

---

# Contents

1. A Grammatical Theory with Mathematical Properties, 1
  - 1.0 Introduction, 1
  - 1.1 Partially Ordered Entry Dependence, 1
  - 1.2 Likelihood Inequalities Within Dependence, 5
  - 1.3 Reductions on Entries; Transformations in the Set of Sentences, 8
  - 1.4 The Informational Interpretation, 9
  - 1.5 The Reduction System; Daggered Sentences, 11
  - 1.6 Sentence Analysis, 18
  - 1.7 Properties of the Grammatical System, 19
  - 1.8 Overview, 24
  - 1.9 Note on Method, 26
2. The Base Sublanguage, 33
  - 2.0 Properties of the Entry System; Entry Order Recapitulated, 33
    - 2.01 Argument Requirement, 33
    - 2.02 Linear Form of the Sentence, 36
    - 2.03–2.05 Indicators, Carriers: Words and Affixes that Are Not Ordered Entries, 37
    - 2.03 Operator-Indicator *-s*, 37
    - 2.04 Argument Indicators, 40
      - 2.041 Prepositions and Case, 40
      - 2.042 *that*, 40
      - 2.043 *-ing*, 41
      - 2.044 *Whether ... or*, 49
      - 2.045 Infinitive, 52
      - 2.046 Summary, 54

- 2.05 Carrier *be, do*, 54
- 2.06 Subsets, 55
  - 2.060 Not in Base, but in Reductions, 55
  - 2.061 Likelihoods, 56
  - 2.062 Likelihood-Ordering; Coherent Selection, 58
  - 2.063 Domains of Reduction: Broad and Strong Selection, Rejection, 60
  - 2.064 Grammatical Subclasses, 62
- 2.07 Multiple Classification, 65
  - 2.070 Against Multiple Classification, 65
  - 2.071 Homonyms, 65
  - 2.072 Co-occurrence Ranges, 65
  - 2.073–2.074 One Morpheme Apparently in Different Classes, 66
  - 2.073 Due to Simple Zeroing, 66
  - 2.074 Due to Metaphor and Manner, 67
  - 2.075 Residual Multiple Classification, 68
- 2.1–2.6 Dependence Classes of Words, 70
- 2.1 Zero-Order Arguments, 70
  - 2.10 Null Dependence, 70
  - 2.11 Indefinites, 70
  - 2.12 Quantity Nouns, 72
  - 2.13 Classifier Nouns, 72
  - 2.14 Proper Names, 73
  - 2.15 Other Subsets, 73
  - 2.16 Quoted and Located Material, 74
- 2.2 First-Order Operators, 74
  - 2.20 Introduction, 74
  - 2.21  $O_n$ , 74
  - 2.22  $O_{nn}$ , 75
  - 2.23  $O_{nnn}$ , 76
- 2.3 Second-Order Operators: Unary, 77
  - 2.30 Operating on Operators, 77
  - 2.31  $O_o$ , 77
  - 2.32  $O_{on}$ , 80
  - 2.33  $O_{no}$ , 83
  - 2.34  $O_{nno}$ , 84
- 2.4 Binary Second-Order Operators: Conjunctions, 85
  - 2.40 Operators on Two Sentences, 85
  - 2.41 Subordinate Conjunctions, 85
  - 2.42 Coordinate Conjunctions, 86
  - 2.43  $O_{noo}$ , 87

- 
- 2.5 Metalinguistic Addressing; Statement of Sameness, 87
    - 2.50 Addressing Requirements, 87
    - 2.51 For Relative Pronouns, 89
    - 2.52 For Zeroing of Parallel Material, 92
    - 2.53 For Zeroing of Co-arguments, 93
    - 2.54 Unaddressed Pronouns, 94
    - 2.55 *I, you*, 95
    - 2.56 The Sameness Statement, 96
  - 2.6 Metalinguistic Assertion Operator *I say*, 97
    - 2.60 Metalinguistic Material in Sentences of the Language, 97
    - 2.61 Presence of Metalinguistic Operators, 98
    - 2.62 Zeroing of *I say*, 99
    - 2.63 Direct Discourse; *I, you*, 100
    - 2.64 *Not; and, or*, semicolon, 101
    - 2.65 Adverbs on *say*, 102
    - 2.66 Reductions Referring to *I say*, 102
  - 3. Reductions Producing All Other Sentences, 107
    - 3.0 Properties of the Reduction System, 107
      - 3.1 Linearizations and Transpositions, 109
        - 3.10 Introduction, 109
        - 3.11 Front Positioning, 109
        - 3.12 After Zeroing of *which is*, 115
        - 3.13 Coordinate Interruption, 116
        - 3.14 Transport of *and, or* Residues, 117
        - 3.15 Tense before Subject, 117
        - 3.16 Length Transposition, 119
        - 3.17 Permutations, 120
      - 3.2 The Relative (*wh*) Pronouns, 120
        - 3.20 Modifiers, 120
        - 3.21 What Is Pronounced, 121
        - 3.22 Relation to Antecedent, 123
        - 3.23 The *wh*-Words, 124
        - 3.24 Restrictive Relative Clause, 124
        - 3.25 Multiple Relative Clauses, 126
        - 3.26 Reductions of *wh*-Pronouns, 126
      - 3.3 The Unaddressed Pronouns and Related Ones, 127
        - 3.30 Introduction, 127
        - 3.31 *He, she, it*, 127
        - 3.32 Relation to Antecedent, 131
        - 3.33 Other Referential Nouns, 133
        - 3.34 *-self*, 134
        - 3.35 Referential Use of Quantifiers; *One*, 135

- 3.4 Repetitional Zeroing, 136
  - 3.40 General Conditions, 136
  - 3.41 Parallel Zeroing under *and, or*, 139
  - 3.42 End-zeroing under Conjunctions, 143
  - 3.43 Under Repetition-Favoring Conjunctions and Operators, 146
  - 3.44 Subject Zeroing, 147
  - 3.45 Under  $O_{no}$ ,  $O_{nno}$ ,  $O_{on}$ , 148
- 3.5 Low-Information Zeroing, 150
  - 3.50 Informationless at Entry, 150
  - 3.51 Constants, 151
  - 3.52 Indefinites and Classifiers, 153
  - 3.53 Indefinites and Classifiers as Compound Heads, 155
  - 3.54 Zeroed Operators with Broad Selection, 157
  - 3.55 High Likelihood with Respect to Particular Co-occurrences, 158
  - 3.56 Low Information with Respect to Neighboring Sentences, 163
  - 3.57 Zeroing of Performatives, 164
  - 3.58 Status of the Non-Repetitional Zeroings, 165
- 3.6 Low-Information Variants, 166
  - 3.60 Morphophonemics and Suppletion, 166
  - 3.61 Variants of the Indicators, 167
  - 3.62 Morphophonemic Variants of Words, 168
  - 3.63 Variants of Word Sequences, 169
  - 3.64 Intonation, 170
  - 3.65 Compound Words, 170
  - 3.66 Suffixes from Compounds, 173
  - 3.67 Prefixes from Operators, 181
- 4. Word Classes, 187
  - 4.0 Introduction, 187
  - 4.1 Aspectual Classes of Verbs and Predicates, 188
  - 4.2 Adverbs, 191
  - 4.3 Subordinate Conjunctions, 192
  - 4.4 Outside the Major Classes, 197
- 5. The Noun Phrase, 199
  - 5.0 Properties of Nouns, 199
  - 5.1 Underived Nouns, 200
    - 5.11 Zero-Order Argument Nouns, 200
    - 5.12 Indefinites; Demonstrative Pronouns, 201
    - 5.13 Set and Fragment Nouns, 204
    - 5.14–5.16 Underived Nouns as Operators, 205
    - 5.14 Underived Nouns with the Syntax of *-er*, 206
    - 5.15 Classifier Nouns: Noun Members of  $O_n$ , 208

- 5.16 Predicate Nouns on Sentences: Noun Members of *O<sub>o</sub>*, 209
- 5.17 Nouns in Adverb Position, 211
- 5.2 Derived Nouns and Arguments, 211
  - 5.20 Arguments Compounded with Nouns, 211
  - 5.21–5.23 Nouns Derived from Operators Modifying Zero-Order Arguments, 212
    - 5.21 Agentive Nouns, 212
    - 5.22 Product Nouns, 214
    - 5.23 Fragment Nominalization, 218
  - 5.24–5.26 Nominalized Sentences and Word Sequences, 220
    - 5.24 Sentences as Arguments, 220
    - 5.25 Nominalized Sentences, 221
    - 5.26 Noun Phrase minus Noun, 225
    - 5.27 Summary, 226
- 5.3–5.6 Expanded Noun Phrase, 227
- 5.3 Modifiers, *wh*, 227
  - 5.31 Relative Clause, 227
  - 5.32 Left Modifiers, 229
  - 5.33 Adjective Order, 231
  - 5.34 Compounds, 233
  - 5.35 Apposition, 236
  - 5.36 *The*, 237
- 5.4 *And*-Residues, 244
- 5.5 Quantifiers, 244
  - 5.50 Quantifiers on Sentences, 244
  - 5.51 The Scale Construction: *two feet long*, 245
  - 5.52 Count Nouns, 250
  - 5.53 Plural, 252
  - 5.54 Numbers, 257
  - 5.55 Portion and Aggregate Words, 260
  - 5.56 Plural Quantifiers, 262
  - 5.57 *Pre-the*, 263
- 5.6 Gender and Case, 264
- 5.7 Referential Pronouns, 264
- 6. The Verb Phrase, 265
  - 6.0 Introduction, 265
  - 6.1 Tense, 265
    - 6.11 Tense from *before*, *after*, 265
    - 6.12 Tense Carried Over, 269
    - 6.13 Present Tense, 272
    - 6.14 Tense-aspect, 274
    - 6.15 Durativity of Operators, 277
    - 6.16 Use of Tense for Evidence, not Time, 277

- 6.2–6.4 Relation of Operator to Its Arguments, 279
  - 6.2 Zero-Order Arguments, 279
  - 6.3 Sentences as Arguments, 281
    - 6.31 *That*, 282
    - 6.32 Infinitive, Subjunctive, 283
    - 6.33 *Whether*, 284
    - 6.34 *-ing*, 285
  - 6.4 Two-Part Objects, 286
  - 6.5 Preverbs, 289
    - 6.50 Lower Subject Same as Higher, 289
    - 6.51 *Have -en*, 290
    - 6.52 *Be -ing*, 294
    - 6.53 *Do*, 297
    - 6.54 The Auxiliaries, 298
    - 6.55 Preverbs on *to V*, *Ving*, 301
    - 6.56 Preverbs on Nominalized Verbs, 302
    - 6.57 Extensions of *be*, 305
  - 6.6 Modifiers of Operator and Sentence, 305
    - 6.60 Sentence and Its Modifier Each Asserted, 305
    - 6.61 *-ly*, 307
    - 6.62 Adverb Order, 308
    - 6.63 Sentence Adverbs, 310
    - 6.64 Privative and Restrictive Adverbs, 312
    - 6.65 Subordinate Clauses, 313
  - 6.7 Subsets of Verbs, 314
    - 6.71 Reciprocals, 314
    - 6.72 Collectives, 316
    - 6.73 *Respectively*, 317
  - 6.8 Derived Verbs, Zero Causatives, 317
  - 6.9 Pro-verbs, 319
- 7. Forms Due to Metalinguistic Operators, 321
  - 7.1 The Negative, 321
    - 7.11 *Not*, 321
    - 7.12 *Not* in Complex Sentences, 322
    - 7.13 *Not*, *no* on Nouns, 325
    - 7.14 Operators Selecting or Rejecting *not*, 326
    - 7.15 Modifiers with *not*: *any*, 327
  - 7.2 The Interrogative, 331
    - 7.21 Yes-No Questions, 331
    - 7.22 Disjunctive Questions, 333
    - 7.23 *Wh*-Interrogatives, 334
    - 7.24 Derivation, 337

- 7.25 What Can Be Questioned, 340
- 7.26 Multiple Interrogatives, 345
- 7.27 Tag Question, 346
- 7.28 Questions with Subordinate Clauses, 348
- 7.29 Interpretation, 350
- 7.3 The Imperative, 351
- 7.4 Direct Discourse, 352
- 8. Transformed Sentences, 355
  - 8.1 *What fell is the book*: Extraction, 355
  - 8.2 *It*-Sentences, 359
  - 8.3 *There*-Sentences, 361
  - 8.4 The Passive, 362
    - 8.41 The Components, 363
    - 8.42 The Domain, 364
    - 8.43 Nonpassive *be -en*, 365
    - 8.44 Special Cases, 366
  - 8.5 Other Object-Subject Permutations, 367
    - 8.51 The Middle: Intransitive of Participation, 368
    - 8.52 The Instrumental, 369
  - 8.6 Adjectivized and Nominalized Operators, 371
    - 8.61 *Ving* and *Ven* as Left Modifiers, 371
    - 8.62 Adjectivized Operators, 372
    - 8.63 Nominalized Operators, 372
    - 8.64 *Very* on *-ing*, 372
  - 8.7 Constructions with *to*, 374
    - 8.71 Subjunctive *O<sub>no</sub>* Arguments: *anxious to*, *eager to*, 374
    - 8.72 Preverb: *is to*, 374
    - 8.73 *The man to do it*, 374
    - 8.74 *He is wise to do it*, 375
    - 8.75 *He is easy to please*, 375
  - 8.8 Adverbial Apposition, 376
  - 8.9 Analogic Adjectives from Adverbs, 377
- 9. Conjunctive Constructions, 379
  - 9.0 Introduction, 379
  - 9.1 The Comparative Constructions, 380
    - 9.11 The Comparative, 380
    - 9.12 Forms Related to the Comparative, 386
  - 9.2–9.4 The Metalinguistic Conjunctions, 387
    - 9.2 *And*, 388
    - 9.3 *Or*, 390
    - 9.4 The Secondary Sentence: Semicolon, 391
    - 9.5 Repeated Sentences, 392

- 9.6 Bisentential Verbs, Conjunctional Particles, 393
  - 9.60 Subordinate Conjunctions, 393
    - 9.61 *Therefore*, 395
    - 9.62 *However*, 396
    - 9.63 *So*, 397
    - 9.64 *Too*, 399
    - 9.65 *Either*, 400
    - 9.66 *Only, except, but*, 401
    - 9.67 *Even*, 404
  - 9.7 Metaphor, 405

Appendix: Sentence Analyses, 409

Index, 415