

Visible Thinking

Unlocking Causal Mapping
for Practical Business Results

John M. Bryson
Fran Ackermann
Colin Eden
Charles B. Finn



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To all those who have helped us develop causal mapping as a technique, and to all those who will benefit from using it in the future.

Contents

About the Authors	ix
Preface: Creating the Future You Want – Causal Mapping for Individuals and Groups	xi
Part I What Mapping Is and Why and How It Works	1
1 What to Do When Thinking Matters	3
2 How and Why Mapping Works	21
Part II What Do I Think? A Guide to Cognitive Mapping	43
3 How not to Miss the Boat	45
4 House of the Rising Fun	63
5 It's a Bummer to Be JB	87
Part III What Do We Think? A Guide to Oval Mapping	123
6 To Merge or not to Merge – That Is the Question!	125

7	Small College Hoping <i>not</i> to Get Smaller!	153
8	Making the Most of our Assets	183
9	A Question of Turning Around	203
Part IV Summary and Conclusions		243
10	Learning from the Chapters, or How Does This all Fit together and How Can I Make Use of It?	245
11	Benefits, Limitations and the Future of Mapping	295
Resource A	Glossary of Terms not Defined in the Text	309
Resource B	Analysing Causal Maps	311
Resource C	A Brief and Selective History of Causal Mapping for Facilitating Thinking and Other Commonly Used Mapping Techniques	329
Resource D	Additional Resources	343
Resource E	Listing of Process Guidelines	347
	Index	361

About the Authors

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Preface: Creating the Future You Want – Causal Mapping for Individuals and Groups

WE ALL FACE SITUATIONS IN WHICH *THINKING REALLY matters* – either as an individual or as a group – *if we are to create the future we want*. For example, have you had trouble figuring out what was bothering you, making you anxious or keeping you awake at night? If some parts of your life have not turned out well, do you wonder why? Have you puzzled about how to make your job more satisfying, get the raise you want or acquire the resources you need? Have you wondered about how to make the most persuasive case to your boss, staff or customers? Have you pondered how you might create more satisfied clients or customers? Or maybe your organization, church or community group needs to rethink its strategy. Have you wondered about what the content of the strategy should be and how you might go about developing it with the help of others? Would you like more assurance about your decisions, to be more comfortable with your relationships and generally more in control of your life?

These are all examples of situations where – in order to create the future you want – *thinking really matters*. The questions and answers are important and all have to do with our ability or inability to make reasonable sense of the world. They involve *complex, interconnected issues* in which everything seems to be linked to everything else – and that is part of the problem! Indeed, getting clear about what the issues *are* is at least half the battle. Developing effective responses to the issues involves thoughtful exploration of a number of elements, including *goals, strategies* and *actions* to address the issues. The

answers are *not necessarily obvious* and careful thought might even lead to *surprising outcomes*. In circumstances such as these, typically individuals and groups must *talk things out* in order to know what they should want, why they should want it and how they might achieve it.

The purpose of *Visible Thinking* is to help you understand and use the tool of *causal mapping* to make sense of challenging situations, to get more of what you want out of them and less of what you don't want. Causal mapping is a simple and useful technique for addressing situations where thinking – as an individual or as a group – matters. A causal map is a word-and-arrow diagram in which ideas and actions are causally linked with one another through the use of arrows. The arrows indicate how one idea or action leads to another. Causal mapping makes it possible to articulate a large number of ideas and their interconnections in such a way that people can know *what* to do in an area of concern, *how* to do it and *why*, because the arrows indicate the causes and consequences of an idea or action.

Causal mapping is therefore a technique for linking strategic thinking and acting, helping make sense of complex problems, and communicating to oneself and others what might be done about them. With practice, the use of causal mapping can assist you in moving from “winging it” when thinking matters to a more concrete and rigorous approach that helps you and others achieve success in an easy and far more reliable way.

Visible Thinking is the first book to put the power of causal mapping at the disposal of a general management audience. The book helps people understand the theory and practice of causal mapping. It shows how managers can use and benefit from causal mapping in an almost limitless number of areas – indeed, in almost any area where thinking matters!

When an individual uses causal mapping to help clarify their own thinking, we call this technique *cognitive mapping*, because it is related to personal thinking or cognition. When a group maps their own ideas, we call it *oval mapping*, because we often use oval-shaped cards to record individuals' ideas so that they can be arranged into a group's map. Cognitive maps and oval maps can be used to create a

strategic plan, because the maps include goals, strategies and actions, just like strategic plans.

Part I of the book uses several examples to present an overview of the theory and practice of mapping. Part II then focuses on cognitive mapping, while Part III shows how to do oval mapping. Part IV pulls the previous sections together, provides guidance on how to do mapping, and summarizes the benefits and limitations of mapping. All parts of the book are built around cases in which the authors have been involved, so the connection with real-life practice should be immediately apparent. A number of resource sections are also included at the end of the book.

Scope

Visible Thinking therefore introduces the theory and practice of causal mapping and provides practical guidance on how to do it individually and in groups. The book is based on three important premises. The first premise is that *most people do not know for sure what they think about many important matters*. They know that these matters are complex and important, but they do not know what, if anything, to conclude about them. This can be a cause for discomfort, anxiety, opting out or, in the extreme, alienation. Let us be clear that this premise is meant to be a descriptive and not a pejorative statement. We ourselves do not know what we think about many issues: John and Chuck, who are Americans, are not sure what they think about any number of matters ranging from the societal to the personal. For example, they are unsure what to think about the US federal debt, the best way to stop terrorism, or their respective employers' most recent annual budgets. They also are not sure what their local neighborhood groups should do, where their families should go on vacation next year, whether to move from the family home to a condominium (John), how to remodel the family home (Chuck) and so on. Similarly, Fran and Colin, who are Brits living in Scotland, are not sure what they think about the Labour Party, the future of their National Health Service, Scottish independence, European Union decision making, the ideal strategy

for their departments, where to go sailing next year, what their career paths should be and so on.

There are good reasons for this. First, the average adult can handle no more than about seven concepts consciously at any given time, and yet most important issues involve many more concepts than that.¹ Because of the busyness of everyday life, we may not know what is important, let alone what to do about it. Even if we do, we are continually distracted by the urgent at the expense of the important. Further, thinking takes time and attention, both of which are often in short supply.

Second, careful thought is not very important for much of what we do. For example, no one has to think very hard about commuting to and from work as long as he or she is familiar with the route, the weather is good, the vehicle is in good repair (legs for Colin, car for Chuck, bus for John, train for Fran), nothing unusual is happening along the route and the journey isn't long enough to be a problem. Indeed, typically we are least conscious of what we do best and do the most often. We simply follow a set of pre-programmed routines that have worked pretty well in the past and are likely to work well in the future. And while executing the routine, we tend to think about what we will do in the near future, not about what we are doing in the present.²

Third, we don't need to think much about things we have consciously decided *not* to think about, because it's not worth it. For example, John has decided not to think about his pension investments, other than to monitor quarterly reports, because he is far from an expert in such matters and it might depress him to manage them himself! Instead, he has decided to pay a fee-only financial adviser to think about his investments for him. Fran can't be bothered about car maintenance; she would much rather have her local service station take care of it. Colin doesn't need to think about where the warmest beaches and most sunshine are in the world, because he is not happy being hot. Unlike his co-authors, he does not fantasize about vacationing in the Caribbean. Chuck has decided not to think about changing jobs anytime soon, as he has done so twice in the last few years.

The book is also based on a second premise, namely that *thinking does matter when it comes to deciding what to do about many important issues*. Most of us are unlikely to buy a house, buy a car, buy a new computer, have a second child, change jobs, get a divorce or speak about a serious subject with the president of the company without first spending at least some time thinking about what to do, how to do it and why. If we do any of these things on impulse, the results conceivably might be outstanding, and thinking more carefully would not have made them any better. But a more likely outcome is that the results will not be nearly satisfactory enough – and may in fact be disastrous. We have all found ourselves wondering what would have happened if we had “thought better of it”. Beyond our individual experience, however, is the weight of research evidence. Paul Nutt, for example, in a review of 400 strategic decisions, provides clear evidence of the importance of thinking clearly and reasonably *when it does matter*. His research shows that half of all strategic decisions fail!³ Failure to think through the situation, develop a clear direction and find a reasonable, defensible response that addresses key stakeholders’ interests and concerns can lead to decision failure, or even a debacle. In contrast, successful thought in strategic decision situations can lead to notable – even exemplary – success. In other words, what people do when thinking matters, *matters!* Said differently, without the thinking you need, you will not create the future you want.

The final premise on which the book is based is our belief that *people need tools and techniques to help them think effectively about what to do in complex issue areas*. We need methods and guidance for clarifying what might be going on in a complex area of concern and for figuring on what to do, how and why. Causal mapping is one of the tools that we believe can help. Indeed, we have found it to be *the* most helpful way of gaining an understanding of important issue areas in such a way that we can figure out effective strategies and actions that will achieve our goals. This is particularly true in situations where we are actually *angry, distressed or depressed*, either to begin with, or as a result of thinking about the problem but not knowing what to do about it. The anger, distress or depression can get in the way of clear thinking, which simply makes the situation worse. Causal mapping can help us take a more optimistic, objective and action-oriented look at the situation. As a result, we are more likely to take effective action and feel better.⁴

Overview of Contents

The book is designed to introduce the theory and practice of causal mapping to a general management audience. It does so primarily through numerous examples. In each example, thinking clearly mattered. As the book progresses, the guidelines for doing effective causal mapping are gradually introduced and developed.

The book is organized into four parts. Part I provides an introduction to causal mapping, including what it is and why it is important. Part II focuses on answering the question: “What do I think?” In this section we examine cognitive mapping. Part III helps answer the question: “What do we think?” In this section we look at oval mapping. The final section, Part IV, pulls together the main points of the previous chapters, summarizes the benefits and limitations of mapping, and discusses its future.

Part I: What Mapping Is and Why and How It Works

Part I consists of two chapters. Chapter 1 introduces the idea of causal mapping and shows how it can be useful. The general nature, purpose and benefits of mapping are presented. The example in this chapter focuses on how Chuck and his wife Mary used a relatively informal form of causal mapping to find a way out of a recurring argument they were having about who was responsible for doing what around the house. Many people – particularly those in long-term relationships – will nod their heads knowingly as the conflict unfolds, and will appreciate how mapping was used to manage the conflict. While the conflict is a domestic one, the approach to resolving it would apply to almost any interpersonal conflict in a work team.

In Chapter 2, the main example shows how John and Chuck use a more formal type of causal mapping to figure out how to do something they have long dreamt of – sailing from Duluth, Minnesota, to Hilton Head Island, South Carolina, a trip of some four months and 4000 miles. The example is developed as a way of presenting mapping in more detail. The example helps us understand the general structure for maps and suggests a set of simple

rules to be followed when constructing them. Again, the example is rather personal, but what it demonstrates is more generally how causal mapping can be used for strategic planning purposes. The example also is not unusual at all in that it provided John and Chuck with a number of surprising revelations that led them to rethink how they were going about pursuing this adventure, and indeed much else in their lives. In other words, when they saw what they said, they were not sure they liked what they saw, and had to figure out what to do to change it.

Part II: What Do I Think? A Guide to Cognitive Mapping

The book's second section helps readers figure out what they think as individuals through showing how to create cognitive maps. Chapter 3 shows how Colin figured out how to negotiate delivery of a new product (a custom-made sailboat) on time and to agreed quality standards. The map helped Colin figure out how he could involve third parties to help him achieve his aim, through inventing ways to tap their self-interest in the service of his own. The example is thus one of creative conflict management and project management.

Chapter 4 shows how Fran figured out where to live, an example that might be thought of more generally as a facility location exercise. Fran used mapping to develop a number of criteria to help her with her search and then used them to find, purchase and move into her new flat. In the process, she discovered some goals she didn't know she had and that discovery helped her more self-consciously pursue a better life.

The final chapter in Part II, Chapter 5, shows how to develop cognitive maps through interviewing another person. In this chapter Chuck interviews John in order to explore options and develop strategies for John to pursue to get a more satisfying job. The example may be thought of more generally as showing how to explore strategic options. It is also interesting because it revealed a dilemma: for John to stay where he was, he had to be willing to leave. The map showed how the dilemma could be managed.

Part III: What Do We Think? A Guide to Oval Mapping

The focus in Part III is on developing *group maps*, or collective representations of the world. These maps are used to show what a group of two or more people think they ought to be doing, how they might do it and why – in short, how to create the future they want.

Chapter 6 shows how a group working for a Scottish public-sector college created a group map – an oval map – to help the college decide whether or not to merge with another organization. Based on the mapping exercise, the college decided not to merge. The example should be useful to anyone interested in collaboration, mergers or acquisitions.

Chapter 7 involves a turnaround situation faced by a non-profit organization – another college – faced with a deteriorating situation and the need to search for a new president. The interim president of the college used a retreat setting to involve a significant number of stakeholders in an oval mapping process. The map was used to guide a subsequent strategic planning effort and a search for a new president. The example shows how mapping can fit into a larger strategic planning and organizational change effort.

Chapter 8 presents a business case in which a group map is created out of individual cognitive maps. The case involves getting a group of people from different departments to work together on creating a new product. The example should therefore be useful to anyone interested in working across organizational boundaries, especially for purposes of developing new products or services.

Chapter 9 involves another business example and shows how mapping was used by a top management team to develop a strategic plan for their company within a very tight time frame. The example is quintessentially about strategic planning – seen as strategic thinking, acting and learning – by a top management team. The example also involves added urgency, since on the one hand the organization was desperately short of cash, while on the other hand the team members were major shareholders in the firm and had much to lose if the planning failed. In the end, the planning exercise worked and the organization is now quite healthy.

Part IV: Summary and Conclusions

The book's final section consists of two chapters. Both are designed to provide a summary of all of the material presented in a form that makes it quick reference material for practical use in the future. Chapter 10 provides a detailed comparison and contrast of the cases along four different dimensions: the nature of the problems and challenges that prompted mapping; the inputs or resources used for mapping; the mapping process itself; and the contributions that mapping made to a successful outcome. The chapter then presents a set of process guidelines designed to help readers create their own maps.

Chapter 11 discusses the benefits, limitations and future of mapping. The chapter concentrates on how mapping enhances learning by individuals and groups. In summary, mapping is what to do when thinking matters.

Resource sections

The book also includes three resource sections that provide supplemental material and information. Resource A is a glossary. Resource B offers guidance on how to analyse maps. Resource C provides a brief history of causal mapping and shows how it is related to other kinds of commonly used word-and-arrow diagrams. Resource D gives information on where to find additional help with mapping. And Resource E presents a complete set of the process guidelines presented in Chapters 2–9.

Audience

This book is meant for any leader or manager who wants help figuring out how to create the future he or she wants in his or her job, organization, life or community, either alone or in partnership with others. Readers simply need to be willing to invest a little time in learning how to do causal mapping.

Mapping, of course, is not the only tool that would help in these situations. Nor is it for everyone. Some people like using pictures to help them think things through, while others prefer to talk things through. Some like to deal only with concrete facts and others enjoy working with ideas and possibilities. Nor is mapping a substitute for technical expertise, useful advice, professional guidance, counselling or therapy. Having said all that, we believe that mapping is a *very* effective way of helping people sort out the many aspects of the situations they face in such a way that they can figure out a strategy for creating the future they want. Mapping can help anyone who is willing to follow the simple rules and think carefully. We wrote this book so that you can understand causal mapping and apply it in situations that matter to you.

Knowledge Base

The knowledge base for the book consists of several sources: personal construct theory in psychology,⁵ sense-making theory in psychology and social psychology,⁶ social construction theory in sociology,⁷ constructivism in education⁸ and our own work in strategic management.⁹ We also draw on insights from the literature on cognitive therapy,¹⁰ narrative therapy¹¹ and facilitation.¹²

We build on psychologist George Kelly's notion that we each use a "personal construct system" to make sense of our world, to make predictions about it, to try to control it, and in general to anticipate and reach out to it. Language is central to this process. We make sense of the world through comparison and contrast, in which to know what anything means we need to know at least one thing it is like, and one thing it is not like. In a broader sense, meaning is embedded in context, which consists of a whole set of comparisons and contrasts. People construe the same events differently, which means that shared meaning must be negotiated, and consensual action implies a reasonably shared sense of the consequences of actions. A crucial feature of this view is the idea that you never change anyone's mind (or a group's "mind") *directly*. Instead, all you can do is help them elaborate their view of the world to the point that *they change their own mind(s)*. (Anyone who has had or worked

with teenagers knows what we are talking about!) Mapping is a way of helping individuals elaborate, understand and change their individual construct system, and of helping groups develop and negotiate a shared view of the world.

We have written the book in such a way that although the material draws on all of the above theories, the reader does not need to become knowledgeable about them. The book is intended to be highly practical and an expression of the adage that “there is nothing so practical as good theory.”¹³

Conclusion

Visible Thinking should provide most of the guidance anyone needs to use causal mapping. We hope that the information and instructions supplied in this book will prompt readers to commit the brief amount of time and energy it takes to learn how to create causal maps and to use them when thinking matters. We hope that our readers’ lives will thereby become more satisfying, meaningful and productive, and that their workplaces, homes and communities will also benefit. Nothing would make us happier!

Notes

- 1 See the classic article on cognitive limitations by G. A. Miller (1956) The Magical Number Seven Plus or Minus Two: Some Limits to Our Capacity for Processing Information, *The Psychological Bulletin*, **63**, 81–97.
- 2 See A. H. Van de Ven (1986) Central Problems in the Management of Innovation, *Management Science*, **32**(5), 590–607.
- 3 See Paul Nutt (2002) *Why Decisions Fail*, San Francisco, CA: Berrett-Koehler.
- 4 Causal mapping can be a tool for learning to be more optimistic, rather than pessimistic; see Martin Seligman (1991) *Learned Optimism*, New York: Alfred Knopf.
- 5 George Kelly (1963) *A Theory of Personality*, New York: Norton Kelly.

- 6 Karl Weick (1995) *Sensemaking in Organizations*, Thousand Oaks, CA: Sage.
- 7 Peter Berger and Thomas Luckmann (1967) *The Social Construction of Reality*, New York: Doubleday Anchor Books.
- 8 David Hyerle (1996) *Visual Tools for Constructing Knowledge*, Alexandria, VA: Association for Supervision and Curriculum Development.
- 9 John Bryson (1995) *Strategic Planning for Public and Nonprofit Organizations*, San Francisco, CA: Jossey-Bass; John Bryson and Charles Finn (1995) Development and Use of Strategy Maps to Enhance Organizational Performance, in Arie Halachmi and Geert Bouckaert (eds), *The Challenge of Management in a Changing World*, San Francisco, CA: Jossey-Bass; and Colin Eden and Fran Ackermann (1998) *Making Strategy*, Thousand Oaks, CA: Sage.
- 10 See, for example, Martin Seligman (1991) *Learned Optimism*, New York: Alfred Knopf.
- 11 See, for example, Gerald Monk, John Winslade, Kathie Crocket and David Epston (1997) *Narrative Therapy in Practice: The Archaeology of Hope*, San Francisco, CA: Jossey-Bass.
- 12 See, for example, Roger Schwarz (2002) *The Skilled Facilitator*, San Francisco, CA: Jossey-Bass.
- 13 Kurt Lewin, quoted in David Johnson and Frank Johnson (2002) *Joining Together*, 8th edn, Upper Saddle River, NJ: Pearson, Allyn and Bacon.

Part I

What Mapping Is and
Why and How It Works

1

What to Do When Thinking Matters

DO YOU EVER WONDER WHAT TO DO? ARE YOU EVER CONFUSED about how to proceed? You are not alone. Most of us puzzle about important matters. Often it is hard to know what to do about important issues at work – or even how to think about them. These issues may involve customers, clients or service users; employees, professional groups or unions; suppliers or distributors; bankers or funders; or any of a large number of other stakeholders. Issues at home or in the community may also take serious thought before a satisfactory solution can be found.

The world is often a muddled, complicated, dynamic place in which it seems as if everything is connected to everything else – and that is the problem! The connections can be a problem because while we know things are connected, sometimes we do not know how, or else there are so many connections we cannot comprehend them all. Alternatively, we may not realize how connected things are and our actions may lead to unforeseen and unhappy consequences. Either way, we would benefit from an approach to problem solving that helps us understand just how connected the world is, what the effects of those connections are, and what might be done to change some of the connections and their effects.

Causal mapping is an approach that can help. *The purpose of this book is to help you understand and use causal mapping to make sense of challenging situations – and to get more of what you want out and less of what you don't want out of them.* We will show how mapping can be used to help an *individual* understand a situation better and act effectively on it, and we will also show how *groups* can build

understanding and create effective action. The focus is on management challenges and how to manage them.

Causal mapping is a simple and useful technique for addressing situations where thinking – as an individual or as a group – matters. *A causal map is a word-and-arrow diagram in which ideas and actions are causally linked with one another through the use of arrows. The arrows indicate how one idea or action leads to another.* Causal mapping makes it possible to articulate a large number of ideas and their interconnections in such a way that people can know *what* to do in an area of concern, *how* to do it and *why*, because the arrows indicate the causes and consequences of an idea or action. Causal mapping is therefore a technique for linking strategic thinking and acting, helping make sense of complex problems, and communicating to oneself and others what might be done about them.

When can mapping help? There are a number of situations that are tailor-made for mapping. We find mapping to be particularly helpful when:

- effective strategies need to be developed, either at work or at home;
- persuasive arguments are needed;
- effective and logical communication is essential;
- effective understanding and management of conflict are needed;
- it is vital that a situation be understood better as a prelude to any action.

These situations are not meant to be mutually exclusive. Often they will overlap in practice.

Perhaps the most important situations are the ones where *effective strategies need to be developed*, either at work or at home. For example, you might be focused on work-related concerns such as the following:

- How could I make my job more satisfying?
- What might we do to create more satisfied customers?

- How should I prepare for a job interview?
- How do I get more resources for my department?

Another category of situations occurs when *persuasive arguments are needed*. For example, you might be concerned with the following questions:

- How can I make an effective case for funding an important work-related project?
- How can I write a better report?
- How can I communicate my needs in such a way that people really listen, instead of hearing only what they want to hear?
- How do I persuade my boss to give me a raise?

Or you might be in a situation where persuasion is not so much the issue, but certainly *effective and logical communication is needed*. For example, you might wonder:

- How do I give clear directions to my staff?
- How can I better understand what people are saying? How can I improve my listening skills?

Sometimes the challenge is that *effective understanding and management of conflict are needed*. The conflict can be internal, interpersonal or inter-group in nature. Consider the following situations:

- What is bothering me? Making me anxious? Making me fret? Keeping me awake?
- How can I understand and deal with conflict with people who are important to me?
- How can I address a conflict with an employer, supplier or contractor?

Finally, you may simply *need to make sense of some situations*. You need to work out what is going on in order to figure out what you can or should do about it, if anything. For example, you may wonder:

- How do I know if Person X is making sense? They just offered what they say is a “real deal”, but how do I know if it is? How do I know what questions to ask to understand more clearly what they are saying?
- All hell just broke loose in this meeting. How do I figure out what happened?

In each of these situations, *clear and logical thinking matters*. The questions are *important*. They involve *complex, interconnected issues* in which everything seems to be linked to everything else. Often they call for *careful exploration of values, goals, issues, strategies and actions to address the issues*. The answers are *not necessarily obvious*, and careful thought might even lead to *surprising outcomes*.

As we noted above, the purpose of this book is to introduce you to causal mapping and get you to use it to address questions like these. In causal maps ideas and actions are linked to one another in a way that makes sense for purposes of understanding and action. Depending on the circumstances, the connections may be causal, inferential, sequential, temporal or logical in a philosophical sense.

Causal mapping makes it possible to articulate a large number of ideas and their interconnections in such a way that we can better understand an area of concern. Causal mapping also helps us know what to do about the issue, what it would take to do those things, and what we would like to get out of having done so. Causal mapping is therefore a particularly powerful technique for making sense of complex problems, linking strategic thinking and acting, and helping to communicate to others what might or should be done. When an individual uses causal mapping to help clarify his or her thinking, we call this technique *cognitive mapping*, because it relates to his or her own cognition. When a group maps their own ideas, we call it *oval mapping*, because we often use special oval-shaped cards to record individuals’ ideas so that they can be arranged into a group’s map. Sometimes an oval map is called an *action-oriented strategy map*.¹

Of course, there are plenty of situations where the problems and issues are not complex and we do not need any special help addressing them. This book is not about such situations, but instead