CONTENTS

77		
Fron	oto C	haoro
LIVI	uu	Diece

Pref	face pa	ige vii
List	t of abbreviations	xv
Gen	eral Introduction	1
	COMMENTARY	
	The title	23
	Wittgenstein's preface	23
	Russell's introduction	23
	The relation of W.'s problems to Russell's philosophy	24
I	The world as a totality of facts in logical space (1-1.21) The Tractatus conception of fact	27
11	Atomic facts, objects, and logical space (2-2.0141) The meaning of Sachverhalt; Why the set of atomic facts must be unique; The concept of space; The form of an object	38
Ш	Objects as the substance of the world (2.02-2.027) Logical atomism in the Tractatus; The uses of 'form' in the Tractatus	57
IV	The structure and form of atomic facts (2.0271-2.034) The form of an atomic fact	65
v	Reality and the non-existence of atomic facts (2.04-2.063) Negative facts	69
VI	Pictures of facts (2.1-2.15(1)) The semantical terminology of the Tractatus; The picture theory	72

VII	The form of representation as a link between picture	e
	and reality (2.15 (2)-2.17) Can a set of objects unite in more than one atomic fact?	page 81
VIII	The impossibility of depicting the form of representation (2.171-2.174)	86
IX	The logical picture (2.18-2.21) Pictures in general	88
x	The sense of a picture (2.22-2.225) The verification of propositions	92
XI	Thoughts as logical pictures (3-3.05)	95
ХII	The proposition in its projective relation to the world (3.1-3.13)	98
XIII	The propositional sign is a fact (3.14-3.144) Conventional expression of sense	101
xıv	Completely analysed propositions as composed of names (3.2-3.221) Is the propositional sign a token or a type?	107
xv	The analysis of propositions (3.23-3.261)	111
XVI	The meaning of names (3.262-3.3) Difficulties about the naming relation; Summary: How an elementary proposition represents	114
XVII	Expressions and variables (3.31-3.314)	122
xvIII	The logical proto-picture; propositions as functions of expressions (3.315-3.318) How far does the logical form of a complex determine the logical form of its elements?	125
XIX	Sign and symbol contrasted; modes of signification (3.32-3.322)	130
xx	Confusions in ordinary language and the need for an improved ideography (3.323-3.33) Logical syntax and the Begriffsschrift	132
XXI	Rejection of the theory of types (3.331-3.333) The theory of types; The self-reference of propositions	145

XXII	Essential and accidental features of symbols		
	(3.334-3.3442) Notations for truth-functions	page	150
XXIII	The proposition as a point in logical space		
	(3.4-3.42) Co-ordinates		154
XXIV	Ordinary language disguises thought; philosophy		
	as 'critique of language' (3.5-4.0031)		158
xxv	Propositions as pictures (4.01-4.021)		161
xxvı	Propositions as showing and saying (4.022-4.023) Can facts be described?)	164
xxvII	The sense of a proposition as a resultant of the		
	meanings of its constituents (4.024-4.0312(1))		171
xxvIII	'Logical constants' do not stand for objects		
	(4.0312(2))		173
XXIX	Multiplicity of a proposition (4.032-4.0412)		174
xxx	Truth-value and sense; negation (4.05-4.0641)		177
XXXI	The nature of philosophy; philosophy is not a		
	science (4.1-4.116)		185
XXXII	The impossibility of representing logical form		
	(4.12-4.1213)		188
	The notion of 'showing'; The limits of language		
XXXIII	Formal properties and formal relations		
	(4.122–4.123)		195
XXXIV	How formal features are expressed (4.124-4.126)		197
xxxv	Variables as signs for formal concepts		
	(4.127–4.12721)		201
xxxvi	How to express the general term of a formal series	3	
	(4.1273)		203
xxxvii	The impossibility of counting logical forms		
	(4.1274–4.128)		205
xxxvIII	Propositions can be analysed (4.2-4.24)		206
XXXIX	Definitions and identities (4.241-4.243)		210

Combinations of atomic truth-possibilities and their	r	
expression in truth-tables (4.25-4.31) The verification of elementary propositions; The interpreta-	page 2	212
tion of truth-tables		
Propositions as truth-functions of elementary		
,		219
Truth-tables as propositional signs; there are no		
'logical objects'; assertion (4.44-4.442) How logical signs symbolize; Assertion	2	23
Tautology and contradiction as limiting cases of		
truth-functions (4.45-4.4661)	2	28
Tautologies and contradictions as 'degenerate cases'		
The general propositional form (4.5–5.01)	2	36
The distinction between 'argument' and 'index'		
(5.02)	2	38
The consequence relation (5.1-5.134)	2	40
There is no causal nexus (5.135-5.1362)	2.	43
Tautology and contradiction 'say nothing'		
(5.1363-5.143)	2.	45
Probability (5.15-5.156) The nature of probability	2	47
Operations as expressing internal relations		
(5.2-5.254)	2	58
Propositions as resulting from truth-operations on		
elementary propositions (5.3-5.32)	2	62
There are no 'logical objects'; negation (5.4-5.442)	26	63
The primitive notions of logic (5.45-5.452)	26	6 5
The nature of logic (5.453-5.4541)	26	67
Logical signs as punctuations (5.46-5.4611)	26	69
The general form of a proposition (5.47-5.472)	2'	70
The autonomy of logic; self-evidence; how		-
nonsense arises (5.473-5.4733)	27	72
	expression in truth-tables (4.25-4.31) The verification of elementary propositions; The interpretation of truth-tables Propositions as truth-functions of elementary propositions (4.4-4.431) Complex propositions and the picture theory; How complex propositions depend on elementary ones Truth-tables as propositional signs; there are no 'logical objects'; assertion (4.44-4.442) How logical signs symbolize; Assertion Tautology and contradiction as limiting cases of truth-functions (4.45-4.4661) Tautologies and contradictions as 'degenerate cases' The general propositional form (4.5-5.01) The distinction between 'argument' and 'index' (5.02) The consequence relation (5.1-5.134) There is no causal nexus (5.135-5.1362) Tautology and contradiction 'say nothing' (5.1363-5.143) Probability (5.15-5.156) The nature of probability Operations as expressing internal relations (5.2-5.254) Propositions as resulting from truth-operations on elementary propositions (5.3-5.32) There are no 'logical objects'; negation (5.4-5.442) The primitive notions of logic (5.45-5.452) The nature of logic (5.453-5.4541) Logical signs as punctuations (5.46-5.4611) The general form of a proposition (5.47-5.472) The autonomy of logic; self-evidence; how	The verification of elementary propositions; The interpretation of truth-tables Propositions as truth-functions of elementary propositions (4.4-4.431) Complex propositions and the picture theory; How complex propositions depend on elementary ones Truth-tables as propositional signs; there are no 'logical objects'; assertion (4.44-4.442) How logical signs symbolize; Assertion Tautology and contradiction as limiting cases of truth-functions (4.45-4.4661) Tautologies and contradictions as 'degenerate cases' The general propositional form (4.5-5.01) The distinction between 'argument' and 'index' (5.02) The consequence relation (5.1-5.134) There is no causal nexus (5.135-5.1362) Tautology and contradiction 'say nothing' (5.1363-5.143) Probability (5.15-5.156) The nature of probability Operations as expressing internal relations (5.2-5.254) Propositions as resulting from truth-operations on elementary propositions (5.3-5.32) There are no 'logical objects'; negation (5.4-5.442) The primitive notions of logic (5.45-5.452) The nature of logic (5.453-5.4541) Logical signs as punctuations (5.46-5.4611) The general form of a proposition (5.47-5.472) The autonomy of logic; self-evidence; how

LVIII	Relativity of the primitive logical operations	
	(5.474-5.476)	age 275
LIX	Joint negation as the basic logical operation	
	(5.5-5.511)	276
LX	Essential aspects of a logical notation, illustrated by	
	the case of negation (5.512-5.5151)	278
LXI	Generality (5.52-5.525)	280
LXII	Description of the world by completely general	
	propositions (5.526-5.5262)	287
LXIII	Identity (5.53-5.534)	290
LXIV	The axiom of infinity; propositions about the	
	number of objects in the universe (5.535-5.5352) The axiom of infinity	295
LXV	Ostensibly non-extensional occurrences of	
	propositions (expressions of belief, judgement, etc.)	
	(5.54-5.5423)	298
LXVI	The forms of elementary propositions; logic and its	
	'application' (5.55-5.5571)	302
LXVII	The limits of language (5.6-5.61)	307
LXVIII	Solipsism; the 'metaphysical subject' (5.62-5.641)	308
LXIX	The general form of a truth-function (6-6.01)	311
LXX	Numbers (6.02-6.031)	313
	The foundations of arithmetic in Principia Mathematica	
LXXI	Logical truths as tautologies; the nature of logical	
	propositions (6.1-6.113) Are logical principles tautologies?	317
LXXII	Tautologies reveal the formal properties of the	
	universe (6.12-6.1202)	320
LXXIII	Calculation of tautologies; logical propositions are	
	expendable (6.1203-6.1221)	322
LXXIV	Logical propositions are a priori (6 1222-6.123)	325
LXXV	Logic and 'essential' validity; the axiom of	
	reducibility (6.1231-6.1233)	326

LXXVI	Logic presents the 'scaffolding' of the world;	
	there are no surprises in logic (6.124-6.1251) page The connexion between logical propositions and the world	ge 329
LXXVII	Proof in logic (6.126-6.13)	337
LXXVIII	The nature of mathematics; mathematical	
	propositions as equations (6.2-6.2323)	340
LXXIX	Mathematical method (6.233-6.241)	342
LXXX	Science and the a priori; induction; causation	
	(6.3–6.34)	344
LXXXI	The nature of scientific theory, illustrated by the	
	case of mechanics (6.341-6.35) The analogy of the network; Newton's mechanics	347
LXXXII	Causation; the 'passage of time'; incongruity of	
	counterparts (6.36-6.362)	361
LXXXIII	Induction and the 'laws of nature' (6.363-6.372)	364
LXXXIV	The independence of the world from my will	
	(6.373–6.374)	366
LXXXV	The incompatibility of colours (6.375-6.3751)	367
LXXXVI	The world is without value (6.4-6.41)	370
LXXXVII	Ethics; reward and punishment; the will	
	(6.42-6.43)	371
LXXXVIII	Death and immortality (6.431-6.4312)	373
LXXXIX	The mystical (6.432-6.522)	373
LXL	The right method of philosophy; how the	
	Tractatus is to be understood (6.53-7) Is the Tractatus self-defeating?	376
Sigla		387
German co	ncordance	389
Bibliograp	hy	416
Index of re	ferences to passages from the 'Tractatus' in other works	422
	assages paraphrased	429
General in	dex	430
		10