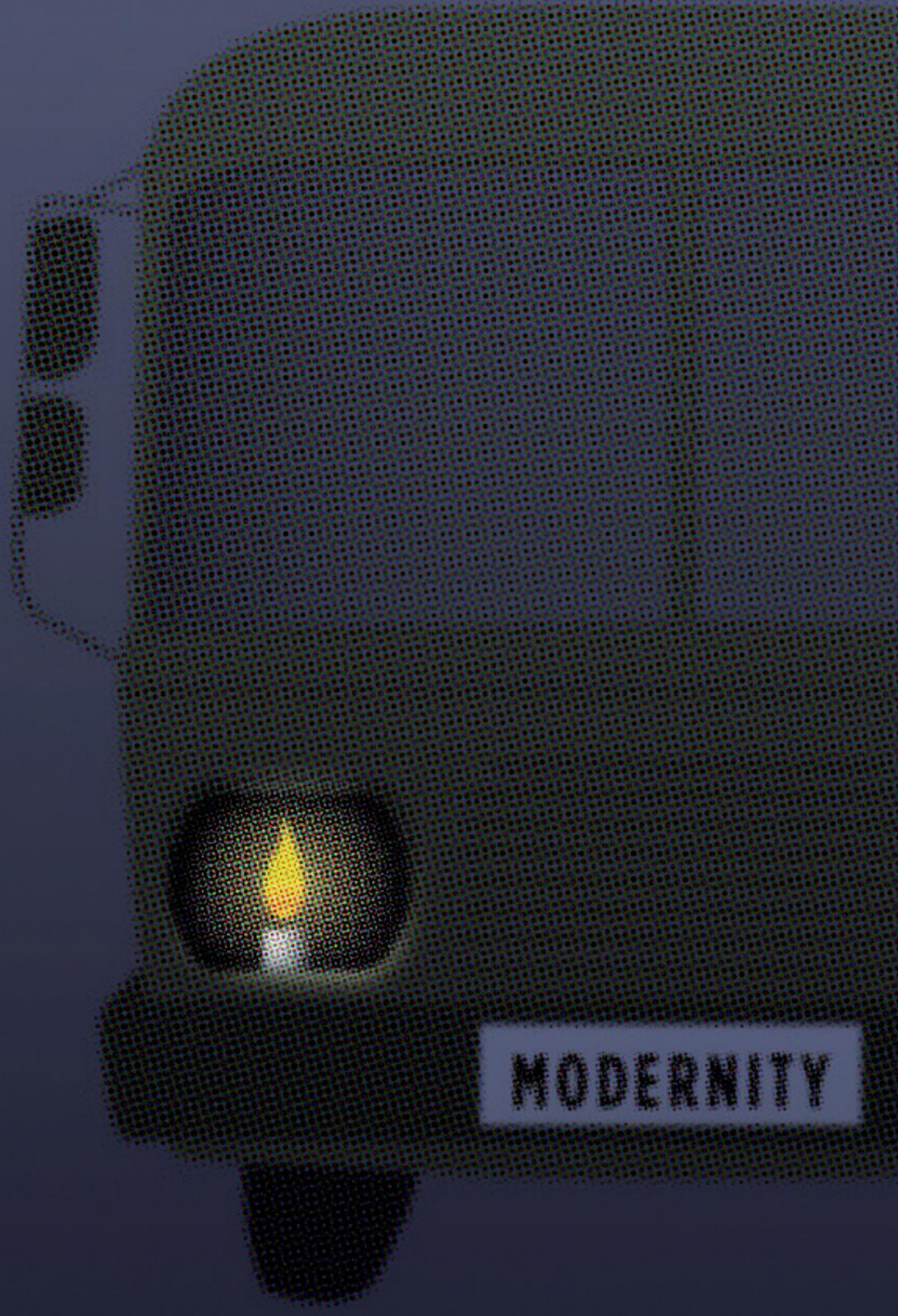


Information MUST BE *Designed*

DINO KARABEG



MODERNITY

Table of Contents

Foreword	1
Introduction	4
Before we begin.....	4
This book in a nutshell.....	6
This book as an example.....	8
Claim and <i>justification</i>	9
Book overview.....	10
Chapter 1: Order design	14
Information overload.....	15
A historical parallel.....	18
Bringing structure to information.....	22
<i>Polyscopy</i> is scientific.....	25
Information overload revisited.....	27
<i>Polyscopic</i> information.....	29
Examples and applications.....	31
Ten reasons why information needs to be <i>polyscopic</i>	41
Order <i>design</i> seen from a <i>mountain top</i>	51
Chapter 2: Truth design	64
Information must be <i>true</i>	66
Origins of scientific truth.....	70
Popular idea of science.....	71
Insights from 20 th century physics.....	74
Leading scientists renounce the reality assumption.....	77
Reality construction becomes an object of study.....	81
Reverberations in philosophy.....	83
‘We are constructing reality’.....	85
A historical parallel.....	87
<i>Methodology</i> as a foundation for <i>truth</i>	90
A <i>designed epistemology</i>	91
<i>Designing</i> concepts.....	99
<i>Designing</i> relationships.....	94
<i>Designing</i> logic.....	106
<i>Designing justification</i>	106
A <i>designed</i> method.....	108
Example <i>result</i>	111
<i>Truth design</i> seen from a <i>mountain top</i>	113

Chapter 3: Meaning <i>design</i>	124
Meaning as a basic need.....	125
Bio-physical environment, resources and sustainability.....	127
Lifestyle, health and wellbeing.....	131
What this tells us about meaning <i>design</i>	138
Changes on the market of information and ideas.....	140
A better way to think.....	144
<i>Polyscopy</i> as an attitude.....	148
<i>Designing</i> abstraction.....	150
<i>Designing</i> criteria.....	155
<i>Designing</i> the key point of <i>informing</i>	161
<i>Designing</i> presentation.....	162
<i>Designing</i> methods.....	163
Examples.....	166
Meaning <i>design</i> seen from a <i>mountain top</i>	178
Chapter 4: Freedom <i>design</i>	198
Information as power.....	200
<i>Information design</i> offers solutions.....	201
<i>Perspective</i> of <i>information</i>	203
<i>Perspective</i> of power.....	211
Examples.....	229
Information that can empower.....	233
<i>Methodology</i> as a written convention.....	234
Freedom <i>design</i> seen from a <i>mountain top</i>	235
Conclusion	238
This book seen from a <i>mountain top</i>	239
<i>Information design</i> as a new paradigm in <i>informing</i>	244
Must we really <i>design</i> our <i>informing</i> ?.....	245
<i>Design</i> as a new paradigm in culture.....	247
The way ahead.....	252
Notes	254
<i>Designed</i> concepts	264

Foreword

In the shadow of the great accomplishments of the Information Age, our information has remained unsuitable for the role it *must* fulfil in this age—the role of providing us correct vision and awareness, so that we may orient the rapid global change in a favorable direction. The underlying reason, I am going to claim, is that our very approach to information has remained *traditional*. The purpose of this book is to propose an alternative.

I am calling this alternative *information design* at the risk of misunderstanding, because the same term has been used with different connotations. To understand information design as it is defined in this text, it is best to cross over and meet *information design* on its own premises. In *information design* we can redefine concepts, recycle words and create fresh and new ways of speaking. We can give agile, new meanings even to common words like ‘information’ and ‘design,’ and we can put them together in a new way. I use italics when I want to emphasize that I am referring to the *designed* meaning of the concept.

The main goal of this first book about *information design* is to lay the foundation. The book will extend a single claim, that for a variety of reasons, both fundamental and pragmatic, we should no longer automatically rely on our inherited or habitual ways. Some of our creation and use of information now needs to be consciously directed, based on explicitly stated premises, or put simply, *information* must be *designed*. The challenge I have undertaken when writing is to render a careful academic argument in support of this claim that is both accessible and entertaining.

To show how *information* can be *designed* and what the consequences of this course of action might be, I will elaborate on a concrete *information design* methodology called *Polyscopic Modeling*, and give examples of *information design* in practice.

On the more practical side, *information design* is conceived as a space (both in the abstract sense of ‘framework,’ and in the actual sense of ‘profession’ or ‘department’) where new thinking can develop. I envision it as a space where we can make concerted progress towards a cultural revival, and in that way contribute to the solution of the sustainability-related and other contemporary issues, or of the ‘world problematique’ as the Club of Rome called them.

The ultimate goal of *information design* is to help us deal effectively with the ills and perils of modernity by beginning a new direction of progress and a new phase of cultural evolution. But as this book will show, before we can do that, we must first complete the part of our modernization that we have unduly neglected—we must modernize our handling of information.

ACKNOWLEDGEMENTS

Information design is a result of the work of a large number of historical people, who are too numerous to name and often well known. My contribution, if any, has been in the simple act of *designing* the word ‘design’ and applying it to information, which provided a framework for highlighting and combining already existing ideas and for putting them into practice.

I first of all wish to thank my closest collaborators and friends, Boas Krøgh Nielsen and Fredrik Eive Refsli, for their unreserved and many-sided help and support. And once again Fredrik for designing this book visually, and Siv Mannsåker for the graphical presentation of the figures.

The specific initial variant of *information design* theory and practice that is described in this book has grown at the University of Oslo Department of Informatics as in a winter garden, until it was ripe enough to be tasted and robust enough to be transplanted. I am indebted to the Department of Informatics for providing the environment where *information design* could develop, and to my students and colleagues who contributed to this development, especially to Rolf Guescini, Jan Egil Hagen and Roy Lachica. I wish to thank the leadership of the University of Oslo Flexible Learning Project for sponsoring the Information Design course development, and to Steinar Moum, Per Sirra and J.M. Taraldsen of the University Center for Information Technology for technical help.

Parallel to this academic development, steps have been taken to bring *information design* into public and commercial use. I am grateful to William Fagerheim of Mind the Gap, Håvard Grjøtheim of GAN, Reidar Holtskog of National College of Art and Design, Jeanette Luytkis of Futt, Boas Krøgh Nielsen of former Norwegian Corporate University, Henrik Tschudi of Flux and to all others who have contributed their valuable time and ideas to the IBUS (Information-Based bUusiness and Society) Project. I am thankful to the leadership and staff of former Norwegian Corporate University (Bedriftsuniversitetet) for hosting and sponsoring the IBUS project.

I owe the insights that led me to *information design* to my teachers, especially to Ljubomir Jeftić, János Komlós, Sang Kyu Shim, Javad Nurbakhsh and Li Jun Feng.

Warm gratitude is due to Alma Culén for helping me during the formative stages of this work.

Special thanks are due to friends and colleagues who read various versions of this text and suggested improvements, especially to Pål de Vibe, Boas K. Nielsen, Fredrik E. Refsli, Natasza Sandbu, Fiki Schilor and Ann Schumacher.

Above all, I am grateful to my parents for their unwavering support and to Linda, for being there and making a difference.

Introduction

*To reinvent the future, everything must be reinvented,
even the method to be followed.* — AURELIO PECCEI

BEFORE WE BEGIN

I would like to introduce my theme gently, by first speaking about something that is already familiar, and then guiding you deftly towards that which is new. But every possibility I can think of seems misleading.

I could, for example, begin by talking about contemporary issues, such as the climate change. I might point out that, according to expert opinions, which now seem to be heading towards a consensus, certain negative global trends will have to be reversed if we should have a sustainable future. I could then tell you that there is a natural way to facilitate such a change, namely by creating and using information in a way that provides necessary vision and orientation. But then you would be misled into believing that this book is about sustainable development.

I could also begin by telling you about the changes in our understanding of science, truth and reality that have been developed through modern physics. I could quote the scientists' claims that 'we have to learn to think in a new way.'¹ I could then point out that our conventional confinement to traditional disciplines in the academia keeps us confined to old ways of thinking, and that changes in the way we conceive of and handle information are now called upon for fundamental, academic reasons. But then you would be misled into believing that this is a text in philosophy of science.

I could begin by pointing at the heritage of the world traditions, both ancient and modern, which has recently become accessible owing to dramatic improvements of the technology of communication, but which remains divided across various traditional communities and worldviews. I could then point out that there is a natural way to integrate this heritage and to benefit from it, namely by providing a tradition-independent way of communicating and establishing facts. But then you might be misled into believing that this book is 'alternative.'

I could just as well begin by talking about information technology, by observing that the radical technology change we are witnessing is inviting us or even compelling us to rethink our handling of information. But then you might conclude that this book is for the readers with technology interests.

I could also begin by talking about information manipulation, as my father suggested. Being a lawyer, he is most ready to adjoin *information design* from this end. "Just say that your book is about liberating thought and speech," he advised me, "and everyone will understand what you are talking about. We all know that

we are being manipulated.” But then you might think that *information design* is about political and legal questions around information.

The reason why any such beginning would be misleading is that this book is about all those themes at once. But when I say this, then you are really getting a wrong impression, because I am making the matter seem far more complex than it is.

My simple point is that all the mentioned concerns and causes can be served by a single shift of perception, and by the reorganization that follows from it. Our handling of information can be reconstructed in a simpler and more natural way, so that everything fits and works.

Not wanting to misguide you, I will begin this book by explaining this main point. I will begin from the end, by giving you a glimpse of the book’s conclusion.

THIS BOOK IN A NUTSHELL

This strange-looking bus with its enigmatic under-text is the message of this book in a nutshell.

Roughly,² that message is that the way we habitually create and use information, or our *informing* as I am calling it, is like taking a pair of candles and using them as headlights in a bus. There is a better way to do it, suggests the Information Design Challenge *ideogram*. In a *culture* that has become *modern*, *information must be designed*.

What this means, why this is the case and what consequences such design might have, all that can be guessed by looking at this *ideogram*.

What strikes us immediately is incongruence: The candles in the picture are placed into a role that they obviously cannot fulfil. The licence plate of the bus suggests that the picture should be interpreted metaphorically, that the bus represents the ‘modernity,’ or our contemporary condition. The text in the *ideogram* suggests that the picture is really a statement about *modern culture* and its *informing*. The text explains that a combination of a *culture* that is *modern* and an *informing* that is *traditional* is in a similar way incongruent as a bus is with candle headlights. So the whole *ideogram* is suggesting that it is a *traditional informing* that is placed into a role in our *culture* that it cannot fulfill, namely into the role of providing vision, orientation and guidance.

Because of this inadequacy of our *informing*, suggests the Information Design Challenge *ideogram*, our condition is like the condition of the people in that bus—we are being taken somewhere, at high speed and in a dark night, without seeing the road or the destination. For all we know, we might be using our best efforts and our fascinating technology to do no better than go faster to a place where we may not want to be.

Is it really possible that in spite of all our scientific prowess and technological vigor we might be making such a simple but far-reaching error, something as ill-advised as using candles as headlights in a bus, and in that way putting at risk our entire civilization?

The Information Design Challenge *ideogram* explains also in what way such an uncanny error could develop. Nobody in his right mind would design candle headlights. The only way a bus could end up with such misplaced lighting is if the people who created it never even considered the options, if they simply took the source of illumination they already had, which was developed much earlier, with old technology and for some completely different purpose, and adopted it for this new purpose without thinking.

It is this ‘simply taking over without considering the options’ that we must be cautious of,⁴ suggests our *ideogram*. Could we have done something of that kind with our *informing*?

Indeed we could! Practically without exception, our information is created within professions that are *traditional*, in the sense that what is being done and how is automatically taken over from the past. A physicist, for example, learns from the previous-generation physicists what a physicist is supposed to do and

Information Design Challenge *ideogram*



Modern culture with traditional informing
is like a bus with candle headlights

does that. And so does a philosopher, and a journalist, and a fiction writer. Every one of our information-making professionals does his or her job by pursuing an inherited routine. None of us has it in the job description to look at our society or *culture* as a whole and investigate what roles information needs to fulfil in it, and what information should be like in order to be suitable for those roles.

The problem with the bus in our *ideogram* can be remedied simply by designing the headlights instead of automatically relying on the lights that happen to be there. Could it be similar with our *culture*? Can the way we create and use information indeed be *designed*? Could the positive effects of such design be as dramatic as our *ideogram* suggests?

THIS BOOK AS EXAMPLE

You may now be wondering what *information design* might look like in practice? Suppose that we choose to *design* the way we create and use information. What sort of information might result from such design? How could *designed* information help us redirect our efforts?

While several examples of *designed* information will be presented in this book, one example you have already seen – the Information Design Challenge *ideogram*.

This *ideogram* shows us something that we cannot see with naked eye, namely our *culture*. And by doing that, it alleviates what may well be the main cause of our error. The candle headlights in a bus are impossible because the bus is a physical object that we can see. A similarly misconstrued *informing* may easily remain undetected because the *culture* we cannot see. By showing us our *culture*, the Information Design Challenge *ideogram* shows us what we need to do.

Already we see that this first piece of *designed* information, the Information Design Challenge *ideogram*, has the capacity to correct our vision and help us avoid a sweeping, possibly grave error. We can no longer simply rely on the *informing* we have inherited from the past, without examining it critically. *Information* must be *designed*! By *designing information*, an incongruent and risky condition can be turned into a safe and sane one. By *designing information*, we can provide our *culture* the required vision. This single act of *design* can help us use all our resources in safer and better ways.

But this simple message, although necessary, is not yet sufficient. We are talking about a new way of comprehending and handling our situation. Can we rely on this message enough to pursue the action it suggests? In what way can we follow this new course?

The rest of this book will give answers to such questions. The Information Design Challenge *ideogram* is only the beginning of his first example of *designed information*. The complete example is this entire book.

CLAIM AND JUSTIFICATION

This first example of *information design* consists of the *main claim* and its ‘proof’ or *justification*, as I prefer to call it. The claim, that *information* must be *designed*, is made on the title page and explained here, in Introduction. This claim is ‘proven’ or *justified* in four chapters, and offered to you for adoption in Conclusion.

The claim that we cannot and should not rely on *traditional informing* to keep us informed, that *information* must be *designed*, is *justified* by using *polyscopy*, the method that is described in the book.

What makes this *justification* possible is that in *information design* we can *design* the main concepts used in the argument, instead of relying on their *traditional* meaning. This allows us to speak in a precise way about the things that would otherwise remain ambiguous and vague, such as *informing* and *culture*. By *designing* concepts I will be able to *design* a certain sufficiently clear way of looking, or a certain *scope* as I am calling it, and I will give this *scope* to you to look through. If by looking through my *scope* you will see what I am claiming, then you will be able to verify my *main claim* yourself.

I will be pointing at certain trends and situations related to information and

informing, and your task will be to look at them through the provided *scope* and see if you can recognize in them the basic pattern illustrated by the Information Design Challenge *ideogram*. To show the incongruence of our present *informing*, I will be pointing at large information-related anomalies. To show that a suitable *informing* can be *designed*, I will elaborate on an example of such *design*, a prototype *informing* called Polyscopic Modeling *methodology*⁵ or more simply *polyscopy*.⁶

BOOK OVERVIEW

Each of the four chapters covers a distinctly different set of concerns. While sequential reading gives the advantage of introducing the ideas gradually, you may also skip directly to those themes that interest you.

The general line of argumentation that is repeated in each chapter is that certain considerable changes have been taking place recently (in information technology, in the assumptions that underlie truth creation, in the risks and opportunities we need to be able to respond to, and in the power-related conditions around information) and that our *informing*, by virtue of being *traditional*, was unable to adjust to those changes. The result is that our *informing* no longer suits the role and the situation it finds itself in, and that conscious re-creation or *design* must be used to resolve the anomalies and continue progress.

What is different in each chapter is the change and the anomaly that we choose to focus on.

Chapter One is motivated by the information technology change. When our traditional ways of creating and using information are made efficient by information technology, the result is chaos, or ‘information overload,’ as it is more usually called. Instead of being the light that shows us the way, information becomes the fog that hides it! Is it still useful to create more information? By developing a *methodology* we can *design* methods for re-structuring information. *Polyscopy*, our *designed* method, can help us organize the vast information heritage we have, so that we can see what is essential in it and make it accessible. *Polyscopy* allows us to ‘rise above the fog’ and get a clear overview. Combined with new Internet technology, *polyscopy* offers ways to make education adaptable to the needs of the learner, to support grass-roots value change and global vision creation, to make academic research and communication more effective and to provide guidelines for website design and navigation.

Chapter Two is about *truth* or about reliable and agreed-upon information. We need such information to be able to see clearly what goes on and agree upon a course of action (‘steer our bus’). Fundamental discoveries in 20th century science discredited the assumption that ‘truth’ means ‘correspondence with reality,’ based on which our traditional approaches to truth have developed. The presumed correspondence with reality also had another problem—it gave us as many reality pictures as there are traditions, and just as many ‘truths.’ Can the *traditional* approach to truth still give us the *truth* we can live by? In Chapter Two *information design* appears in the role of a new symbolic space, free from traditional assumptions and beliefs, where new approaches to *truth* can be developed based on explicitly stated conventions, and in synchrony with the state of the art in science. In this new space, the traditions can meet and merge and we can create common *truths*. On this new foundation we can develop a general method for *truth* creation that preserves the advantages of the scientific approach to *truth* and avoids its disadvantages. Our goal is to be able to give reliable answers to the basic questions about our condition and our world that now must be answered.

Chapter Three is motivated by the cultural change from traditional to modern, and by the risks and opportunities associated with sustainability and globalization. Can *traditional informing* still provide us the guidance we need? Researchers claim that we are ‘driving in a wrong direction’ without being sufficiently aware of that to change course. Are we using information for no better purpose than to entertain us, or to maintain a fixed worldview and thereby

a comforting sense of meaning? In *information design* we create meaning ‘by design,’ to give us awareness. In Chapter Three *information design* appears as a framework in which our need to be properly informed, rather than the traditional ‘reality mapping,’ serves as value matrix to set directions in *informing*. Within this new framework we *design* criteria that information needs to satisfy, and we create methods that enable us to fulfil them. *Polyscopy* allows us to communicate key insights from the divided traditions and make them accessible to modern people. *Designed* methods help us create reliable information about values, lifestyle, well-being and contemporary global condition, and thereby aid us in direction choices.

Chapter Four is about socio-economic power and its relationship with information. Without doubt, substantial power is invested in ‘directing our bus,’ by influencing consumer and other choices. What can we do to secure that information and information media will not be instruments of that power? Is *traditional* democracy still capable of protecting us from power misuse? *Information design* brings us to a new understanding of power, which shows how we may be disempowered without noticing. By founding the creation and use of information on an explicitly stated convention, *information design* subjects the power of information to democratic control. By giving us new ways of seeing and speaking, *information design* empowers us to think and act in new ways. From the discussion in Chapter Four *information design* emerges as a deep-reaching and necessary form of political action.

Conclusion highlights the main points from the four chapters and offers a clear overview of the two options, *traditional informing* and *information design*. It is argued that *design* must replace *tradition* as a necessary ethical stance and a way of being in the world, because it empowers us to free ourselves from dysfunctional habits and destructive power dependencies and enables us to self-organize. *Information design* can be understood as a natural first step in a transition from *tradition* to *design*, which can illuminate the way to *design*. The final conclusion, whether we should continue relying on our *traditional* ways of creating and using information, or make a change and follow the *design* way, remains your to decide.

NOTES

- 1 See Hans-Peter Dürr, J. Daniel Dahm und Rudolf zur Lippe, The Potsdam Manifesto 2005 “We have to learn to think in a new way”. <http://www.vdw-ev.de/manifest/>.
- 2 My claims and definitions will become more precise as we go along. We must postpone proper definitions until Chapter Two, where the *information design* way of defining concepts is explained. Until then, an intuitive understanding of concepts will serve us well enough. A glossary of *designed* terms is provided at the end of the book.
- 3 As we shall see in Chapter Two, I am using the word *culture* in a very general sense which includes not only what is commonly subsumed by that term such as good manners and fine arts, but also aspects of many other things such as science, technology and economy. *Culture* is close to what is usually called ‘civilization.’
- 4 I emphasize this point which is often missed: *Tradition*, as this word is defined in Chapter Two, is not characterized by a certain ‘traditional’ way of doing things, but by this ‘simply taking over without considering the options’ attitude and the corresponding way of developing *culture*. My *main claim* is that this way of developing our *informing* can no longer be relied on and that *design* must be used.
- 5 The name Polyscopic Modeling and the idea to base the creation and use of information on a *methodology* was introduced on the Einstein Meets Magritte conference in Bruxelles in 1995, and subsequently published as Dino Karabeg, Prospectus for Polyscopic Modeling. In D. Aerts et al. (Eds.) *World Views and the Problem of Synthesis*, Kluwer, 1999. The summary of the main ideas appeared as Dino Karabeg, *Designing Information Design*. *Information Design Journal* 2003;11(1). The methodology definition was published as Dino Karabeg, Polyscopic Modeling definition. In: R. Griffin et al. (Eds.), *Changing the Tides*. IVLA Book of Selected Readings, International Visual Literacy Association, 2004.
- 6 I use the term ‘Polyscopic Modeling’ to refer to the *methodology*, which is a written convention, and *polyscopy* to refer to the practice which follows from this *methodology*.