

CONTENTS

Contents	3
0 Introduction and overview	7
1 Preliminaries	11
1.1 Introduction	11
1.2 Martingales in discrete time	11
1.3 Martingale results in continuous time	22
1.4 Classification of stopping times	23
1.5 Filtration enlargement and applications	25
1.6 Discussion on the concepts	26
2 Weber's optimal stopping problem	31
2.1 Statement of the type of Problems	31
2.2 Solution of Problem 1	35
2.3 Solution of Problem 2	42
2.4 Particular case	44
2.5 Continuous-time Approximation	45
3 The Alternative Choice Problem	49
3.1 Example and Background	49
3.2 Main results	51
4 New developments of the Odds Theorem	57
4.1 Introduction	57
4.2 Stopping On The Last Success: Unknown Odds, Random Length, Recall and Other Modifications	60
4.3 The Role of the k -fold Multiplicative Odds	67
4.4 Applications	68
5 A non monotone stopping problem	71
5.1 Introduction	71
5.2 Statement and discussion	72
5.3 Solution by dynamic programming	74
5.4 The Bruss-Yor argument	75

5.5	Conclusion	77
6	One step more in Robbin's problem	79
6.1	Introduction	79
6.2	Solution for the cases $n = 2$ and $n = 3$	82
6.3	Solution for the case $n = 4$	84
6.4	The optimal stopping rule for $n = 4$	91
7	Tying strings and stopping	93
7.1	Description of the n -game	93
7.2	Related work	95
7.3	Definitions and first results	100
7.4	Pure cycles and their distribution	106
7.5	Defining cycles by feature	109
7.6	Application to the maximum length cycle	119
7.7	Stopping on cycles	124
	Conclusion	129
	Bibliography	131