Chandos Information Professional Series

CP
CHANDOS
PUBLISHING

Ontologies, Taxonomies and Thesauri in Systems Science and Systematics

Emilia Currás

Contents

List of figures *xiii*

Foreword *xv*

Preface *xix*

Prologue *xxiii*

About the author *xxvii*

1 From classifications to ontologies **1**

Knowledge 2

A new concept of knowledge 5

Knowledge and information 6

Knowledge organisation 8

Knowledge organisation and representation 9

Cognitive sciences 10

Talent management 12

Learning systematisation 13

Historical evolution 14

From classification to knowledge organisation 15

Why ontologies exist 17

Ontologies 20

The structure of ontologies 22

Summary 25

Topics for discussion 27

References 28

2	**Taxonomies and thesauri**	**35**
	From ordering to taxonomy	36
	The origins of taxonomy	37
	Hierarchical and horizontal order	39
	Correlation with classifications	40
	Taxonomy in computer science	43
	Computing taxonomy	43
	Definitions	45
	Virtual taxonomy, cybernetic taxonomy	46
	Taxonomy in Information Science	48
	Similarities between taxonomies and thesauri	50
	Differences between taxonomies and thesauri	51
	Topics for discussion	54
	References	55
3	**Thesauri**	**57**
	Terminology in classification systems	58
	Terminological languages	59
	Thesauri	63
	Thesauri definitions	65
	Conditions that a thesaurus must fulfil	72
	Historical evolution	73
	Classes of thesauri	78
	Topics for discussion	83
	References	84
4	**Thesauri in (cladist) systematics**	**87**
	Systematics	87
	Systematics as a noun	90
	Definitions and historic evolution over time	91

Differences between taxonomy and systematics 93
Systematics in thesaurus construction theory 94
Classic, numerical and cladist systematics 97
Classic systematics in information science 98
Numerical systematics in information science 100
Thesauri in cladist systematics 102
Systematics in information technology 105
Some examples 106
Topics for discussion 109
References 110

5 Thesauri in systems theory 111
Historical evolution 112
Approach to systems 114
Systems theory applied to the construction of thesauri 116
Components 117
Classes of system 118
Peculiarities of these systems 121
Working methods 122
Systems theory applied to ontologies and taxonomies 124
Topics for discussion 125
References 126

Author index 129

Subject index 131