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THE VISUAL STRUCTURE OF A PLANE SURFACE

A thesis submitted in partial
fulfilment of the requirements for
the degree of Doctor of Philosophy

by

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Australian National University
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This thesis describes original research carried
out by the author in the Department of Psychology of
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TABLE OF CONTENTS

		page
ACKNOWLEDGEMENTS		iii
ABSTRACT		ix
CHAPTER 1	INTRODUCTION	1
1.1	The scope of the study	1
1.2	The specification of location on the plane	4
1.3	The structure of the study	9
CHAPTER 2	THE REPRESENTATION OF INTERVAL-ORDERING JUDGMENTS	13
2.1	The description of interval-ordering judgments: explicit and implicit representation-functions	13
	2.1.1 The explicit representation-function	13
	2.1.2 The implicit representation-function	18
2.2	The consistency of interval-ordering judgments	20
	2.2.1 The structure of interval-ordering judgments	21
	2.2.2 The existence of an implicit representation-function	27
CHAPTER 3	THE DETERMINATION OF AN IMPLICIT REPRESENTATION-FUNCTION: THE BISECTION-METHOD	32
3.1	The bisection-function	32
3.2	The bisection-function and the implicit representation-function	35

page

3.3	The representation-function for a half-path		36
3.4	The complete implicit representation-function		41
	3.4.1	Generalisation within a half-path	41
	3.4.2	Generalisation to both half-paths	42
3.5	The case of a linear bisection-function		46
	3.5.1	The form of the representation-function	47
	3.5.2	The generalisation of the representation-function	51
	3.5.3	The parameters of the implicit representation-function	54
	3.5.4	The implementation of the bisection-method	57
CHAPTER 4	THE JUDGMENT OF DISTANCE ON THE MEDIAN PATH		60
4.1	Studies of median distance- judgment		60
4.2	The implicit representation-function for the median path: Experiment 1		65
	4.2.1	The experimental arrangement	66
	4.2.2	Procedure	71
	4.2.3	Results and discussion	73

		page
CHAPTER 5	THE CONSISTENCY OF MEDIAN INTERVAL-ORDERING JUDGMENTS	89
5.1	Alternative implicit representation-functions: the multiplication method	89
5.2	The consistency of median distance-judgments: Experiment 2	92
	5.2.1 The experimental arrangement	92
	5.2.2 Procedure	94
	5.2.3 Results and discussion	96
CHAPTER 6	THE JUDGMENT OF DISTANCE ON A FRONTO-PARALLEL PATH	103
6.1	Studies of lateral distance-judgment	103
6.2	The form of the lateral implicit representation-function: Experiment 3	105
	6.2.1 The experimental arrangement	105
	6.2.2 Procedure	110
	6.2.3 Results	112
6.3	Lateral exponents at different distances: Experiment 4	119
	6.3.1 The experimental arrangement	121
	6.3.2 Procedure	122
	6.3.3 Results and discussion	123
CHAPTER 7	THE JUDGMENT OF DISTANCE ON THE PLANE: COORDINATED IMPLICIT REPRESENTATION-FUNCTIONS	129
7.1	The representation of inter-path comparisons	130

page

7.1.1 Coordinated implicit representation-functions 130

7.1.2 The coordination of a family of implicit representation-functions 134

7.2 Determination of the coordination-function: Experiment 5 138

7.2.1 The experimental arrangement 139

7.2.2 Procedure 141

7.2.3 Results 142

7.3 The visual structure of the plane 145

7.3.1 Individual differences in judgment 145

7.3.2 A visual map of the plane 147

7.3.3 Size-constancy on the plane 154

7.3.4 The problem of complete representation 159

CHAPTER 8 VISUAL STIMULATION BY A PLANE SURFACE 164

8.1 The optical projection of the plane 165

8.1.1 The visual direction of an image-point: the image-surface 165

8.1.2 The visual direction of a point on this plane 169

8.1.3 The projection of a surface-pattern 172

page

8.2 The role of visual direction in the judgment of distance 180

8.2.1 Visual direction as a cue to distance 181

8.2.2 The judgment of distance as a function of visual direction 184

APPENDIX I Demonstrations of properties of the equivlaence and order relations 196

APPENDIX II Results of Experiment 1 203

APPENDIX III Results of Experiment 2 215

APPENDIX IV The statistical structure of the multiplication method 226

APPENDIX V Results of Experiment 3 231

APPENDIX VI Results of Experiment 4 238

APPENDIX VII Results of Experiment 5 and tables for Chapter 7 249

BIBLIOGRAPHY 255

ABSTRACT

This study is concerned with the capacity to make judgments of distance on an horizontal plane surface. In particular, it provides a descriptive account of the patterns of interval-ordering judgment along certain rectilinear paths on such a surface. A scaling technique has been employed which enables a metrical representation of judgment to be made for each selected path. The foundations of this technique are examined in Chapters 2 and 3, and an experimental validation is provided in Chapter 5. Chapter 4 employs the technique to examine the pattern of judgment on the median path of the plane, and Chapter 6 provides a corresponding account of judgment on fronto-parallel paths at various distances from the observer. In Chapter 7 consideration is given to the possibility of providing a general representation of judgment on the plane, and an examination is made of intra-path interval comparisons which involve the median path and the family of fronto-parallel paths. Finally, Chapter 8 examines the visual input which results from viewing a plane surface, and a reinterpretation of the earlier findings is made in terms of this input.