The language of graphics
von Engelhardt, Y.

Citation for published version (APA):
von Engelhardt, J. (2002). The language of graphics

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: http://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
Acknowledgments

This thesis would never have been finished if I had not received an enormous amount of encouragement, support, feedback and help. I want to thank:

Remko Scha for envisioning this research, and for playing a key role in the development of the concepts that are presented here. Remko has been an inspiring supervisor, both academically and through his open-minded approach to life in general. I have always enjoyed our discussions - it seems that Remko tends to understand my ideas before I understand them myself.

Peter van Emde Boas for kindly welcoming me in his department and for supervising the evolution of my work. Peter’s mathematical perspective has greatly helped to eliminate inconsistencies and to sharpen many of my initially somewhat fuzzy ideas. I am grateful to Peter’s department and to the University of Amsterdam for supporting me during the certainly longer-than-expected course of this project.

Jos de Bruin for creating this research project, for arranging the financing of the project by the RIVM (National Institute for Public Health and Environmental Protection), and for providing a lot of useful feedback on countless drafts.

Clive Richards for his phonebook-sized thesis titled ‘Diagrammatics’, which I read while trying to live in a cave on the Canary Islands. While rats were chewing holes into my inflatable mattress, Clive’s book made a lasting impression on my thinking about graphic representation. His analysis lies at the base of my thesis.

Theo Janssen for numerous useful suggestions over the past eight years, the most recent being the ‘comment’ as an item in the standard figure caption.

Fred Lakin for reading the entire manuscript and for providing various detailed remarks which have resulted in important improvements, such as sharpening my definition of recursive syntactic decomposition; also for his idea to turn my view of written text into a figure (figure 3-17).

Matthias Mayer for repeatedly commenting on my work and for proposing valuable enhancements, one of them being the inclusion of the Glossary.

Alan Blackwell, Jeroen van Hasselt, Cees Roel, Mehdi Dastani, Dejuan Wang and Henk Zeevat for working together with me on publications, and for our many stimulating brainstorming sessions about systematic approaches to graphic representation.
Acknowledgments

Niels van der Sluijs for his design work (e.g. our joint contribution to the InfoArcadia exhibition, diagrams for my lectures, the cover of this thesis). In addition to designing the form, Niels always tries to understand my (sometimes vague) ideas, and tends to make remarks that help to improve the contents of my work.

Piet Westendorp, Karel van der Waarde, Peter Bogaards and Conrad Taylor for their help when the InfoDesign and InfoDesign-Cafe mailing lists which I founded and moderated, were growing beyond all expectations. And Piet and Karel, as well as Paul Mijksenaar for involving me in the editorial work on the Information Design Journal. Last but not least, Piet, Karel and Peter for their helpful and detailed feedback on my manuscripts.

Zenon Kulpa, Bob Horn and Hari Narayanan for reading the final manuscript and for reacting with many useful questions and comments.

Jacques Bertin, Barbara Tversky, Michael Twyman and Richard Saul Wurman for discussing ideas about graphic representation with me.

Janet Abrams and John Thackara for the opportunity to write for ‘If/Then’.

Ronald van Tienhoven and Maarten de Reus for our very stimulating cooperation on setting up the InfoArcadia exhibition.

Dan Boyarski and Bob Swinehart for having me as a visitor at Carnegie Mellon School of Design.

Claus Michael Semmler and Nicole Semmler for generously helping me with a number of things, for example with my figures, and with my first book contribution in German. And Kwee Tjoe Liong as well as comic shop Lambiek for assisting me in practical matters.

Edwin Kisman for providing me with the opportunity to try out and practice my skills in designing publishable infographics.

Ingrid von Engelhardt (my mom) for teaching me how to make sensible flow charts when I was nine years old, and for meticulously correcting and improving the complete text of my Ph.D. thesis thirty years later.

Wolfgang von Engelhardt (my dad) for his continuous moral encouragement to finish this thesis, for his support, and both Wolfgang and his wife Annelies for many open and exciting discussions.

Renate Tesch and Hallock Hoffman for ‘adopting’ me for a year. That fantastic year in Southern California did it to me: My being in love with life is something I partly owe to Renate. I often wish that she was still alive.

Steph Sallaerts for making me practice essential living skills, like ‘letting go’.

Ruu Beunderman for his humorous wisdom about life. And for managing to teach me how to do more (essential stuff) by doing less (non-essential stuff). And also for telling me not to worry about eating poisoned fish.
Lieve Witteveen for millions of reasons, one of them being that she carefully scanned and ‘photoshopped’ almost all figures that are contained in this thesis.

Jetty Jurrissen and Ad Witteveen (Lieve’s mom and dad) for being like an extra pair of parents to me.

Miguel Jaspers for changing my life by setting up the blind date between Lieve and me. And for digitally polishing up my not quite print-ready files.

Sonja, Robert, Petra, Jelle, Monte, Ana, Mary, Leif, Anala and Yvonne for having come into my life, and for lots of help in various ways.

Mieke Zijlmans for many years of being enormously supportive.

Kenneth Coleman for his friendship and his incredible hospitality in providing me with a paradise-like second home in San Diego. In the course of the years, I have spent many months in Kenneth’s garden, working on the concepts presented in this thesis.

Marc Pauly for proofreading the entire manuscript, and for preparing the Dutch version of the abstract. And, most of all, for our conversations. Every hour that I have spent with Marc discussing life, feels like a well spent hour.

Amsterdam, August 2002

Yuri Engelhardt
"Much careful labor has been expended in so arranging the book that a busy reader may get the gist of the matter by looking at the illustrations and reading only the titles and the sub-titles [...] under each illustration. [...] Though the text gives much more detailed information concerning method than can possibly be put into any sub-titles, the reader who examines only the illustrations and the titles, without any reference to the text, will undoubtedly get a major portion of the vital material in the book."

Willard C. Brinton, 1914 (in the preface to his book 'Graphic methods for presenting facts')

About the graphic representations and their captions

A visual overview of the graphic representations that are contained in this thesis can be found in the Figure Index (pages 181-187).

The figures are divided into two groups. The largest group of figures consists of those that are enclosed in a box. Such a 'boxed' figure is included as an example specimen, and its structured caption provides a standardized analysis of the figure in terms of the developed framework (see section 5.1 for a brief discussion of this analysis). This kind of caption is not so much concerned with what is shown in the figure, but rather with how it is shown.

A few figures however are not enclosed in a box. This second group of figures serves to illustrate specific points, and their captions do not contain the complete standardized analysis.

Most of the specific terms that are used in the figure captions (and throughout the thesis) can be looked up in the Glossary at the very end of the thesis.