duplicates, we were left with 65 methods (listed in the Appendix).

Table 1 Number of mapping methods included in each collection, and a breakdown showing which phase the methods cover. Each collection uses a particular classification of phases. The table maps them to the broad overarching phased of research and development.

		Collection[*]				
		Tomitsch et al.	van Boeijen et al.	IDEO	Martin and Hanington	Kumar
Total number of methods N=399		80	67	51	100	101
Map-based methods N=74		21[+]	10	7	13[^]	23
Maps by phase	**Research phase N=59**	Think N=19	Discover N=3 Define N=6	Ask N=3 Learn N=3	Planning, scoping and Definition N=3 Exploration, synthesis, and design implications N=9	Sense intent N=4 Know context N=4 Know people N=1 Frame insights N=8
	Development phase N=20	Make N=3 Break N=2	Develop and deliver N=1	Watch N=1 Try N=0	Concept generation and early prototype iteration N=7 Evaluation, refinement and production N=0 Launch and monitor N=0	Explore concepts N=2 Frame solutions N=3 Realize offerings N=1

[*] *Nine methods sat across multiple phases in the five collections and were counted multiple times; the numbers in the table include duplicates like mind maps that appear in several collections. This causes discrepancy in row Discover and Define.*

[+] *Tomitsch et al. classify three methods into two phases. For this reason, the total number of methods is 21, but phase classification has 24 methods.*

[^] *Martin and Hanington classify 6 methods into two phases. For this reason, the total number of methods is 13, but phase classification 19.*

In the third step, we started the process of classifying these 65 methods according to the layers of the proposed model in Figure 1. To ensure a consistent approach between the two authors for the classification of mapping methods, we randomly selected six methods to discuss and classify together according to the four-layered model. As all the randomly selected methods turned out to be examples of the first three layers, we additionally looked for a method that corresponded to the fourth layer.

In the fourth step, we divided the remaining methods between the two authors. Each author reviewed the methods in their own time and classified them according to our model. Any ambiguous methods were flagged and subsequently resolved during a shared discussion session.

The fifth step was an agreement analysis. Each author randomly selected six methods from the other author's pool of methods (avoiding any methods that were previously discussed together). This process resulted in each author classifying four of the six methods in a way that matched the other's classification, marking one method for subsequent discussion and disagreeing for one method. This resulted in an agreement score of 84%, which we deemed satisfactory.

4. Results

Table 2 provides the result of the analysis process, showing the distribution of mapping methods from the five method collections according to the model in Figure 1. The analysis suggests that most of the methods organize content, and some synthesize it. There is less focus on more complex forms of information organization, i.e. on making sense of materials.

Table 2 Methods by the level of information (duplicates removed)

Level	Frequency
Arranging entities on a plane	9
Organizing content	33
Synthesize content	16
Making sense	7
Total	65

In our analysis, we classified the methods into the four categories according to the highest level we could find from the descriptions featured in the methods collections. If there was an element of mapping, we counted the method in. For example, collages are not maps on their own, but if a collage self-consciously uses space to differentiate things like colors or shapes, it involves spatialization that qualifies it as a potential map even when the final analysis might disregard information in space. If on the other hand, the space is used to, say, identify trends over time (for instance, left is now and right is one year from now), collages remain maps.

In the remainder of this section, we present the findings from our analysis process, structured according to the four layers of the proposed model.

4.1 Arranging entities on a plane

The first layer of the model represents the most basic use of maps in design. The 9 design maps we found in the design collections from this layer are used to arrange entities on a plane. The spatial separation of entities serves to encode information. All methods used a two-dimensional space even though it would be possible to also use a multi-dimensional space to arrange entities. The very act of lifting data points onto a plane highlights and foregrounds these entities while other data points are chosen not to be included. This act shapes the information space. The way those entities are arranged into groups of entities follows as a second act. The spatial positioning of entities only marks differences in the data without encoding any meaning into the specific position an entity takes within a group of entities or the relationship of entities to each other. The information captured is nominal. It does not turn data into a numerical form, and distances and angles of the collage only denote difference.

Figure 2 Participants creating a collage from a present collection of images (left) and an example of an image board (right). Source: Martin & Hanington (2012)

An example for a map that is widely used in design is the collage. Martin and Hanington describe a collage as a way for participants "to visually express their thoughts, feelings, desires, and other aspects of their life" (Martin & Hanington, 2012). The process involves participants arranging a preset collection of images, words and shapes. Groupings may either emerge inductively or could be provided by the researcher, asking participants, for instance, to capture experiences past, today and in an ideal future. However, how those groups are arranged on the plane does not provide any additional meaning or information. Image boards are similarly presented as a "collage of collected pictures, illustrations, or brand imagery" (Martin & Hanington, 2012) but are created by the designer, for example, to capture a certain aesthetic or mood for a product, much like moodboards (McDonagh & Storer, 2005; Lynch, 1991). While the arrangement of entities in an image board is also carefully chosen by the designer, the method's description does not suggest specific ways of grouping the entities (Figure 2).

In design language, maps that arrange entities on a plane are useful for filtering data or a domain (as is the case in sketchnoting), to highlight or foreground relevant things (e.g., data from participants in a collage), to map out different parts of a problem domain or design situation (channel mapping) or to gather data on specific categories (SWOT analysis). All these operations shape the information space in design research activities.

4.2 Organizing content

The largest group of design maps (n=33) goes farther than just arranging entities on a plane. When data points are arranged on a plane, the most important bit of information gained is isolating the entities and showing they are different. When maps are used as content organizers, more information is built into them. In addition to showing differences between entities, maps also contain information about the relationships between the entities. These additional entities order information in the map. Information is ordinal in that although the elements remain qualitative, directions and markers like streets carry information as do their number, but we do not know exactly how. For example, when elements are on a plane, we know that if one element is closer to a second element than a third element, but we do not know how much.

These relationships can be expressed in several ways. For example, cognitive maps are designed to capture cognitive structures of users and show how they relate to the environment. In the IDEO method cards pack (IDEO, 2002), cognitive maps were illustrated with an example of how people use the city. In this example, the map captures bike messengers' knowledge of water oases. The map is more than about organizing information on a plane: it also contains information about what happens between cognitive nodes and how the system of nodes forms a map in the heads of the messengers. One example of how relationships are mapped is the concept of "big, bad, evil hill," directional arrows showing navigation pathways, grids of streets, locations of water spots, and location of clients (Figure 3).

A popular example within this category are stakeholder maps, which designers use to capture the networks of people around design. They are meant to identify the key constituents that might have a stake in design outcomes. They "help to visually consolidate and communicate the key constituents of a design project, setting the stage for user-centered research and design development" (Martin & Hanington, 2012). The process of creating these maps starts from speculative mindmaps and brainstorming of the beneficiaries (and losers) of design, powerholders, as well as those who might be opposed to it. After the speculative phase, the map evolves into a more clearly identified and defined form, and it is usually visualized with a mix of text, images and graphics.

These maps identify entities that need to be paid attention to and relate them to other entities. They may also contain judgment to express things like dependency relationships with text, size of graphics, the number of lines and their strength, or position.

In design language, maps that organize content are – in addition to filtering – used as layers and masks in graphics. They highlight some bits of information and blur other bits (for example, the cognitive map example in Figure 3 highlights some routes and neighborhoods, backgrounds others, and deletes a good deal of other things). In abstracting away from the messiness of the world, they create clarity of vision.

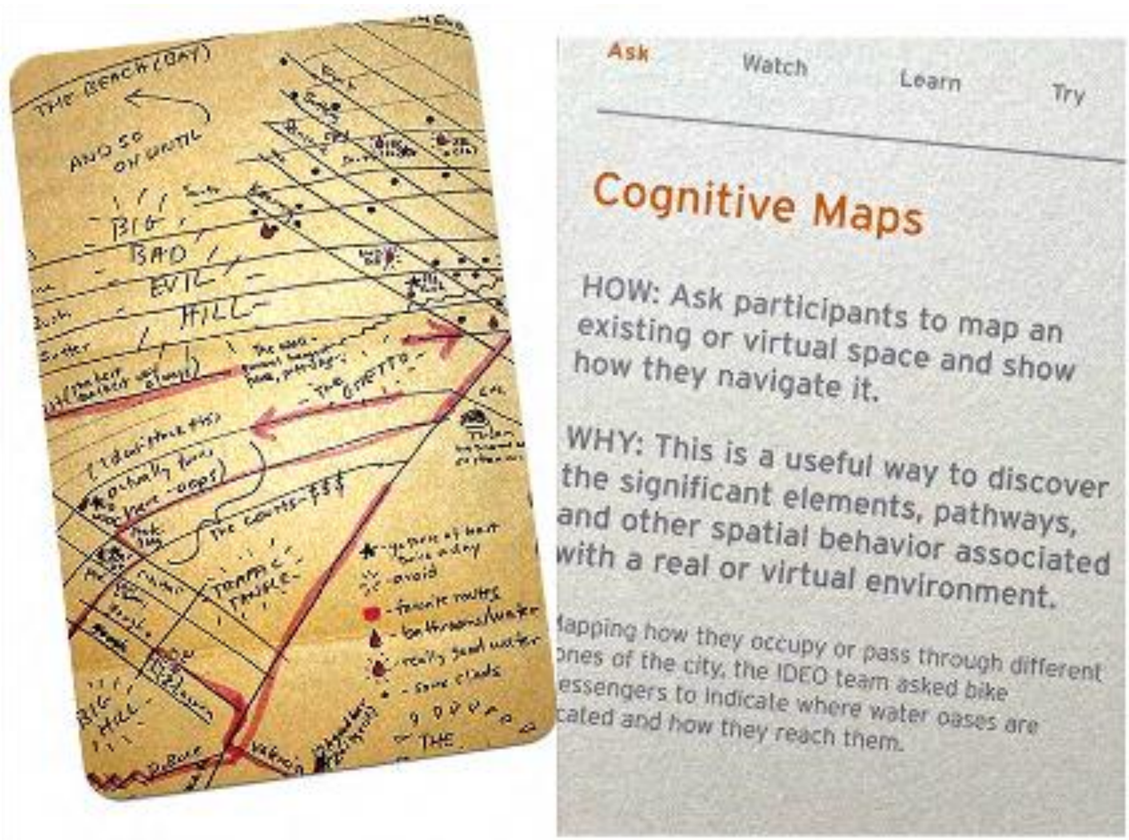

Figure 3 An example of a cognitive map (left) and the method description (right). Source: IDEO (2002)

4.3 Synthesizing content

The third group of maps is marked by the creation of groups that quantify information entities and their relationships. These higher-order groups can be either identified and arranged by the researcher/designer or by participants. These groups serve to organize data, allowing for a synthesis that goes beyond arranging elements on a plane or separating entities to show spatial relationships. In other words, maps as content synthesizers allow designers to gain deeper insights into datasets. These maps analyze entities and in addition reorganize them into meaningful categories that can prepare design activities. Information gains quantifiable properties in at least three ways. First, groupings isolate some entities and show that they are somehow similar. Second, the size of the grouping carries information that may be quantifiable. Third, the plane underneath the groupings may be made precise: the distance from one entity to another can be consistent. The result is an abstract articulation that can be measured. We found 16 instances of this type of map in the design methods collections.

A method that demonstrates how maps can act as synthesizers is the insights clustering matrix. An insights cluster matrix is based on user research data. Kumar describes an example in which 99 insights were identified and subsequently arranged as an insight matrix to "analyze these insights and find patterns" (Kumar, 2012). Taking the form of a matrix, the method involves listing all insights on both axes. Each insight pair relationship is assigned a numerical score that reflects the similarity of the two scores. Sorting the matrix so that similar scores are next to each reveals clusters and patterns that offer insights into the data (Figure 4).

By inspecting the matrix, we see entities in the context of a synthetic framework that consists of nine circles on the diagonal of the matrix. We see that entities in Circle 1 share a quality (social support) and differ from entities in Circle 2 that do not have this quality: instead, they share the quality "creating shared experiences." The matrix also suggests an underlying quantitative organization. The distance between Circles 1 and 2 is smaller than the distance from Circle 1 to Circle 9. However, we do not know whether the entities – represented as dots – close to the diagonal have more of the quality encoded by the circles than entities farther away, or whether they are meaningless in terms of the system of circles around the diagonal.

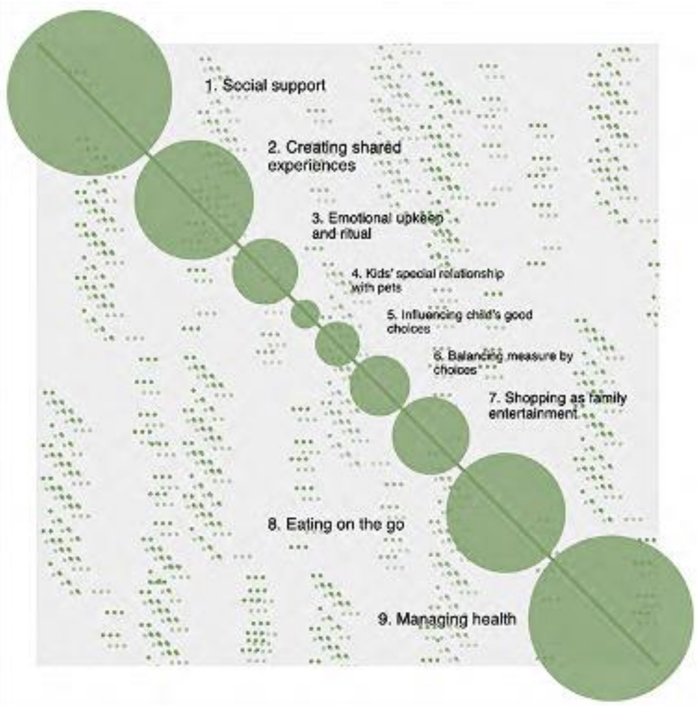

Figure 4 An example of insights clustering matrix (right). Redrawn from Kumar (2012)

The insights clustering matrix requires decontextualizing insights, placing them on a plane, clustering them with green circles, and placing these on a downward diagonal vector. These operations create hierarchies between insights and map their relative position on the vector.

Entities (here insights) are organized into clusters (green circles) that are in turn organized along the vector (diagonal) that organizes the underlying plane (white background). The properties of operations are not precise, but the method involves several operations that help researchers to organize complex content. Maps as synthesizers are mainly used when researchers are dealing with and looking for insights across large datasets. They can be used to identify commonalities, reveal patterns or generate insights.

4.4 Making sense

Some maps create meaningful connections by reference to theoretical systems. The previous three layers are bottom-up approaches that examine entities in the world by placing them under a few clear and distinct concepts and relationships. These categories are not theoretically based. Some maps, in contrast, are designed to work in the context of theory that specifies the relationships. An example from the van Boeijen et al. collection was Ansoff's growth matrix that mapped entities onto a complex multilayered space to capture potential growth strategies in business and market development. This theoretical connection has several implications to mapping in design. Perhaps most importantly, it helps to raise questions that are not evident in data and would not be accessible with synthesis alone.

Figure 5 Ansoff's growth matrix

Ansoff's growth matrix (Ansoff, 1957) also demonstrates how a theoretical space can be construed with simple means (Figure 5). In Ansoff's matrix, x-axis and y-axis both denote novelty (lower left corner being existing market and products and upper right corner new markets and products). The matrix groups entities, collects them into four quadrants that are internally similar and different from each other (for example, two otherwise similar entities are different if they are in a different cell). It also organizes these quadrants over a space defined by two variables that have two different values. Through these operations, it organizes the quadrants into a theoretically meaningful system – in this case, theory of product development. It shows that some entities are relevant enough to be isolated into the matrix and organizes these entities into the quadrants. Information lies in the organization of the plane and product development actions depend on how the entities are located onto the plane. Many other elements are left undefined. For example, cell size, shape, and distance from the origin seem to carry no information. We only know that two entities inside the "diversification" quadrant have properties entities in the "market development" quadrant do not have, but not how much, how many other qualities these entities have, nor whether these other qualities would be similar or different.

When entities are mapped into a system, they also say that these entities are connected, and they influence one another. A change in one entity has ripple effects across the system. The act of thinking systemically leads researchers to novel questions: how change in one entity leads to changes in other entities, which changes can be predicted, and which cannot.

Many lower-level maps can be enriched by putting them into a theoretical context. For example, cognitive mapping can be enriched by creating hypotheses from psychological theory (Jodelet & Milgram, 1976). If we were to apply this theory to cognitive maps of urban space, we can assume that they may vary wildly depending on who draws them: children's maps are much less complicated than the maps of their parents, whose lifespan is obviously larger. Maps from working-class respondents tend to focus on areas around their home, workplace and extended family, while upper-middle-class maps are likely to cover much wider areas of the city, contain prestigious areas like opera houses and museums, have corridors like major freeways that connect activities, and have points like airports that transport them out of their ordinary life. These effects can also be mitigated by the period or residency, the type of education, family background and "habitus," and the nature of work. Cognitive theory gives tools to formulate these more complicated questions and study them by simply organizing them into transparent layers to see what maps say about these questions.

5. Discussion and design insights

Our analysis of mapping methods shows that underneath the simple act of isolating some entities from the world and putting them on a usually two-dimensional plane lies a rich set of assumptions and practices that build on these assumptions. The paper has been interested in the ways in which designers turn things in the world into analytical entities, and how they treat the underlying space as a research instrument – starting from an undefined space that only means that entities are separate all the way to a multilayered space that is conceptually laden and has definable properties.

The most typical dictionary notion of a map as a diagrammatic representation of an area may also be inadequate in design. Out of the 65 design maps identified in the method collections, only two conceptualize space, and even then, through constructs like mental maps that break the idea that maps should present a physical area precisely. Many design maps are abstract forms rather than accurate representations of landscape, roads, geographical forms or cities. For instance, affinity diagrams might initially not be considered as maps, our analysis found that they often use a directional space to separate clusters, which qualifies them as maps even though they can function through hierarchy without a spatial element. As in the social sciences, maps in design tend to be representations of abstract entities rather than based on precise measurements (Lynch, 1991). This does not imply any statement of complexity. The operations that produce maps in geology or planet physics are extremely complex, and the technology behind interactive maps for navigation results from decades of scientific research and technological development.

Perhaps the greatest strength of mapping as a way to organize information in design is its flexibility. The basic operations of mapping are easy to adapt to lots of topics – meanings, things, environment, spaces, people, networks of people, experience, time (as in customer journeys). More complex operations are also easy to integrate into maps. Examples are quadrants in double dichotomies and arrows denoting directions of influence (and even causal links as is the case in systems maps).

However, the term "map" needs to be taken cautiously. First, there is a dizzying array of concepts. Sometimes a method appears under several names and the words "map" and "mapping" are not reliable indicators. Second, some methods can be maps even when they inherently are not. Collecting and reshuffling images, as is the case in the collage method, does not involve mapping, but if the underlying space is used as an analytical device, a collage turns into a map. Likewise, matrices and double dichotomies can be maps, but they can also be descriptive devices and sometimes mathematical constructs (we found many examples in van Boeijen et al.'s collection). To classify a method as a map requires attention to the specifics of use. Third, although many maps are tools for organizing information, some uses go beyond that in that information in the map is relative to theory. Systems maps, for instance, organize information and synthesize it, but always in the context of systems theory.

The analysis further revealed that maps have interesting properties in terms of design. Maps shape research, creating categories and scales that shape the ways in which designers come to see their object through the map. None of the methods collections featured design maps based on true quantitative Cartesian space, nor did we find instances of non-linear spaces. In design, space has nominal and ordinal properties, but not more than that. Perhaps this is because design tends to be qualitative in its quest for innovation that often lies in the margins rather than in central tendencies.

The objective of this paper was to study maps from the perspective of how they organize information. Of course, there may be other perspectives. For example, we can hypothesize that the first two levels of the model work in the early, explorative stages of the design process, while the two upper layers are more useful in nuanced analysis in the later stages. The relationship, however, is probably complex, as Table 2 suggests: it is clear that maps have found many expressions as research tools, but far fewer in the development phase, and even in the former, the relationship remains complex.

As the methodology section noted, the analysis of this paper is based on five collections, even though by now there are at least 10-12 other collections that cover engineering and new forms of design. The main reason for focusing on these five collections is that they focus on design practice rather than conceptual frameworks like design thinking or social design. Yet, acknowledging this possible gap opens a way to another analysis and test the model this paper has developed against collections in these new areas of design, and also perhaps finding trends behind them.

Finally, we did not have access to data about how maps are created, the intentions of designers who are using maps, nor the reception of maps. The analysis of this paper remains abstract but despite this, it opens up an important and ubiquitous class of design methods for inquiry. Questions about the use of maps will be left for future studies.

6. Conclusion

Through the proposed model, the paper provides designers with a rich tool for understanding design maps and points a way towards a more cartographically conscious design. By using our analysis or applying the model for their own classification of methods, designers are able to make a better-informed decision about which map to use depending on the situation, and how to move towards more complex thinking by choosing maps from the fourth level. For instance, if the situation requires simply organizing elements on a pane, designers can employ cognitive maps or mind maps. If designers find themselves in a situation where they need to make sense of data, they should turn to a method like systems mapping.

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Appendix

A. Mapping methods featured in the five design method collections categorized according to the proposed classification

IDEO (2002)	Kumar (2012)	Martin and Hanington (2012)	Tomitsch et al. (2020)	van Boeijen et al. (2020)
Arranging entities on a plane				
Conceptual landscape	Compelling experience map	Collage	Channel mapping	
Collage	SWOT analysis	Image boards	Empathy mapping	
			Moodboards	
			Sketchnoting	
Organizing content				
Behavioral mapping	Activity network	Behavioral mapping	Card sorting	C-box
Cognitive maps	Competitors-complementors map	Mind mapping	Design timescapes	Journey mapping
Flow analysis	Convergence map	Stakeholder maps	Impact ripple canvas	Mind mapping
Social network analysis	Descriptive value web	Territory maps	Local orbits	Perceptual map
	Innovation evolution map	Word clouds	Mapping space	Segmentation-targeting-positioning
	Innovation landscape		Mindmapping	Trend foresight
	Offering-activity-culture map		Perceptual maps	
	Opportunity mind map		Scenario-based thinking	
	Prescriptive value web		Speculating preferred futures	
	Research participant map		Wireflows	
	Solution roadmap			
	Strategy roadmap			
Synthesizing content				
Affinity diagrams	Concept grouping matrix	Concept mapping	Affinity diagramming	Contextmapping
	Concept-linking map	Mental model diagrams	Context-mapping	Product journey mapping

	Entities position map	Scenario description swimlanes	Research visualization	
	Eras map	Thematic networks	User journey mapping	
	Initial opportunity map	User journey maps		
	Insights clustering matrix			
	Tree/semi-lattice diagramming			
	User journey map			
		Making sense		
	ERAF systems diagram	Cognitive mapping	Backcasting	Ansoff growth matrix
			Cartographic mapping	Ecodesign strategy wheel
			Systems mapping	