

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

Determinants of Perceived Training Transfer

*A thesis presented in partial
fulfilment of the degree of Masters of
Science in Psychology at
Massey University*

**Warren James Saunders
2000**

Abstract

Organisational literature suggests that training is an area of exponential growth (Goldstein, 1986, 1991, 1993; Quinones & Ehrenstein, 1997). Despite this, and a high level of expenditure on training, the application of learnt skills on the job is low (Curry, Caplan, Knipple, 1994). The deficit between investment in training and the 'generalisation' of trained skills to the job has been referred to as the 'training transfer problem' (Michalak, 1981). Research has identified a range of aspects in the work environment, trainee, and training design that can influence transfer of training (Baldwin & Ford, 1988). This study attempts to assess these influences on the effectiveness of an in-house training intervention. Guided by Holton's (1996) 'Evaluative Research & Measurement Model', a quasi-experimental design was used to confirm influences of 'intervening conditions' on perceived training transfer. Intervening conditions included *Learner Readiness*, *Performance Self-Efficacy*, *Motivation to Transfer*, *Transfer Effort*, *Performance – Outcomes Expectations*, *Feedback/Performance Coaching*, *Supervisory Support*, *Supervisory Sanction*, *Peer Support*, *Resistance*, *Personal Outcomes – Positive/Negative*, *Opportunity to Use Learning*, *Personal Capacity for Transfer*, *Perceived Content Validity*, and *Transfer Design*. Analysis of employee perceptions indicated that training resulted in a perceived change in work place practices for those who had participated in training. Regression results evidenced the influence of the intervening conditions on perceived training transfer. Of the 16 intervening conditions in Holton's (1996) model, only *Transfer Effort – Performance Expectations*, *Feedback/Performance Coaching*, *Supervisory Support*, *Resistance*, *Perceived Content Validity*, and *Transfer Design* impacted on perceived training transfer significantly. Findings are discussed in the context of design, sampling, statistics, and limitations; recommendations for training practitioners and organisations, as well as suggestions for future researchers are outlined.

Dedication

*I would like to dedicate this Master's to
the memory of the siblings I never knew,
Kim Gilvray, and Jeannette Saunders.*

*I also dedicate this thesis to the women of my
family for all the hardships they have endured.*

Acknowledgements

Obtain access to a population in the organisational context requires dedication and careful negotiation. The researcher needs to be aware that in order to obtain an organisational sample, the investigation must in some way bring benefit to the organisation, particularly those of the private sector. Once a population is obtained, research in the organisational context demands both patience and compromise. Throughout the research process one needs to be in constant contact with the organisation to ensure smooth and proper delivery and administration of instrumentation to participants'. These difficulties were eased with the belief and support of two members of the ANZ banking Group to which I am grateful: Vic Hewson (former ANZ HR Manager), and Alma McNicole (current ANZ HR Manager).

During the process of research, analysis and reporting I sought and received the advice of my primary and secondary supervisor, Dr. Gus Habermann and Dr. Sarah Leberman. Whilst Dr. Habermann gave valued guidance on matters of scale development, empirical research, and statistical analysis, Dr. Leberman provided sound advice on matters of research within training and the organisational context. Dr. Leberman furnished a valued qualitative counterbalance to Dr. Habermann's more quantitative perspective. During the write-up, both supervisors provided prompt and accurate editorial feedback, which lifted the final report to its present level.

I would like to extend my thanks to Professor Elwood F. Holton III, Ed. D. of *Louisiana State University* for allowing me to utilise his Learning Transfer Questionnaire (LTQ) and for providing council on issues of scale administration and data collection.

Special thanks to Nien-Tsu Cheng, his wife, Yueh-Ling Cheng, and their daughter, Maggie CJ Cheng for their friendship, encouragement, and support from conception to completion of both this thesis and my master's degree.

During the Autumn of this work, my mother, Frances Ralston, and her partner Roy Tregilgas provided a home in which I could complete the present work. I thank you both.

In the last week of this labour, Patricia Waite and Andy Dando's hospitality made the tedious task of referencing and final editing more bearable.

Finally, I would like to extend my thanks to those members of the ANZ Bank who recognised the benefits of participating in this research. I hope that the findings can assist you and your colleagues in receipt of more effective training programs.

TABLE OF CONTENTS

Dedication	i
Acknowledgments	ii
Abstract.....	iii
CHAPTER 1 INTRODUCTION	1
The Phenomenon	3
Motives	4
Theoretical & Practical Motivation	5
Research Objectives	8
Organisation of the Thesis	8
CHAPTER 2 TRAINING.....	11
A definition of Training for Organisations	11
Training, Learning, & Performance	13
Training Outcomes.....	14
Training Effectiveness	17
Contrasting Training Outcomes with Training Effectiveness	20
Training in Organisations: Why its Critical	21
Summary	24
CHAPTER 3 TRANSFER OF TRAINING	26
A DEFINITION OF TRAINING TRANSFER	26
THEORIES OF TRANSFER OF TRAINING	28
<i>Traditional Views on Transfer of Training</i>	28
Lateral & Vertical Transfer.....	28
Specific & Non-Specific Transfer.....	29
Literal & Figural Transfer.....	29
Near & Far Transfer.....	30
Positive & Negative Transfer.....	30
SUMMARY	31
Traditional Training Design Conditions	31
Learning Principles & Learning Theory of Training Transfer	31
Identical Elements.....	32
A cognitive View of Transfer	33
Schemata	34
Stimulus Variability.....	36
General Principles Approach	36
Conditions of Practice.....	37
<i>Massed Versus Distributed Practice</i>	37
<i>Whole Versus Part Training</i>	37
<i>Feedback</i>	38
<i>Over-learning</i>	39
SUMMARY	39

<i>Contemporary Training Design Conditions</i>	40
APPROACHES TO ENHANCING TRAINING TRANSFER	40
<i>Behavioural Self Management</i>	41
<i>Marx Relapse Prevention Model</i>	42
<i>Goal Setting</i>	43
<i>Models of Training Transfer</i>	44
LINKING TRAINING DESIGN, TRAINEE CHARACTERISTICS, & THE WORK	
ENVIRONMENT WITH TRAINING TRANSFER	44
Huczynski & Lewis Model	45
Noe Model	47
Baldwin & Ford Model of the Transfer Process	50
Systemic Model of Factors Predicting Training Outcomes	53
Stages of Transfer Model.....	54
Yelon MASS: A Model for Producing Transfer.....	56
Garavaglia Transfer Design Model.....	57
Tracey, Tannenbaum & Kavanagh Model of Transfer of Training.....	59
Cannon-Bowers, Salas, Tannenbaum, & Mathieu Model of Training Effectiveness	
.....	60
Holton's Evaluative Research & Measurement Model.....	63
<i>SUMMARY</i>	65
 CHAPTER 4 A TRANSFER CLIMATE FOR TRAINING	67
ORGANISATIONAL CLIMATE	68
A Meta-perspective on Organisational Climate.....	68
Structural Approach.....	69
Perceptual Approach.....	69
<i>Selection-Attraction-Attrition (SAA) Model</i>	70
<i>Collective Climate Model</i>	70
Interactive Approach.....	70
Cultural Approach.....	71
<i>Distinguishing Climate & Culture</i>	72
Conceptualisation & Criticisms of Organisational Climate.....	73
<i>Climates within Climate</i>	73
<i>Perceptions Versus Conditions</i>	74
Organisational Climate & Behaviour.....	74
<i>CONCEPTUALISATION OF TRANSFER CLIMATE IN THIS INVESTIGATION</i>	75
 CHAPTER 5 INTERVENING CONDITIONS	78
Influences on Transfer of training	79
<i>SECTION ONE</i>	79
TRAINEE CHARACTERISTICS	79
Learner Readiness	79
<i>Trainability: A Sub-Factor of Readiness</i>	80
<i>Choice to Participate: A Sub-Factor of Readiness</i>	80
Performance Self-Efficacy.....	82
Motivational Factors	85
Expectations	87
<i>SECTION TWO</i>	89
WORK ENVIRONMENT CHARACTERISTICS	89

SUMMARY	92
Social Support	93
Organisational Support - Feedback/Performance Coaching	93
Supervisory/Manager Support & Sanction	94
Peers Support, Peer Saction - Resistance/Openness to Change	97
Personal Outcomes - Postive/Negative	98
Ability	99
Opportunity to Use Learning	99
Personal Capacity for Transfer	101
Training Relevance - Perceived Content Validity	101
Transfer Design	102
 CHAPTER 6 THE PRESENT INVESTIGATION	103
INTRODUCTION	103
SECTION 1	103
AIMS & ASSUMPTIONS	103
Aims, Research Questions, & Hypothesis: Qualification	103
Section A	104
PRIMARY OBJECTIVE	104
Section B	104
Development of Psychometric Instruments	104
Aims	104
<i>The Perceived Transfer Questionnaire (PTQ)</i>	104
<i>The Learning Transfer Questionnaire (LTQ)</i>	104
Section C	105
Intra-Group Comparisons	105
Aim	105
Research Question	105
Hypothesis	105
Inter-Group Comparisons	105
Aim	105
Research Question	106
Hypothesis	106
Section D	106
Influence of General Input Characteristics on Perceived Training Transfer	106
Aim	106
Research Question	106
Hypothesis	106
Section E	108
The Influence of the Intervening Conditions on Perceived Training Transfer	108
.....	108
Trainee Characteristics Scales	108
Aims	108
Research Questions	108
Collective & Relative Predictive Power of 'Trainee Characteristics'	108
Hypotheses	108
Aggregate & Relative Predictive Power of Motivational Dimensions	109
Hypotheses	109
Work Environment Scales	109
Aims	109
Research Questions	109

<i>Collective & Comparative Predictive Power of the 'Work Environment'</i>	110
Hypotheses	110
<i>Composite & Relative Predictive Power of 'Ability Scales'</i>	110
Section F	111
<i>Replication of a theorised Relationship between the Intervening Conditions &</i>	
<i>Training Transfers</i>	111
Aim	111
Research Question	111
Hypothesis.....	111
SECTION 2	112
RESEARCH DESIGN	112
<i>Transfer of Training as the Criterion for Training Effectiveness</i>	112
<i>A Quasi-Experimental Design</i>	113
<i>The Evaluative Research & Measurement Model</i>	113
<i>Treatment & Control</i>	114
<i>Pre- and Post-testing</i>	114
<i>Independent & Dependent Variables</i>	116
<i>Ethics & Confidentiality</i>	116
<i>Validity</i>	117
SECTION 3	118
INSTRUMENTATION, SAMPLING, & DATA COLLECTION	118
Measuring the Dependent Variable: Perceived Transfer of Training	119
Part 1	119
PERCEIVED TRANSFER OF TRAINING SCALE (PTQ).....	119
Part 2	122
OPEN-ENDED QUESTION FOR THE PERCEIVED TRAINING	122
Part 3	123
Trainee Pass Rate	123
Measuring the Independent Variable	124
Treatment & Control	124
Perceived Transfer Climate	125
Part 1	125
THE LEARNING TRANSFER QUESTIONNAIRE (LTQ).....	125
Part 2	126
Open-ended Questionnaire for Supervisory Support	126
Part 3	126
Open-ended Questionnaire for Peer Support	126
Background Questionnaires	127
Background Questionnaire for Participants	127
Background Questionnaire for HR Manager, Training Designer & Facilitator ...	127
Sampling Procedure	128
Source & Selection of Sample	128
The Organisation.....	128
Criterion for Inclusion of Participants	129
Survey Procedure	130
Phase One	130
Phase Two.....	130
Phase Three	130

CHAPTER 7 ANALYSIS & RESULTS	131
INTRODUCTION	131
Data Analysis	132
<i>Section One</i>	132
PREPARATION OF DATA	132
Missing Data	132
Item Reversal	133
Index Generation	134
NORMALITY OF DISTRIBUTION.....	134
<i>Section Two</i>	135
Psychometric Properties of Scales	135
Sample Descriptive.....	137
Descriptive for Treatment Groups	139
<i>Section Three</i>	141
INTRA-GROUP COMPARISONS	141
<i>A CAUTION WITH RESULTS</i>	145
INTER-GROUP COMPARISONS	145
INFLUENCE OF GENERAL INPUT CHARACTERISTICS ON PERCEIVED TRAINING	
TRANSFER	149
DEPENDENT FACTOR	149
INDEPENDENT FACTORS	149
<i>Job Position X Treatment Condition Effects on Perceived Training Transfer</i>	149
<i>Gender X Treatment Condition Effects on Perceived Training Transfer</i>	150
<i>Ethnic Group X Treatment Condition Effects on Perceived Training Transfer</i>	151
<i>Age Group X Treatment Condition Effects on Perceived Training Transfer</i>	151
<i>Time in Organisation X Treatment Condition Effects on Perceived Training Transfer</i>	
.....	152
<i>Time in Job Position X Treatment Condition Effects on Perceived Training Transfer</i>	
.....	153
<i>Belief that training Improves job Performance X Treatment Condition Effects on</i>	
<i>Perceived Training Transfer</i>	153
<i>Belief that 'Training is tailored to the Job' X Treatment Condition Effects on Perceived</i>	
<i>Training Transfer</i>	154
<i>Self-directed Learning X Treatment Condition Effects on Perceived Training Transfer</i>	
.....	155
SUMMARY	155
<i>A CAUTION WITH RESULTS</i>	156
THE INFLUENCE OF THE INTERVENING CONDITIONS ON PERCEIVED TRAINING	
TRANSFER	156
Selection of Regression Models.....	156
THE DEPENDENT FACTOR	157
PREDICTORS.....	159
Regression Assumptions.....	159
COLLECTIVE & RELATIVE PREDICTIVE POWER OF 'TRAINEE CHARACTERISTICS'	161
AGGREGATE PREDICTIVE POWER OF 'MOTIVATIONAL DIMENSIONS'	161
MOTIVATION DIMENSIONS: SUB-SCALE OF TRAINEE CHARACTERISTICS.....	161
RELATIVE PREDICTIVE POWER OF 'MOTIVATIONAL DIMENSIONS'.....	162
COLLECTIVE PREDICTIVE POWER OF THE 'WORK ENVIRONMENT'	162
COMPARATIVE PREDICTIVE POWER OF 'WORK ENVIRONMENT SCALES'	163
COMPOSITE PREDICTIVE POWER OF THE 'ABILITY SCALES'	164
ABILITY SCALES: A SUB-SCALE OF THE WORK ENVIRONMENT'	164

<i>RESPECTIVE PREDICTIVE POWER OF THE 'ABILITY SCALES'</i>	165
THEORETICAL RELATIONSHIP BETWEEN INTERVENING CONDITIONS & PERCEIVED TRAINING TRANSFER	165
<i>Section Four</i>	167
QUALITATIVE DATA	167
Trained Groups Response to Qualitative Questions	167
Background Interviews with HR Manager, Training Designer, and Facilitator... ..	167
CHAPTER 8 DISCUSSION	169
Intra-Group Comparisons	171
Inter-Group Comparisons	173
Influence of General Input Characteristics on Perceived Training Transfer	174
The Influence of the Intervening Condition on Perceived Training Transfer	175
COLLECTIVE & RELATIVE PREDICTIVE POWER OF 'TRAINEE CHARACTERISTICS'	176
AGGREGATE PREDICTIVE POWER OF 'MOTIVATIONAL DIMENSIONS'	178
MOTIVATION DIMENSIONS: SUB-SCALE OF TRAINEE CHARACTERISTICS	178
RELATIVE PREDICTIVE POWER OF 'MOTIVATIONAL DIMENSIONS'	179
COLLECTIVE PREDICTIVE POWER OF THE 'WORK ENVIRONMENT'	180
COMPARATIVE PREDICTIVE POWER OF 'WORK ENVIRONMENT SCALES'	183
COMPOSITE PREDICTIVE POWER OF THE 'ABILITY SCALES'	185
<i>ABILITY SCALES: A SUB-SCALE OF THE WORK ENVIRONMENT'</i>	185
RESPECTIVE PREDICTIVE POWER OF THE 'ABILITY SCALES'	188
Theoretical Relationship between Intervening Conditions & Perceived Training Transfer	188
Methodological Limitations	190
Recommendations	193
Future Research	194
General Conclusions	196
References	197
Appendix I	218
Appendix II	220
Appendix III	225
Appendix IV	247
Appendix V	267
Appendix VI	271
Appendix VII	279

LIST OF FIGURES

FIGURE 2.1: KIRKPATRICK'S FOUR-LEVEL EVALUATION MODEL: ORIGINAL (1) & REVISED (2)	20
FIGURE 3.1: HUCZYNSKI & LEWIS (1988) MODEL OF FACTORS AFFECTING THE MANAGEMENT TRAINING TRANSFER PROCESS	47
FIGURE 3.2: NOE'S (1986) MODEL OF MOTIVATIONAL INFLUENCES ON TRAINING TRANSFER	50
FIGURE 3.3: BALDWIN & FORD'S (1988) MODEL OF THE TRAINING TRANSFER PROCESS	52
FIGURE 3.4:RICHEY'S (1992) SYSTEMIC MODEL OF FACTORS PREDICTING EMPLOYEE TRAINING OUTCOMES	54
FIGURE 3.5: FOXON'S (1994) STAGES OF TRANSFER MODEL	56
FIGURE 3.6: GARAVAGLIA (1994) TRANSFER DESIGN MODEL	59
FIGURE 3.7: TRACEY, TANNENBAUM, & KAVANAGH (1995) MODEL OF TRANSFER OF TRAINING	60
FIGURE 3.8: CANNON-BOWER, SALAS, TANNENBAUM, & MATHIEU'S (1995) COMPREHENSIVE MODEL OF TRAINING EFFECTIVENESS	62
FIGURE 3.9: HOLTON'S (1996) EVALUATIVE RESEARCH & MEASUREMENT MODEL.....	64
FIGURE 6.1: UNTREATED CONTROL GROUP DESIGN WITH PRE-TEST & POST-TEST	115
FIGURE 7.1: SCREE PLOT OF PERFORMANCE DEPENDENT VARIABLES FROM A VARIMAX FACTOR ANALYSIS	158
FIGURE 7.2: SCATTER PLOT OF STANDARDIZED RESIDUALS AGAINST STANDARDIZED PREDICTED VALUES FOR A FOUR PREDICTOR HIERARCHICAL MODEL.	160
FIGURE 7.3: NORMAL PLOT OF STANDARDIZED REGRESSION FOR THE FOUR-PREDICTOR SOLUTION FROM A HIERARCHICAL REGRESSION MODEL.	160

LIST OF TABLES

TABLE 3.3: THE SIX LINKAGES WITHIN BALDWIN & FORDS (1988) MODEL	53
TABLE 7.1: CRONBACH'S ALPHA COEFFICIENT FOR FACTORS FROM THE PTQ.....	136
TABLE 7.2: CRONBACH'S ALPHA COEFFICIENT FOR FACTORS FROM THE LTQ.....	137
TABLE 7.3: DESCRIPTIVES FOR GROUP CONDITION	138
TABLE 7.4: AGE DESCRIPTIVES FOR SAMPLE	138
TABLE 7.5: GENDER DESCRIPTIVES FOR SAMPLE	138
TABLE 7.6: ETHNICITY DESCRIPTIVES FOR SAMPLE	138
TABLE 7.7: AGE DESCRIPTIVES FOR TREATMENT GROUP	139
TABLE 7.8: GENDER DESCRIPTIVES FOR TREATMENT GROUP	139
TABLE 7.9: ETHNICITY DESCRIPTIVES FOR TREATMENT GROUP	139
TABLE 7.10: AGE DESCRIPTIVES FOR CONTROL GROUP.....	140
TABLE 7.11: GENDER DESCRIPTIVES FOR CONTROL GROUP	140
TABLE 7.12: ETHNICITY DESCRIPTIVES FOR CONTROL GROUP	140
TABLE 7.13: PAIRED T-TESTS FOR TREATMENT GROUP (TIME 1 & 2) PTT	143
TABLE 7.14: PAIRED T-TESTS FOR CONTROL GROUP (TIME 1 & 2) PTT	144
TABLE 7.15: INDEPENDENT SAMPLES T-TEST FOR TREATMENT GROUPS (TIME 1 & 2) PTT	148
TABLE 7.16: FACTOR LOADING FOR PTQ CHANGE VARIABLES.....	159