



UvA-DARE (Digital Academic Repository)

The language of graphics

von Engelhardt, J.

Publication date
2002

[Link to publication](#)

Citation for published version (APA):

von Engelhardt, J. (2002). *The language of graphics*. [Thesis, fully internal, Universiteit van Amsterdam].

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: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, P.O. Box 19185, 1000 GD Amsterdam, The Netherlands. You will be contacted as soon as possible.

Contents

Acknowledgments.....	xi
1 Graphic Representation.....	1
1.1 Visual Language.....	4
1.2 Aims of this Thesis.....	5
Deconstructing graphics.....	5
A syntactic framework.....	6
A comprehensive framework.....	7
A unifying framework.....	8
Not a normative framework.....	9
Static versus dynamic and interactive graphics.....	9
2 Graphic Syntax.....	11
2.1 Overview of Graphic Syntax.....	13
2.2 Graphic Space.....	21
Graphic space as a mental construction.....	21
Visual layers: a common phenomenon in graphic space.....	21
2.3 Graphic Objects.....	23
The notion of graphic objects.....	23
Elementary graphic objects.....	23
2.4 Visual Attributes.....	25
A special case of using size: proportional division.....	28
2.5 Syntactic Structures.....	30
2.5.1 Structures involving object-to-object relations.....	32
Spatial clustering.....	32
A special case of spatial clustering: labeling.....	34
Separation by a separator.....	34
Lineup.....	36
An application of lineup: proportional repetition.....	38
Linking by a connector.....	40
Containment by a container.....	44
An application of containment: composite symbols.....	45
Superimposition.....	50
A look at the literature concerning object-to-object relations.....	50

2.5.2 Structures involving meaningful spaces and object-to-space relations	54
Metric spaces	57
Distorted metric spaces	65
Degree to which aspects of space can be meaningful.....	70
A look at the literature concerning meaningful spaces.....	71
2.5.3 An overview of syntactic roles of graphic objects	74
2.5.4 Composite syntactic structures	79
Simultaneous combination	79
Nesting.....	81
Background-inset displays and multipanel displays.....	84
Graphic multiples	87
Shared-axis multipanels	92
3 Interpretation of Graphic Representations	95
3.1 Type of Correspondence	97
3.1.1 Literal correspondence	103
Physical structures and conceptual structures.....	103
3.1.2 Metaphoric correspondence	106
3.1.3 Metonymic correspondence	107
3.1.4 Rebus-based correspondence	109
3.1.5 Arbitrary-conventional correspondence	111
3.1.6 A look at the literature concerning type of correspondence	115
3.2 Mode of Expression	119
Written text	120
A look at the literature concerning mode of expression	122
Relationship between mode of expression and type of correspondence	125
‘Iconic versus symbolic’ distinction ignores non-literal pictorial graphic objects.....	127
3.3 Informational Roles of Graphic Objects	129
A look at the literature: emphasis on information objects.....	130
3.4 Type of Represented Information	134
4 Classification of Graphic Representations	137
Primary types of graphic representation.....	138
Hybrid types of graphic representation	142
A look at the literature concerning classifications of graphic representations.....	146

5 Analyzing Graphic Representations and Graphic Theories	151
5.1 Analysis of Graphic Representations	151
5.2 Analysis of Graphic Theories	153
6 Conclusions	161
A syntactic framework.....	161
A comprehensive framework.....	162
A unifying framework.....	162
Culture dependence.....	162
What is it all good for?.....	163
Abstract	165
Samenvatting	169
ILLC Dissertation Series	173
Bibliography	175
Figure Index	181
Author Index	189
Subject Index	191
Glossary	193

