

**The values of meaning and the meanings of ‘values’:
Environmental language in text and concept system in a Wet
Tropics World Heritage context**

**Thesis submitted by
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in April 2008**

**for the degree of Doctor of Philosophy
in the School of Arts and Social Sciences
James Cook University**

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Declaration on Ethics

The research presented and reported in this thesis was conducted within the guidelines for research ethics outlined in the National Statement on Ethics Conduct in Research Involving Humans (1999), the Joint NHMRC/AVCC Statement and Guidelines on Research Practice (1997), the James Cook University Policy on Experimentation Ethics, Standard Practices and Guidelines (2001), and the James Cook University Statement and Guidelines on Research Practice (2001). The proposed research methodology received clearance from the James Cook University Experimentation Ethics Review Committee (approval number H1713).

Denise Dillon

22 April, 2008
Date

Statement on the Contribution of Others

The research described and presented in this thesis was undertaken by the author under supervision by Dr David Cottrell and Dr Joseph Reser, both of whom provided editorial and academic advice.

David Cottrell, Mike Steel (JCU) and Ron Heady (co-author of PerMap, a perceptual-mapping program) provided statistical advice. Brigitta Flick provided research assistance (a tedious item reduction exercise), and was remunerated for her services, but not her priceless support. The thesis also benefited from the author's discussions with Katrina Lines, Joan Bentrupperbäumer and Brigitta Flick, and from editorial advice given by Sophie Creighton, Rosemary Dunn and members of the JCU Postgraduate Thesis Writing group.

The research would not have been possible without the contribution of the many participants who devoted their time and efforts towards completing the required tasks. The dedication of a small group of CAFNEC volunteers to their conservation efforts, and of a small group of JCU academics involved in environmental research, extended to their assistance as research participants. They gave freely of their time and knowledge, and are commended for their efforts.

For financial support, I am grateful to the James Cook University Graduate Research School for a Faculty/School Scholarship over the duration of my candidature, and the Faculty of Arts, Education and Social Sciences for three Internal Research Grants. I am also appreciative of the two travel scholarships I received from the Human Communication Sciences Network (HCSNet), which enabled my travel to Sydney for the HCSNet Summerfest in 2005 and 2006. The following publication details are for an individually authored, refereed article, and a collaborative, refereed paper based on early incarnations of my literature review.

Dillon, D. (2005). The value of meaning and the meanings of *value*. *LinQ*, 32 (1), 11-23.

Dillon, D., Reser, J., & Cottrell, D. (2005). The meanings of values in a Wet Tropics World Heritage context: social representations and rhetoric. In *Proceedings of the Ecopolitics XVI conference: Transforming Environmental Governance into the 21st Century*, 4-6 July, Griffith University, Nathan Campus.

Acknowledgements

I extend sincere and grateful thanks to my supervisors, David Cottrell and Joe Reser, for their advice, help and patient encouragement for the duration of my candidature. Joe sparked the original idea with his ongoing interest in environmental values, his wealth of expertise in the field of environmental psychology and his knowledge of the psychology of language. David helped keep the idea alight even when I was in the dark about what to do next (a regular occurrence), and I have benefited from his cognitive-scientific approach, his expertise in experimental language research and research design, and his prowess in weeding the nonsense out of what I thought made perfect sense.

Over the four years that I worked on this research I had the pleasure of meeting and working with a succession of Honours and postgraduate students who came to study in the Psychology labs. Thanks to all the staff and the succession of students at the E1 Psychology Labs for advice, mutual commiserations, and great baking efforts. Suzanna, especially, did us proud. Brigitta, Jane, Carolyn, Deborah, and Cat all sustained and supported me in some way, and Katrina provided inestimable support for which I am eternally grateful.

I can say in all sincerity that these postgraduate years have been the best of my life (so far), even though I readily (and vociferously) acknowledge the challenges, obstacles, and pitfalls of postgraduate research. Any negatives notwithstanding, the truth is that I have gained the ultimate affirmation not only in being allowed, but also being paid, to do what I have loved.

Abstract

There is growing concern about and evidence of emergent language and meaning problems in the environmental domain, where natural science and social science terminology and assumptions, management speak and lay language come together without a common understanding. This research examined environment-specific meanings and uses of the abstract word ‘values’ that are dependent upon lexical and experiential context through language and prior knowledge. The aims were to examine and document an environmental vocabulary and associated meanings in naturally occurring contexts that appear to have multiple cultures of use and meaning, and to consider theoretical and practical implications concerning multifarious meanings of terms and constructs.

The research investigated naturally occurring language use in the protected area domain of a World Heritage Area (WHA). This applied context encompasses multiple language and meaning issues in natural resource management, research and monitoring, and community consultation and participation, where effective communication is essential between stakeholder groups with often differing cultures of use and meaning for particular core terms and constructs. Theoretical perspectives that informed the research embrace cognitive scientific and social psychological theories of mental and social representations, and knowledge acquisition, elicitation and representation. The principle methodologies employed were text analysis, a lexical decision task, and concept mapping. Participants and document samples were drawn from three groups involved in environmental research, management and conservation activism in the Wet Tropics WHA in Australia.

Study 1, involving text analysis, indicated that meanings commonly assigned to ‘values’ in the WHA context reflect intersecting semantic domains of economic worth, abstract moral principles, and biophysical attributes. Study 2 compared environment-specific word use with general use in the British National Corpus, and confirmed that word

associations with ‘values’ in general use differ from those in the specific WHA context. Study 3 examined the role of specific background knowledge on word recognition. Results suggest that experts and novices use qualitatively different strategies for recognising low-frequency environment words. Study 4 examined the conceptual content and structure of an ‘environmental values’ construct, revealing 81 items in seven clusters along two dimensions (affect and social orientation). The content and structure are similar to ‘values’ typologies derived from different theoretical and methodological approaches, pointing to an underlying conceptual structure within broader ‘values’ research. The four studies, taken together, clearly establish that serious language use and meaning problems and confusions exist relating to ‘environmental and world heritage values’, that there is potential for problems with effective communication and credible natural resource management and science because of these unresolved language and meaning issues, and that these problems are evident in underlying language and concept processing as well as in text-based and informal communication contexts. A clear management challenge in the protected area management domain is the management of environmental discourse for effective research, monitoring, and management of protected environments. It is recommended that the importance and role of language in designating, specifying, and communicating about important environmental constructs relating to human-environment interactions, conservation, and management be given a clearer and distinct status as an important and neglected research area and need.

Table of Contents

Statement of Access	i
Declaration Concerning the Electronic Copy of this Thesis for Library Deposit	i
Statement of Sources	ii
Declaration on Ethics	ii
Statement on the Contribution of Others	iii
Acknowledgements	iv
Abstract	v
Table of Contents	vii
List of Tables	xii
List of Figures	xiii
Typographic Conventions	xiv
Glossary	xv
1. POSING THE QUESTION: INTRODUCTION	1
Research Focus	12
Research Objectives	12
Research Questions	13
Thesis Structure and Outline	13
2. CONFUSION ABOUT VALUES IN THE ENVIRONMENTAL CONTEXT	16
Introduction	16
Problems with the Discourse of Environmentalism	17
Emotive Rhetoric and Normative Language	19
Operational versus Normative Terminologies	21
Defining and Operationalising ‘Value’ and ‘Values’	22
‘Values’ as a Concept and Theorised Construct	27
Measuring ‘Values’	34
Ranking	35
Rating	37
Concept Mapping	40
Text analysis	42
Methodologies and Measurements Suited to a Study of Language Use and Meaning	44
3. PAST THEORY, MEASUREMENT AND MEANINGS	47
Introduction	47
The Nature of Meaning	48
Connotative Meaning	50
Denotative Meaning	53
Operationism.	54
The Development of Background Knowledge	56
Semantic Network Theories	58

Problems with semantic network theories.	58
Social Representations Theory	59
Background Knowledge and its Influence on the Construction of Meaning	62
Language, Communication and Meaning Representation	66
The ‘Orderliness’ of Language	67
Paradigms and Syntagms	69
Vocabulary Richness	70
Using Distributional Information to Represent Meaning	71
4. A TEXT ANALYSIS OF ‘VALUES’ DISCOURSE	75
Introduction	75
Meaning Operationalised	76
Method	76
Sampling	77
Group Selection	77
Document Selection	79
Exclusions	82
Unitizing: Text Unit Selection	85
Defining Context: Pseudo-paragraphs	85
Recording: Computer Aided Text Analysis Software	87
Confirmation of the Distribution ‘Orderliness’	87
Vocabulary Diversity	88
Reducing	89
Function Word and Proper Noun Exclusions	90
Lemmatisation	91
Phrase and Idiom Combinations	92
Part of Speech and Word Sense Exclusions	93
Frequency Threshold	96
Correspondence Analysis and Results	99
Discussion	104
Group Keyword Profiles	104
Shared Vocabulary	106
Document Examples	111
Cluster Analysis and Results	123
Window Size to Measure Co-occurrence	124
Resetting Frequency Thresholds	125
Hierarchical Clustering	126
How Many Clusters? Stopping Rules	126
Hierarchical Tree Graphs: Dendrograms	127
Reading the Clusters	127
WTMA Dendrograms and Cluster Solutions	127
CRC Dendrograms and Cluster Solutions	132
CAFNEC Dendrograms and Cluster Solutions	140
Case Clusters	143
Discussion: Comparative Performance of the Similarity Measures	144
Sample Size	144
Window Size	145
Word Stemming	145
Going Further	146
5. COMPARING LOCALISED AND GENERAL CONTEXTS	148
Introduction	148

The Corpus	148
BNC Online Version	149
Method: Creating Sub-corpora	149
Results	150
Keyword Frequencies	150
Co-occurrences	151
Values Subsets	155
Further Subcorpora Comparisons	157
Discussion	159
6: LEXICAL FACILITATION OF MEANING: THE ROLE OF BACKGROUND KNOWLEDGE	161
Introduction	161
The Lexical Decision Task	162
Method	166
Design	166
Participants	166
Apparatus	167
Stimulus Items	167
Procedure	168
Results	169
ANOVA Analyses of Response Times and Errors	171
Age as a Covariate	175
Discussion	176
7. MAPPING THE DIMENSIONS OF 'VALUES': MEANINGS IN A CONCEPTUAL VALUES SYSTEM	179
Introduction	179
Semantic Networks and Concept Maps	182
Concepts and Categories	183
Similarity Judgements	185
Multidimensional Scaling and Sorting	185
Item Generation	188
Participants	189
Materials	189
Procedure	190
Concept Items	191
Item Reduction	193
Method: Sorting and Rating	194
Participants	194
Materials	197
Procedure	198
Results: Concept Structure	198
Data Matrices	199
Proximity Analyses: MDS	200
Concept Map: Total Combination	201

Cluster Analysis	205
Rating Task Scores	206
Reliability Analysis	210
Discussion	213
Alternative Interpretations	214
Kellert's Biophilia Typology	215
Schwartz's Motivational Continuum	221
Conclusions	226
8. UNRESOLVED ISSUES, QUESTIONS, THEORETICAL INSIGHTS AND IMPLICATIONS	230
Is the Confusion Real?	232
Are There Practical Consequences?	236
What are the Underlying Factors and Processes?	238
What Insights and Understandings are Offered?	241
Evaluation of the Methodologies	242
Limitations	244
Implications	245
Conclusion	247
References	249
Appendix 1a	266
Frequency Details of Document Items in the Sampling Frame for Three Organisations	266
Appendix 1b	267
WordStat Default Exclusion List	267
Appendix 2a	268
Lexical Decision Task Stimuli for Four Conditions: High-frequency Environment, Low-frequency Environment, High-frequency Control and Low-frequency Control, and Nonword Fillers	268
Appendix 2b	269
Response Times and Error Rates: Items	269
Mean Response Times in Milliseconds and Mean Percentage Error Rates as a Function of Group, Source and Sample Frequency across Items	269
Appendix 2c	270
z-Skewness and z-Kurtosis Scores	270
RT Data - Subjects	270
RT Data - Items	270
Error Data - Subjects	270
Error Data - Items	270
Appendix 2d	271
Mean Percentage Error Rate Frequencies across 60 Participants	271
Environment Words High Frequency Condition	271
Environment Words Low Frequency Condition	271
Control Words High Frequency Condition	271
Control Words Low Frequency Condition	271
Mean Percentage Error Rate Frequencies across 21 Items for Two Groups	272
Environment Words High Frequency Condition	272
Environment Words Low Frequency Condition	272
Control Words High Frequency Condition	273
Control Words Low Frequency Condition	273
Appendix 2e	274
ANOVA Tables: Participants	274

Analysis of Variance for Mean Response Times by Participants	274
Analysis of Variance for Mean Percentage of Errors by Participants	274
ANOVA Tables: Items	275
Analysis of Variance for Mean Response Times by Items	275
Analysis of Variance for Mean Percentage of Errors by Items	275
Appendix 2f	276
ANCOVA Table: Age as Covariate	276
Analysis of Covariance for Participant Response Times with Age as a Covariate with Group, Keyword Sample Frequency and Corpus Source	276
Analysis of Covariance for Participant Error Rates with Age as a Covariate with Group, Keyword Sample Frequency and Corpus Source	276
Adjusted Mean Response Times and Error Rates: ANCOVA Analysis	277
Adjusted Mean Response Times in Milliseconds and Adjusted Mean Percentage Error Rates as a Function of Group, Source and Sample Frequency across Participants	277
Appendix 3a: Listing task	278
Appendix 3b: Sorting and Rating Tasks	281
Excerpt from Sorting Task Recording Sheet	284
Excerpt from Rating Task Recording Sheet	284
Appendix 3c: Mean Rating Scores	285

List of Tables

Table 1.	A Selection of Definitions for Value and Values	26
Table 2.	Kluckhohn's Five Value Orientations Common to all Human Groups	33
Table 3.	Descriptive Data for Word Counts and Instances of VALUES, in Documents by Group of Origin	83
Table 4.	Type-token Relationships for the Sample Documents and Three Group Sub-samples	89
Table 5.	Phrases Meeting the Criteria of a Two-word Minimum and Six-word Maximum	93
Table 6.	Examples of Included and Excluded VALUES Occurrences	94
Table 7.	Keyword and Occurrence Counts for the Sample and Three Sub-samples	95
Table 8.	Keyword and Case Frequencies for 100 Keywords by Group using the Criteria of Keyword Frequency >24 and Case Frequency >14	98
Table 9.	WordStat Correspondence Analysis Statistics for Three Subgroups of the Independent Variable (WTMA, CRC, CAFNEC) and 100 Keywords	100
Table 10.	WTMA: Statistics for Five Clusters Derived Using Cosine Theta	130
Table 11.	CRC: Statistics for Clusters 1-5 (of 11) Derived Using Cosine Theta	136
Table 12.	CRC: Statistics for Cluster 6 (of 11) Derived Using Cosine Theta	137
Table 13.	CRC: Statistics for Cluster 7 (of 11) Derived Using Cosine Theta	138
Table 14.	CRC: Statistics for Clusters 8-11 Derived Using Cosine Theta	139
Table 15.	CAFNEC: Statistics for Four Clusters Derived Using Cosine Theta	142
Table 16.	Comparative Frequencies (f) of VALUES Occurrences in Four Forms for Science and Social Sub-corpora	150
Table 17.	Examples of Word Stimulus Items by Source and Keyword Sample Frequency	168
Table 18.	Mean Response Times in Milliseconds and Mean Percentage Error Rates as a Function of Group, Source and Sample Frequency across Participants	170
Table 19.	Response Counts and Percentages for Groups by Relevance: Environmental and Personal	191
Table 20.	Mean Response Counts by Group and Relevance for each of 12 Noun Phrase Items	193
Table 21.	Cross-tabulation of Self-Selected Category Association by Group as Frequencies and Percentages of the Total Sample Count	196
Table 22.	Statement List: 81 Single Words and Phrases Generated from the Listing Task, in Alphabetical Order by Short Item Name	203
Table 23.	Ten Highest-rated Items and Ten Lowest-rated Items for 'Discussion of the Management of Values in the Wet Tropics World Heritage Area'	207
Table 24.	Ten Highest-rated Items and Ten Lowest-rated Items for 'Discussion of the Presentation of Values in the Wet Tropics World Heritage Area'	208
Table 25.	Ten Highest-rated Items and Ten Lowest-rated Items for 'Discussion of the Protection of Values in the Wet Tropics World Heritage Area'	208
Table 26.	Cronbach's Alpha for Ratings of Items within each Cluster	210
Table 27.	81 Statements and Short Item Names Sorted by Cluster: Total Combination	212
Table 28.	Nine Categories of Biophilia Values	216

List of Figures

Figure 1. Australia, (c) copyright Commonwealth of Australia (Geoscience Australia), and the Wet Tropics World Heritage Area in north eastern Queensland (www.wettropics.gov.au).	10
Figure 2. Bilogarithmic plot of word frequency against frequency rankings (4,857 unique types).	88
Figure 3. Bilogarithmic scatter plot of keyword and case frequencies for 2,512 keywords in 68 cases.	97
Figure 4. Two-dimensional correspondence map for three subgroups of the independent variable (WTMA, CRC, CAFNEC) and 100 keywords, using a case frequency threshold of 15 and a keyword frequency threshold of 25. ('values' was recoded to 'valuez' to avoid word stemming from plural to singular)	102
Figure 5. Two-dimensional correspondence map for three subgroups of the independent variable (WTMA, CRC, CAFNEC) and 246 keywords, using case and keyword frequency thresholds of 10. (Note that 'Cairns', the name of a town in the Wet Tropics region, appears as 'cairn' as a result of the word stemming procedure)	109
Figure 6. Keyword dendrogram for 31 keywords from the WTMA sub-sample: Jaccard's coefficient.	129
Figure 7. Keyword dendrogram for 31 keywords from the WTMA sub-sample: cosine theta.	129
Figure 8. Keyword dendrogram for 136 keywords from the CRC sub-sample: Jaccard's coefficient.	133
Figure 9. Keyword dendrogram for 136 keywords from the CRC sub-sample: cosine theta.	134
Figure 10. Keyword dendrograms for 24 co-occurring keywords in CAFNEC text: Jaccard's coefficient.	141
Figure 11. Keyword dendrograms for 24 co-occurring keywords in CAFNEC text: cosine theta.	141
Figure 12. Comparative percentages of co-occurrence between 'values' and 22 target words in two BNC sub-corpora against an Environment category.	153
Figure 13. Comparative percentages of 'values' instances according to context category for two BNC sub-corpora.	155
Figure 14. Comparative percentages of co-occurrence between the word 'values' and 22 target words in the World Finance and Culture BNC sub-corpora against an Environment category.	158
Figure 15. Disordinal interaction in response times between word source and sample frequency, with error bars showing standard error.	173
Figure 16. Ordinal interaction in response times between group and word source, with error bars showing standard error.	174
Figure 17. Scree plot using ratio MDS analysis with maximum precision, with objective function values for 1, 2, 3, 4, 5, and 6 dimensions.	201
Figure 18. Total Combination: Two-dimensional configuration of the 81 statements showing an Affective dimension (negative/positive) on the horizontal axis and a Social Orientation dimension (socio-physical/socio-cultural) on the vertical axis.	204
Figure 19. Concept map (Total) showing the seven clusters in two dimensions.	213
Figure 20. Two-dimensional configuration of the 81 statements showing values categories determined using Kellert's biophilia typology.	218
Figure 21. Two-dimensional configuration of the 81 statements showing values categories determined using Schwartz's motivational continuum.	223

Typographic Conventions

This document is a thesis, not a manuscript being submitted for publication. As such, APA formatting and typographic conventions have been used throughout except for certain purposes, where APA conventions have been ignored in favour of readability. The following conventions in this thesis are noted for the reader.

Italics

Italics are used for the quotations at the beginning of each chapter. In these cases, quotations are as per their original source with the exception of this typographic use of italics.

Italics are also used to emphasise some words or phrases, and to identify the anchors of a scale.

SMALL CAPITALS

To identify them as study items, keywords and keyword phrases from the text analysis are printed in small capitals

LARGE CAPITALS

Large capitals are used to identify themes, concepts and some linguistic examples.

Quotation marks: Double or Single

“Double inverted commas”

For any material quoted from other sources double quotation marks are used, with the exceptions of block quotations and quotations within quotations. Quotation marks are omitted from block quotations, and single marks are used for quotations within quotations.

‘Single inverted commas’

APA guidelines suggest that double marks be used for any first use of ironic comments, slang, and invented or coined expressions. For improved readability of this thesis, in all such instances I adopt the use of single inverted commas as suggested in the Australian Government *Style manual* (6th ed.). Single inverted commas are also used throughout to maintain awareness of ‘values’ as the item under study.

Spacing: Single or Double

While APA convention specifies double spacing throughout, in this thesis single spacing is used for all block quotations and all Tables.

[*sic*]

To draw attention to spelling errors or gendered language in quoted material I use the italicised word *sic* in square brackets. An exception has been made in the case of *behavior*, simply because it occurs in quoted sources with some frequency, and is not a misspelling, as such, but rather the convention of another country.

Indigenous

In accordance with advice in the Australian Government *Style manual* (6th ed.), capitalisation of the first letter in this word is maintained throughout, as it refers specifically to Australian Indigenous people as distinct from indigenous peoples of the world.

Glossary

Much of the work contained in this thesis is interdisciplinary in nature, and employs terms that are either specific to one discipline or that are used in different ways in two or more disciplines. Consequently, this glossary has been provided to explain terms used herein that might not be familiar to the reader, or familiar but in a different sense to that adopted here. Glossary entry descriptions and definitions are from several sources, which are listed at the end of the glossary. Sources are indicated within the entries. Where only one source is provided, that is the sense adopted for this thesis; where no source is given the current author has specified the relevant sense.

Application/s: The natural occurrence of a word in written or spoken discourse; the intended meaning. In this thesis, ‘application’ is used interchangeably with ‘use’.

Concept: Reber and Reber (2001) provide two denotations for concept: “A complex of objects all of which share some attribute(s) or properties”, and “the internal, psychological, representation of the shared attributes”. The latter is similar to Babbie’s (1999) ‘conception’: “The technical term for those mental images in our mental file drawers, is conception....The terms associated in our separate minds make it possible for us to communicate and eventually agree on specifically what we will mean by those terms. The process of coming to an agreement is conceptualization and the result is called a concept.” Rather than considering a ‘concept’ as a collective, agreed-upon and shared image, this thesis adopts Cruse’s (2004) description: “Concepts are vital to the efficient functioning of human cognition. They are organized bundles of stored knowledge which represent an articulation of events, entities, situations, and so on in our experience.” A ‘conceptual system’, on the other hand, is here considered as a multidimensional collation of individual representations.

Connotation: (cf. denotation) Anderson’s (1990) definition of connotation is adopted here: “The connotation of a word is the set of distinctions, or rule [*sic*], for deciding whether an object, action, or property is a member of the class of objects, actions, or properties that constitutes the denotation of the word. This use of connotation should not be confused with the common meaning of affective coloration.”

Construct: “The least confusing way to use this term is to treat it as a rough synonym of concept, at least in so far as both are basically logical or intellectual creations. Essentially one infers a construct whenever one can establish a relationship between several objects or events” (Reber & Reber).

Content Analysis: “A research technique for the objective, systematic, and quantitative description of the manifest content of communication” (Smith, 2005).
“The analysis of frequencies in manifest content of messages using the identification and counting of key units of content as the basis of its method” (O’Sullivan et al., 1994).

Content Words: (cf. function words) “These are the *semantically* important parts of a sentence, that is to say, the nouns, verbs, adjectives, adverbs. They are often described as an “open class” of words because new ones are constantly being invented and there seems no limit to how many of them there can be” (Smith).

Context: Two of the senses by which Reber and Reber define context are pertinent here: “Generally, those events and processes (physical and mental) that characterize a particular situation and have an impact on an individual's behaviour (overt and covert)”, and “in linguistics, the surrounding words, phrases and sentences that are components of the meaning of any given word, phrase or sentence”.

In this thesis, ‘context’ is considered in both of these senses: Firstly, the specific circumstances (i.e. temporal, cultural, physical, historical, emotional) within which an action or event takes place and, secondly, in the surrounding words, phrases and sentences.

Co-occurrence: “Simultaneous, but not necessarily contiguous, presence of occurrences of two given words in a fragment of text (sequence, sentence, paragraph, neighbourhood of occurrence, corpus part, etc.)” (Lebart, Salem, & Berry, 1998).

Corpus: “Limited set of texts upon which the study of a linguistic phenomenon is based. In lexicometrics, a set of texts that are combined for comparison purposes, serving as a basis for a quantitative study” (Lebart, Salem, & Berry).

Dendrogram: “Graphic representation of a hierarchical cluster analysis, showing the progressive inclusion of clusters” (Lebart, Salem, & Berry).

Denotation: (cf. connotation) Reber & Reber define denotation thus: “Meaning conveyed by the objects or instances to which a word refers or, by extension, by the generic idea or concept that is represented by that word.”

This thesis adopts Anderson’s description: “To maintain a distinction between specific and general reference, I will use the traditional term denotation to indicate the entire class of entities associated with a word.”

Discourse Analysis: “The systematic analysis of a spoken or written discourse, and thus an important source of objective research data for the study of higher-order cognition” (Smith).

Function Words: (cf. content words) “These are the *syntactically* important parts of a sentence, that is to say, the prepositions, conjunctions, and pronouns. Unlike content words, they are often described as a “closed class” of words because there are comparatively few of them to start with and new ones are only rarely added” (Smith).

Keyword: The term ‘keyword’ comes from computer technologies whereby search statements are constructed using keywords or phrases that are significant to the topic content, and used to find information (synonym: Type).

Meaning: “The import of a signification. The product of culture” (O’Sullivan et al.). “On its face, the thesis that resolving word meanings requires a considerable amount of reasoning based on context and world knowledge may seem to be incompatible with the view that accessing word meanings is a ‘module’ that is ‘impenetrable’ to such influences. However, I am not necessarily saying that stereotyped word senses do not get accessed, nor that the early stages of the process could not be routine. What I am saying is that it is a mistake to equate these transient throughputs with meaning” (Anderson, p. 15).

Occurrence: “A singular instance of ‘use’. Each instance of a keyword in a corpus” (Lebart, Salem, & Berry). (synonym: Token)

Operationalisation/operationalism: “Conceptualization is the refinement and specification of abstract concepts, and operationalization is the development of specific research procedures (operations) that will result in empirical observations representing those concepts in the real world” (Babbie).

“Essentially, it argues that the concepts of science be operationalized - that they be defined by, and their meaning limited to, the concrete operations used in their measurement....In the final analysis, many of the critical terms and concepts of psychology carry a 'thingness' or a 'deep' meaning that is simply not captured by even the most thorough operational characterization” (Reber & Reber).

Phrase: A phrase consists of several words, but is not grammatically complete enough to constitute a clause. Alternatively, it is “a syntactic structure that consists of more than one word but lacks the subject-predicate organisation of a clause”. (Smith)

Practice: “The repetition of an act or series of acts (Cruse).

“Any behavior that is customary or traditional, particularly within a particular culture” (Reber).

For this thesis, 'practice', 'application' and 'use' are used interchangeably throughout.

Pragmatics: “Pragmatics is the science of communicational motivation, that is to say, ‘of the aspects of meaning and language use that are dependent on the speaker, the addressee, and other features of the context of utterance’” (Smith).

“The study of the interpretation of utterances and more specifically how the context of situation influences their meaning. Traditionally the study of meaning has focused upon the meaning of words or sentences as if meaning inhered within the linguistic expression itself and was ultimately determined by the linguistic system. Pragmatics, however, emphasizes the role of context in determining meaning” (O’Sullivan et al.).

Referent: “Literally, the thing referred to [hence often seen as “noun referent”]. ‘A term used in philosophical linguistics and semantics for the entity (object, state of affairs, etc.) in the external world to which a linguistic expression relates’” (O’Sullivan et al.).

“The entity in the real world that is indicated or picked out by word, phrase or expression. Strictly speaking only concrete objects or events can be considered as referents, although some authors will stretch the term to cover abstractions which can be operationalised” (Reber & Reber).

Representation: “A thing that stands for, takes the place of, symbolizes, or represents another thing. In studies of perception and cognition one often sees reference to the mental representation of a stimulus event which, depending upon theoretical orientation, may be characterized as a direct mapping of the stimulus (direct realism), an elaboration of the stimulus (constructivism), a mental code of it (idea, image) or an abstract characterization of it (proposition)” (Reber & Reber).

Rhetoric: The persuasive use of a word for linguistic effect.

Sense: “I will define the sense of a word as the set of distinctions the word conveys in a particular circumstance of use. A more common usage is to equate sense with the set of circumstances in which the word is used in a serious, literal-minded fashion. To keep the two meanings of sense straight, I will use another traditional term, connotation, for the nonspecific meaning” (Anderson).

Token (cf. type): “A specific utterance in linguistic form of a linguistic expression. In 'happiness begets happiness' there are three word tokens but only two word types” (Reber & Reber). Used throughout this thesis as a synonym for ‘occurrence’.

Type (cf. token, keyword): “The form of a word corresponding to identical occurrences in a corpus” (Lebart, Salem, & Berry).

“A class of utterances or words defined so as to represent a coherent group for the purpose of determining a type-token ratio” (Reber & Reber). ‘Type’ is used throughout this thesis as a synonym for ‘keyword’.

Type-token ratio (TTR): “In studies of language, the ratio of the number of types to the number of tokens in a corpus of language. In the most frequently used sense the count of tokens is the total number of words in the corpus and the count of types is the total number of different words. The closer to 1.0 the ratio is the greater the verbal diversity the person displays. Such ratios are often used in analysis of verbal sophistication of children” (Reber & Reber).

Use: “[use, law (or principle) of. The not surprising generalization, first formalized around the turn of the century by E. L. Thorndike, that responses, functions, associations, etc., which are practiced, exercised or rehearsed (I.e. 'used') are strengthened relative to those which go unused” (Reber & Reber). Naturally occurring word instantiations; in practice (used interchangeably with ‘application’)

Vocabulary: “Set of distinct words (types) found in a corpus” (Lebart & Salem). “The full compendium of words that an individual knows”, or “any specifically circumscribed list of words. When this last meaning is intended, a qualifier is typically used to denote the conditions” (Reber).

Glossary Sources

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