

Introduction

Cartographic Myths in Organizations

Karl E. Weick

University of Michigan

The purpose of this brief introduction is to provide a fuller appreciation of the nature of maps and mapping as a context for the studies of cognition and strategy that follow. Traditionally maps have emphasized spatial relatedness (O'Keefe and Nadel, 1978, pp. 62–89). Maps are surrogates of space (Wilford, 1981, p. 13) and have been described informally as 'a sketch to communicate a sense of place, some sense of here in relation to there' (p. 7). A map of a city, a mall, a university campus is useless until one sees the comforting label, 'You are here'. Maps put people in their place, both literally and figuratively (p. 12). The concept of spatial relatedness is a quality that the human mind requires to comprehend anything, which is probably the reason why map metaphors abound (e.g. the purpose of this strategy is to map out the future).

Spatial relatedness is a vivid part of organizational life, as is evident in such words as above, below, near, far, vertical, full, empty, dense, open, closed, connected, crowded, center, periphery. Network theory (Monge and Eisenberg, 1987) is a theory of spatial relations.

Even though mapmakers keep emphasizing space, what is interesting about strategic maps in management is that they also seem to capture time. Maps which portray causality, predicate logic, or sequences, all capture temporal relations: if this (in the now), then that (in the future).

Not only do maps emphasize spatial relatedness, they also emphasize classification and the assignment of things to classes. Naming is always classifying, and mapping is

essentially the same as naming' (Bateson, 1979, p. 30). The content of maps consists largely of differences. A map is 'some sort of effect summing differences, organizing news of differences in the "territory"' (Bateson, 1979, p. 110). You have to know something already in order to 'see' something different. This is a point we will encounter repeatedly. The problem with getting managers to think more globally, for example, may be that this task is difficult to map because there is nothing but difference. Everything looks the same because it is all incomprehensible, so there is nothing to map. What a confused global thinker needs is patterns interspersed among the differences.

Maps and Territories

The relationship between maps and classification is perhaps best known by social scientists through Korzybski's epigram, the map is not the territory (Korzybski, 1958 [1st edition in 1933]; Hampden-Turner, 1981). The key ideas behind this well-known phrase are summarized by Postman (1986).

Humans live in two worlds—the world of events and things (the territory) and the world of *words* about events and things (the map). The central question then is, how, by use of abstracting and symbolizing, do people map the territory? Abstracting is the process that enables people to symbolize, and is described as 'the continuous activity of selecting, omitting, and organizing the details of reality so that we experience the world as patterned and coherent' (p. 229). This process becomes necessary but inherently inaccurate, because the world changes continuously and no two events are the same. The world becomes stable only as people ignore differences and attend to similarities.

Even though the world is not the way people see it, people still get by because the names they have for it tell them what to expect and how to prepare for action (p. 229). Korzybski took the position that scientists were more aware of the abstracting process and more aware of the distortions in their maps, which meant they were more flexible than lay people in altering their symbolic maps to fit the world. Applied to managerial cognition, this line of reasoning would suggest that those managers who were more aware of the abstraction process and of the distortions it could create, would have more accurate maps. Conceivably the Rep test procedure used by Reger in this volume would make managers more 'aware of the abstracting process' and, after it was administered, their maps should become more accurate.

The practical advice that flows from sensitivity to map-territory issues focusses on changes in language behavior. The most compact example is Kellogg's (1987) effort to train himself to write and talk in E prime, a form of language which, among other things, eliminates any use of the verb 'to be' (basically am, is, was, are, were). Use of this verb form promotes the idea that the map IS the territory (e.g. John is smart=the smartness is in John, not in the eye of beholder). This construction makes the subject

of the sentence disappear and the object is made to seem like the key actor. If avoidance of 'to be' forms is too difficult, one can always simply append 'to me' to any declarative statement (e.g. It seems to me John is smart). Another piece of advice is to punctuate any assertion with 'etc.', to remind ourselves that we have not said and cannot say everything that could be said about the territory.

The size of the managerial vocabulary becomes important to students of mapping because words have different degrees of richness and nuance and therefore may provide better or poorer approximations of the territory. Having been sensitized to the fact that the map is not the territory, one must also admit that some maps are better than others. Some media, those with many independent externally constrained elements, render the things they sense more accurately than do media having the opposite set of properties (few, dependent, internally constrained) (Heider, 1959; Weick, 1979, pp. 188–193).

The distinction between map and territory has typically had a cautionary ring, warning people not to treat nouns as anything but a crude static rendering of a much more complex changing territory. What is interesting about problems of strategic mapping in managerial life is that the distinction between map and territory sometimes disappears.

Managers sometimes blur the distinction because strategic thinking is often a right-brain activity. As Bateson (1979) notes, the distinction between map and territory is made by the left brain BUT NOT by the right brain (p. 30). He uses as his example, an issue which has a contemporary ring, flag desecration. '(W)ith the dominant hemisphere, we can regard such a thing as a flag as a sort of name of the country or organization that it represents. But the right hemisphere does not draw this distinction and regards the flag as sacramentally identical with what it represents. So "Old Glory" is the United States. If somebody steps on it, the response may be rage. And this rage will not be diminished by an explanation of map-territory relations. (After all, the man who tramples the flag is equally identifying it with that for which it stands.)'

Point? If, as Mintzberg (1976) says, intuiting and managing strategy is a right-brain activity, then maps *are* the territory, and it makes even more sense to talk about strategic mapping than Huff and her associates argue.

Managers also may blur the distinction between map and territory because much managerial life is socially constructed. A significant portion of the organization and its environment 'consists of nothing more than talk, symbols, promises, lies, interest, attention, threats, agreements, expectations, memories, rumors, indicators, supporters, detractors, faith, suspicion, trust, appearances, loyalties, and commitments, all of which are more intangible and more influenceable than material goods' (Weick, 1985, p. 128). In a socially constructed world, the map creates the territory, labels the territory, prefigures self-confirming perception and action.

Most map/territory discussions imply passive actors facing an intractable, material world which they register imperfectly and categorize crudely. Managerial life is often different, involving proactive people who enact, manipulate, influence, create, or construct territories that realize their maps.

And finally, managerial strategists may blur the distinction between map and territory because unique territories resemble one another at high levels of abstraction. When a specific territory is simplified and categorized, it becomes more like other territories in the same category. The map is not the territory when the territory is described with particulars, but it is more like the territory when those particulars are ignored and treated as non-existent.

Maps and Action

Managerial maps differ from conventional spatial maps, not just in their unusual relationships to the territory, but also in the conditions of their use. These conditions often determine what is crucial in a map. For example, contrary to what might be suspected, accuracy is not always crucial in managerial maps. Three examples illustrate why. The first is my all time favorite map story.

A small Hungarian detachment was on military maneuvers in the Alps. Their young lieutenant sent a reconnaissance unit out into the icy wilderness just as it began to snow. It snowed for two days, and the unit did not return. The lieutenant feared that he had dispatched his people to their deaths, but the third day the unit came back. Where had they been? How had they made their way? Yes, they said, we considered ourselves lost and waited for the end, but then one of us found a map in his pocket. That calmed us down. We pitched camp, lasted out the snowstorm, and then with the map we found our bearings. And here we are. The lieutenant took a good look at this map and discovered, to his astonishment, that it was a map of the Pyrenees. (This story was related by the Nobel Laureate Albert Szent-Gyorgi and was turned into a poem by Holub, 1977.)

My favorite moral of the Pyrenees story is the advice, if you're lost any old map will do. For people who study maps, as well as those who claim to use them, a map provides a reference point, an anchor, a place to start from, a beginning, which often becomes secondary once an activity gets underway. Just as a map of the Pyrenees gets people moving so they find their way out of the Alps, a map of the wrong competitor can get people talking so they find their way into the right niche.

Accuracy is also not the dominant issue when the Naskapi Indians burn caribou bones to find game (Speck, 1977) or when the armed forces use tourist maps to find targets in Grenada (Metcalf, 1986).

In the case of the Naskapi, if you're lost and don't know where to hunt for game, any old input—including cracks in a bone—will do. Priests read cracks formed when caribou shoulder bones are heated over a fire and, on the basis of this information, forecast where game can be found. Once the prophecy is made, the hunters don't continue to sit around and argue about where to hunt. Instead, they get moving, which improves the chance that they will find some game. Furthermore, since they hunt in different places from day to day, they do not overhunt an area and they make it more difficult for animals to evade them.

In the case of Grenada, if you're lost and don't know where to attack, then again, any old input, including a tourist map made in 1895, will do (Metcalf, 1986, p. 293). The invasion of Grenada happened so quickly that military cartographers were unable to prepare the usual detailed maps judged 'necessary' for a large-scale operation. Therefore, each unit initially used a different map of Grenada made by separate sources until enough copies of a common map were found, which turned out to be a tourist chart printed in London. Only after the initial assault was an 'official' map made available to everyone.

Parenthetically, managing may be a lot like the invasion of Grenada. Managers invade new markets before the cartographers hand them a map, and before people are entirely sure the invasion is legitimate. The invasion becomes the pretext to learn what is being invaded and what constitutes the legitimate grounds for the invasion. Furthermore, the fact that military units acted in a coordinated manner even though they were not working off a common map, suggests that a little organization and structure can go a long way.

The point of these three different examples can be understood in the context of Huff's question, is the idea of a map merely a useful metaphor or is information actually encoded in the form of maps? In the case of managerial mapping, both answers seem to be true. The issue is one of timing. With a map in hand, no matter how crude it is, people encode what they see to conform as closely as possible to what is on the map. The map prefigures their perceptions, and they see what they expect to see. But, as discrepancies accumulate, they pay closer attention to what is in their immediate experience, look for patterns in it, and pay less attention to the maps. The map in hand then becomes more metaphorical but, ironically, only because it was the means by which other, more current maps were formed. The map in hand calls attention to differences between it and that which is actually encountered. It takes a map to make a map because one points out differences that are mapped into the other one. To find a difference, one needs a comparison and it is maplike artifacts which provide such comparisons.

Maps activate self-correcting action, so they are real starting points that soon become real fictions based on experience which serves to update a static representation of a changing world. Maps provide a frame, albeit a flawed (simplified) one, within which experience can be understood. Parts of the map confirm that experience, but more important, parts are discrepant with it. Discrepancies between maps and current experience stand out because comparison is made possible. The map deepens the appreciation of what is actually encountered, highlights it, punctuates it, but is also altered by it.

In each of the three examples, maps are important for reasons other than accuracy. The map calms the troops snowbound in the Alps and gets them moving toward home. The map makes a decision for the Naskapi and gets them moving toward game. The map coordinates the invasion forces in Grenada and gets them moving toward shore. In each case, it is the movement that is crucial to the resolution. Movement locates exit routes, game and the enemy.

Generalized to organizational settings, accuracy is seldom the highest priority in managing, as is demonstrated by the adequacy with which things get done in the face of inertia, satisficing, organized anarchies, ambiguity, lies, and overload. Strategy implementation is often judged successful when the organization is moving roughly in the same direction. Accuracy is nice, but not necessary, and the reason is that organizations generate action which creates its own substitutes for accuracy and learning.

Maps and Sensemaking

Mapmaking resembles sensemaking, an assertion that can be illustrated by explanatory tradeoffs, patient files in a suicide-prevention clinic, and narrative fiction.

Both mapmaking and sensemaking involve a search for explanations. The explanations they turn up vary in their generality, accuracy, and simplicity. As Thorngate (1976) has argued, of the three criteria of simplicity, generality, and accuracy, only two can be achieved in any one explanation.

By definition a map starts simple. The simplification can be used as a crude guideline in several different settings (combination of general and simple) or as a precise guideline in a particular setting (combination of simple and accurate). The tension and wonder in the Pyrenees story comes because the normal tradeoff among the three criteria is breached and all three are accomplished. The map of the Pyrenees is treated as if it were a map of the Alps, which makes the simplification more general. At the same time, the map of the Pyrenees gets people moving which makes the simplifications in the map more accurate as the map is updated by what the soldiers actually encounter. Simplicity, generality, and accuracy all exist at the same time. The misconception adds generality to the simplification at the same time that action adds accuracy to it.

In an odd way, the fact that the map is a simplification is the soldiers' salvation. Even though the map is of one mountain range, and the soldiers are in a different range, the common feature is that both settings are mountain ranges and fit the same category. The map contains both the particular and the general, as is true for any map. The particular becomes ground, the general becomes figure, and the map becomes the territory.

Managerial maps also resemble file folders in a suicide-prevention center (Garfinkel, 1967). Entries in these folders are crafted with an eye toward future questions that may be raised about them, questions that can only be dimly anticipated in the present. Therefore the folders must be capable of being read in several different ways. The contents of the folder are approximations, multiple stories awaiting the telling, documents in search of diverse underlying rationales which will shift the meaning of the fragments collected in the folder. An assortment of lines connecting nodes on a map often means just as many different things as do scraps of paper in a folder, as do

cracks in a shoulder bone, as do tourist attractions in military maneuvers. The truth of the map lies in the action and in the conditions of use. To understand a map is not just to observe it lying passively on the desk in front of a researcher or lying open near a campfire in the Alps or lying embedded in dried shoulder bones in the Labrador Peninsula. The conditions under which the map was judged necessary, the conditions under which it was discovered, the project that its discovery interrupted—and either accelerated or slowed—the salient questions at the time of its discovery, the intentions, all inform it and render the debate over its ontological significance premature, if not misplaced.

Strategic sensemaking with maps also bears a close affinity to narrative sensemaking. The similarity can best be appreciated in the context of Bruner's (1986) discussion of virtual texts. Great storytelling consists of narratives that are powerful, not so much because they evoke a standard reaction, as because they recruit what is 'most appropriate and emotionally lively in the reader's repertory' (p. 35). To recruit personal interests, the stories must allow for rewriting by the reader. When stories retain this latitude and readers:

begin to construct a virtual text of their own, it is as if they were embarking on a journey without maps—and yet, they possess a stock of maps that *might* give hints and besides, they know a lot about journeys and mapmaking. First impressions of the new terrain are, of course, based on older journeys already taken. In time, the new journey becomes a thing in itself, however much its initial shape was borrowed from the past. The virtual text becomes a story of its own, its very strangeness only a contrast with the reader's sense of the ordinary. The fictional landscape, finally, must be given a 'reality' of its own—the ontological step. It is then that the reader asks the crucial interpretive question, 'what's it all about?' But what 'it' is, of course, is not the actual text—however great its literary power—but the text that the reader has constructed under its sway. And that is why the actual text needs the subjunctivity that makes it possible for a reader to create a world of his own. Like Barthes, I believe that the writer's greatest gift to a reader is to help him become a writer. . . . Beyond Barthes, I believe that the *great* writer's gift to a reader is to make him a *better* writer. (pp. 36–37)

If cognitive maps are imperfect renderings of territory, and if people have had extensive experience with other territories in their lives, then present maps which evoke earlier 'analogous' maps (Schutz, 1967, p. 90), create a composite virtual map that capitalizes on what the person already knows. And since personal past experience is the vehicle by which the gaps are filled, personal involvement in the present should be higher. A journey that starts without maps is not frightening as long as there are hints of earlier journeys that are similar.

Good strategies, like good fiction, invite rewriting and pull past experience into the present to construct virtual strategies. The crucial question then becomes one of the repertory available to the person doing the rewriting, the person's access to that repertory, and the organization's willingness to listen to what the person draws forward.

Strategies that encourage rewriting and increased involvement are likely to be those strategies that call forth the most relevant past experience. And those strategies most likely to do this are those whose outcomes can be envisioned most clearly. Clear outcomes are most likely to occur when the strategy is conceived in the future perfect tense as if it had already been accomplished, rather than in the future tense where it is visualized simply as an open-ended possibility, one of many possibilities.

Once the future project is visualized as if it were already finished, then the intermediate steps that must occur 'in-order-to' reach that end become clearer when people search through memory for 'analogous' completed projects and the steps by which they were completed. Current intermediate steps become meaningful because they are similar to the steps that earlier led to an outcome that resembles the outcome envisioned in the current strategy.

Maps enter into future perfect scenarios because they preserve means-end relationships derived from earlier experience. If we imagine experience stored in the form of sequences flowing from left to right, then means are toward the left side and ends are toward the right. When a future project is visualized in the future perfect tense, it becomes an 'accomplished' end which may bear some resemblance to an end already accomplished and stored at the right end of an existing map. Events to the left of that end are some of the means by which it was accomplished, and things that should be done in order to achieve the envisioned end.

Conclusion

Having reviewed several nuances of maps that become more visible when we view them in the context of organized life, we can now finally unpack the title of this introduction. When we say that people in organizations live by cartographic myths, we mean the following.

In the loosely coupled, chaotic, anarchic world of the organization, differences are everywhere and people need abstractions to smooth over the differences. People also need to become cartographers in order to fashion those disconnected abstractions into more plausible patterns. Having become cartographers, people then need to adopt the myth that their maps are a sufficiently credible version of the territory that they can now act intentionally. The key steps in this process have been summarized as follows:

The important feature of a cause map [or any map] is that it leads people to anticipate some order 'out there'. It matters less what particular order is portrayed than that an order of *some* kind is portrayed. The crucial dynamic is that the prospect of order lures the manager into ill-formed situations that then accommodate to forceful actions and come to resemble the orderly relations contained in the cause map. The map animates managers, and the fact of animation, not the map itself, is what imposes order on the situation.

Thus, trappings of rationality such as strategic plans are important largely as binding mechanisms. They hold events together long enough and tight enough in people's heads so that they do something in the belief that their action will be influential. The importance of presumptions, expectations, justifications, and commitments is that they span the breaks in a loosely coupled system and encourage confident interactions that tighten settings. *The conditions of order and tightness in organizations exist as much in the mind as they do in the field of action.* (Weick, 1985, pp. 127–128)

In the present discussion, I have argued that maps are intimately bound up with action, both the action that is ongoing when the map is first invoked, and the action that occurs subsequent to the discovery of the map. It is the tight coupling between maps and action that tightens the coupling between maps and the territory. Distortions of the territory that find their way into maps, find their way out again when maps are coupled with action. This line of reasoning suggests that the following studies can be appreciated as commentaries on the resourcefulness with which managers and researchers alike abstract from territories which themselves are only imperfectly known and then use these abstractions to attack those imperfections and correct them. The cycle is a chronic process for both researchers and managers, although the demands for correction usually are more stringent for the researchers than for the managers.

The following reports should be read, not simply as discussions of pragmatic artifacts, but as portraits of possible myths, embodied in maps, that people treat as real and that can have real consequences. The maps have already had real consequences for the authors who now highlight those qualities of people they feel must be posited to account for the maps that were produced. These maps, or others like them, will also continue to animate managers to act in ways that please or jar the social science cartographers. What both need to keep in mind is that persistent efforts of each to understand the maps of the other is not a mere exercise in accuracy. It is a much larger exercise of appreciation.

References

- Bateson, G. (1979) *Mind and Nature*. New York: Dutton.
- Bruner, J. (1986) *Actual Minds, Possible Worlds*. Cambridge, MA: Harvard University Press.
- Garfinkel, H. (1967) *Studies of Ethnomethodology*. Englewood Cliffs, NJ: Prentice-Hall.
- Hampden-Turner, C. (1981) *Maps of the Mind*. New York: Collier.
- Heider, F. (1959) Thing and medium. *Psychological Issues*, 1 (3), 1–34.
- Holub, M. (1977) Brief thoughts on maps. *The Times Literary Supplement*, 4 February, p. 118.
- Kellogg, E. W. (1987) Speaking in E-prime. *ETC.: A Review of General Semantics*, 44 (2), 118–128.
- Korzybski, A. (1958) *Science and Sanity*, 4th edition. Lakeville, CT: International Non-aristotelian Library Publishing Co.
- Metcalf, J. (1986) Decision making and the Grenada rescue operation. In J. G. March and R. Weissinger-Baylon (eds), *Ambiguity and Command*, pp. 277–297. Marshfield, MA: Pitman.
- Mintzberg, H. (1976) Planning on the left side and managing on the right. *Harvard Business Review*, July–August.

- Monge, P. R. and Eisenburg, E. M. (1987) Emergent communication networks. In F. M. Jablin, L. L. Putnam, K. H. Roberts and L. W. Porter (eds), *Handbook of Organizational Communication*, pp. 304–342. Beverly Hills: Sage.
- O’Keefe, J. and Nadel, L. (1978) *The Hippocampus as a Cognitive Map*. Oxford: Clarendon Press.
- Postman, N. (1986) The limits of language. *ETC*, 43 (3), 227–233.
- Schutz, A. (1967) *The Phenomenology of the Social World*. Evanston: Northwestern University.
- Speck, F. G. (1977) *Naskapi*. Norman: University of Oklahoma.
- Thorngate, W. (1976) Possible limits on a science of social behavior. In L. H. Strickland, F. E. Aboud and K. J. Gergen (eds), *Social Psychology in Transition*, pp. 121–139. New York: Plenum.
- Weick, K. E. (1979) *The Social Psychology of Organizing*. 2nd edition. Reading, MA: Addison-Wesley.
- Weick, K. E. (1985) Sources of order in underorganized systems: themes in recent organizational theory. In Y. S. Lincoln (ed.), *Organizational Theory and Inquiry*, pp. 106–136. Beverly Hills, CA: Sage.
- Wilford, J. N. (1981) *The Mapmakers*. New York: Knopf.