

# Contents

<b>In lieu of a foreword</b> . . . . .	1
1. Illustrative examples of the problems addressed in this book . . . . .	1
1.1. Categories and lexical meanings . . . . .	1
1.2. Objects and their parts . . . . .	3
2. Main topics discussed in this book. . . . .	5
3. Acknowledgements. . . . .	7

## Chapter 1

<b>The evolutionary-synthetic approach and its concepts</b> . . . . .	9
1.1. Cognitive units: the perceptual vs. functional dichotomy . . . . .	9
1.2. General development theory . . . . .	12
1.2.1. Development cycle . . . . .	12
1.2.2. Complete schema of development cycle . . . . .	14
1.2.3. Partial differentiation stage: the main and supplementary parts of objects. . . . .	14
1.2.4. Complete differentiation stage: role relationships . . . . .	15
1.2.5. Partial and complete integration stages . . . . .	16
1.2.6. “Flower” schema of a partitive system . . . . .	18
1.3. A basic-level concept and its development into a hierarchical system of parts . . . . .	20
1.3.1. Defining basic-level concepts . . . . .	20
1.3.2. Extended definition of a basic concept . . . . .	20
1.3.3. Artifactual and natural basic concepts . . . . .	23
1.3.4. Notional words and their basic meanings . . . . .	26
1.3.5. Concepts and their parts. . . . .	26
1.3.6. Development of concepts into systems of parts . . . . .	29
1.3.7. Flower schemas of partitive systems. . . . .	31
1.3.8. Differentiation of adjoining objects. . . . .	32
1.3.9. The partitive system of an object as a pathway of knowledge . . .	34
1.4. Structural unity of phenomenal objects. . . . .	35
1.4.1. Role system of situation participants. . . . .	35
1.4.2. Role system of object properties (adjectival system) . . . . .	36

1.4.3. Full lexical meaning . . . . .	37
1.4.4. Phenomena learning schemas . . . . .	39
1.4.5. Main factor in the development of mental representations . . . .	40
1.4.6. Reference relation (Frege and Chomsky) . . . . .	42
1.4.7. The language of thought and its embodiment in different languages. . . . .	44
1.4.7.1. Linguistic embodiment of the units of the language of thought . . . . .	44
1.4.7.2. Linguistic expression of partitive relationships . . . . .	46
1.5. The nature and structure of human categories. . . . .	47
1.5.1. Definition of dual category . . . . .	48
1.5.2. “Age” structure of human categories. . . . .	55
1.5.3. Basic meanings of the words <i>tree</i> and <i>banana</i> . . . . .	58
1.5.4. Distinction between semantic and pragmatic components in lexical meaning . . . . .	60
1.5.5. Model of a fruit tree. . . . .	62

## Chapter 2

### The genesis of human concepts and propositions. The initial stage

<b>of language. Aristotle and Chomsky on thought and language. . . . .</b>	<b>64</b>
2.1. Introduction . . . . .	64
2.1.1. The history of the problem. . . . .	64
2.1.2. The proposed solution . . . . .	66
2.2. Mental representations of agentive situations . . . . .	68
2.2.1. The notion of situation. . . . .	68
2.2.2. Situation development . . . . .	70
2.2.3. The situation ‘PERSON IS RUNNING’ . . . . .	71
2.2.4. Identification of locomotive situations . . . . .	72
2.2.5. Specific situations . . . . .	73
2.2.6. Defining the term ‘situation’ . . . . .	75
2.3. The development of basic situations into systems of protoconcepts . . .	77
2.3.1. Experimental data . . . . .	77
2.3.2. Decomposition of situations into Talmy’s components. . . . .	79
2.3.3. Definition of protoconcepts . . . . .	80
2.3.4. Definition of role relationships . . . . .	81
2.3.5. Integration of protoconcepts into protosituations . . . . .	83
2.3.6. The level of protoconcepts in the situation tree. . . . .	84
2.3.7. Identification of situations of running . . . . .	85
2.3.8. Specific protoconcepts. . . . .	86
2.3.9. Clarifying the identification process . . . . .	89

2.3.10. Situations of observable actions . . . . .	90
2.3.11. Hundreds of thousands of protoconcepts . . . . .	91
2.3.12. Thousands of situations . . . . .	93
2.4. The development of protoconcepts into systems of object and motor concepts . . . . .	95
2.4.1. Experimental data . . . . .	95
2.4.2. The formation of object concepts . . . . .	96
2.4.3. The formation of a motor concept (action) . . . . .	97
2.4.4. The formation of a predicative relationship . . . . .	98
2.4.5. The stage of conceptual integration . . . . .	100
2.4.6. The conceptual level of a development tree . . . . .	102
2.4.7. Specific concepts . . . . .	104
2.4.8. Clarifying the identification process . . . . .	106
2.4.9. The formation of conceptual situations of actions . . . . .	107
2.4.10. The outcome of the third cycle in the child's development . . . . .	109
2.5. Matrices of concepts, propositions, and language . . . . .	110
2.5.1. Conceptual classification of the visible world. Conceptual matrix . . . . .	111
2.5.2. Propositional classification of the visible world. Propositional matrix . . . . .	113
2.5.3. The conceptual language of thought. Thought procedure . . . . .	116
2.5.4. The linguistic matrix as an initial stage of the child's language . . . . .	117
2.5.5. Distinguishing between general-cognitive and language-specific processes. Initial stages in language evolution . . . . .	120
2.5.6. Quick growth of the child's lexicon . . . . .	123
2.6. Aristotle and Chomsky on thought and language . . . . .	124
2.6.1. Aristotle's approach . . . . .	124
2.6.2. Chomsky's approach . . . . .	126
2.6.3. On the purpose of language . . . . .	130
2.6.4. Why are there languages, and so many of them? . . . . .	135
2.7. Appendix. Does a child's language affect his formation of concepts? (supplement to subsection 2.3.6) . . . . .	137
2.8. Conclusion . . . . .	140
2.8.1. On the indecomposability of concepts into elementary concepts . . . . .	140
2.8.2. Leaps in the child's cognitive development . . . . .	143
2.8.3. Spatial actions . . . . .	144

**Chapter 3****The effect of culture on language:**

<b>The case of the Amazonian tribe Pirahã</b> . . . . .	146
3.1. Introduction . . . . .	146
3.1.1. On the Pirahã language: does culture affect language? . . . . .	146
3.1.2. Sapir and Baudouin de Courtenay on the effect of culture on language . . . . .	147
3.2. Models of activity development for individuals and ethnic groups . . .	150
3.2.1. The uniform progress of an ethnic group. . . . .	150
3.2.2. The Pirahã tribe and pottery. . . . .	152
3.2.3. Activities: crossing the Rubicon . . . . .	154
3.2.4. The minimal model of human activity development. . . . .	154
3.2.5. The model of human activity development: basic concepts . . .	156
3.2.6. Case example: medical activity and its effects on the language and thought of a ethnogroup . . . . .	158
3.2.7. Case-study: stages in the development of Al-Sayyid Bedouin Sign Language, ABSL . . . . .	163
3.2.8. The final stage of human civilization. . . . .	165
3.2.9. <i>Homo perfectus</i> . . . . .	167
3.3. Systematization of mental representations and conceptualization of linguistic meanings . . . . .	172
3.3.1. Two principles of development . . . . .	173
3.3.2. The child's conceptualization of color and other properties . . .	176
3.3.3. Does a child's language affect the process of differentiation? . . . . .	178
3.3.4. Words for color in Pirahã: the role of color in the life of modern industrial societies and the Pirahã Indians . . . . .	178
3.3.5. Lexical indicators of time . . . . .	181
3.3.6. Counting and count words. . . . .	183
3.3.7. Absence of the passive voice. . . . .	185
3.3.8. On the universality of human concepts . . . . .	188
3.3.9. Concluding remarks. . . . .	190
3.4. On the relative nature of 'exotic' linguistic properties . . . . .	191
3.4.1. Two principles of perception . . . . .	191
3.4.2. 'Exotic linguistic property' as a relative feature . . . . .	196
<b>References</b> . . . . .	197
<b>Name index</b> . . . . .	214
<b>Subject index</b> . . . . .	219
<b>Lexical index</b> . . . . .	228