A personal construct model of adolescent risk-taking

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A PERSONAL CONSTRUCT MODEL OF ADOLESCENT RISK-TAKING

A thesis submitted in partial fulfilment of the requirements for the award of the degree of

Doctor of Philosophy (Clinical Psychology)

from the

UNIVERSITY OF WOLLONGONG

by

Lindsay Gregory Oades BA (Hons)

Department of Psychology

1999
DEDICATION

I dedicate this thesis to my friend in the first year Psychology tutorial who soon became my lover and later my wife. Alison Hemsley’s verve and enthusiasm for life continues to inspire me. Until now Alison has only known me as a student; we have travelled this ten year journey together. We started as “adolescent risk-takers” who were late to lectures. May we continue to take risks, without the lectures. Thankyou Alison.
ACKNOWLEDGMENTS

I choose first to thank the group of over 250 young people who so freely shared their experiences with me. My understanding of the human life-span has been eternally enriched by their stories.

Second, I would like to thank my supervisor Linda Viney who has had the courage to risk developing a Psychology that listens to people. Linda’s intellectual achievements inspired my move to Wollongong. Amidst all of the technicalities of research Linda is a person who has had the wisdom to understand the power of basic encouragement. Linda’s unceasing ability to listen and help me tighten my ideas has been greatly appreciated.

Third, I would like to thank the group of people and institutions who have been essential in completing this large work. I thank particularly Peter Caputi for his support with statistical procedures, alongside Rayomand Pestonji and Ross Colquhoun. I thank Karen Hemsley for the artwork in developing the grid methodology. I thank the NH&MRC for the Dora Lush scholarship awarded to me to complete this research. I thank also the many helpful people in the four secondary schools, two juvenile justice centres and the regional university who provided my necessary points of contact along the way.

Finally, I would like to thank my parents who have always encouraged and supported my education. It was mum who taught me from an early age, by her caring example, that there are people out there who suffer. It was dad who taught me, by example, to question and strive for excellence.
Abstract

This report describes the development of a personal construct model of adolescent risk-taking using two studies.

Study 1 explored three broad research questions regarding the process, structure and content of construing by adolescents of risk-taking. After a pilot study (n=19) using university-based adolescents, the first study involved 112 adolescents (57 males and 55 females) aged between 15 and 20 years from secondary school, university and juvenile correction settings in New South Wales, Australia. Data were collected in individual interviews.

Two new methodologies were developed in Study 1: The Experience Cycle Methodology (ECM) and The Risky Situations Grid Technique (RSGT). The ABC Technique and Content Analysis Scales of Psychosocial Maturity (CASPM) were also used. Important findings from Study 1 were: (a) Adolescents perceived situations as risky but were poor at predicting whether or when they would be in such situations; (b) 44% of adolescents spontaneously described a dilemma in terms of decision making between physical risk and psychosocial risk; and (c) Adolescents consistently reported Unprotected Sex, IV Drug Use and Passenger in a Fast Car as the three most risky situations.

To refine the model, Study 2 included 124 participants (68 males and 56 females) aged from 14 to 20 years also from school, university and juvenile correction settings. Similar methodologies to Study 1 were used. Five hypotheses were tested and the most important findings were: (a) Past Risk-Taking and Physical Risk Perception were significantly correlated to Intended Future Risk-Taking; (b) Construct Revision was significantly related to Confirmation/Disconfirmation; and (c) Almost 80% of participants who reported construct revision also reported tight predictions with high investment, or disconfirmation of their predictions, or both.

A final personal construct model of adolescent risk-taking was presented in the form of three propositions and six assumptions. The sampling, design and measurement of the two studies were evaluated. Suggestions for future research are provided and the clinical implications of the personal construct model of adolescent risk-taking are then discussed.
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CHAPTER 1

AN INTRODUCTION TO THIS RESEARCH
An Introduction to this Research

In this chapter I provide an introduction to this research by stating briefly the key aspects of the argument presented in following chapters. I describe then the two empirical studies involved in developing and refining the personal construct model of adolescent risk-taking. I describe the structure and style of presentation of this research report before providing a chapter-by-chapter summary of its contents.

Statement of Thesis

The term “risk-taking” has become increasingly applied to problematic behaviours of adolescents (Irwin, 1993). Researchers have proposed many models to understand and explain these behaviours. These models rely to varying degrees on biological, sociological or psychological explanations. In this thesis I apply the theoretical framework of personal construct psychology to the phenomenon of adolescent risk-taking (Kelly, 1955/1991) and link it to developmental principles (Irwin & Millstein, 1986; Jessor & Jessor, 1977; Udry, 1988). While personal construct psychology emphasises psychological aspects of human functioning, it does not exclude or deny the importance of biological and social factors. The importance of the social is “built in” to the definition of risk that I describe as part of the personal construct model of adolescent risk-taking, as is the biological.

Consistent with personal construct psychology, this model takes the individual’s personal perceptions as the focus of investigation. Hence, the personal construct model of adolescent risk-taking provides an alternative perspective from the numerous nomothetic models such as the Theory of Reasoned Action, the Health Belief Model and the Biopsychosocial Model of Risk Behaviour. Such models attempt to predict, statistically, risk-taking behaviour using group-based statistical techniques. The focus of the personal construct model of adolescent risk-taking is on how the individual predicts his or her own behaviour and then revises it after experimenting (Oades & Viney, 1997a).

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1 George Kelly's two volume "Psychology of Personal Constructs" was first published in 1955 in New York by Norton. This work was republished in 1991 in London by Routledge. Throughout this report the citation Kelly (1955/1991) is therefore used. Page numbers cited refer to the 1991 Routledge volumes.
Risk perception has become a popular theoretical concept within adolescent risk-taking literature. The personal construct model of adolescent risk-taking views risk perception as a form of prediction, in terms of Kelly's (1955/1991) view of "person as scientist". The model holds that such predictions are dynamic, changing as a result of the ongoing personal experimentation that is intensified during the period of adolescence. The personal construct model, however, does not limit itself to a simple relationship between perception of low risk causing high risk behaviour. Rather, the personal construct model holds that adolescents view behaviours in terms of situations in which multiple behaviours may occur (e.g., unprotected sex, drug use). The model also maintains that while adolescents perceive many of these behaviours as "risky" in a physical sense, they are not skilled at anticipating if or when they will be in such situations.

The personal construct model includes the notion of "psychosocial risk" in addition to the commonly researched "physical risk". Hence, from the individual's point of view, not performing a "risky behaviour" may involve a significant degree of "psychosocial risk". Hence the fundamental unit of the personal construct model of adolescent risk-taking is the "risky situation". The risky situation is a psychosocial context in which an adolescent may or may not choose actions that are risky in physical and/or psychosocial terms.

The personal construct model asserts that it is experiential knowledge of risky situations that is most important in understanding future behaviour. This also provides an alternative to the multitude of studies that have demonstrated a poor relationship between levels of declarative knowledge about "risk behaviour" and individuals' self-reported behaviour. The model assumes that many adolescents in Western urban contexts are taking risks already, and hence interventions should "tap into" this wealth of experiential knowledge rather than ignoring or denying its existence. Moreover, the personal construct model rejects any assumption that risk-taking is necessarily dysfunctional and asserts that much risk-taking, by definition, leads to change in an optimally functioning individual (Kelly, 1955/1991; Winter, 1992). This change, that may result from risk-taking, may be change that the individual prefers. I have developed the personal construct model of adolescent risk-taking with intervention in mind. The intervention of particular relevance is personal construct group-based intervention previously used to reduce unhelpful risk-taking (Viney, Truneckova, Weekes & Oades, 1997).
Two Studies to Develop and Refine a Personal Construct Model of Adolescent Risk-Taking

This thesis is based on two studies involving samples of Australian adolescents. A preliminary model was developed from key theoretical concepts of personal construct psychology before the commencement of the first study. The first study was designed to extend empirically the preliminary model. The first study involves 112 male and female adolescents aged between 15 and 20 years from three contexts: secondary school, university and a juvenile correction centre. I chose the three populations to understand a wider range of psychosocial contexts, levels of experience in risk-taking and how this experience may affect the individual's personal perceptions and intended future risk-taking. The first study was largely exploratory in nature. I used it to refine the personal construct methods employed in the second study. For this reason the first study involved broad research questions rather than specific hypotheses. After the first study I revised the preliminary model into an interim model. I derived hypotheses from the interim model to test in the second study.

The second study involved 124 adolescents of both sexes aged between 13 and 20 years, again from secondary schools, a regional university and a juvenile justice centre. To strengthen the robustness of the model, different secondary schools and a different juvenile justice centre were sampled. In the second study I regrouped the adolescents based on their level of experience of risk-taking into two groups: low and high experience risk-takers. The hypotheses from the interim model were tested in the second study. The results were discussed as part of the final personal construct model of adolescent risk-taking. The final personal construct model of adolescent risk-taking is presented as three empirically verified propositions and six theoretical assumptions.

The Presentation and Structure of this Research Report

I have written this report to maximise the use of first person writing style. This is appropriate for two reasons: (a) it is consistent with the personal emphasis of personal construct psychology; and (b) I conducted all of the interviews within this research and believe, consistent with post-positivist
methodologies appropriate to personal construct psychology, that I was not a neutral or objective researcher.

The report is deliberately structured in two sections: Part A includes a description of previous literature in adolescent risk-taking, culminating in the personal construct perspective on such risk-taking. This section is non empirical. Part B includes the empirical development and refinement of the personal construct model and its evaluation and implications. I have structured the report in 11 chapters to make research questions and hypotheses easily accessible and to divide the first study from the second study. As there are two studies, I have significantly reduced the chapter describing the method of the second study to avoid unnecessary duplication. In the description of the method of the second study I have only presented procedures that are different from the first study. I have referred the reader to the method section of the first study and appendices for any detailed descriptions.

I have structured the report so that the reader can understand the process of the development of the model rather than just the final product. That is, the report describes a preliminary model before the first study, an interim model before the second study, and a final model after the second study.

Summary of the Contents of this Research Report

In this chapter I have introduced the concept of adolescent risk-taking and shown how the personal construct model of adolescent risk-taking is essentially different from competing models. I described how this thesis is based on two studies before describing important aspects of the structure and presentation of this report.

In Chapter 2 I explore the important theoretical concepts of “identity” and “self” and how these relate to development during adolescence. This chapter forms an important basis for a central assumption of the personal construct model of adolescent risk-taking, which asserts that adolescent risk-taking is an experiment that assists the adolescent to develop their psychosocial identities.

In Chapter 3 I provide a more detailed description of various models others have used to explain and predict adolescent risk-taking. I describe briefly several models that constitute the nomothetic search for “predictors”
of risk-taking. I conclude the chapter by describing the narrative approach to adolescent risk-taking as an example of a non objectivist approach to this area.

In Chapter 4 I provide a contrast to most of the previous chapter by presenting key concepts from personal construct psychology. I then apply these concepts to adolescent risk-taking by providing personal construct definitions of risk and risk-taking. I introduce the notion of risk-taking as an experiment to develop identity as the guiding analogy of the personal construct model of adolescent risk-taking. I describe the Experience Cycle (Kelly, 1970), as the key personal construct theoretical concept underpinning the personal construct model of adolescent risk-taking. I conclude the chapter by presenting a preliminary personal construct model of adolescent risk-taking that assumes the definitions of risk and risk-taking described.

Chapter 5 begins Part B of the thesis by moving to the empirical section. In this chapter I describe the aim of the first study and the three research questions that relate directly to the preliminary model.

In Chapter 6 I provide the method of the first study used to answer the three research questions. This includes the personal construct methodologies developed to operationalise this model: the Risky Situations Grid Technique and the Experience Cycle narratives that develop into the Experience Cycle Methodology of the second study. The Experience Cycle Methodology is a semi-structured interview technique using the phases of Kelly's (1970) Experience Cycle to generate qualitative data about the experiences of risk-taking.

In Chapter 7 I present the results in terms of the three research questions relating to: the process of risk-taking, the structure of risk perception and the content of constructs related to identity and risk. I discuss these results for the three questions and provide an interim model from which I derive hypotheses that I test in the second study.

In Chapter 8 I state the seven hypotheses that I test in the second study. These hypotheses relate to the Experience Cycle Methodology and the interplay between the experience of risk-taking and intended future risk-taking.

In Chapter 9 I describe the method used to test the hypotheses of the second study. I provide only those methods that are significantly different from the method of the first study.

In Chapter 10 I describe the results of the second study. I outline firstly four examples of the qualitative results of the Experience Cycle Methodology: two involving significant physical risk and two involving significant
psychosocial risk. The four examples correspond to four of the nine elements used in the Risky Situations Grid Technique. This enables the reader to integrate directly qualitative and quantitative results. In the second section of the chapter I present the quantitative results to test the hypotheses.

In Chapter 11 I summarise the important findings and describe the final personal construct model of adolescent risk-taking. I review critically the strengths and weaknesses of this thesis and its two studies. I provide suggestions for further research to develop and refine the personal construct model of adolescent risk-taking, particularly the need for a longitudinal study. I discuss then broader implications for research in the area of adolescent risk-taking. I describe implications of the personal construct model of adolescent risk-taking for individual clinical work with adolescents. Finally, I review recent personal construct group work with adolescents designed to reduce unhelpful HIV related risk-taking (Viney, Truneckova, Weekes & Oades, 1997). I discuss how the results from the second study of this thesis can inform future group-based interventions with adolescents.
CHAPTER 2

ADOLESCENCE AND IDENTITY DEVELOPMENT
Adolescence and Identity Development

In this chapter I begin by describing three major challenges facing the developing adolescent: changing attachments, including the roles of friendships and family commitment; psychosexual development; and identity development. These challenges form the background of this thesis, as the chapters that follow all assume a life-span development approach in their conceptualisation of adolescent risk-taking. I discuss the third challenge of identity development in the second part of this chapter. I introduce different approaches to identity and self to position the personal construct model of adolescent risk-taking with contemporary views of self.

Adolescent Development

Adolescence is a unique developmental period. The adolescent undergoes significant changes in physical, cognitive and psychosocial functioning. Each of these changes influence the development of the adolescents' personal and social identities; how they see themselves and how they believe others see them. With physical growth, their appearance changes in a concrete manner. At a more abstract level, the maturation of cognitive processes allows the adolescents to be able to reflect on how others see and feel about them (Elkind & Bowen, 1979). This cognitive maturity also enables adolescents to begin to question previously accepted beliefs or value systems of parents and others. Along with the adolescent's physical, cognitive and psychosocial development, there is psychosexual development. The development of psychological maturity can be understood in terms of three important challenges: (a) changing attachments including roles of friendships and family commitment, (b) psychosexual development and (c) identity development. As I will demonstrate throughout this thesis, these three challenges are closely linked.

The first challenge for adolescents is the changes in their attachments through commitments to their friends and family (Bowlby, 1988). Adolescents change their definitions of friendship towards shared intimacy rather than mutual activities as they develop (Berndt, 1989). Hunter (1985) reported that most adolescents discussed their peer relationships with their friends (Barrett, 1977). An important research finding suggests that the most crucial single predictor of the future mental health and achievement of an adolescent is his
or her ability to get along with peers (Rutter & Garmezy, 1983). As adolescents become less dependent on their parents they transfer this dependence onto the peer group. At the same time they have increased cognitive capacity and begin to question the beliefs and values of their parents. Moreover, the adolescent begins to share personal information and find companionship with peers of both sexes rather than with parents or teachers (Buhrmester & Furman, 1987).

The second psychosocial challenge for adolescents is the resolution of the sexual selves and capacities to form heterosexual relations. The peer group offers a social context for the beginning of heterosexual relationships. As the segregation of the sexes begins to disappear, the peer group provides adolescents with security and role models as well as people with whom to talk. Research findings, not surprisingly, report that the typical adolescent friendship circle is quite large and fluid (Fischer, Sollie & Morrow, 1986). A large friendship circle radiates from the peer group involving members of either sex. The physical growth and cognitive maturation lead the adolescent into experimenting with sexual relations in a way that is modulated by psychosocial context including religious and moral beliefs. This arena has become more prominent of late with the threat of HIV infection to adolescents (Moore & Rosenthal, 1993). I will discuss these issues further in the next chapter in relation to adolescent risk-taking and condom use.

The third challenge is the development of an identity (Adams, Gullota & Montemayor, 1992). Erikson (1968) wrote extensively about this attempt to define oneself as a unique person. Contemporary research inspired by his writings, including the work of Marcia, Berzonsky and Viney is consistent with Erikson's contention that identity development is the primary task and crisis of adolescence. I discuss now the concepts of identity and self in more detail with reference to these authors.

The Concepts of Identity and Self

In recent years the traditional views of self and identity have changed within the social sciences (Cox & Lyddon, 1997). A particular view of self, based on Western individualism, has pervaded the numerous psychological theories. Of late, constructivist and postmodern schools have questioned the view of self as a stable, knowable and bounded entity. Such a view of self links the approaches that value empirical and quantifiable approaches to personality, such as trait theories. Cox and Lyddon (1997) discriminate between two root
metaphors that describe the differing approaches to self: one of "discovery", and one of "creation".

Cox and Lyddon (1997) link the notion of discovery of self vis-a-vis "finding oneself" or "self discovery", with the modernist and essentialist view of self originating possibly with Aristotle. These authors assert that Erikson's (1968) Identity, Youth and Crisis, which has been so influential in the area of adolescence and identity development, is based on the metaphor of discovery. Likewise, Cox and Lyddon (1997, p205-6) assert that Marcia's (1980) identity status paradigm, that effectively operationalised Erikson's theory, is also within the modernist paradigm. They state that both theories "tend to implicitly endorse modernist assumptions in that identity is viewed as progressive in nature, culminating in the achievement of an identity status or state". Cox and Lyddon (1997) view the position as modernist, as it follows a stage view of development in a linear direction.

Erikson (1982) described eight stages of development beginning in infancy and ending in old age: basic trust versus basic mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, identity versus identity confusion, intimacy versus isolation, generativity versus stagnation, integrity versus despair. For Erikson (1968) identity development was the central concern during late adolescence. Marcia (1980) extended this claim, using the dimensions of exploration and commitment in developing four identity status's that late adolescents may attain.

Marcia's (1980) work on identity status has guided much of the recent research in identity and identity formation. Patterson, Sochting and Marcia (1992, p10-11) describe the four identity status's as follows:

(a) Identity diffusion is the least developmentally advanced status, although, like all the status's, it has adaptive aspects, and may be the most adaptive mode of functioning under certain conditions. Commitment to an internally consistent set of values and goals is absent, and exploration is either missing or shallow. People in identity diffusion tend to follow the path of least resistance, and may appear to be having a carefree, cosmopolitan lifestyle, and/or being empty and dissatisfied;

(b) Identity foreclosure represents a high level of commitment to an identity following little or no exploration. For some, identity foreclosure is a developmental starting point, from which a period of
exploration will ensue. However, as an identity resolution, Marcia considers *foreclosure* to represent a less developed state than *moratorium* or *identity achievement*. People who follow the foreclosure pattern adopt a single set of values and goals, usually those of their parents;

(c) *Moratorium* is arguably considered a stage, rather than a resolution of the identity formation process, although some people apparently remain in moratorium over many years. Marcia's moratorium status refers to the process of forging an identity-occupational, interpersonal, and ideological commitments— from the myriad of possibilities available. The person in moratorium is intensely preoccupied with exploring options and working toward commitment; and

(d) *Identity achievement* represents an autonomous resolution of identity, incorporating a set of commitments adopted during a period of exploration (moratorium). It is the exploration of the moratorium period that distinguishes the flexible strength of identity achievement from the rigid strength of identity foreclosure.

The notion of identity achievement corresponds to the notion of "discovery", and moratorium corresponds to the "search". Cox and Lyddon (1997) assert that while Erikson's and Marcia's work has been useful, postmodernist thinking has challenged their view of self and identity. The postmodern view of self is based on the metaphor of creation as opposed to discovery. Cox and Lyddon (1997) describe five views of self consistent with postmodernist, feminist and constructivist schools of thought: *self-as-social-economic-political-construction, self-as-transcendent, self-as-narrative, self-as-theorist* and *self-as-evolving process*. I describe now these views of self with emphasis on *self-as-theorist* and *self-as-evolving process*, as these views have most relevance to the personal construct model of adolescent risk-taking.

The view of *self-as-a-social-economic-political-construction* challenges the modernist view of self as an autonomous and individual agent. This constructionist position asserts that one's identity cannot be defined apart from social, economic and political context. Sampson (1990) argues that the paradigm of Western self is the bourgeois individual. From this position the contemporary conception of self would not exist without progression from medieval feudalism through to advanced capitalism. Similarly, Gergen (1991)
critiques the focus on the individual by asserting that individual identity is constituted by relationships and language systems. From Gergen's social constructionist position, the identity is decentralised and dispersed between people in relationship.

The view of self-as-transcendent originates in ancient Eastern philosophy and mysticism. Capra (1975; 1982) has popularised the similarities between Eastern philosophy and the way the "new physics" conceptualises matter as including energy. In this view the universe and its parts are inherently linked and dynamic. This leads to a view of self in which ego boundaries are more fluid, incorporating everything as part of self.

The view of self-as-narrative is a further example of moving away from "self as discovery" towards "self as creation". Polkinghorne (1991) describes this view of identity as a continually unfolding narrative in time and space. Like developmental constructivist positions, this position views identity as a self-organising process. Like social constructionist positions, this position views identity as constituted by relationship with others through narrative.

The view of self-as-theorist is important to the personal construct model of adolescent risk-taking. Berzonsky (1989a) and Viney et al (1995) have reframed the developmental constructs of Erikson and Marcia, in a fashion more consistent with postmodern or constructivist views of identity. Berzonsky (1989b) describes a self theory as something that a person constructs for themselves to make sense of themselves and others. Based on Marcia's work, Berzonsky (1986; 1989a; 1989b; 1992; 1994; Berzonsky & Neimeyer, 1988; Berzonsky, Rice & Neimeyer, 1990) asserts that people construct, maintain and revise their self-theories in four particular styles: (a) information oriented identity style self-theorists who tend to be more scientific in that they are more open to environmental information relevant to their self theories; (b) normative oriented identity style self-theorists, who tend to be more dogmatic in developing their theories. This group tends to be more conforming than the information oriented group; (c) diffuse/avoidant identity style self-theorists delay making decisions and function in an ad hoc manner; and (d) committed self-theorists who have chosen, with little reflection, a particular identity. Berzonsky (personal communication) has recently stated that commitment is now used as a moderator variable.

The essence of Berzonsky's (1992) approach is that identity development is a process as opposed to an attained state. Viney et al's (1995) view of
psychosocial maturity, operationalised in the Content Analytic Scales of Psychosocial Maturity, uses Erikson's (1968) epigenetic tasks, remoulding them as bipolar constructs to deal with these tasks. Viney's approach to psychosocial maturity is consistent with Kelly's (1955/1991) aim to avoid stages. Viney views Erikson's epigenetic tasks as bipolar constructs. Hence, while maintaining that they are important developmental issues Viney does not claim that dealing with these developmental necessarily must occur in stages, rather they are an ongoing process. Viney et al's (1995) content analytic scales to measure psychosocial maturity assesses whether people are equipped with constructs to deal with such tasks. This is consistent with the self-as-theorist position in which the person develops certain sets of helpful and unhelpful constructs to make sense of themselves, their development and others. This is consistent with a view of self as changeable, but not in a stage-by-stage linear fashion.

The view of self-as-evolving-process is similar to the view of self-as-theorist and both can be described broadly as constructivist. The view of self-as-process is grounded on evolutionary epistemology (Guidano, 1987; 1991; Mahoney, 1991), in which the self is viewed as a developmental process rather than a static entity. Guidano (1995) draws on the work of Popper (1973) and Piaget (1971) by viewing self knowledge structures as evolutionary life processes shaped in response to challenging environmental pressures (Mancuso & Hunter, 1985). A central feature of this position is a view of self as having an innate tendency to evolve adaptively into more differentiated and complex forms and functions (Cox & Lyddon, 1997).

Mascolo's epigenetic systems approach to self and its development, (Mascolo, Craig-Bray & Neimeyer, 1997; Mascolo & Fischer, 1998; Mascolo, Fischer & Pollock, 1997; Mascolo & Mancuso, 1990) is relevant here and an important addition to Cox and Lyddon's (1997) ideas. Mascolo, Fischer and Pollock (1997) describe an epigenetic systems view of development that holds that knowledge arises through self-directed interpretive activity. Nativist and sociocultural approaches emphasise genetic and environmental influences to development respectively. In contrast to these positions the epigenetic systems approach maintains that anatomical and behavioural structures emerge in development. These structures develop through inseparable co-actions between and among elements of a hierarchically organised organism-environment system. Hence, an organism develops through multiple
interactions between its biology and special sociocultural context. Mascolo, Fischer and Pollock (1997) argue that, while the developmental processes are interpenetrated by biogenetic and sociocultural systems, there is still a "constructor" in this process. That is, consistent with constructivism, the individual actively creates meaning by structuring and restructuring their experience through self-regulated mental activity.

The views of self-as-theorist, self-as-evolving-process and Mascolo's epigenetic systems approach to development of self and identity are of direct relevance to the personal construct model of adolescent risk-taking. This will become more evident in the later sections of this thesis. In my view of personal construct psychology, the self is a theory that is tested by way of action. However, also from within the personal construct model of adolescent risk-taking, risk-taking has a developmental link with identity. The identity is an evolving process, with the risk-taking providing the psychosocial and physical environmental pressures and interaction, to which Guidano (1995) and Mascolo, Fischer and Pollock (1997) refer. I will develop these themes in the following two chapters.

In this chapter I have introduced the three important challenges facing the adolescent. I discussed the important concepts of self and identity in greater detail, describing several different approaches to self. I contrasted the notion of "discovery" of self to the more constructivist notion of "creation" of self, drawing particularly from Cox and Lyddon's (1997) article. I described the work of Bersonsky and his view of the self-as-theorist, together with Guidano's (1995) view of self-as-evolving-process and Mascolo, Fischer and Pollock's (1997) epigenetic systems approach to development. I stated that these three views of identity and its development are important bases from which to understand the personal construct model of adolescent risk-taking. In Chapter 3 I turn to adolescent risk-taking and the search for "predictors" of risk-taking.
CHAPTER 3

MODELS OF ADOLESCENT RISK-TAKING:
THE SEARCH FOR "PREDICTORS"
Models of Adolescent Risk-Taking:
The Search for “Predictors”

In this chapter I describe some important assumptions that have been made about adolescent risk-taking, including the important distinction between risk-seeking and risk-avoiding. I summarise then some of the more influential models and associated empirical studies that have searched for “predictors” of adolescent risk-taking or predictors of preventive behaviour, such as condom use. I contrast then the assumptions of these nomothetic models that have attempted to find predictors of adolescent risk-taking with Lightfoot’s (1992; 1997) narrative approach to adolescent risk-taking. This approach is more similar to the personal construct model than the other models that search for statistical predictors of risk-taking.

Assumptions About Adolescent Risk-Taking

Risk-taking is a complex concept that crosses disciplines and is part of people’s everyday life. In Trimpop’s (1994) comprehensive review of the area he sought to answer the following questions:

What is risk-taking behaviour and how do we perceive risks?

What personality type engages in risk-taking behaviour? And is it mainly determined genetically or by situational characteristics?

What motivates people to take risks, and what do they feel before, during and after the performance?

How do we control and master possible negative consequences of risk-taking behaviour and how do we compensate for different levels of perceived risks?

Is there a connection between different types of risk-taking (financial, social, physical) and can we explain it in one “holistic” model?
What does risk motivation (original emphasis) mean for our daily life and how can we modify it?

Trimpop’s (1994) questions are diverse and highlight several issues about the risk-taking literature. These questions assume a view of motivation as an entity driving the person. Trimpop also assumes a trait theory of personality. Like most researchers in the area of adolescent risk-taking, Trimpop is interested in risk perception, the development of a model, and intervention.

I have used Trimpop’s (1994) work to show that the questions one asks about risk-taking will constrain the answers one offers. Trimpop’s coverage of the multitude of attempts at understanding risk-taking is a testimony to this claim. Trimpop’s review includes risk-taking in terms of: evolution, arousal, personality, sensation-seeking, reversal theory, motivation/emotion theories and expectancy x value theories with reference to situational factors.

Narrowing the focus of risk-taking to adolescents constrains some of the situational factors but still leaves a multidimensional concept. Lightfoot (1997, p14) states eloquently two competing historical constructions of adolescent risk-taking as follows:

... I suppose that the historical stamina of our interest in adolescent risk-taking owes some debt to the double meanings that we attach to these behaviours. On the one hand, many have gained notoriety as "social problems", manifestations of an insidious pathology overtaking the body of contemporary society. The sentiment is hardly overstated in a time during which teen violence and homicides roil suburbs and inner cities alike, and HIV moves rapidly and perniciously among the teen population. Yet we romanticise youth's mischief with equal enthusiasm. Our literature and folklore make heroes of young adventurers and invite nostalgic reflection on a time in our lives when taking risks created windows of possibility and was seen to test our mettle, if not our maturity. Throughout history we have brought these behaviours into focus with two apparently incompatible lenses. One provides a view of risk-taking as trouble, the other as opportunity. Lightfoot's (1997) distinction between risk-taking as trouble versus risk-taking as opportunity is a useful one. Lyng (1993) refers to a distinction between functional risk-taking and dysfunctional risk-taking. This brings the
issue of development into the trouble versus opportunity distinction. Functional risk-taking is that which provides developmental opportunities to the risk-taker. In terms of the self and identity development issues that I discussed in the previous chapter, the functional adolescent risk-taker uses the opportunity of “adolescence” to develop their identity. Many members of society may still perceive this behaviour as trouble. Dysfunctional risk-taking is that which brings trouble to the risk-taker developmentally, biologically and psychosocially.

Irwin (1993, p23) asserts that: “the literature and conventional wisdom speak about the functional role risk-taking serves, yet there is little or no work done trying to understand the functional nature risk behaviours may serve in the developmental process of adolescence”. Lightfoot’s (1997) view of risk-taking as “transformative experience” is supportive of such a notion. Lightfoot (1997, p97) uses the following narrative from a 17 year old to illustrate her position:

That’s how you grow up- experiences. The only way to get experience is to take risks. When you’re growing up you’ve got to find out- “Well, I’ve heard all this stuff about sex and drugs and driving”- and you have to try out a little bit of everything and from that build your own plan, your own lifestyle, and become the person you are when you become developed.

This young person is acutely aware of the relationship between risk-taking and developmental issues. The recent movie “Trainspotting” graphically demonstrated issues of adolescent risk-taking. The movie concludes with the line, “Choose life, I chose not to choose life”. This tension throughout the movie is a further illustration of the developmental issues relating to risk-taking. The threat of HIV/AIDS through unprotected sex and intravenous drug use, such as that portrayed in Trainspotting, is the modern day example of trouble to which Lightfoot (1997) refers.

The trouble versus opportunity distinction is similar to another distinction that pervades the risk-taking literature. Trimpop’s (1997) review of the risk-taking literature illustrated the distinction between risk-avoiding mode and risk-seeking mode. Hence, if someone is in risk-avoiding mode they are likely to see risk as trouble, and if operating in risk-seeking mode they will view risk as opportunity. Trimpop’s (1997, p239) summary of the important distinction between risk-seeking and risk-avoiding is illustrated in Table 1.
have added Lightfoot's (1997) distinction between risk-as-trouble and risk-as-opportunity.

Table 1 Trimpop's (1994) Distinction Between Risk-Seeking and Risk-Avoiding

<table>
<thead>
<tr>
<th>Risk seeking mode</th>
<th>Author</th>
<th>Risk avoiding mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>voluntary risk-taking</td>
<td>Slovic</td>
<td>involuntary risk-taking</td>
</tr>
<tr>
<td>performance oriented</td>
<td>Dweck</td>
<td>learning oriented</td>
</tr>
<tr>
<td>paratelic</td>
<td>Apter</td>
<td>telic</td>
</tr>
<tr>
<td>intrinsic motivation</td>
<td>Deci</td>
<td>extrinsic motivation</td>
</tr>
<tr>
<td>primary control</td>
<td>Rothbaum</td>
<td>secondary control</td>
</tr>
<tr>
<td>problems as challenges</td>
<td>Dienstbier</td>
<td>problems as threats</td>
</tr>
<tr>
<td>arousal seeking</td>
<td>Berlyne</td>
<td>arousal avoiding</td>
</tr>
<tr>
<td>sensation seeking</td>
<td>Zuckerman</td>
<td>sensation avoiding</td>
</tr>
<tr>
<td>strong nervous system</td>
<td>Pavlov</td>
<td>weak nervous system</td>
</tr>
<tr>
<td>high emotional reactivity</td>
<td>Larsen</td>
<td>low emotional reactivity</td>
</tr>
<tr>
<td>high desire for control</td>
<td>Burger</td>
<td>low desire for control</td>
</tr>
<tr>
<td>high need for achievement</td>
<td>McClelland</td>
<td>low need for achievement</td>
</tr>
<tr>
<td>hope for success</td>
<td>Blankenship</td>
<td>fear of failure</td>
</tr>
<tr>
<td>risk enjoying, seeking</td>
<td>Buck</td>
<td>risk tolerating, avoiding</td>
</tr>
<tr>
<td>opportunity</td>
<td>Lightfoot</td>
<td>trouble</td>
</tr>
</tbody>
</table>

I describe now the numerous previous attempts to find predictors of adolescent risk-taking.

Models to Predict Adolescent Risk-Taking

Many models and theories have attempted to establish predictors of health related behaviour in general, while some models have focussed on adolescent risk-taking in particular. Certain risk-related behaviours, including substance use, sexual activity and recreational vehicle use, appear to be linked (Irwin, 1993). Investigators have begun to focus on the mechanism of interrelationships between risk related behaviours, moving away from focussing on single behaviours. This will be the case with the personal construct model of adolescent risk-taking introduced in the next chapter. I
begin my description of models with two of the most influential models; the Health Belief Model and the Theory of Reasoned Action. Both of these models have emphasised cognitive aspects of health related decision making rather than personality dispositions. The models both employ nomothetic approaches using group based statistics and both models are based on rationalistic assumptions (Mahoney, 1988), understanding the person’s processes from a model of rational decision making.

The Health Belief Model

The Health Belief Model has been an influential approach to health decision making (Terry, Gallois & McCamish, 1993). The model asserts that intentions and health related behaviours can be predicted from health related attitudes and values. The model states that preventative health behaviour is influenced by the belief that: (a) one is susceptible to the disease, illness or injury in question (perceived susceptibility); (b) the consequences of the disease are severe (perceived severity); and (c) the advocated measures will be effective (perceived benefits). These beliefs are then weighed against the disadvantage of taking the advocated health measures (perceived barriers). Hence, the model proposes that people take preventive health action as if they have evaluated the level of threat associated with a disease, as well as the costs and benefits of taking the action.

Evidence exists that health belief variables successfully predict a range of health behaviours, including dietary compliance (Becker, Haefner, Mainman, Kirscht & Drachman, 1977), breast self-examination (Hallal, 1982), calcium intake (Wurtel, 1988) and vaccination (Cummings, Jette & Rosenstock, 1978). In their review, Janz and Becker (1984) found support for each of the four dimensions of the health belief model: severity, susceptibility, benefits and barriers. The dimension of perceived barriers emerged as the most important component. Harrison, Mullen and Green (1992), in a meta-analysis of 147 studies, however found that for any one dimension of the model 10% was the largest proportion of variance explained in actual behaviour.

The Health Belief Model assumes that if public education campaigns are to be successful in changing risky behaviour, then they must be able to identify predictors of such behaviour. Relevant to the large public education campaign on HIV/AIDS, Terry, Gallois and McCamish (1993) cite numerous studies that have failed to find convincing support that the Health Belief Model
can successfully predict safer sex behaviour. Terry, Gallois and McCamish (1993) maintain that Ajzen's and Fishbein's (1980) Theory of Reasoned Action has been empirically more successful than the Health Belief Model in its predictions of safer sex behaviour.

The Theory of Reasoned Action

The Theory of Reasoned Action asserts that people make behavioural decisions through a reasoned consideration of the available information (Ajzen & Fishbein, 1980). The theory hypothesizes that behaviour is the consequence of a logical sequence of cognition, with intention being the most immediate determinant of behaviour. Intentions in turn are held to be determined by:

1. attitudes towards the behaviour; and
2. the normative pressure to perform the behaviour (subjective norm).

Attitudes are, in turn, a function of behavioural beliefs (beliefs concerning the consequences of performing the behaviour) and outcome evaluations (the value placed on each of the consequences). Subjective norms are a function of normative beliefs (people's perception of the pressure from others to perform the behaviour) and motivation to comply with others. The Theory of Reasoned Action is illustrated in Figure 1.

![Figure 1: The Theory of Reasoned Action](image)

The Theory of Reasoned Action proposes that intention to perform a behaviour is an accurate predictor of behaviour only when the behaviour is under the person's volitional control (Fishbein & Ajzen, 1975). For instance of
one exception, the person may lack the skills to perform the behaviour. In the case of condom-use, the process is a negotiation between two people. Hedeker, Flay and Petraitis (1996) have attempted to further accommodate individual differences in the model. To extend the Theory of Reasoned Action to situations in which the behaviour is not completely under the person's control, Ajzen (1985, 1987, 1991; Ajzen & Madden, 1986) proposed the Theory of Planned Behaviour.

The Theory of Planned Behaviour

Ajzen's (1985, 1987, 1991; Ajzen & Madden, 1986) modification of the Theory of Reasoned Action to include variables of control beliefs, perceived power and perceived behavioural control is illustrated in Figure 2. Ajzen and Madden (1986) concede that while an actual measure of behavioural control would be desirable they are difficult to attain. These authors have used perceived control as proxy measures of actual control.

The Theory of Planned Behaviour is essentially an extension of the Theory of Reasoned Action. In some ways, it takes the most successful dimension of the Health Belief Model, that is the perceived barriers to perform a behaviour, and adds it to the Theory of Reasoned Action, in the form of perceived behavioural control. The major similarity among these three models is that they emphasise the role of cognition as beliefs. The three models employ a nomothetic approach, using group based statistics, and they all have the guiding analogy of a rational decision maker in which risk-taking is irrational. Gardner (1993) uses rational-choice theory to argue for the opposite position with adolescents. That is, he argues that adolescent risk-taking is rational from a life-span perspective. I consider now Gardner's position.
Gardner's (1993) Lifespan Rational-Choice Theory of risk-taking asserts that risk-taking is optimal for the young. Gardner asserts that the young are required to make decisions about futures that are uncertain. Gardner uses Expected Utility Theory, a mathematical model that describes how a consistent decision maker with stable goals will act under certain constraint on possible actions. As Gardner (1993) states, the Rational-Choice Theory is not concerned with how people process information and does not assert that people make everyday choices by assigning numbers to outcomes and calculating utilities. Rather, the theory asserts that an outside observer observing a sufficiently consistent pattern of choices could find numbers describing the person's values that would rationalise the choices. Gardner (1993, p71) states that: "it is as if (original emphasis) the person used a utility scale to rate the value of moments of future time, then calculated the amounts of utility they expected to accumulate in each of the alternative future lives consequent to the present decision, and then made the choice that returned the maximum expected lifetime utility".

Figure 2  The Theory of Planned Behaviour
Using Rational Choice-Theory, Gardner (1993) explains that it is rational for the young to be more impulsive than adults. This is because a focus on the immediate rather than the long term consequence of a decision is a rational response to uncertainty about the future. For example, forgoing the use of cigarettes, from the expected utility perspective is an investment. The investment is in increased life expectancy, the benefits of which are received in the future. The cost of the investment is to go without the pleasure of the cigarette. Uncertainty about the future makes the investment risky and therefore decreases its value as compared to present consumption. Gardner (1993) asserts counter-intuitively that young people are using a risk-avoidant strategy rather than using a risk-seeking strategy. That is, the young person, by smoking in the present, is avoiding the risk of losing the current benefits. Hence, while the smoking behaviour may be considered as risk-seeking, it is risk-avoidant if the uncertain long term consequences are considered. There is opportunity cost of forgoing immediate benefits for benefits in a future that may not occur. Gardner (1993) asserts, relevant to the personal construct model of adolescent risk-taking, that a greater degree of risk-taking during youth is an optimal life-span pattern for a rational decision maker.

Risk Motivation Theory

Trimpop’s (1994) Risk Motivation Theory is a complex theory involving personality, situational, physiological, emotional, cognitive and motivational variables. Risk Motivation Theory states that the risk-taking action will be the product of the following multiple interaction of variables in the following cycle: (a) risk-personality factors (including nervous system arousability, desire for challenges, desire for control, emotional reactivity, telic/paratelic tendency, internal/external control and risk history) will interact with risk-situational factors (including probability of success, value of success, level of control, voluntariness, type of activity, level of skill) to determine risk perception; (b) risk perception (including physiological perception, emotional perception and cognitive perception) is in turn compared to target levels, (ie a target level appraisal is conducted by comparing perceived physiological states, emotional state and cognitive state to the desired state); (c) the target level appraisal is conducted in physiological, emotional and cognitive domains to determine a total target level of risk via a cost/benefit analysis; (d) the cost/benefit analysis in turn influences motivation for action that either
produces a desire to preserve the current state or a desire to change it to a higher or lower level of arousal or risk; (e) the action plan will be influenced by the degree of difficulty within a situation and the scripts, schemata and strategies of compensating behavioural action; (f) the action that takes place in response to a perceived stimulus is either a continuing or compensating action aimed at maximising the total physiological, emotional and cognitive benefit by adjusting for shortcomings in either one of the three levels of perceived risk; and (g) performing the action changes the external environment of the acting person and observation of these changes serves as information in a feedback loop, evaluating the success of the action plan. Results are perceived as a new stimulus, triggering a new compensation loop, returning the cycle to Part (a).

As Trimpop (1994) asserts, Risk Motivation Theory is essentially a homeostatic theory, like Risk Homeostasis Theory (Wilde, 1982). However, in contrast to other utility models of risk-taking, such as Risk Homeostasis Theory, Risk Motivation Theory does not only take conscious cognitive cost/benefit analyses into account, but also physiological and emotional cost benefit analyses. I have chosen to describe only Risk Motivation Theory as an example of a motivational theory as it is the most inclusive, including most of the variables from competing expectancy/value and homeostatic theories.

The Biopsychosocial Prevention Model

Irwin and Millstein's (1986) Biopsychosocial Prevention Model is similar to Trimpop's (1994) risk motivation theory in its complexity but different as it specifically focuses on adolescents. Irwin and Millstein (1986) refer to biopsychosocial factors in similar ways to Trimpop's personality variables. The biopsychosocial variables include biological maturation, cognitive scope, self perception, perceptions of social environment and personal values interacting to effect risk perception and characteristics of the peer group (Irwin, 1993; Irwin & Millstein, 1986; Irwin & Ryan, 1989). In a later work Irwin (1993, p22) outlines many dimensions that interact to predict risk-taking behaviour, based on the previous Irwin and Millstein (1986) model as follows: (a) predisposing biopsychosocial (endogenous) factors (including affective states and sensation-seeking, aggressiveness, asynchrony of biological/psychological and social development, cognition and style, developmental drives during adolescence, gender, genetics, hormonal effects in young males,
internalisation of role models, race/ethnicity and self esteem) interact with predisposing environmental (exogenous) factors (including family factors [low parental support and controls, maladaptive family situations, parental denial, parental involvement in risk behaviours, parenting style, socioeconomic status and family structure], lack of knowledge of consequences of behaviour, peer behaviour, school transitions, and societal denial and unresponsiveness) which in turn lead to increased vulnerability and/or risk situations; (b) the increased vulnerability in biopsychosocial and environmental domains may then interact with precipitating factors. Biopsychosocial precipitating factors include lack of experience/knowledge, lack of skills to resist peer pressure and substance use. Environmental precipitating factors may include peer initiation, school transitions, social pressure and substance use availability; and (c) a further interaction between biopsychosocial precipitating factors and environmental precipitating factors for vulnerable individuals is seen to lead to risk-taking behaviour.

The complexity of this model is evident. A similar model incorporating biological, psychological and social factors is Langer and Warheit's (1992) Pre-Adult Health Decision Making Model.

The Model of Pre-Adult Health Decision Making

Langer and Warheit's (1992) Pre-Adult Health Decision Making Model begins with Riesman's (1950) personality typologies of tradition-directed, inner-directed and other-directed personality types. Langer and Warheit (1992), using the concept of directedness, examine how reference groups influence attitudes, beliefs and behaviours related to risk. Langer and Warheit (1992) assert that a limitation of competing models is that they presume an undifferentiated domain of free, rational and autonomous individuals predicated on the assumptions that adults are free. These authors state that adolescent models must take into account the social and cultural restrictions that adolescents experience.

Langer and Warheit (1992) describe three basic tenets to their model: (a) identity development is composed of three parts which include: differentiation of self from the previously held view of identity advanced by parents, migration from parental sphere of influence to that of peer influence, and a synthesis of parental and peer influences which are combined with the individual's idiosyncratic personal and social
characteristics; (b) adolescent decision making is seen to be socially interactive and negotiated with others; and (c) decision making is considered in terms of inputs including knowledge and beliefs, and outputs including attitudes and behaviours.

The model is considered within a developmental time line. Biological, psychological and social factors along with knowledge and beliefs are seen as the inputs. Peer, parent or self directedness is seen to mediate the decision making that result in the output of attitudes or behaviours. These attitudes and behaviours in turn feedback to the biopsychosocial factors, that is they become inputs for the developing adolescent.

I have now described several models and theories that differ in their complexity and foci. The order of their presentation corresponded with an increase in complexity and specificity of focus. What is common to these models is that they essentially all have risk-taking behaviour as the dependent variable. They generally all resemble path models in their form, that is they are supported by quantitative data based on nomothetic statistical models. Of the models mentioned, only the Pre-Adult Health Decision Making Model had a truly developmental focus like the personal construct model of adolescent risk-taking. An approach that moves away from the objectivist and nomothetic method is Lightfoot's (1997) narrative account of adolescent risk-taking. I describe now this approach as an example of the approach most similar to the personal construct model of adolescent risk-taking.

The Narrative Approach to Adolescent Risk-Taking

Lightfoot (1997) takes a narrative approach to adolescent risk-taking by viewing risk-taking as beginning as play and drama and ending as narrative and story. The central idea is that a narrative is both the process and product of lived experience. That is, people, including adolescents weave life experiences into coherent stories, in ways that reconstruct images of themselves and the groups with which they affiliate. Lightfoot asserts that young people tell and retell their adventures, which are significant personally and socially. Adolescents' risks are seen to promote a sense of shared history and means by which to mediate ingroup-outgroup relations. From a narrative perspective risk-taking provides the material for stories. Moreover, they become part of the collective biography of the peer group. The symbolic meaning of the risks can sometimes magnify the risks to near mythical proportions.
Lightfoot (1997) places the narrative approach to adolescent risk-taking within a developmental context by viewing risk-taking as a form of play. The play is linked to what Lightfoot terms “transformative experience”. This refers to the adolescent who speaks of risks as if they were evidence of being a “participant” and argues that risks have a role in growing up. Lightfoot (1997) asked a group of adolescents: “What’s the difference between something that’s risky and something that’s not?”. Lightfoot asserts that nearly all respondents reflected the idea of exploring new territory and around 25% indicated that risks are different from non-risks because they provide challenging or novel experience. In these narratives 65% emphasised the possibility of unknown or unintended consequences and the remaining 10% indicated that risks have positive implications for peer relationships, friends are impressed by those who attempt extraordinary things.

Lightfoot asked the adolescents: “What’s appealing about taking risks?” and all referred to the pleasure or excitement in changing the status quo. Important to the personal construct model of adolescent risk-taking to follow, 30% of Lightfoot's respondents indicated that risks are important because of their developmental implications, providing opportunities for learning about oneself and one's abilities.

In Lightfoot's (1997) narrative approach the transformative experience of risk-taking in play and dramatic form does not simply end with a single behaviour that others may construe as risky. The behaviour is played on a stage often directly and afterwards used as a narrative to position the adolescent in their group discourse. The story of risk is likely to be told and retold with effect on the identity of the storyteller each time. Hence, it is not only the risk-taking action that may transform the adolescent but the stories told thereafter that will shape the young person.

I have stated that of those approaches described the narrative approach is the most similar to the personal construct approach to adolescent risk-taking. There are three main similarities. First, the emphasis on transformation due to risk-taking. Second, the idea of play is similar to the exploratory emphasis I will discuss within the personal construct model. Third, at an epistemological and methodological level, narrative/social constructionist approaches are more similar to the personal construct model of adolescent risk-taking than the essentially statistical and nomothetic causal modeling approaches described previously.
In this chapter I discussed assumptions underpinning adolescent risk-taking with reference to Lightfoot's (1997) distinction between adolescent risk-taking as trouble versus opportunity. I included Trimpop's (1994) summary of the distinctions in the literature that can be considered as examples of the risk-seeking versus risk-avoidant distinction. I summarised important previous models that have searched for “predictors” of risk related behaviour. These models included The Health Belief Model, The Theory of Reasoned Action, The Theory of Planned Behaviour, The Lifespan Rational Choice Theory, Risk Motivation Theory, The Biopsychosocial Prevention Model, and The Model of Pre-Adult Health Decision Making. In the final section of this chapter I described Lightfoot's (1997) narrative approach to adolescent risk-taking, as the model most similar to the personal construct model of adolescent risk-taking. The focus on risk-taking as play and transformative experience is a striking similarity. This chapter, combined with the previous chapter on self and identity development provides the conceptual context to situate the personal construct approach to adolescent risk-taking that I introduce in the next chapter.
CHAPTER 4

PERSONAL CONSTRUCT PSYCHOLOGY
AND ADOLESCENT RISK-TAKING
Personal Construct Psychology and Adolescent Risk-Taking

In this chapter I begin by examining the criteria that could be used to assess the quality of a model (Viney & Oades, 1998). I introduce then the central tenets of personal construct psychology (Mahoney, 1988; Warren, 1998), and then apply them to the area of adolescent risk-taking. I define “personal construct”, before describing Kelly’s (1955/1991) view of a person as a scientist. This leads to discussion of the way a person experiences events, emotions and learns and changes as a result. I apply these important concepts to adolescent risk-taking and provide personal construct definitions of risk and risk-taking. The theoretical underpinnings of the personal construct model are then further developed by: (a) exploring the notion of risk-taking as an “experiment” to develop identity; (b) using the Experience Cycle as a framework for understanding the process of risk-taking; (c) viewing risk perception as a form of prediction; and (d) viewing adolescent risk-taking from the perspective of the risk-taker rather than the “expert researcher”. The chapter concludes with propositions of a preliminary theoretical model of adolescent risk-taking.

What is a Model?

Before attempting to develop a personal construct model of adolescent risk-taking I believe it is useful to consider what a model is; its functions and standards used to assess a model. Hesse (1967) has provided a thorough review of models and analogies (Braithewaite, 1962). Hesse (1967, p.357) describes Campbell’s (1920) rejection of the position: “that models are merely dispensable aids to theory construction and can be detached and discarded when the theory is fully developed”. This claim is important for the personal construct model of adolescent risk-taking and personal construct models in general. The theory of personal constructs can be considered already “fully developed”, articulated formally in a fundamental postulate and eleven corollaries. As Harre (1961) asserts, a conceptual model applies the ideas of a better known domain to a lesser known one. In terms of the personal construct model of adolescent risk-taking, the better known domain is the experience of personal change in personal construct theoretical terms. The lesser known domain is adolescents’ experience of risk-taking in relation to their change and development.
Viney and Oades (1998) describe important functions of models and standards to assess good models in personal construct research. In terms of functions, Viney and Oades assert that models: (a) protect us from being dazzled by the complexity of events; (b) make us accountable and serve the heuristic function of suggesting ideas to us; (c) provide conceptual and empirical definitions; (d) allow us to make predictions; and (e) confine us by their assumptions and hence assist us in the planning of methods for data collection.

Viney and Oades (1998) describe the following criteria to evaluate the standard of personal construct models: (a) the model needs to be made up of assumptions that are appropriately based in personal construct psychology; (b) the model needs to be clearly articulated; (c) the model needs to be internally consistent; (d) the model should be parsimonious; (e), the model needs to be relevant to the events in focus; (f) like its parent theory the model should be verifiable through the testing of hypotheses; and (g) the model should be sufficiently comprehensive, yet specific enough to make predictions. In Chapter 11 I will evaluate the final personal construct model of adolescent risk-taking with reference to these standards. I consider now the theoretical framework underpinning the development of the personal construct model of adolescent risk-taking.

**The Personal Construct and the Person-as-Scientist**

In 1955 Kelly published the two volumes of *Psychology of Personal Constructs*. The "construct" has remained the fundamental unit of personal construct psychology. Theorists, however, have found the term construct has not always been easy to define (Fransella, 1989; Mischel, 1964; Tschudi, 1983). Multiple terms have been used to describe a construct including: "transparent patterns or templates", "templates", and "portholes" providing the image of the person "looking out" at the world (Fransella, 1989). Tschudi (1983) has described the construct as a hypothesis. Mathematical terms have also been used including "dimension", "factor" and a "set". Fransella (1989) has argued that a construct is not a concept, nor a rule. Fransella (1989) described the main features that she has used to define a construct including: abstraction, bipolar, linked to fellow constructs, used at different levels of awareness, and inseparable from feelings and behaviour. However, most relevant to the personal construct model of adolescent risk-taking are Fransella's (1989) view of:
(a) constructs as the basis of anticipation and prediction; and
(b) constructs as forming the basis of choice.

A personal construct is an abstraction of the process in which a person attempts to anticipate the future, constantly making choices between one path to take or another. The person is viewed as an inquirer, like a scientist trying to understand and predict the world. I discuss now this analogy.

Kelly (1955/1991) and contemporary personal construct theorists have viewed the person as being like a scientist. This analogy has encapsulated much of the personal construct approach by viewing the person as predicting, experimenting and then possibly changing their world view as a result. Like a scientist, the person makes a prediction that X result will occur when they perform Y behaviour. Behaviour is the experiment, used to answer a "research" question (Kelly, 1966). Kelly's (1966) assertion that behaviour, in experimental terms can be seen as the independent variable rather than the dependent variable, has been in contrast to many other psychological theories. The majority of the empirical psychological research has attempted to predict behaviour. From a personal construct perspective the behaviour has been viewed as the experiment to test the construct system. The following section considers how Kelly (1955/1991; 1970) has viewed what the person does with the "results" of their personal experimentation.

**Experience. Learning. Emotions and Change**

Kelly (1955/1991) has given emotion a unique position in his theory by equating it with change in the construct system. Therefore, if a person revises their predictions as a result of an experience, they will also have experienced emotions. McCoy (1981) has stated that when a person experiences validation or invalidation of his or her predictions, this person will experience positive or negative emotions respectively. McCoy (1981) provides definitions for positive emotions (love, satisfaction, happiness, complacency, contentment and self confidence) and negative emotions (threat, guilt, shame, anxiety, fear, bewilderment, doubt, sadness and anger). McCoy (1981, p98) states that surprise is neither positive nor negative, but: "in so far as surprise heralds a need to reconstrue, it is more akin to the negative emotions than the positive ones". McCoy (1981, p99) argues that "in Kelly's scheme positive or negative outcomes are not sought in themselves; they are a by-product and a signal of the outcome of the fundamental process. Therefore man (sic) is not
fundamentally seeking pleasure or to reduce tension”. Kelly's (1955/1991) and McCoy's (1981, p97) definitions of emotions, that are most relevant to adolescent risk-taking are as follows:

Threat: Awareness of imminent comprehensive change in one's core structure;

Guilt: Awareness of dislodgment from one's core role structure;

Shame: Awareness of dislodgment of the self from another's construing of one's role; and,

Anxiety: Awareness that the events with which one is confronted lie outside the range of convenience of the construct system.

Working with adolescents Kasper (1962) defined threat as involving:

(a) construal of oneself by another in an outdated manner; “how I used to be, rather than how I am now”;

(b) construal of oneself as inferior to another's view of oneself;

(c) discrepancy between another's view and one's own view of personal change.

Winter (1992) relates Kasper's (1962) study to Dunnett's (1988) study which views threat more as a single invalidation. While Kasper's (1962) views are very relevant, in my view they relate more to shame and I will reserve the term threat for more single invalidational events such as those relating to physical risk-taking as defined in the section to follow.

The emotion fear is deliberately precluded from the theoretical development of the model because it involves incidental rather than comprehensive change to one's core structures. This is done to focus the model on more major risk-taking experiences, yet still remaining an intraspective model. Hence, it is not that fear does not occur, but that it is of less theoretical importance.

Viney and Westbrook (1976) have developed a concept of “cognitive anxiety” to represent a person’s reaction to their inability to anticipate and integrate experience meaningfully (p148). Relevant to adolescent risk-taking Viney and Westbrook (1976, p141) state that this inability to anticipate may be a result of:

(a) extremely novel stimuli, not before experienced and therefore not covered by the construct system;

(b) extra constructs needed but not always available;
(c) incongruous stimuli that leads to conflict within the construct system;
(d) responses unavailable generating uncertainty; and
(e) a high rate of stimulus presentation, or any other problem interfering with cognitive processing.

These aspects of cognitive anxiety are directly relevant to adolescent risk-taking. Relevant to (a) and (b) above, adolescents may not have experienced many of the situations in which they find themselves. Relevant to (c) above, a key incongruent stimulus for an adolescent is the voice of their parents versus the voice of their peers. Relevant to (d) above, adolescent risk-taking inherently involves uncertainty. For this reason, anxiety is included in the personal construct definitions of risk in the next section. Relevant to (e) above, adolescents generally have high levels of stimulus presentation. Moreover, the use of drugs such as alcohol obviously interferes with their cognitive processing. Hence, the general inability to anticipate, similar to that mentioned by Viney and Westbrook (1976), is closely linked to adolescent risk-taking. This position is related to what is argued and supported empirically later in this thesis, that risk-taking may not result because adolescents do not perceive risk, but rather that they have difficulty anticipating the risky situations in which they “find” themselves.

Kelly (1955/1991) has described two important theoretical concepts related to emotion: "hostility" and "aggressiveness". Kelly (1955/1991, p391) has defined hostility as "the continued effort to extort validational evidence in favour of a type of social prediction which has already been recognised as a failure". To return to the analogy of person as scientist, a person who does so has behaved like a "bad scientist" (Fransella, 1983). Kelly (1955/1991, p391) has defined aggressiveness as: "the active elaboration of one's perceptual field". A person has demonstrated aggressiveness if they choose to be in new situations requiring decision and action. The experimenting adolescent will often actively put themselves in new situations in a manner similar to Kelly's notion of aggressiveness.

Kelly's (1955/1991) assumption about learning, written in opposition to the behavioural zeitgeist of his time, has had an important consequence in terms of why a person conducts experiments and changes as a result. Kelly (1955/1991, p53) has stated that: "learning is not a special class of
psychological processes; it is synonymous with any and all psychological processes. It is not something that happens to a person on occasion, it is what makes him (sic) a person in the first place. This assertion has had significant implications for the development of the current model of adolescent risk-taking and its relationship to identity development. These issues are discussed in the following sections of this chapter.

The research on autobiographical recall and identity construction is relevant here (Barclay & Smith, 1993; Barclay & Wellman, 1986; Baumeister & Newman, 1994; Dalton, 1988; Neimeyer & Metzler, 1994; Neisser & Fivush, 1994). As Lightfoot (1997) argues, adolescents naturally tell stories about their risk-taking adventures. The Experience Cycle, essentially providing the temporal plot to a story, may well become a recalled story about self. The story that is most available to a person is the story that is most likely to have an effect on their life (White & Epston, 1990). These issues are discussed later in Chapter 11 as part of the evaluation of the final personal construct model of adolescent risk-taking.

The Experience Cycle, discussed later in this chapter, has played a significant role in the building of the personal construct model of adolescent risk-taking. In chapters 2 and 3 I have discussed identity development and the search for predictors of risk-taking. In the following sections of this chapter I apply personal construct concepts such as experimentation, prediction and the Experience Cycle to these issues.

**Applying Personal Construct Psychology to Adolescent Risk-Taking**

In this section I apply to adolescent risk-taking directly the key theoretical concepts discussed in the previous section (Kelly, D., 1990; Kelly, D. & Taylor, 1981; Lynch, 1995). I define first the important terms of "risk" and "risk-taking" from a personal construct perspective. I reconsider the issues that I dealt with in Chapter 2 on adolescent identity development and Chapter 3 on the search for predictors of risk behaviours, including risk perception, discussing them from a personal construct perspective. I use this theoretical framework to generate research questions reported in Chapter 5. In Chapter 6 I describe the methods I use to answer these questions, empirically developing the preliminary personal construct model of adolescent risk-taking.
Personal Construct Definitions of Risk and Risk-Taking

The following personal construct definitions of risk form the theoretical base of the model of adolescent risk-taking that I develop and refine empirically in the two studies of this research report. These are theoretical definitions and assumptions. Therefore, they will not be tested empirically.

Risk

Throughout this thesis I assume the following definition of risk:

Risk involves an individual's range of awareness of possible comprehensive negative consequences, either imminent or long term, of a self-initiated act. The awareness of risk is defined intrapsychically, from the persons' point of view, from the inside looking out. (see 3). Risk is usefully divided into two types:

**Physical:** The person's a priori perception of the possibility of physical- and health-related negative consequences resulting from a self-initiated act. This type of risk is often linked with the emotion of threat. However, this definition also includes long term change.

**Psychosocial:** The person's a priori perception of the possibility of psychological and social related negative consequences resulting from the self-initiated act. This type of risk is closely related to the emotions of guilt and shame as defined by McCoy (1981) (Mascolo, 1994).

The actor may be aware at different levels of possible negative consequences of an action. This level of awareness may range from a preverbal bodily sensation or arousal to a conscious cognitive awareness which can be verbalised. Kelly (1955/1991) defined levels of cognitive awareness as ranging from a high level construct which is readily expressed in socially effective symbols to levels that are preverbal, not expressed in

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2 I deliberately use the term "usefully" here to recognise that this distinction resembles a dualistic division between mind and body. While I note that Kelly (1955/1991) is a monist, I use the distinction because it fits with the construing of many of the research participants. For these reasons the distinction between physical and psychosocial, like a construct, is "useful" but not necessarily "true".
linguistic form. If the actor is in no way aware of the consequences of their action a priori, then from this intraspective definition of risk, they cannot be defined as risk-takers.

Risk, as defined here, is very similar to Kelly's (1955/1991) original definition of threat. Two major differences are:

(a) This definition of risk includes reference to change occurring in the long term, that is, delayed change resulting from the act, whereas Kelly's definition of threat makes explicit reference to imminent change; and

(b) This definition of risk refers only to acts of volition, whereas Kelly's definition of threat includes no such restriction.

This personal definition of risk is in contrast to common "objective" definitions that define risk extraspectively. The a priori perception of the negative consequences, their probability and magnitude are all defined from the persons' point of view rather than by "risk experts".

The two types of risk, physical and psychosocial, are not mutually exclusive. A particular act involves each type to some degree. For example, for the perceiver the act of unprotected sex may involve the physical risk of HIV and the psychosocial risk of what the partner may think.

Psychosocial risk is very similar to the way risk is discussed in some of the personal construct psychotherapy literature involving the psychotherapeutic relationship (Butt, 1998; Leitner, 1985; 1988). Leitner (1988) shows how a client in a "ROLE relationship" takes a risk, which I refer to as psychosocial risk, in revealing themselves to others as they may experience core invalidation. Hence, psychosocial risk-taking always involves a relationship with self (psychological) or others (social). An interpersonal example may include the risk of speaking up about sex or going against the social rules indicating that you do not wish to have sex, (Rosenthal & Peart, 1996), which sometimes results in feeling ashamed (McCoy, 1981; Mascolo, 1994). An intrapsychic example, corresponding to the experience of guilt, may include the example of a personal resolution to remain "strong", not to yield to the temptation of "having sex too early", because that would be "weak" and "wrong". It is assumed that physical and psychosocial risk are not mutually exclusive. A particular act may involve each to a certain degree, for example, unprotected adolescent sexual intercourse.
The game of "truth and dare" often played by children and young adolescents shows some of the important processes of adolescent risk-taking (Oades & Viney, 1997b). The "truth" relates to the more psychosocial experiment in which adolescents and their friends co-construct the social identity of the person when he or she attempts "telling the truth". Social identity issues often lead to the question "What will others think of me?" and McCoy's (1981) related notion of shame. For the older adolescent questions of personal identity become more prominent such as: "What will I think of myself?" linked to Kelly's (1955/1991) definition of guilt. The "dare" more often relates to an act more heavily weighted in physical risk.

Risk-Taking

The definition of risk-taking incorporates the definition of risk. Risk-taking involves the behavioural enactment of what is perceived as risky. Throughout this thesis, when referring to the personal construct model of adolescent risk-taking, I assume the following definition of risk-taking:

Risk-taking is an act (meaningful behaviour) that is undertaken with differing levels of awareness of the associated risk in "risky situations". Risk-taking is an impulsive act, theoretically but not intraspectively, in which the actor internally experiences a pressure to act. Risk-taking (like hostility and aggression) is an act associated with emotion, that by definition includes anxiety.

The term "risk-taking" is most often used by an extraspective observer who uses the term, usually pejoratively, because they are unhappy with the act. From a personal construct perspective, risk-taking can be understood only when the intraspectively perceived options open to the actor are examined.

Risk-taking is defined as an act because every risk-taking behaviour is meaningful to the actor. The term act is used to emphasise this and distance this approach from the assumptions of behaviourism. Act is assumed to be synonymous with Kelly's (1955/1991) use of "experiment". The definition of construing assumed in this thesis is consistent with that of Pfenninger and Klion (1994), in that construing, by definition, involves action. That is, construing is a total process involving cognition, emotion and action. This is different from "risk perception" which does not involve action.

This definition of risk-taking includes reference to "risky situation" to recognise that: (a) as mentioned, acts are meaningful to the person; (b) acts
occur within a social context, that is they are "situated interpretive acts" (Mascolo, 1994; Sarbin, 1986). This is in opposition to single decontextualised behaviour referred to by much psychological research. This definition assumes that "risky situations" for adolescents usually involve important others (Lightfoot, 1997). A "behaviour" is an abstract decontextualised theoretical construct of a parent, teacher or psychologist; and (c) these "situated interpretive acts" are embodied (Butt, 1998; Meshoulam, 1997; Mills, 1997).

Moreover, a "situation" is more consistent theoretically with Kelly's (1955/1991, p85) description of validation of a prediction as: "the common intersect of a certain set of properties". This "intersection" to which Kelly referred has otherwise been termed validation or, more simply, confirmation. The opposite, when properties do not intersect, has been termed invalidation or disconfirmation. The situation corresponds to the certain set of properties, for example; late, loud music, alcohol. This definition assumes that the adolescent is more likely to make predictions about whether they will be in such situations (and perform actions that they construe, in a constellatory manner, that usually occur in such situations), than make specific behavioural predictions about whether they will, for example, ingest 800 mls of beer. To the adolescent "situation" is concrete and "behaviour" is abstract.

The risk-taking act is theoretically defined as impulsive. The act is impulsive in terms of the foreshortened phases of the Circumspection-Preemption-Control (C-P-C) cycle described by Kelly (1955/1991). The C-P-C Cycle is concerned with decision making. The circumspection phase of the Cycle involves the person considering the many options available to them, for example, those involving whether to take the risk or not. The preemptive phase involves reducing or preempting these options down to two options representing each end of a bipolar construct. The final phase is the control phase in which a decision is made regarding which action to take. This relates to what Kelly (1955/1991) termed the Choice Corollary. Moreover, adolescents may experience dilemmas in choosing between actions weighted heavily with psychosocial risk versus actions weighted heavily with physical risk.

This definition of risk-taking as impulsive theoretically, is a departure from the rest of the definition of risk as defined intraspectively. That is, the person may not construe themselves as behaving impulsively. However, for theoretical reasons, in terms of the Circumspection-Preemption-Control (CPC)
cycle or Decision Making Cycle they behave impulsively. I use this qualification to restrict the scope of risk-taking. Adolescent risk-taking is assumed to have foreshortened phases of the Decision Making Cycle. Therefore, while it may seem that all adolescent risk-taking acts could be defined as simply aggressiveness in Kelly's terms, risk-taking is different because: (a) it is impulsive by definition and (b) while risk-taking, as defined here, usually is a form of aggressiveness, it is not necessarily so.

Risk-taking is defined as an act associated with emotion. Kelly (1955/1991) also defines hostility and aggressiveness as behaviours associated with emotion. As stated, all risk-taking involves anxiety. The risk-taking act is assumed here as what occurs after the anxiety, and as a result elaborates the construct system. Depending on whether the risk is more heavily weighted towards physical or psychosocial risk, other emotions experienced may include threat, guilt or shame.

The risk-taking act, in the case of adolescents, is assumed in this definition to be usually an act of aggressiveness. That is, the adolescent expands their perceptual field by experiencing risky situations. The act is hostile only if the negative consequences of a risk-taking act actually occur and have been construed by the person, yet the risk-taking acts continue. This person has difficulty making sense of their prior actions, completing their experience cycle (Winter, 1992).

I have described my theoretical assumptions underlying my definitions of risk and risk-taking from within a theoretical framework personal construct psychology. I summarise now the key aspects of these assertions:

1. Risk and hence risk-taking acts are defined intrapsychically and a priori. That is, they are defined from the person's point of view, before the act;
2. Risk refers only to a priori perception of a volitional act;
3. Risk is conceptualised as having two types; physical risk and psychosocial risk. Risk-taking acts involve different amounts of each type of risk.
4. Risk-taking, like aggressiveness or hostility, is an act associated with emotion. All risk-taking involves anxiety. Physical risk-taking involves threat. Psychosocial risk-taking involves guilt, shame or both.
5. "Risky situations" is a more appropriate way to conceptualise risk taking than "risk behaviours" because it is more meaningful to the adolescent and
consistent with the view of risk-taking as occurring within a social context—a situated interpretive act.

6. Risk-taking is, by definition, impulsive in theoretical terms. That is, it involves foreshortened phases of the Circumspection-Preemption-Control cycle (Decision Making Cycle) described by Kelly (1955/1991).

I apply this framework specifically to the issues discussed in Chapter 2 and Chapter 3.

Risk-Taking as an Experiment to Develop Identity

In Chapter 2 I discussed adolescent identity development in general, without specific reference to personal construct psychology. I now apply personal construct psychology to adolescent identity development. I view adolescent risk-taking as experimentation required for identity development, based on Kelly's (1955/1991) analogy of person-as-scientist. That is, I tie, theoretically, adolescent identity development to adolescent risk-taking. While I am not the first to make this link (Jessor, 1984; Lyng, 1993), I believe the personal construct analogy of risk-taking, as an experiment to develop identity, has two advantages. First, the phenomenon of risk-taking for adolescents often has an "experimental" aspect to it, as evidenced by the popular descriptions of adolescents as "experimenting". Second, personal construct psychology provides a rich theoretical framework to develop the notion of adolescent identity experimentation, as it is based on the analogy of person-as-scientist.

The assertion that risk-taking is an experiment to develop identity has significant implications as it suggests that risk-taking is not necessarily dysfunctional. In reference to risk-taking as dysfunctional, Irwin (1993, p.12) states that: "the major problem for investigators and clinicians is to distinguish between normal transitional risk-taking behaviours that are developmentally enhancing and those same behaviours that, by their frequency and intensity, are pathological expressions for which there is little evidence of secondary gain for the teenager". In personal construct terms, I refer to the former "normal transitional risk-taking behaviours" as a form of aggressiveness. I stated in the personal construct definition of risk-taking that this form is the most common form of adolescent risk-taking. In personal construct terms, I refer to the latter "pathological expressions" (Irwin, 1993) as
a form of hostility. Anderson et al (1993, p172) assert that: "making the
distinction between developmentally-enhancing versus developmentally-
detrimental risks is one of the important tasks facing those engaged in the
study of risk-taking". These authors claim that perhaps the time has come to
ask a different question from whether adolescent decision making is
inadequate: How does risk-taking, even when it involves significant threats to
well being, play a positive role in development and in the mental health of the
individual?

Lyng (1993) takes the example of adolescent criminal behaviour which in
commonsense terms is dysfunctional. By introducing the concept of
"edgework", such behaviour takes on a function. Lyng (1993, p110) uses
"edgework" to refer "to activities that typically involve the process of
negotiating the boundary between life and death, consciousness and
unconsciousness, sanity and insanity, or any other dramatic experiential
expression between the line of order and disorder". Edgework is one example
of an effort to move away from viewing risk-taking as totally dysfunctional.
In my view, "edgework" is very similar to my personal construct definition of
physical risk.

This view, that the interaction of the organism with its environment,
physical or social, is necessary for the organism's development, is consistent
with broader constructivist views of development. One example is Guidano's
(1995, p90) view that self knowledge structures, such as identity, can be seen
as: "evolutionary life processes that are progressively shaped in response to
challenging environmental pressures". Pfenninger and Klion (1994) also
argue for the role of activity in meaning making. Kelly (1971) refers to "faith"
and "commitment" in a similar fashion to how I use risk and risk-taking:

It is this faith that distinguishes the psychology of the unknown from
simple psychological agnosticism. And it is experience, sought in full
cycle, that is the implementation of the faith.

So one's construction of a situation (my emphasis), for which he must
always take full personal responsibility- whether he (sic) can put it
into words or not- provides the initial grounds for seeking experience
with events. This is to say that one's personal constructs -not physical
accidents- are the springboard to self involvement. I become aware of a
situation by construing it in my own terms, and on these terms I come
to grip with it. Some psychologists call this "opening the self to experience". But there is more to experience than mere collision with events- a lot more. I dare anticipate what will happen and I wager my life that what happens will be different because I have intruded myself. This, as I see it, is commitment- what I have called "self involvement plus anticipation" (p.15).

Kelly's (1971) description of the terms faith and dare in this quote fit closely with the definition of risk I provided earlier. The "experience, sought in full cycle", is discussed in terms of Kelly's (1970) Experience Cycle, in the section to follow.

Kelly's (1955/1991) Choice Corollary claims that a person chooses for himself (sic) that alternative in a dichotomised construct through which he anticipates the greater possibility for extension and definition of his system (Green, 1995). This is further theoretical support that Kelly's view of the person is consistent with risk-taking as an experiment to develop one's identity (Vaughn & Pfenninger, 1994; Viney, 1987; 1992). In the previous section I defined risk-taking, in terms of the Decision Making Cycle, as impulsive. This may appear inconsistent with functional risk-taking. However, I also defined risk-taking, by definition, as including anxiety. The foreshortening of the Decision Making Cycle is a result of this anxiety (Winter, 1992). The result, however, is that the person has the faith (Kelly, 1971) to take the risk and elaborates his or her system. The person's choice is elaborative, even if he or she has made the choice rapidly.

In this section I have argued that, by using a personal construct theoretical framework, adolescent risk-taking can be conceptualised as an experiment to develop a person's identity. I likened functional risk-taking to Kelly's (1955/1991) concept of aggressiveness and less functional risk-taking to Kelly's (1955/1991) concept of hostility. I have examined Kelly's (1971) use of the terms faith and commitment to demonstrate the necessity of personal participation and investment in risk-taking experiments. Having described the theoretical rationale for considering risk-taking as an experiment to develop identity I now consider the process of this experiment. I use Kelly's (1970) Experience Cycle as the framework to understand the process of adolescent risk-taking.
The Experience Cycle as a Framework for Understanding the Process of Risk-Taking

Kelly (1970) described the Experience Cycle later than the original 1955 theory of personal constructs (Winter, 1992). The first phase of the Cycle is the anticipation phase, in which a prediction is formulated concerning a particular event. The second phase is the investment phase, in which the person fully involves himself or herself in this anticipation. The third phase, the encounter phase consists of the person openly and actively experiencing the event. The fourth phase, the confirmation and disconfirmation phase constitutes the assessment of this encounter in relation to the initial anticipation. In the final constructive revision phase, the person reconstrues, if necessary, based on the evidence obtained during the encounter. A fresh anticipation and a further cycle may then occur.

If there is a block in this cycle, nothing new is learned. For the adolescent risk taker this would mean that identity would not be elaborated by the risk-taking act. Winter (1992) defines hostility as the Experience Cycle not being completed. The hostile person is the epitome of the bad scientist (Fransella, 1983). Kelly (1969) gives the example of the person who, wishing to be a good host, would rather shorten the length of his guest’s legs than lengthen their bed. This however is not usually the case, as the adolescent risk-taking act is usually an aggressive act, rather than an act of hostility.

I use the Experience Cycle as a theoretical basis to understand better the process of adolescent risk-taking. In the first study I use questions derived from each phase of the cycle to form the basis of a semi-structured interview format (Smith, 1995). The second study involves the refinement of this methodology to develop the Experience Cycle Methodology (ECM). I consider now risk perception, as discussed in Chapter 3, from a personal construct perspective.

Risk Perception as a Form of Prediction

The concept of risk perception is prominent in the recent literature on adolescent risk-taking (Benthin, Slovic & Severson, 1993; Moore & Rosenthal, 1991; Smith & Rosenthal, 1995). This concept relates to the stereotype of adolescents perceiving themselves as invulnerable or even immortal. Millstein (1992) claims that there is, however, little or no empirical support for this notion (Melton, 1988). Weinstein (1984) reports how adults who engage in risk
behaviour perceive less risk associated with those behaviours than individuals who do not engage in such behaviour. This leads to the question of whether the low perceived risk or the risk behaviour came first? Also, does the risk behaviour continue with low perceived risk? Intuitively it seems that low perceived risk will predict greater risk-taking. However, empirical studies demonstrating such a simple relationship are, as yet, scarce. The answer may either be more studies, or acknowledgment that a more complex relationship exists between risk perception and risk-taking behaviour.

Personal construct psychology in general, and this study in particular, with the intraspective definition of risk, is in a unique position to provide a novel framework for the phenomenon of risk perception. As was demonstrated above by Kelly's (1971) comments regarding faith and commitment through participation, the notion of risk is central to personal construct psychology. That is, risk perception is not simply a topic of investigation to personal construct psychology, it is something central to its theoretical foundation.

As previously defined, risk is an *a priori* perception of a volitional act. Hence, the definition of risk that I have employed is inherently subjective. Like personal construct psychology, the definition is not concerned with essentialist or objectivist ratings of risk that correspond to certain actions. Moreover, by qualifying the definition of risk as a priori the notion of risk perception and prediction are deliberately combined. Furthermore, by defining risk-taking as a volitional act, the definition is consistent with Kelly's (1971) views of commitment as involving anticipation *and* participation.

As will become apparent, I operationalise risk by attaching it to the Investment Phase of the Experience Cycle Methodology. That is, because risk is defined intraspectively, it is then logical to understand the risk by asking the person of their "level of investment" in the experiment they are conducting.

To extend the Kellian analogy of person as scientist, the Lakatosian term of "crucial experiment" can be applied to particular behavioural experiments (Berzonsky, 1992). I use "crucial experiment" to refer to any risk-taking act that is likely to bring about significant change to the person's system of construing. That is, the level of risk may be measured by its implications for change to the construct system (Hinkle, 1965). Whereas Lakatos (1970) used the term "crucial experiment" to refer to single experiments that changed whole

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3 Admittedly, this assumes that the risk is perceived at a verbal level of awareness.
research programs, I use it to refer to a wider range of risk-taking experiments that the person views as important to who they are. The term “crucial experiment” relates to Kelly's (1971) use of the term commitment as quoted previously. In terms of identity formation, the sexual act for example, has become a crucial experiment for many adolescents in Western urbanised cultures. Hence, from a personal construct perspective I view risk perception as a form of prediction. If the possible results of an experiment are too threatening, too risky, the experiment is not conducted or the results are denied (Kelly, 1957).

I defined risk previously as involving two types: physical and psychosocial. This means that decision-making between two possible experiments may involve an implicative dilemma (Hinkle, 1965). That is, both actions may involve risk, one involving more physical risk and the other more psychosocial risk of different weight. Dilemmas surrounding which experiment to conduct and the consequent risk-taking acts are associated with emotion. Consider two adolescents negotiating condom use in terms of a physical risk versus psychosocial risk dilemma. Sue may experience shame if she asks Dan to use a condom, as she believes Dan will not expect her to do so (McCoy, 1981). To ask Dan to use a condom may be to engage in a risk-taking experiment which she perceives at some level as having significant psychosocial risk. Sue perceives having sex without a condom as risky; involving physical risk. This notion of decision making dilemmas between physical and psychosocial risk is operationalised by using Tschudi’s (1977) ABC model.

Nomothetic to Idiographic:

Moving from theResearchers Predicting Adolescents Behaviour
to Adolescents Predicting Their own Behaviour

In this section I discuss HIV-related sexual risk-taking as a specific example of risk-taking. As I discussed in Chapter 3, with reference to the Health Belief Model and Theory of Reasoned Action, many researchers have assumed that sexual behaviour, similar to other behaviours, can be predicted from a person’s knowledge, attitudes and beliefs (Moore & Rosenthal, 1993). This has been termed as the “K-A-B paradigm” (Bettinghaus, 1986). Adolescent sexual behaviour has been conceptualised as a process of rational decision making (Langer & Warheit, 1992; Rosenthal, Hall & Moore, 1992; Terry, Gallois
& McCamish, 1993). Moore and Rosenthal (1993, p131) question whether the assumption that knowledge about HIV transmission leads to avoidance of unsafe behaviour and question whether attitudes about condoms relate to their use.

Although numerous early studies have demonstrated that some adolescents have inadequate knowledge of HIV transmission (Ross et al, 1988), more recent studies have demonstrated "adequate" levels of knowledge (Dunn, Donald, Lucke, Nilsson & Raphael, 1993; Rosenthal, Moore & Brumen, 1990; Viney, Henry, Oades & Campbell, 1996). This leads to the question: Adequate for what? Even early studies had demonstrated that knowledge did not predict attitudes or behaviour successfully (Kegeles, Adler & Irwin, 1988). Recent studies have began to question the role of knowledge, some claiming it is a necessary but not sufficient requisite of behaviour change (Kraft, 1993; Mellanby, Phelps & Tripp, 1992; Morrison, Baker & Gillmore, 1994). Most researchers within this paradigm now accept that knowledge is not a sufficient condition for behaviour change. Questions arise as to whether it is even a necessary condition for behaviour change. At the very least, the relationship between knowledge and behaviour is complex and unlikely to be linear.

The K-A-B paradigm includes the Health Belief Model, the Theory of Reasoned Action and its revision the Theory of Planned Behaviour. These approaches adopt a nomothetic stance, employing group-based statistics. These models assume objective definitions of risk behaviours. From a personal construct perspective I question: (a) the objective definition of risk; (b) the emphasis on decontextualised a priori knowledge; and (c) the emphasis on nomothetic group based statistical models. The personal construct model of adolescent risk-taking stands in opposition to all three by assuming a subjective definition of risk, an emphasis on situated and experiential knowledge and significant reference to idiographic and qualitative data. Movement from the K-A-B paradigm to the personal construct model of adolescent risk-taking requires one to move from the image of "the expert researcher" predicting adolescent condom use to the image of the individual predicting his or her own condom use (Oades & Viney, 1997a).

Morrison et al (1994, p286) claim that the form of "knowledge" reliably and validly reproduced in "knowledge" scales is unlikely to be the form of knowledge the adolescent applies to themselves individually. These authors
assert that interventions may be better aimed, then at personalising risk, rather than teaching abstract risk states. The personal construct model of adolescent risk-taking and previous personal construct group work with adolescents takes exactly the same view of knowledge of risk (Viney, Truneckova, Weekes & Oades, 1997).

Within personal construct theory the notion of learning is central. Learning and construing are closely related ideas. Kelly (1955/1991, p75) states that: "learning is not a special class of psychological processes, it is synonymous with any and all psychological processes". In most of the condom-use literature, knowledge and learning are predominantly conceptualised in cognitive terms, in which knowledge is the storage of information. The knowledge is abstracted from the context, and hence the adolescent does not necessarily relate it to themselves.

Fromm (1993) asserts that learning, as opposed to knowledge, should be assessed from the learner's point of view, as to whether it is personally meaningful. Personal construct theory explicitly uses the term "core constructs" to describe constructs that relate to self. Fromm (1993) has added the notion of reflexive constructs, information which can be applied to self. Fromm divides these constructs into those that are directly applicable to self, and those that indirectly relate to self. Interestingly, in Fromm's (1993) study of what students learned, the statements categorised by the students as non-reflexive were exactly those that the teacher had planned before the seminar. They were, however, not those which the students saw as important to their learning, because they did not relate to self. It could be that past interventions relating to "knowledge" and the measurement of "knowledge" has focused too heavily on non-reflexive constructs- information that the adolescent sees as having no relevance to self. The personal construct view of learning asserts that what the adolescent already knows will influence what they will learn (Novak, 1993). Novak's (1993, p173) finding, that pencil and paper tests account for only about 10% of functional knowledge of an individual, is directly relevant to the research measuring knowledge conducted thus far on adolescent condom use.

The personal construct view emphasises experiential learning in which knowledge is self-referential, rather than pencil and paper tests of knowledge. The focus on individual cycles of experience is consistent with this emphasis (Allport, 1937; Viney, 1988; Windelband, 1904; Yin, 1984). In addition to some
nomothetic hypotheses I develop the idiographic approach throughout this report, including the development of the Experience Cycle Methodology and concluding with hypothesis testing in the second study which examines "within cycle" hypotheses.

A Preliminary Personal Construct Model of Adolescent Risk-Taking

I have described the theoretical definitions and assumptions underpinning the personal construct model of adolescent risk-taking. These definitions and assumptions are axiomatic, true by definition and hence will not be tested empirically. Viney and Oades (1998) assert that models are usefully stated in the form of propositions and assessed as to whether they perform certain functions and meet certain standards. I present the personal construct model of adolescent risk-taking in three versions to allow the reader to understand its development: preliminary, interim and final. The preliminary model is theoretical, from which the exploratory research questions are derived. The interim model is a modified version of the preliminary model based on the empirical findings of Study 1. The final model is a further modification of the preliminary model after more specific hypotheses are tested in Study 2.

As part of model development in Study 1, the preliminary model of personal construct risk-taking and the corresponding three research questions employ the framework of content, process and structure of risk construal. The term "structure" refers to the relationship between constructs, traditionally measured by repertory grid technique. The term "process" refers to the process of anticipating, experiencing and reconstruing, exemplified by the experience cycle as developed later in this thesis. The term "content" refers to the content of constructs, particularly those that relate to risk construal and identity tasks. The final personal construct model of risk-taking aims to represent individual psychological processes, relating the structure of risk perception, the content of constructs to how construal and reconstrual occurs as a process as a result of taking risks. The preliminary personal construct model of adolescent risk-taking is stated as four propositions. Research Questions relating to the first three propositions are presented in the next chapter.
The preliminary personal construct model of adolescent risk-taking is stated in propositions as follows:

A. Adolescents engage in experiments involving unique processes of anticipation of and sometimes personal involvement in risky situations that may lead to construct revision.

B. Adolescents experience dilemmas in decision making between physical risk and psychosocial risk. Physical risk-taking must be always understood within the psychosocial environment in which it occurs. The structure and complexity of the risk perception of adolescents will be a product of many factors other than their age and has no simple relationship to their behaviour.

C. Adolescents vary in their psychosocial maturity in terms of the meaning they apply to events. The content of their helpful and unhelpful constructs enables adolescents to understand their own psychological and social development.

D. The process of adolescent risk experimentation, the structure of risk perception and the contents of developmental constructs are related. Adolescents who have been involved in comprehensive risk experimentation are likely to have different structures of risk perception and different sets of developmental constructs than adolescents who have not been involved in comprehensive risk experimentation.

In the first part of this chapter I introduced key concepts of personal construct psychology including the personal construct, person as scientist, and the personal construct view of experience, learning, emotions and change. In the second part of this chapter I provided then a personal construct definition of risk and risk-taking. I applied personal construct psychology to the issues I discussed in Chapters 2 and 3, particularly identity formation and risk perception. I evaluated the nomothetic search for adolescent risk predictors. I concluded the chapter with a preliminary theoretical model of adolescent risk-taking stated in four propositions. In Chapter 5 I state explicitly the research aim and three research questions that are necessary to operationalise the preliminary theoretical model presented in this chapter. These issues are examined in Study 1.
PART B
TWO STUDIES DEVELOPING AND REFINING THE
PERSONAL CONSTRUCT MODEL OF ADOLESCENT RISK-TAKING
CHAPTER 5

STUDY 1 AIM AND RESEARCH QUESTIONS
Study 1 Aim and Research Questions

Aim of the First Study

The general aim of this study is to operationalise and extend empirically a personal construct model of adolescent risk-taking. This model of adolescent risk-taking will attempt to combine an understanding of the qualitative process of adolescent risk-taking with quantitative measures of the structure of adolescent risk construal. The model will be a *personal construct* model in its choice of concepts and methodology. More specific hypotheses, derived from this model, will be tested in the second study. The final personal construct model of adolescent risk-taking will be useful for further research and intervention.

Research Questions

The following research questions all assume a personal construct theoretical framework.

Research Question 1

What are the individualised psychological *processes* that occur before, during and after adolescent risk-taking?

Research Question 2

What are the *structures* of adolescent construct systems which are used to construe risky situations?

Research Question 3

What is the *content* of the constructs adolescents use to:
(a) develop their identities; and
(b) construe risky situations?
CHAPTER 6

STUDY 1 METHOD
Study 1 Method

In this chapter I describe first the characteristics of the participants of Study 1 and how these participants were sampled. I describe then the process and structure of the interviews including the ethical issues of interviewing individually about the topic of risk-taking. The final section of this chapter describes the methods in Study 1 that I used to operationalise the research questions presented in the previous chapter.

Participants

Secondary School, University and Juvenile Justice Samples

I sampled adolescents from three settings to provide a range of experience in risk-taking activities; secondary school, university and juvenile justice settings. One hundred and twelve young people (57 males and 55 females) aged from 15 to 20 years (mean age 17.91 years) participated in this first study. I interviewed 50 participants of equal sex ratios from two coeducation secondary schools that were government funded. The schools were of a low and moderate socioeconomic background respectively. I interviewed 50 participants of equal sex ratios from a regional Australian university. This university sample consisted of students of introductory psychology courses and students living in a university residence housing many international students. I interviewed a further 12 male participants who were detained in a regional juvenile correctional centre.

Ninety-eight (87.5%) of the participants were Australian born and 103 (92%) said that they spoke English at home. Sixty-four (57.1%) of the participants said that their father was born in Australia. Sixty-nine (61.6%) of the participants said that their mother was born in Australia. For children and parents the proportion of those people born out of the country is slightly higher than the national average as is the region (McLennan, 1996; 1997a; 1997b). In terms of religious orientation, 60 (53.6%) stated they had no religion, 23 (20.5%) stated they were Catholic, 17 (15.2%) stated they were Protestant, and 11 (10.7%) stated they were of other religious orientations. This compares to the following national data from 1996: Anglican 22%, Catholic 27%, 21.9% Other Christian, Other religions 3.5% and No religion 16.6% (McLennan, 1998). Of those 52 (46.4%) participants who stated they had a religion, 6 (11.5%)
claimed to be very involved, 15 (28.9%) claimed to be moderately involved, and 31 (59.6%) claimed to be a little involved.

**Sampling Issues**

The two secondary school samples were selected randomly from six regional government schools who were willing to participate. The six schools willing to participate were however not selected randomly. All participants "volunteered". However, those participants within introductory psychology courses, approximately half of the university sample, were granted "bonus" course credit. The level of credit was specified by the course coordinator and was in addition to normal course requirements and equivalent to the level of credit granted by other researchers. I offered those participants in the Juvenile Justice Centres a soft drink upon completion of the interview.

The secondary school samples were representative of Australian adolescents in several ways: (a) the multicultural mix within the schools was consistent with Australian culture, although with a slightly higher proportion of non Australian born people; (b) the religious background of the students was also consistent with wider Australian figures; (c) the schools were in a coastal urban location, similar to the majority (85.3%) of Australians who live in urban settings (McLennan, 1997b; Skinner, 1997a; 1997b). One school had a moderate socioeconomic status and one had a low socioeconomic status.

The university sample included both first year psychology students and non psychology students attending a university college. This sample was also representative of an Australian university population. The multicultural aspect of Australian culture was represented in both the school and university samples. The juvenile justice sample was small, not random and included only males. For these reasons it is possibly less representative. The sampling was not random because the Psychologist at the Centre requested that I only interview certain participants (see comments on exclusion criteria below). The sample was small due to the inaccessibility of this adolescent group and the knowledge that such access would be better used in the second study to test the more developed model.
Inclusion Criteria

Age.

Secondary school participants from Year 10 and Year 11 samples were interviewed. I did not interview those participants who were yet to have their fifteenth birthday and those who had had their 21st birthday. That is, people who were 15 to 20 years of age were included.

Exclusion Criteria

Sexual orientation.

As parts of this study included sexual risk-taking I excluded the data of two participants who described themselves as homosexual. However, I interviewed these participants and discussed with them other research focusing on risk-taking more directly related to homosexual populations. I designed this study to sample "heterosexual" adolescents. I made this decision because of multiple research studies focussing more specifically and sensitively on issues relating to homosexual culture. I recognise however that the heterosexual versus homosexual dimension may not be as well defined or stable as originally believed (Jagose, 1996).

Mental state.

I honoured the request of the Psychologist from the Juvenile Correction Centre by not interviewing certain prospective participants. I excluded these participants as the nature of the interview may have been detrimental to their psychological state.

Research Design

I designed this study to achieve the aim and answer the research questions outlined in Chapter 5. I intended this study to be more generative and exploratory than the second study. For this reason I measured multiple variables and generated much qualitative material from interviews with the participants. I employed a cross-sectional survey design with counterbalanced interviews of secondary school based, university based, and juvenile justice based adolescents. I interviewed the participants once each.
**Procedure**

**The Interview Settings**

I interviewed the participants individually due to the sensitive and personal nature of the material discussed. I decided that, particularly for adolescents, the demand characteristics of myself, a person whom the participant would never see again, were likely to be less significant than a group format, surrounded by everyday peers. I therefore interviewed the participants individually. The interview settings were sound proof with glass windows, ensuring confidentiality. Hence, the participant and I were in view of staff but not students passing who may walk past the window. I was therefore protected legally from allegations of misconduct and reduced the risk of physical threat to myself. I believe the participants also felt more comfortable in such a setting.

**The Interviewer and the "Clinical" Interview**

I conducted all the interviews. I am male and I was 25 years of age when I conducted the interviews. I was born in Australia and I am of English descent. At the time of the interviews I was a registered psychologist in NSW and had the equivalent of a Masters of Clinical Psychology degree, appropriate training for a Clinical Psychologist in Australia.

The interview process resembled a "clinical interview" format. While it included questionnaires given as a structured interview, I also made every effort to "engage" the participant and make them feel comfortable. The interview process also resembled a clinical interview in its depth and significant inclusion of qualitative material.

**Structure of the Interview**

All participants completed the quantitative structured interview (see Appendix A for other measures used but not included in this report). The participant usually completed this interview in approximately 30 minutes. Approximately half of the participants, whom I selected randomly, also completed a qualitative interview (see ABC Technique, CASPM, Experience Cycle Narratives, RSGT in measures section below). The participant usually completed this additional section of the interview in 45-60 minutes.
For the qualitative interviews I always requested the participant to complete the interview in the following order: RSGT, Experience Cycle Narratives, ABC Technique, then CASPM. I randomly assigned the participants to interviews of three types: (a) quantitative interview, (b) quantitative and then qualitative interview, or (c) qualitative and then quantitative interview. I employed this counterbalanced design to control for possible carry over effects.

Ethics. Participant Information and Consent

The University, School Education and Juvenile Justice Ethics committees approved this research. I requested both minors and their parent or guardians to sign consent forms. Those over 18 years of age did not require consent of parent or guardian. I prepared and conducted the research to meet the requirements of the Australian Psychological Society (1986) Code of Professional Conduct and the New South Wales Psychologists' Registration Board Code of Conduct (1997). Consent forms contained brief information about the research and clear statements that the research was voluntary, confidential and that they could stop the interview at any time (see Appendix B for a sample consent form).

Measures

Pilot Study

I piloted all measures with 19 university students of an Introductory Psychology course. I refined then several of the measures and the order of delivery, particularly the RSGT, described below.

ABC Technique (Research Question 1: Process of Adolescent Risk-Taking)

I employed Tschudi's (1977) ABC technique (Dalton & Dunnett, 1993) to assess the dilemma of choosing between physical and psychosocial risks. I have included the ABC technique concerning research question 1, a measure of process, as I believe it corresponds closely to the control phase of Kelly's (1955/1991) Circumspection-Preemption-Control (CPC) Cycle. I refer to this cycle as the "decision making cycle". Hence, I believe the ABC technique provides information about the process of decision making, particularly what I refer to as the "physical risk versus psychosocial risk dilemma".
I questioned the participants about: Not asking a partner for a condom to be used (A1) versus Asking a partner for a condom to be used (A2). To achieve this I asked for the disadvantage of Not asking for a condom to be used (B1), followed by the advantage of Asking for a condom to be used (B2). I asked participants for the Advantage of asking (C1) and the disadvantage of Not asking (C2) (see Table 2). I recorded the responses verbatim.

<table>
<thead>
<tr>
<th></th>
<th>Tschudi's (1977) ABC Technique Applied to “Asking Partner for a Condom to be Used”</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Not asking to use</td>
</tr>
<tr>
<td>A2</td>
<td>Asking to use</td>
</tr>
<tr>
<td>B1</td>
<td>Disadvantage of not asking</td>
</tr>
<tr>
<td>B2</td>
<td>Advantage of asking</td>
</tr>
<tr>
<td>C1</td>
<td>Advantage of not asking</td>
</tr>
<tr>
<td>C2</td>
<td>Disadvantage of asking</td>
</tr>
</tbody>
</table>

Experience Cycle Narratives of Risk-Taking (Research Question 1: Processes of Risk-Taking)

Link with elements of the Risky Situations Grid Technique (RSGT).

I generated narratives about risk-taking with participants immediately after administering the Risky Ranks Grid (see Risky Situations Grid Technique section below). I asked participants to tell stories about two of the elements from the nine elements of the RSGT. The elements I chose were (a) Element A; sex without a condom and (b) the element ranked as most risky as part of the Risky Ranks Grid. If this was also Element A, I then chose the element ranked as the second most risky as a cue for a story. See Appendix C for the verbatim protocol used to generate stories about risky situations.

Semi-structured interview: Questions from Kelly’s Experience Cycle.

To generate narratives about risk-taking I used a semi-structured interview format. I derived the pool of questions from Kelly’s (1970) Experience Cycle.
Stories were audiotaped. A research assistant then transcribed all stories. I analysed the stories by looking for similarities and differences between participants for narratives corresponding to each phase of the Experience Cycle. My major purpose in this approach was to develop further this methodology. This methodology formed the basis of the Experience Cycle Methodology (ECM) that I used in the second study. A detailed description of the development of this methodology from Study 1 through to Study 2 is provided in Appendix C.

The Risky Situations Grid Technique (RSGT) (Research Question 2: Structures of Adolescent Risk Perception)

The Risky Situations Grid Technique (RSGT) is a methodology I have used to operationalise part of the developing personal construct model of adolescent risk-taking (Fransella & Bannister, 1977). I have used the term RSGT to refer to any grid-based investigations using the nine elements that consist of nine cartoon style multicoloured drawings of situations which may be perceived as risky (See Appendix D.). The drawings are presented on A5 size laminated cards. I administered sets of drawings identical in form for males and females. However, the drawings I administered to male participants were coloured differently to those I administered to females. I instructed the artist to design the drawings so that the experience of the male in the situation did not, prima facie, differ significantly from that of the female. For the set of cards administered to male participants the artist coloured the key male in each situation pink. Conversely, the key female person was coloured pink for the set of drawings I used with female participants. The nine elements shown in Appendix D included the following situations:

(a) I am having unprotected sex
(b) I am refusing to drink further alcohol
(c) I am having protected sex
(d) I am sharing an intra-venous needle
(e) I am at the beach on a sunny day
(f) I discuss condom use with a potential partner
(g) I ask a person out
(h) I have to speak in front of others
(i) I am in a fast driving car
Throughout this study and the second study that follows I administered the elements in the above order and signified them with the same letter.

I selected the drawings of situations (elements) to be within the range of convenience of all three groups of adolescents. Previous research involving adolescent group work on HIV related risk-taking (Viney, Truneckova, Weekes & Oades, 1997) contributed to my choice of elements. I reduced the number of elements of the Risky Situations Grid Technique (RSGT) from 12 to nine after the pilot study. The three elements omitted included: (a) a drawing of two young people smoking cigarettes, (b) a drawing of a group stealing a car, and (c) a drawing of a person walking alone in a garden. The drawing involving cigarette smoking was omitted as I believed it was similar to other elements included. I omitted the drawing involving car stealing as it appeared to provide no information besides that of the fast car element. I verified these claims by calculating Euclidean Distances between construing of this and other elements. I omitted the drawing of the person walking alone in a garden as it lacked face validity.

For all variations of the RSGT I positioned, in front of the participant, the nine cards (elements) in a three-by-three matrix format from left to right. Hence, Element a was positioned at the top left corner of the matrix, and Element i was positioned at the bottom right corner of the matrix. Consistent with the previous comments I made regarding a “clinical interview” format, the grid based methodologies involved considerable assistance to the participant. The grid procedures were performed as an interview, or in Stewart and Stewart’s (1980) terms, a “structured conversation”, to: (a) minimise the opportunity of misunderstanding of the procedure; (b) be suitable for the varied ages of the participants; and (c) maximise validity of the results. This is in contrast to many grid procedures with adults that require the participant to complete the procedure as a pencil and paper test in relative privacy.

In this study I used the elements of the RSGT to create two types of grids that I term the As If Grid and the Risky Ranks Grid. I now describe these methods in more detail.

The “As If” Grid.

The first grid I administered in this study was the As If Grid. In this procedure I asked the participant to imagine they were in the exact situation of
the pink person in the drawing. The use of imagination as a “way of knowing” was inspired by the work of early constructivist Vico (Mahoney, 1991). My use of the term "as if" corresponds to George Kelly's (1955/1991) use of the term that was influenced by the work of Vahinger (Mahoney, 1991).

I then used the triadic method of construct elicitation. Triadic elicitation involves asking the participant how two situations are similar, and how these two are different from a third situation. For example, how are drug taking and unprotected sex similar, and how are they different from asking someone for a date? The verbatim instructions that I gave initially to each participant are included in Appendix E. I elicited six constructs from the participant yielding a 9 element by 6 construct grid.

Euclidean Distance Models were calculated from the As If Grid using the ALSCAL and PROXIMITIES commands of SPSS for Windows. Three structural measures were calculated: Cognitive Complexity, Extremity of Ratings and Percentage of Variance Accounted for by the First Factor (PVAFF). Cognitive Complexity of each grid was calculated using Bell's (1994) intraclass correlation formula (Bell & Keen 1981; Feixas et al, 1992) and SPSS for Windows ANOVA command. The percentage of Extremity of Ratings of each grid was also calculated using SPSS for Windows (Feixas et al, 1992). The Percentage of Variance Accounted for by the First Factor (PVAFF) of each grid was calculated using SPSS for Windows FACTOR command.

Feixas et al (1992) argue theoretically and empirically demonstrate that cognitive complexity is a measure of differentiation. While cognitive complexity, prima facie, appears to be similar to PVAFF conceptually, empirically it has been found to be unrelated to PVAFF, and the Extremity of Ratings Measure. Hence, these three measures have been included in Study 1 as they have been demonstrated to measure different aspects of construct system structure. In this case they are employed to measure structure of risk perception.

The “Risky Ranks” Grid.

This grid is a single construct grid in which I asked the participant to rank the situations from most risky to least risky. The verbatim instructions are provided also in Appendix E.
Content Analysis Scales of Psychosocial Maturity (CASPM) (Research Question 3: Adolescent Identity Constructs)

The content of the constructs used to make sense of identity issues of these research participants were assessed using content analysis scales Viney, Rudd, Grenyer, and Tych's (1995) Content Analysis Scales of Psychosocial Maturity (CASPM), use Erikson's (1968) epigenetic tasks, remoulding them as bipolar constructs to deal with identity tasks. Viney's approach to psychosocial maturity is consistent with Kelly's (1955/1991) aim to avoid stages. Viney views Erikson's epigenetic tasks as bipolar constructs. These bipolar constructs are illustrated in Table 3.

<table>
<thead>
<tr>
<th></th>
<th>CASPM codes and weightings used in this study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Identity (+6) versus Identity Diffusion (-6)</td>
</tr>
<tr>
<td>2.</td>
<td>Affinity (+5) versus Isolation (-5)</td>
</tr>
<tr>
<td>3.</td>
<td>Industry (+4) versus Inferiority (-4)</td>
</tr>
<tr>
<td>4.</td>
<td>Initiative (+3) versus Hesitancy (-3)</td>
</tr>
<tr>
<td>5.</td>
<td>Autonomy (+2) versus Constraint (-2)</td>
</tr>
<tr>
<td>6.</td>
<td>Trust (+1) versus Mistrust (-1)</td>
</tr>
</tbody>
</table>

Hence, while maintaining that they are important developmental issues Viney does not claim that dealing with these developmental necessarily must occur in stages, rather they are an ongoing process. Viney et al's (1995) content analytic scales assess whether people are equipped with constructs to deal with such tasks. Four scales of the total 16 CASPM scales are not included: Integrity, Despair, Generativity and Stagnation. These scales are more relevant to developmental issues beyond adolescent years.

The usefulness of these scales for the measurement of psychological states has been demonstrated elsewhere (Gottschalk, Lolas & Viney, 1986; Viney, 1983). Content analysis of free responses overcomes many of the problems of asking adolescents to describe their states. These problems include the difficulties encountered through the ambivalence of their emotions, and the effects of social desirability on their responses. Content analysis also makes possible an ethical approach to adolescents that is honest, while giving them the opportunity to deal with what is important to them. The results from content analysis scales are less influenced by interviewer characteristics than
are other tools and yet provide rigorous measurement (Gottschalk, 1982). They have also proved useful in other studies of adolescents (Viney, 1987).

CASPM scales have appropriate levels of interjudge reliability with a range of coefficients from 0.80 to 0.95 for the 16 scales (Viney & Tych, 1985). Viney and Tych (1985) reported that over short periods of time from two to eight weeks a repeated measure multivariate analysis indicated that the scales were stable. However, for longer periods of six months they varied over time. The scales have shown the expected discriminations between children and adolescents of different ages in Australia, USA (both white and black youths) and the People's Republic of China (Viney, 1987; Wang & Viney, 1996; 1997). The content analytic scoring I conducted was based entirely on Viney, Rudd, Grenyer, and Tych's (1995) manual for the CASPM. These ratings were reliable.

A second blind and independent rater was used to score 19 (34.55%) of the 55 transcripts. A proportionate number of transcripts was sampled from each of the three groups of adolescents.

Pearson $r$ correlations were calculated on the final corrected scores for two raters: Identity Diffusion $r_k = 0.935$; Identity, $r_k = 0.911$; Affinity $r_k = 0.891$; Isolation $r_k = 0.797$; Industry $r_k = 0.874$, Inferiority $r_k = 0.859$, Initiative $r_k = 0.797$, Hesitancy $r_k = 0.793$; Autonomy $r_k = 0.919$; Constraint, $r_k = 0.875$, Trust $r_k = 0.728$; Mistrust $r_k = 0.712$. T tests comparing means from the first and second rater demonstrated no significant differences between the groups except for Constraint in which the second rater rated Constraint with higher scores. A Levene Statistic was calculated to examine the homogeneity-of-variance assumption. All scales demonstrated homogeneity-of-variance for the three groups of adolescents except Isolation and Affinity which had inflated variances for the juvenile justice sample in both cases.

The procedure I used is as follows:

I reiterated confidentiality before turning on the audio-cassette recorder. I asked participants the following question:

*Can you tell me what life is like for you at the moment? Is it good or bad, just tell me how things are going for you now? Talk for about five minutes if you can.*

I used minimal encouragers and reflective listening.

A Research Assistant then transcribed the interviews verbatim. I then claused the transcripts in preparation for coding (Viney, Rudd, Grenyer, &
Tych, 1995). I coded each participant clause of each transcript for the developmental tasks listed in Table 3.

The codes of CASPM and their respective weightings in parentheses are illustrated in Table 3. I multiplied the frequency of each code (See Table 3) by its weight to yield a raw score (RS) for each of the twelve scores. I converted this into a corrected score that takes the number of words in each transcript into account. I calculated the corrected score by generating a Correction Factor (CF) that is 100/number of words. I calculated each of the corrected scores for each participant using the following formula: Corrected Score = \sqrt{((CF*RS) + CF/2)}

In this chapter I have described the method used to operationalise the preliminary personal construct model of adolescent risk-taking and answer the three research questions. In Chapter 7 to follow, I report the results corresponding to each of the Research Questions before discussing these results and revising the preliminary model to develop the interim personal construct model of adolescent risk-taking.
CHAPTER 7

STUDY 1 RESULTS: EXTENDING THE PRELIMINARY MODEL OF ADOLESCENT RISK-TAKING
Study 1 Results: Extending the Preliminary Model of Adolescent Risk-Taking

In this chapter I report the results from the first study for the three research questions presented in Chapter 5. I discuss then answers to each of these research questions linking the empirical findings with the key theoretical propositions previously discussed. I conclude the chapter by revising the propositions of the preliminary personal construct model of adolescent risk-taking. These revisions form the interim personal construct model of adolescent risk-taking that I will refine in Study 2.

Research Question 1: The Processes of Risk-Taking

The ABC Technique

The ABC technique was used as a qualitative tool to understand better the processes of adolescents' decision-making. Participants completed an ABC procedure examining the advantages and disadvantages of asking for a condom to be used versus not asking for a condom to be used. The method was used to elicit any dilemma that existed between physical risk and psychosocial risk. A situation was scored as a dilemma when B1 (the disadvantage of not asking) and C2 (the disadvantage of asking) involved actions with physical and psychosocial risk respectively. A completed example of this procedure, demonstrating a dilemma between physical and psychosocial risk is provided in Table 4. Of the 57 participants who completed this procedure, 25 (43.86%) reported a dilemma between physical and psychosocial risk, without prompting.
Experience Cycle Narratives of Risk-Taking

The 57 transcripts discussing unprotected sex were analysed by grouping sections of the transcripts into two categories; (a) predicting and not predicting situations, and (b) construct revision. Thirty eight (66.66%) of the transcripts involved stories in which a person unsuccessfully predicted their involvement within a risky situation. Thirty eight (66.66%) of the transcripts involved construct revision. Examples of full transcripts of both categories from each participant are provided in Appendix F. Examples are included here in the text to illustrate predictions and revisions relating to condom use.

Category 1: Predicting and not predicting situations.

The following two examples demonstrate instances in which the person anticipated the situation.

“Simon”, a 19 year old male at university, tells of his friends:

Participant

This is kind of the release of it, and um, it wasn’t thought of, probably never realised the fact that they were having sex, it was more thought of in the fact that they always knew this was going
to happen, and um, because of the way the relationship worked, they regarded it, um, they didn’t regard it as they should, a physical act, and more of a, more of an emotional interaction. But they were clouded by their relationship to the realities of the situation.

**Interviewer**

Okay, so they, they were predicting originally, that it was actually, probably going to happen?

**Participant**

Yeah yup.

“Dennis”, 16 year old male in secondary school, describes a person he knows:

**Participant**

Um the guy, he’s sort of, I dunno, I don’t think he, I don’t think they use condoms, like I don’t think he likes to use condoms but I'm not too sure, because you know, that’s not really much of my business, but um, oh he’s, he’s a good bloke but, because I really don’t know him that well, but um, as far as I know, I don’t think that they use protection very often [right]

**Interviewer**

Okay. So you said, before this happened, before that that sort of threat of pregnancy and stuff [yeah] but they weren’t predicting that that was going to happen.

**Participant**

No, they, it was sort of like in their mind that, you know “it doesn’t happen to me, um you know, we’ll be right” or and they also used the withdrawal, before you ejaculate sort of thing which I think was as pretty stupid because you can ejaculate before that [yeah, okay]

**Interviewer**

And, so, like before they had sex, without a condom, did, were they predicting that that’s what they were going to do?

**Participant**

Yeah.
Interviewer

They were [withdraw]. They were going to withdraw? [yup yup] right, okay.

The following two narratives are examples of a person not anticipating a situation.

"Lee", an 18 year old male at university, describes his experience:

Participant

Um my girlfriend and I had decided once, that, you know, we didn't really decide it, it just sort of happened that things got carried away and, we ended up having intercourse without a condom, and um that led to a big scare, and my girlfriend actually thought she was pregnant, um, and went and got tested, and, you know, luckily enough, she wasn't, she wasn't pregnant, so um, we learnt a lot from that, like, for a, a fair while till the results came out, until we did the test. We were both very worried that um, she was pregnant, so, we came out both learning a lot from it, you know, not to use, I mean to use a, a condom when having intercourse, and it doesn't matter how long you've been with a person, I mean we both trust each other, and we got a good open relationship that um, you know, we both know each other's sexual history, but, um you can't always count on the fact that, you can't know the fact that um she could get, or the female could get pregnant [yup, okay]

Interviewer

Just going back to that story, like you said you had unprotected intercourse. Earlier in the day, or the week, or whenever, leading up to that, were you predicting that that might happen, or was it

Participant

Oh, ... probably not. You can't really, a lot of the time, when you, you know, make love, or have intercourse, you can't really predict, you know, what time, you you gonna do it, or what's going to happen. It usually just sort of happens, you know. You don't really plan that sort of thing, if you know what I mean.
"Bill", a 19 year old male in a juvenile justice centre, describes his experience:

**Participant**

The girls were pretty stoned as well, and drunk. And um, me and my mate went to the bedroom, and um, there was two girls, they came in as well. They were just friends [yup] Me and me mate started getting on to one girl each, and then, I think my mate had sex without a condom, [yup] and I think I did too, because we were both just too drunk- just forget about it.

**Interviewer**

Okay [yeah] Yeah, so earlier in the night, say, were you predicting that that would, predicting that that was going to happen, that?

**Participant**

I didn't know. If I was probably normal, I'd probably have used a condom, but I was just too drunk to forget about it (sic).

**Interviewer**

Did you think that you'd end up with these girls, or you didn't know, or you were hoping, or

**Participant**

No, I didn't, because they're all just friends, you know, mate. It was at a party, so we thought, you know, just "Grab em" [yup, okay] yeah.

These last two narratives illustrating experiences in which unprotected sex was not anticipated are similar to many of the narratives generated by the participants. That is, adolescent intercourse in general, and unprotected intercourse in particular, was generally constructed as "impulsive" and "just happening" and hence not predicted. Nineteen (67.9%) of the narratives regarding unprotected sex involved stories in which the subject did not predict the outcome.

**Category 2: Construct Revision.**

Participants generated narratives about themselves or other people not predicting unprotected sex. Did this experience lead to construct change? This category corresponds to questions such as:

What did you/they feel afterwards?
Did you/they get what you expected?
Did you/they change as a result of the experience?
Would you/they do it differently next time?

The following two narratives are examples in which the participants do not appear to demonstrate construct revision.

"Kylie", a 15 year old female in secondary school, describes a friend:

**Participant**

*Um, I can talk for a friend, like, she had unprotected sex. Um, I'm not sure why, I think because like, normally, like, you know, men they withdraw late, and they, most people know that doesn't work, that you can get pregnant. But she still does it. And, I think they went away and then they decided that they did it, or she told us that you know, he, they had it, and he kept going. And now she’s worried that she’s pregnant. She went to get the morning-after pill, but she, she rung up my friend to go get it for her, because she knew she had used it before, and then, she rung up my friend, and me, and like we kind of told her that it’s not really our responsibility, and she got a bit angry, but you know, we just, we didn’t care if she got angry, just as long as she knew what she was doing. She didn’t end up going to get that, now she’s gone for a pregnancy test. She doesn’t know if she’s pregnant or not. She’s still a bit, you know, like, she’s not actually like really that worried, or she doesn’t seem that. Like, even though, like she says she’s going to get an abortion, like she should be on the pill, even though she’s not, and if she does have an abortion, you know, I mean like, I don’t think, me and a couple of my friends, they’d be too happy, they think she should like, I told my friend not to really let her come to me, because it’d be different, if you know like the condom breaks, like she was still trying to be safe, or [mm] she was um, you know like, something did go wrong she got raped, I mean, but it was just her stupidity. She just didn’t want to do the right thing, and I don’t think she should kill her baby because of that.*
Interviewer
Okay, and like, um you said that she she went away or something, and did

Participant
Oh, they'd done it before [right] you know what I mean. Like that never happened just because, you know the first time she should have learnt for the first time, that there was a risk [right, okay]. I know that's easier not to, you know what I mean, like, just to happen but, you know what I mean, when it's pretty easy just to go like buy some condoms, you know what I mean.

Interviewer
So has she, now that she's got this fear of pregnancy, has she changed at all as a result of that?

Participant
Not to my knowledge, no, not really. Like, you know what I mean, because there has been like, it seems like a couple of me friends everywhere, like they come up, I think I'm a bitch I don't know if they're just saying that because they want a reaction, they think, you know what I mean we're going to feel sorry for her taking a risk or something like that, but it's kind of weird to turn around and "we don't want to hear, you" you know, you should have learnt from the first time [right, okay].

Interviewer
So, this person that you're describing, do you think there'll be a next time, which would be like this one or similar?

Participant
Oh, I'm not really sure, but I've got another friend that does the same thing, but, you know, I think they just count on "it's not going to happen to me" so probably, you know what I mean, think like a lot of people have said that I want her to get pregnant just to teach her a lesson, because I think that's the only way, she'll actually learn, to have that scare, like she doesn't know that it's not that easy to walk into an abortion clinic and get it done, you know what I mean?, so
“Derek”, a 20 year old male in a juvenile justice centre, is not confident about changing his behaviour:

**Interviewer**

No [no] so it didn’t have any effect [right] . So in terms of a next time, what what would be the situation?

**Participant**

I suppose I’d think about it, but I don’t really, I’ll still have unprotected sex.

While some narratives were similar to those above, the majority were of participants who demonstrated construct revision. Thirty (66.67%) of the narratives included a participant demonstrating construct revision. The following two narratives demonstrate such revision.

“Susan”, an 18 year old female at university, describes a friend:

**Participant**

Schoolies' week, went on schoolies' week and everyone got drunk for the week and in the middle of that week, she had unprotected sex with this guy and she was so drunk she didn’t remember it but everyone else knew. And it was just really bad...

**Interviewer**

And how did she feel afterwards?

**Participant**

Oh she balled, ‘cos she had to go and ask what happened. She was really upset, she didn’t want any of it to happen, she didn’t want anybody to know about it. She was ashamed of herself.

**Interviewer**

Oh okay and did she change after as a result of that at all or...?

**Participant**

Yes, yes she did. She's um, she still drinks but she doesn't flirt and she doesn't um, she's got a steady boyfriend now and that's see the other um, schoolies' week was just a one night stand thing but now that she's got a boyfriend she's kind of, settled down more.

**Interviewer**

Okay so, if there's a situation that's at all similar, what do you think she'll do?
Participant

Oh she's just likely to say no. Thanks very much but no. I've got a boyfriend or I'm not interested or something.

“Bob”, a 19 year old male in a juvenile justice centre, describes his experience:

Interviewer

Okay, so next later in the evening, or next morning, and stuff, what what did you think about it all then?

Participant

Um, I thought to myself “um” I felt pretty bad, because I just thought about, you know, the risks you could, catch, you know, and stuff like that, you know, just made a silly mistake, you know, mate?

Interviewer

Yup, yup. How did you feel about it, like what, what...

Participant

Oh, it didn't feel too bad, but you know, I just felt pretty silly [yup] later on.

Interviewer

Bit worried?

Participant

Yeah, a bit, worried a bit.

Interviewer

Okay. So, overall, it, did you change as a result of that experience at all, or...

Participant

Yeah, now I use condoms.

Interviewer

Because of that experience?

Participant

Yeah.

Interviewer

Yeah, okay. So you you actually, it was quite significant that night, [yeah] that made you think?
Participant

Yeah, just like, cuz I was drunk [yeah] and once you're drunk, you don't really think about what you do [yup].

Interviewer

Okay. And so, for next time, you've changed your views [yes] at what you do?

Participant

Be more safer.

Susan and Bob's narratives illustrate the two third majority of participants who reported construct revision. This is to be considered alongside the result that one third of the participants did not anticipate that they would be in a risky situation. The second research question considers the structures of construct systems used to perceive risk.

Research Question 2: The Structures of Risk Perception

Euclidean Distances from the “As If” Grid

The As If Grid was analysed using the ALSCAL and PROXIMITIES command of SPSS for Windows (Bell, 1994). Grids were analysed in a multiple format dividing adolescents into three groups: secondary school, university and juvenile justice (Bell, 1994). Figures 3, 4 and 5 illustrate Euclidean Distance Models of the nine risky situations for the three types of adolescents.
Figure 3, and Figures 4 and 5 alike, by examination of dimension one illustrate that all the adolescents construe three situations similarly: the situation involving Unprotected Sex, Intravenous Drug Use, and being a Passenger in a Fast Car. Labelling such dimensions is an interpretive exercise and hence open to debate. However, the assumptions of the personal construct model of adolescent risk-taking suggest that these three situations are likely to involve physical risk. If Dimension 1 is considered unipolar, all other situations would therefore be construed as not physically risky, those to the left on each of the figures. If Dimension 1 is considered bipolar, the personal construct definition of risk would propose that those situations to the left of Dimension 1 could be considered as involving psychosocial risk.

Understanding Dimension 2 must also be speculative. Dimension 2 may represent the degree of intimacy, increasing towards the bottom of the y axis. Dimension 2 for the secondary school risk-takers discriminates situations less effectively than the older university risk-takers and juvenile justice-based risk-takers. In developmental terms, the secondary school students are likely
to have less experience of risk-taking and may not have developed a second
dimension to understand risk. This interpretation is supported by the PVAFF
measures, but not the Cognitive Complexity measures reported below.

Kruskal stress values and squared correlation (RSQ) values were
acceptable for each of these three models: secondary school risk-takers model
stress = 0.0497, RSQ= 0.990, university risk-takers model stress = 0.110 RSQ =0.944
and juvenile justice risk-takers model stress = 0.137 RSQ = 0.886.

Dimension 1

Figure 4. Euclidean Distance Model of Risky Situations for
University Risk-Takers
Figure 5. **Euclidean Distance Model of Risky Situations for Juvenile Justice Risk-Takers**

**Structural Measures from the “As If “Grid**

Cognitive Complexity of each grid was calculated using Bell’s (1994) intraclass correlation formula (Feixas et al, 1992) and SPSS for Windows ANOVA command. The percentage of Extremity of Ratings of each grid was also calculated using SPSS for Windows (Feixas et al, 1992). The Percentage of Variance Accounted for by the First Factor (PVAFF) of each grid was calculated using SPSS for Windows FACTOR command.

PVAFF correlated significantly with Extremity of Ratings ($r = 0.316, p < 0.024$). This was the only significant correlation between these measures. Table 5 illustrates means and standard deviations for Cognitive Complexity, Extremity of Ratings and PVAFF, stated for the three types of adolescents.

Table 5 shows that the juvenile justice risk-takers were significantly more extreme in their ratings of risk and other constructs they used to understand risk. Table 5 indicates a significant difference between the three groups for PVAFF. However, a post hoc analysis indicated no significant
difference at 0.05, the Tukey HSD probability was $p < 0.052$. HSD is a less conservative test. As $p$ was approaching significance, a Scheffe test ($p < 0.066$) was used to confirm that the results were not significant. Hence, a second factor is necessary to account for their risk construal. For Cognitive Complexity, there were no significant differences between the three groups.

**Frequencies from the “Risky Ranks” Grid**

Frequencies of risk rankings of the nine risky situations were calculated for: (a) each group of adolescents; (b) each gender; and (c) the adolescents combined. A Log Linear Analysis demonstrated no significant differences in the frequencies of risk rankings between the different groups of adolescents, nor between males and females. For this reason only the total frequencies are reported in Table 6. As in the Euclidean Distance Models calculated from the *As If* Grid, elements a (Unprotected Sex), d (IV Drug Use) and i (Passenger in Fast Car) were again separated from the other elements, this time construed as most risky. In terms of the personal construct definition of risk provided, it seems that to this sample of adolescents “risky” means physically risky.
Table 5
Comparisons Between Three Groups of Adolescents on Structural Measures of the “As If Grid”

<table>
<thead>
<tr>
<th></th>
<th>School</th>
<th>University</th>
<th>Juv. Justice</th>
<th>Total</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
</tbody>
</table>
| Cognitive Complexityx  | .0726a | .0041 | 23   | .071a | .0494 | 23   | .0504a | .039  | 11   | .068  | .44   | 57   | $F (2,54) = 1.056$  
|                        |                |                  |                 |                | $p < 0.355$ n.s. |
| Extremity of Ratingy   | 59.05a | 13.9  | 24   | 58.33a | 12.71 | 24   | 75.08b | 14.8  | 11   | 61.75 | 14.83 | 59   | $F (2, 56) = 6.522$,  
|                        |                |                  |                 |                | $p < 0.003$  |
| PVAFFz                 | 62.39a | 15.05 | 23   | 55.59a | 13.84 | 21   | 48.11a | 6.89  | 7    | 57.63 | 14.38 | 51   | $F (2, 45) = 3.274$,  
|                        |                |                  |                 |                | $p < 0.046$  |

Note.

a, b Means that share the same superscript do not differ at $p < 0.05$. Post hoc analyses were Tukey HSD.

x The higher the score, the less complex the grid. Values given are calculated on absolute values.

y These scores are percentages of the extreme ratings, ie the number of 1 and 4 ratings divided by total ratings.

z These scores are percentages of variance accounted for by the first factor (PVAFF) of a factor analysis. The higher the score, the greater amount of variance accounted by the first factor. This is a measure of differentiation between the elements.
<table>
<thead>
<tr>
<th>Risky Situation</th>
<th>Most risky</th>
<th>Risk Ranking (n = 57)</th>
<th>Least risky</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
<td>2nd</td>
<td>3rd</td>
</tr>
<tr>
<td>A  Sex without a condom</td>
<td>19</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>(33.3)</td>
<td>(33.3)</td>
<td>(31.6)</td>
</tr>
<tr>
<td>B  No to more alcohol</td>
<td>5</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>(8.8)</td>
<td>(14.0)</td>
<td>(42.1)</td>
</tr>
<tr>
<td>C  Sex with a condom</td>
<td>3</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>(5.3)</td>
<td>(26.3)</td>
<td>(45.6)</td>
</tr>
<tr>
<td>D  IV drug use</td>
<td>33</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(57.9)</td>
<td>(33.3)</td>
<td>(8.8)</td>
</tr>
<tr>
<td>E  Socialising on beach</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(1.8)</td>
<td>(8.8)</td>
</tr>
<tr>
<td>F  Discussing condom use</td>
<td>4</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>(7.0)</td>
<td>(17.5)</td>
<td>(36.8)</td>
</tr>
<tr>
<td>G  Asking someone out</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(1.8)</td>
<td>(14.0)</td>
</tr>
<tr>
<td>H  Public speaking</td>
<td>2</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>(3.5)</td>
<td>(5.3)</td>
<td>(14.0)</td>
</tr>
<tr>
<td>I  Passenger in fast car</td>
<td>5</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>(8.8)</td>
<td>(24.6)</td>
<td>(38.6)</td>
</tr>
</tbody>
</table>
Research Question 3: Adolescent Construct Content- Supplied Constructs for Study 2

The contents of constructs elicited as part of the As If Grid procedure of Study 1 will be used for five of the nine supplied constructs of the As If Grid procedure of Study 2. These constructs were chosen by clustering all the elicited constructs into five categories (Miles & Huberman, 1994). The five constructs to be used for Study 2 are:

(a) dangerous - relaxed/safe
(b) nervous, worried about others - comfortable
(c) peer pressure, no choice, no control - choice, control
(d) close (intimate) - not so close (less intimate)
(e) care, stand up for self - don't care, go-with-the-flow, action, thrill.

An independent and blind second rater, who was given all the constructs elicited from the As If Grid and asked to group them into five metaconstructs, provided the following constructs:

(a) personal danger/risk peer relations/pressure
(b) decision/choice lack of choice/reacting
(c) personal worry/tension relaxed/at-ease/enjoying
(d) in control/ precautions not enjoyable/life threatening
(e) private/sexual public/friendship

The independent clustering of constructs yielded generally consistent results, particularly if the two analyses are compared in terms of poles of constructs. That is, if the five constructs are considered as ten poles there is consistency on 9 of the 10 poles.

Constructs elicited in this study were similar to those evident in previous personal construct group work with juvenile justice and school based adolescents, suggesting their concurrent validity (Viney, Truneckova, Weekes & Oades, 1997).

Content Analysis of Psychosocial Maturity (CASPM) Scores

Twelve CASPM scores were calculated and are reported in Table 7. Table 6 shows that the means from the juvenile justice sample were statistically significantly different from the other two groups for Trust, Mistrust, Autonomy, Constraint and Initiative. The ratio of scores corresponding to positive and negative poles of the developmental construct,
for example trust versus mistrust, is useful when interpreting Table 7. The juvenile justice sample is small and hence results must be interpreted with caution.

Table 7 illustrates no differences for the three types of adolescents in Identity, Identity Diffusion, Affinity, Isolation and Inferiority. The juvenile justice sample was older than the school sample and this may have cancelled expected differences. The means from the university sample were unexpectedly low relative to the other groups on these measures. Of the remaining seven scales, the means from the juvenile justice sample were significantly different from the other two groups on six of the scales and different from one other group on the other scale, Hesitancy. The juvenile justice group was more concerned with developmental issues of trust versus mistrust, and autonomy versus constraint. This is a likely result for incarcerated adolescents.

Revisiting the Research Questions

I review now the answers to each of the research questions.

The first research question asked about the processes of adolescent risk-taking and how they were assessed. The processes of risk-taking were conceptualised in terms of Kelly's (1970) Experience Cycle. The process of risk-taking was assessed by way of qualitative methodologies. In a semi-structured interview schedule I used questions derived from the five phases of the Experience Cycle: anticipation, investment, encounter, confirmation-disconfirmation and constructive revision. In the narratives reviewed, risk-taking was most often construed as an unpredicted phenomenon. The narratives generated, more often than not, included stories of adolescents who reconstrued as a result of their experiences. The results from the ABC technique, corresponding to the control phase of the Decision Making Cycle, also supported the second proposition of a dilemma between physical risk and psychosocial risk.
Table 7
Means and Standard Deviations for Twelve CASPM Subscales With Three Types of Adolescents

<table>
<thead>
<tr>
<th>CASPM Subscale</th>
<th>School (n=24)</th>
<th>University (n=23)</th>
<th>Juv. Just. (n=8)</th>
<th>F(xx, xx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>M 0.93&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.08&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.58&lt;sup&gt;b&lt;/sup&gt;</td>
<td>F = 18.398</td>
</tr>
<tr>
<td></td>
<td>SD 0.27</td>
<td>0.24</td>
<td>0.33</td>
<td>p &lt; 0.000</td>
</tr>
<tr>
<td>Mistrust</td>
<td>M 0.55&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.60&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.12&lt;sup&gt;b&lt;/sup&gt;</td>
<td>F = 10.151</td>
</tr>
<tr>
<td></td>
<td>SD 0.26</td>
<td>0.25</td>
<td>0.60</td>
<td>p &lt; 0.000</td>
</tr>
<tr>
<td>Autonomy</td>
<td>M 0.65&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.90&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.40&lt;sup&gt;b&lt;/sup&gt;</td>
<td>F = 10.071</td>
</tr>
<tr>
<td></td>
<td>SD 0.34</td>
<td>0.42</td>
<td>0.55</td>
<td>p &lt; 0.000</td>
</tr>
<tr>
<td>Constraint</td>
<td>M 0.97&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.96&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.20&lt;sup&gt;b&lt;/sup&gt;</td>
<td>F = 26.622</td>
</tr>
<tr>
<td></td>
<td>SD 0.43</td>
<td>0.39</td>
<td>0.61</td>
<td>p &lt; 0.000</td>
</tr>
<tr>
<td>Initiative</td>
<td>M 1.41&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.44&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.12&lt;sup&gt;b&lt;/sup&gt;</td>
<td>F = 5.506</td>
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<td>SD 0.54</td>
<td>0.49</td>
<td>0.72</td>
<td>p &lt; 0.007</td>
</tr>
<tr>
<td>Hesitancy</td>
<td>M 0.70&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.19&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.96&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>F = 5.006</td>
</tr>
<tr>
<td></td>
<td>SD 0.43</td>
<td>0.56</td>
<td>0.66</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Industry</td>
<td>M 1.67&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.72&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>2.27&lt;sup&gt;b&lt;/sup&gt;</td>
<td>F = 3.157</td>
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<td></td>
<td>SD 0.57</td>
<td>0.52</td>
<td>0.90</td>
<td>p &lt; 0.051</td>
</tr>
<tr>
<td>Inferiority</td>
<td>M 1.07&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.76&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.75&lt;sup&gt;a&lt;/sup&gt;</td>
<td>F = 1.764 ns</td>
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<tr>
<td></td>
<td>SD 0.63</td>
<td>0.65</td>
<td>0.40</td>
<td>p &lt; 0.181</td>
</tr>
<tr>
<td>Affinity</td>
<td>M 2.07&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.06&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.00&lt;sup&gt;a&lt;/sup&gt;</td>
<td>F = 0.020 ns</td>
</tr>
<tr>
<td></td>
<td>SD 0.53</td>
<td>0.80</td>
<td>1.55</td>
<td>p &lt; 0.980</td>
</tr>
<tr>
<td>Isolation</td>
<td>M 1.39&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.21&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.27&lt;sup&gt;a&lt;/sup&gt;</td>
<td>F = 0.336 ns</td>
</tr>
<tr>
<td></td>
<td>SD 0.59</td>
<td>0.70</td>
<td>1.19</td>
<td>p &lt; 0.716</td>
</tr>
<tr>
<td>Identity</td>
<td>M 1.03&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.17&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.02&lt;sup&gt;a&lt;/sup&gt;</td>
<td>F = 0.183 ns</td>
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<tr>
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<td>SD 0.69</td>
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<td>0.87</td>
<td>p &lt; 0.833</td>
</tr>
<tr>
<td>Identity</td>
<td>M 0.58&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.84&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.73&lt;sup&gt;a&lt;/sup&gt;</td>
<td>F = 1.06 ns</td>
</tr>
<tr>
<td>Diffusion</td>
<td>SD 0.52</td>
<td>0.79</td>
<td>0.71</td>
<td>p &lt; 0.354</td>
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</tbody>
</table>

Note. Means that share the same superscript do not differ at p <0.05.
Post hoc analyses were Tukey HSD.
ns = non significant
The second research question asked about the structures of adolescent risk perception and how they could be assessed. The Risky Situations Grid Technique was used to assess the structure of risk perception. From the results of the As If Grid, reported above, there were no reliable differences between the three types of adolescents in their construal of risky situations. From this finding and from the narratives of adolescents, I conclude that adolescent risk-taking is not a consequence of the adolescents perceiving situations as not risky. Most of the adolescents perceived many or most of the situations in the RSGT as involving risk. In my view, the focus is that the adolescents often do not successfully anticipate that they will be in such situations. Abstractly, the adolescents report such situations as risky but do not predict that they themselves are likely to be in them. Hence, based on these results I reject the focus of previous literature and popular claims that adolescents do not perceive risk. I claim that many adolescents who engage in risky situations often do not anticipate that they will be in such situations. The narratives reported provide the first basis for this conclusion. One third of the adolescents stated that they did not anticipate that they would be in risky situations. Combined with the results from the Euclidean Distance Models and Risky Rank Grid frequencies, that demonstrate little group differences in risk perception, I make the interpretation that all groups construe risk in a similar way. Hence, adolescents construe the situations as “risky” between-situations, but do not necessarily anticipate that they will be in such situations, or have the resources to “construe their way out” of such situations. I believe there is a subtle but crucial difference here.

The third research question asked about the content of the constructs that adolescents used to make sense of their development. This was assessed using the Content Analysis Scales of Psychosocial Maturity (CASPM). The results from the secondary school sample and the juvenile justice sample were consistent in magnitude with a previous study using this methodology (Viney, Henry & Campbell, 1995). Given the small sample of juvenile justice participants these results must be interpreted with caution.

Some interesting differences existed between the three groups of adolescents. In terms of the stories regarding risk-taking members of the secondary school group were the most open in volunteering information and discussing their behaviour. Interestingly, based on the PVAFF variable
calculated on the As If Grid, the juvenile justice group had the most differentiated risk perception. This may be because of greater experience as opposed to school education. The juvenile justice group was also more extreme in their ratings of the "risky situations". From the CASPM results, the juvenile justice group was also more concerned with developmental issues of trust versus mistrust, and understandably autonomy versus constraint.

An Interim Personal Construct Model of Adolescent Risk-Taking

The task to develop the personal construct model of adolescent risk-taking involves integrating these empirical results with the preliminary personal construct model of adolescent risk-taking that I presented in Chapter 4. Hypotheses from such a model may then be tested in the second study. To achieve this aim I use the Experience Cycle as the major theoretical concept from Kelly (1970).

I revise now the propositions of the preliminary personal construct model of adolescent risk-taking to yield an interim model to be tested in Study 2. While the personal construct approach holds that the person is always developing and changing, the personal construct model of adolescent risk-taking proposes that this development occurs more frequently than for the adult. A refinement of the semi-structured qualitative interview procedure I used in this first study is termed the Experience Cycle Methodology for Study 2. This methodology is described in detail in Chapter 9. This methodology operationalises the individual processes of construct revision and identity development resulting from risk-taking.

The four propositions of the preliminary model were described in Chapter 4. I discuss now the revision of these propositions and present three propositions that make up an interim personal construct model of adolescent risk-taking.

Considering the largely qualitative information generated in the narratives relating to risk-taking experiences I have made some modifications to first proposition. It is necessary to take into account that two thirds of the stories volunteered involved construct revision and likewise the two thirds that involved people who did not anticipate that they would be in a risky situation. Some adolescents described the "near misses" as useful learning experiences.
Given the emphasis the adolescent stories placed on experience as opposed to declarative knowledge and that the CASPM scores did not reliably discriminate the three groups of adolescents, the third and fourth preliminary propositions have been combined to emphasise experience. There is some evidence that risk perception is important in terms of how the adolescents discriminate between-situations, which is more complex than whether they see a situation as risky or not.

The three propositions of the interim personal construct model of adolescent risk-taking were revised as follows:

A. Adolescents participate in risky situations that they often do not anticipate. This invalidation regarding whether the adolescent would be in such a situation often leads to construct revision. A negative outcome during or after the risky situation is not necessary for construct revision.

B. Adolescents construe risky situations largely in terms of physical risk. Physical risk-taking must be understood in terms of the psychosocial environment in which it occurs, which is termed psychosocial risk. Adolescents often experience dilemmas between physical and psychosocial risk-taking but may not be able to verbalise the notion of psychosocial risk.

C. How an adolescent has made sense of a past experience of risk-taking is the most important influence of intended future risk-taking.

In Chapter 8, I continue the aim of developing a personal construct model of adolescent risk-taking. I describe specific hypotheses, derived from this interim model, that I test using the methods described in Chapter 9.
CHAPTER 8

STUDY 2 AIM AND HYPOTHESES:
REFINING THE INTERIM PERSONAL CONSTRUCT MODEL OF ADOLESCENT RISK-TAKING
Study 2 Aim and Hypotheses: Refining the Interim Personal Construct Model of Adolescent Risk-Taking

In this chapter I describe the aim and hypotheses of the second study. The aim of the second study is to develop empirically the propositions of the interim personal construct model of adolescent risk-taking by testing more specific hypotheses.

The hypotheses use variables that relate to: (a) the phases of the Experience Cycle, using the Experience Cycle Methodology (ECM); (b) self reported Past Risk-Taking and Intended Future Risk-Taking with the nine situations of the Risky Situations Grid Technique (RSGT); (c) differentiation of risk perception, using the Percentage of Variance Accounted for by the First Factor (PVAFF) of the As If Grid; (d) Psychosocial and Physical Risk Perception, calculated from the As If Grid; and (e) Identity, as measured by the Identity scale of the Content Analysis Scales of Psychosocial Maturity (CASPM).

The following groups correspond to four phases of the Experience Cycle Methodology (ECM):

- Anticipation Phase: 1) Loose Prediction, 2) Tight Prediction
- Investment Phase: 1) Low Investment, 2) High Investment
- (Dis)Confirmation Phase: 1) Validation, 2) Invalidation
- Construct Revision Phase: 1) Minimal Revision, 2) Significant Revision

The first two hypotheses below relate to processes that occur within a single experience cycle. That is for construing of one event, how are the phases of the experience cycle related? In particular, how do the earlier phases of the cycle relate to the possibility of construct revision.

The third hypothesis attempts to empirically relate (a) phases of the experience cycle relating to a single event (referred to as process in Study 1), (b) previous risk-taking experience (general experiential knowledge of risk-taking) and (c) intended future risk-taking and (d) physical risk perception (referred to as structure in Study 1). This hypothesis attempts to relate the largest number of different variables, consistent with the original aim of the model's development.
The fourth hypothesis attempts to relate past risk-taking with the phases of the experience cycle relating to a single event. The number of past experiences of risky situations is referred to as "general experiential knowledge of risk-taking". The fifth hypothesis attempts to relate the phases of the experience cycle, relating to a single event, with intended future risk-taking.

**Within-situation Hypotheses**

**Hypothesis 1: Construct Revision and other Experience Cycle variables.**

Within the Experience Cycle Methodology (ECM), a combination of measures of Anticipation, Investment and Confirmation/Disconfirmation will be significantly related to Construct Revision.

**Hypothesis 2: Construct Revision and modified Experience Cycle variables.**

Within the Experience Cycle Methodology (ECM), Commitment, and Confirmation/Disconfirmation will be significantly related to Construct Revision.

**Hypotheses Relating Between-situation and Within-situation Variables**

**Hypothesis 3: Between-situation and within-situation variables related to Intended Future Risk-Taking.**

A combination of Experience Cycle Methodology measures (Anticipation, Investment, Confirmation/Disconfirmation, Construct Revision), Physical Risk-Perception and Past Risk-Taking will be significantly related to Intended Future Risk-Taking.

**Hypothesis 4: Past Risk-Taking and the Experience Cycle**

There will be a significant relationship between the level of Past Risk-Taking and phases of the Experience Cycle Methodology.

**Hypothesis 5: Intended Future Risk-Taking and the Experience Cycle**

There will be a significant relationship between the level of Intended Future Risk-Taking and phases of the Experience Cycle Methodology.
CHAPTER 9

STUDY 2 METHOD
Study 2 Method

In this chapter I describe the method I used to test the hypotheses stated in Chapter 8. To avoid unnecessary duplication of the method described for Study 1 in Chapter 6, for Study 2 I report only that which has changed from Study 1. The main change from Study 1 is the development of the Experience Cycle Methodology (ECM). For a full description of the other methods I refer the reader to Chapter 6 and the relevant Appendices.

Participants

Low Experience and High Experience Risk-Takers

One hundred and twenty four young people (68 males and 56 females) aged from 14.58 to 19.83 years (mean age 17.14 years) participated in this study. I interviewed 56 participants of equal sex ratios from two co-education government funded secondary schools of moderate and high socioeconomic background. I interviewed 40 participants of equal sex ratios from a regional Australian university. This university sample consisted of students of introductory psychology courses and students living in a university residence housing a significant proportion of international students. I interviewed 28 male participants who were detained in a metropolitan juvenile correctional centre. The secondary schools and the juvenile correction centre were different settings from Study 1. One hundred and five (84.7%) of the participants said they were Australian born. One hundred and ten (88.7%) said that they spoke English at home. Fifty six (58.3%) of the participants said that their father was born in Australia, compared to 75 (60.5%) of the participants who said that their mother was born in Australia. As in Study 1, for children and parents, the proportion of those born outside of the country was slightly higher than the national average as is the region (Ethnic Affairs Commission of NSW, 1998; McLennan, 1996). In terms of religious orientation, 80 (65%) stated they had no religion, 16 (13.0%) stated they were Catholic, 7(5.7%) stated they were Protestant, and the remaining 20 (16.2%) stated they were of other religious orientations. Of those 44 participants who stated they had a religion, 7 (15.91%) claimed to be
very involved, 13 (29.55%) claimed to be moderately involved, and 24 (54.54%) claimed to be a little involved.

**Sampling Issues**

The sampling procedures were identical to Study 1. The secondary school samples were representative of Australian adolescents in several ways: (a) the multicultural makeup of the schools was consistent with Australian culture, although slightly higher in its proportion of non Australian born (McLennan, 1996); (b) the religious background of the students was also consistent with wider Australian culture; (c) the schools were in a coastal urban location, similar to the majority of Australians (McLennan, 1997b). One school was of moderate socioeconomic status and one of high socioeconomic status. This complemented the low socioeconomic sample of one of the schools in the first study, supporting the robustness of the model. The university sample included both first year psychology students and non psychology students attending a university college. This sample was also representative of an Australian university population. The multicultural aspect of Australian culture was represented in both the university samples. There was an equal gender balance and sampling of students from multiple courses other than psychology, so it was reasonably representative.

The juvenile justice sample was significantly larger than the first study. However, as it is a clinical sample participants are more scarce. For these reasons it is possibly less representative than the other two samples.

As in the previous study, those sampled were volunteers, hence there is likely to be a bias towards sampling those who are more prosocial and constructive. This was an unavoidable practical constraint of conducting research with this sample. The centre sampled was a regional metropolitan centre on the outskirts of Sydney, Australia’s largest and most cosmopolitan city. This centre takes adolescents from centres throughout the state of New South Wales. In this sense, the sample is quite representative of the range of juvenile offenders in Australia.

The Australian sample used has implications to other Western nations for the three types of adolescents with varying degrees of experience in risk-taking. This is especially true for the personal construct model of adolescent risk-taking that emphasises the process of risk-taking and is less
interested in establishing rates of extraspectively defined risk-taking behaviour. That is, the sampling was chosen to provide a range of adolescents in terms of developmental attainments and risk-taking experience. This was consistent with the emphasis on understanding individual cycles of experience. Hence, while Western nations may vary in their rates of risk-taking behaviours, the personal construct model of adolescent risk-taking, with its emphasis on individual experience, should be able to accommodate local variations, as it has done with these three quite different groups of Australian adolescents.

Inclusion Criteria

Age.

I included secondary school participants from Year 10 and Year 11 samples. I did not interview those participants who were yet to have their fourteenth birthday and those who had had their 21st birthday. That is people who were 14 to 20 years of age were included.

Exclusion Criteria

The Exclusion Criteria relating to sexual orientation and mental state were identical to Study 1.

Research Design

I designed this study to test the hypotheses stated in Chapter 8. Once again I employed a cross sectional survey design with interviews of secondary school-based, university-based, and juvenile justice-based adolescents. I interviewed the participants individually on one occasion. In this study all participants received the same interview structure, as described below.

Procedure

The interviewer and interview settings.

I conducted all interviews in settings very similar to those described for the first study.
Structure of the interview.

All participants were involved in interviews with the same structure. Interviews involved the following structure:
(a) Demographics, Knowledge of HIV Transmission, Past and Future Sexual Behaviour;
(b) As If Grid and Risky Ranks Grid (using RSGT elements);
(c) Experience Cycle Methodology (ECM); and
(d) Content Analysis of Psychosocial Maturity (CASPM).

As with Study 1, some measures were administered but are not included in this report. The knowledge and sexual behaviour measures are such examples. See Appendix A for measures administered but not included in this report.

Ethics and Participant Information

The ethical issues were identical to Study 1. The process of disseminating the participant information was also the same with some slight modifications to the content (See Appendix B).

Measures

The Risky Situations Grid Technique (RSGT)

The Risky Situations Grid Technique (RSGT) is a grid methodology using nine elements that consist of nine cartoon style multicoloured drawings of situations which may be perceived as risky. In the second study I used the same nine elements as Study 1. These elements are shown in Appendix D. The elements represent the following situations:
(a) I am having unprotected sex
(b) I am refusing to drink further alcohol
(c) I am having protected sex
(d) I am sharing an intra-venous needle
(e) I am at the beach on a sunny day
(f) I discuss condom use with a potential partner
(g) I ask a person out
(h) I have to speak in front of others
(i) I am in a fast driving car
The "As If" grid.

The first grid I administered in this study was the As If Grid. I used the same general procedure as described for Study 1, however this time I supplied constructs. Five of these supplied constructs were derived empirically from the first study, but constructs F, G, H and I were included for conceptual reasons. The data record sheet is illustrated in Appendix F. The nine constructs used for Study 2 were:

(a) dangerous - relaxed/safe
(b) nervous, worried about others - comfortable
(c) peer pressure, no choice, no control - choice, control
(d) close (intimate) - not so close (less intimate)
(e) possible immediate negative consequences - possible long term negative consequences
(f) care, stand up for self - don't care, go-with-the-flow, action, thrill.
(g) responsible for actions - not responsible for actions
(h) have been involved - have not been involved
(i) will be involved in next year - will not be involved in next year

The Percentage of Variance Accounted for by the First Factor (PVAFF) of each As If grid was calculated using SPSS for Windows FACTOR command. This is a measure of differentiation between the elements, in this case differentiation between risky situations.

Past and Intended Future Risk-Taking

To calculate an index to past and intended future risk-taking using the As If Grid I summed each individual's ratings from the construct: "I have been in the situation before" versus "I have not been in the situation before". The self report of a situation that they had been fully involved in was rated as a 4, a situation of which they claimed to have no experience was rated as a 1. A rating of 3 or 2 represented gradations of experience. This yielded a range of scores from 9 (no experience of the nine situations of the Risky Situations Grid Technique) to 36 (experience of all of the situations of the Risky Situations Grid Technique). This sum was then divided by nine, the number of elements. I compared the means of these indices across the three
types of adolescents. There was a significant difference between the three groups ($F=5.627, p<0.005$) in the predicted direction, that is the school based participants reported the least experience and the juvenile justice participants reported the most experience in the nine situations. For further analysis involving self-reported experience of Past Risk-Taking and Intended Future Risk-Taking the extreme groups method was employed. This involved selecting participants below the 30th percentile as “low experience risk-takers” and those above the 70th percentile as “high experience” risk takers.

The same method was employed for Intended Future Risk-Taking using the construct: “I will not be involved in the next year” versus “I will be involved in the next year”. The extreme groups method ensures that the comparison is valid without significantly reducing the sample size.

**Physical and Psychosocial Risk Perception**

Physical Risk Perception was calculated by summing the ratings from the first supplied construct of the As If Grid: “Could be dangerous” versus “Relaxed or safe”. The sum was then divided by nine, the number of elements. Psychosocial Risk Perception was calculated by summing the ratings from the second supplied construct of the As If Grid: “I could be nervous or worried about what others think” versus “I would be comfortable”. The sum was then divided by nine, the number of elements.

**Content Analysis Scales of Psychosocial Maturity (CASPM)**

I used the CASPM procedure identical to that employed in the first study. These ratings were reliable. A second blind and independent rater was used to score 34 (31.8%) of the 107 transcripts. A proportionate number of transcripts was sampled from each of the three groups of adolescents. Pearson $r$ correlation coefficients were calculated on the final corrected scores. While all scales were again reliable, for Study 2 I chose to use the Identity scale only for two reasons: (a) empirically in Study 1 CASPM produced results greatly informative to developing the personal construct model of adolescent risk-taking; and (b) theoretically, however, the Identity scale remained relevant given the guiding metaphor of the personal construct model of adolescent risk-taking is “risk-taking as an identity experiment”. 
The Identity scale had an inter-rater Pearson $r_k$ of 0.911 demonstrating its reliability. A t-test also demonstrated no significant differences between the means of the scores of the two raters for this scale.

**Experience Cycle Methodology (ECM)**

**Theory.**
The Experience Cycle Methodology (ECM) (Oades & Viney, 1998), was developed directly out of the Experience Cycle narratives generated in Study 1, as described in Appendix C. In Study 1 I audio taped interviews with a more unstructured format than used for Study 2. The ECM was not audio taped and was a semi-structured interview based on the phases of Kelly’s (1970) Experience Cycle (Winter, 1992). The phases are based on the idea of a scientist making a prediction and then testing the prediction with their behaviour. The phases are anticipation, investment, encounter, confirmation/disconfirmation and constructive revision.

**Administration.**
As a semi-structured interview the questions of the ECM were covered exhaustively, but in a free-flowing fashion. The questions were not asked if the information was volunteered spontaneously as part of the person's story. The task usually took around 15 minutes to complete. Unlike Study 1, in which interviews were audiotaped, in this study I wrote the answers down verbatim on a proforma sheet with subheadings corresponding to the phases of the Experience Cycle. I summarised periodically the answers for the respondent to check their accuracy. The story usually began with the encounter phase, returned to the anticipation phase and then followed the phases of the Experience Cycle sequentially.

The participant was asked to choose an element from the Risky Situations Grid Technique (RSGT) in which they had actually been involved. Only two participants stated that they had not been in any of the situations. This was different from the Study 1 procedure in which personal involvement was not a requirement. The ECM questions are listed below.
The Experience Cycle Methodology (ECM) proforma.

Please tell me a story (about a risky situation) and I will ask questions and write some things down as we go.

ANTICIPATION PHASE
What things were you predicting would happen?
What options did you see open to yourself at this time?
Were you concerned about physical danger, what others may think of you, or what you may think of yourself?

INVESTMENT PHASE
How much did you want this prediction to come true or not to come true?
How much did it matter to you at the time? (Used to assess personal construal of a priori risk).

ENCOUNTER PHASE
Describe the actual experience of doing it? What was the context etc?

CONFIRMATION/DISCONFIRMATION PHASE
How did things go compared to what you initially thought would happen?
How did the prediction go?
What feelings did you have about this?

CONSTRUCTIVE REVISION PHASE
In general what things did you learn from this experience?
NEXT TIME

In terms of a next time (or a time since the story you described) will you or did you change as a result of this experience? Like, did/will you change the way you view things or your behaviour. YES MAYBE NO

What things did/will you change for next time if there is one?
What options do you see open to you now if you were in a similar situation?

How do you now see the advantages and disadvantages of being in a similar situation in the future? (ABC technique of Tschudi, 1977).

A1 Being involved A2 Not being involved
Preferred?

B1 Disadvantage of being involved B2 Advantage of not being involved

C1 Advantage of being involved C2 Disadvantage of not being involved

Do you have any other comments about that story?

Reliability of quantitative analysis of ECM.

To generate quantitative data from the narratives of the ECM the narratives corresponding to the Anticipation Phase, Investment Phase, Confirmation/Disconfirmation Phase and Constructive Revision Phase were each coded into three categories. The instructions followed by the two raters are provided below. Both raters are familiar with personal construct psychology and principles of adolescent development.

ANTICIPATION

Corresponds to Anticipation Phase of Experience Cycle. Please code into one of three groups:

Tight predictions (3): ie specific action, time and location

We had planned the party for tonight and bought the beer.
Loose predictions (2): ie non specific, specific but not in time or uncertain

Maybe I'll get drunk
Thought it might happen one day
Could go out, could stay in, wasn't sure.

None/Exploratory (1): ie no prediction or totally exploratory attitude

Nothing man
Whatever happens happens, go with the flow

Please use response within firstly Anticipation Phase (What things were you predicting would happen?) and secondly Confirmation/Disconfirmation Phase (How did things go compared to what you initially thought would happen?) to establish your groups.

INVESTMENT
Corresponds to Investment Phase of Experience Cycle. Please code into one of three groups:

Significant (3): ie large psychological investment (intraspective risk), “crucial experiment”.

It mattered more than anything else.
It was a useful experience

Moderate (2): ie of importance, but not crucial

I wanted it to happen but it wasn't the be all and end all.

Nil (1): ie of no concern

I didn't care in the least

Please use responses to firstly the Investment Phase (How much did you want the prediction to come true? How much did it matter?) and secondly, the Constructive Revision Phase (especially, What things did you learn from the experience? What things will you/did you change for next time if there
is/was one? and Other comments. Please see Investment, from their point of view, (thinking developmentally).

CONFIRMATION
Corresponds to the Confirmation/Disconfirmation Phases of the Experience Cycle. Please code into one of three groups:

Validation (3): ie got what I was predicting
   *It was exactly the same.*

Mixed (2): ie when they make more than one prediction and results are mixed, or when the outcome is mixed in terms of one prediction
   *Most of it was the same.*

Invalidation (1): ie totally different outcome
   *It was the opposite.*

Please use response within firstly Confirmation/Disconfirmation Phase (How did things go compared to what you initially thought would happen?) and secondly the Anticipation Phase, (What things were you predicting would happen) and thirdly the Encounter Phase (Describe the actual experience of doing it) to establish your groups.

CONSTRUCT REVISION
Corresponds to Constructive Revision Phase of Experience Cycle. Please code into one of three groups in response to the following question.

*In terms of a next time (or a time since the story you described) will you or did you change as a result of this experience?* Like, did/will you change the way you view things or your behaviour. YES  MAYBE  NO

Code YES as (3), code MAYBE as (2) and code NO as (1).

For simplification of later analyses, including Log Linear Analyses (Green, 1988; Marascuilo & Busk, 1987), three categories corresponding each of the
four phases of the Experience Cycle were later collapsed and recoded into two categories for each phase. For the Anticipation Phase category (1) - *none/exploratory prediction* and (2) *loose prediction*, were recoded to a new category (1) *loose prediction*, and category (3) *tight prediction* was recoded into a new category (2) *tight prediction*. For the Investment Phase, category (1) *nil investment* was renamed category (1) *low investment* while category (2) *moderate investment* and category (3) *significant investment* were collapsed into a new category (2) *high investment*. For the Confirmation/Disconfirmation Phase category (1) *invalidation* remained the same while category (2) *mixed validation* and category (3) *validation* were collapsed into category (2) *validation*. For the Constructive Revision Phase category (3) *significant revision* was recoded to category (2) *significant revision* while category (2) *maybe* and category (1) *no revision* were collapsed into category (2) *minimal revision*.

This recoding yielded the following binary categories corresponding to four phases of the Experience Cycle Methodology (ECM):

**Anticipation Phase**
- (1) Loose Prediction \( n=53 \)
- (2) Tight Prediction \( n=68 \)

**Investment Phase**
- (1) Low Investment \( n=58 \)
- (2) High Investment \( n=63 \)

**Confirmation/Disconfirmation Phase**
- (1) Validation \( n=66 \)
- (2) Invalidation \( n=57 \)

**Construct Revision Phase**
- (1) Minimal Revision \( n=58 \)
- (2) Significant Revision \( n=63 \)

Kappa coefficients were calculated to assess inter-rater reliability of these categories (Cohen, 1960; Perreault & Leigh, 1989). The blind and independent second rater rated all transcripts with the three category method. All categories were of acceptable reliability. The kappa coefficients were as follows: Anticipation Phase \( k = 0.816 \), Investment Phase \( k = 0.772 \), Confirmation/Disconfirmation phase \( k = 0.709 \), Constructive Revision Phase \( k = 0.823 \).

In this chapter I have summarised the method used in Study 2. I have described here changes only to the method of Study 1. The main change results from my development of the Experience Cycle Methodology (ECM). In Chapter 10, to follow, I report the quantitative and qualitative results of the
second study and present the final personal construct model of adolescent risk-taking.
CHAPTER 10

STUDY 2 RESULTS
Study 2 Results

In this chapter I report the results of Study 2. As the personal construct model of adolescent risk-taking makes considerable use of the Experience Cycle, it is useful to provide results from the Experience Cycle Methodology (ECM) in their own right, before reporting results in terms of the five hypotheses stated in Chapter 8. I conclude this chapter with considerations of refinement to the interim model, yielding the final personal construct model of adolescent risk-taking.

Results Within the Framework of the Experience Cycle

The Experience Cycle Methodology (ECM) was analysed in two ways: (a) at a qualitative level an participant's description provides a rich understanding of the cycle of a risk-taking experience; and (b) at a quantitative level, corresponding to the five hypotheses, the stories of the ECM were analysed phase by phase (excluding the Encounter Phase).

I provide below examples of four completed ECM's corresponding to the four of the elements of the Risky Situations Grid Technique; two situations that were seen to involve significant physical risk and two situations that were seen to involve significant psychosocial risk. The quantitative analyses of the ECM are considered in the hypothesis-testing section following the ECM examples.

Experience Cycle Methodology Examples Involving Significant Physical Risk

Situation A: Unprotected sex.

"Christy", a 20 year old female in a regional University College describes her experience of unprotected sex. Similar to narratives in Study 1, unprotected sex is described by Christy as "just the moment type of deal" and "whatever happens happens", supporting the idea that she made loose predictions and did not anticipate that she may be in that "risky situation". Christy's description is also consistent with the personal construct definition of risk-taking as impulsive in terms of the Decision Making Cycle, evidenced by her implicature "horny so....".
ANTICIPATION PHASE
What things were you predicting would happen?
To have a good time, get drunk.

What options did you see open to yourself at this time?
1) Use a condom, ask, horny so...
2) Have sex.
Just the moment type of deal. I'm not heavily into having unsafe sex.

Were you concerned about danger, what others may think or what you may think of yourself?
Danger- no
What others think- no

INVESTMENT PHASE
How much did you want this prediction to come true? How much did it matter?
Just kinda going out after classes and getting drunk/party and whatever happens happens.

ENCOUNTER PHASE
Describe the actual experience of doing it?
I was at a fraternity party, just drinking. Get drunk and stuff. Start screwing around and then head back to the room. Start messing around on the bed. Ask you if you want to have sex and I ask about a condom. He says he doesn't have one and I say that's fine and we have sex.

CONFIRMATION/DISCONFIRMATION PHASE
How did things go compared to what you initially thought would happen?
Weren't expecting to have sex. I thought that was a bonus. Next morning, feelings, scared or pregnancy. It's amazing that I find it more scary.

CONSTRUCTIVE REVISION PHASE
What things did you learn from this experience?
I wish I had learned something but I didn't, not enough to take precautionary measures. It's only under the influence of alcohol, never when I'm sober.

NEXT TIME
Did you change as a result of this experience? No

What things will you change for next time if there is one?
Don't really have sex that randomly, more cautious (this has been since).

What options do you see open to you now?
1) No sex if no condom
2) Leave
How do you now see the advantages and disadvantages?

<table>
<thead>
<tr>
<th>A1 Preferred?</th>
<th>Being involved</th>
<th>A2 Not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Disadvantage of being involved</td>
<td>B2 Advantage of not being involved</td>
</tr>
<tr>
<td></td>
<td>STD's, pregnancy, disrespect yourself</td>
<td>Remain physically healthier. More respectful</td>
</tr>
<tr>
<td>C1</td>
<td>Advantage of being involved</td>
<td>C2 Disadvantage of not being involved</td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>It's fun, it's better without a condom (but there are some things that you've just gotta do)</td>
</tr>
</tbody>
</table>

Christy stated that she did not really learn anything from this single experience referring to it occurring only when she is drunk.

**Situation D: Intravenous Drug Use.**

"Mick", a 15 year old male in a metropolitan juvenile justice centre, describes his first experience of injecting Heroin. Unlike the story of Christy above, Mick planned this risk-taking experiment. A further difference, was that to Mick this really mattered at the time, he had a high psychological investment.

**ANTICIPATION PHASE**

What things were you predicting would happen?

First time. Planned. Went and done a rout, got a few hundred.

What options did you see open to yourself at this time?

Do it, do it all the time.

Were you concerned about danger, what others may think or what you may think of yourself?

Danger- I have to admit that I pulled my arm away a bit. Bit worried at the time.

What others think- no

**INVESTMENT PHASE**

How much did you want this prediction to come true? How much did it matter?

It mattered, I wanted it, the second time I went to Cabba and got my own.
ENCOUNTER PHASE
Describe the actual experience of doing it?
Me and a friend, a bloke, in Cabramatta, got a cap, back of some flats, had a shot. Felt all funny and that. Kept going on all night. Went back to our house. Had some cones in my room. Kept on going all night. Woke up in the morning and then couldn't remember a bit of yesterday.

CONFIRMATION/DISCONFIRMATION PHASE
How did things go compared to what you initially thought would happen?
I'd seen people before on it, good. I wanted to do it again. It felt mad, good, lighter.

CONSTRUCTIVE REVISION PHASE
What things did you learn from this experience?
You throw up sometimes.
Takes ages.
Have to put water in the cap and that.

NEXT TIME
Did you change as a result of this experience? Maybe
What things will you change for next time if there is one?
Do it again
What options do you see open to you now?
Do it
How do you now see the advantages and disadvantages?

<table>
<thead>
<tr>
<th>A1</th>
<th>Being involved</th>
<th>A2</th>
<th>Not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred?</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B1</th>
<th>Disadvantage of being involved</th>
<th>B2</th>
<th>Advantage of not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing</td>
<td></td>
<td>Nothing</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1</th>
<th>Advantage of being involved</th>
<th>C2</th>
<th>Disadvantage of not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feels good</td>
<td></td>
<td>The feeling</td>
<td></td>
</tr>
</tbody>
</table>

Experience Cycle Methodology Examples Involving Significant Psychosocial Risk

Situation F: Discussing Condom Use.
“Darren”, a 16 year old male in secondary school, describes his experience of discussing condom use with his girlfriend. Unlike many of the adolescents’ stories, Darren anticipated that he was going to be in this situation, made a tight prediction but “things went in the completely
opposite direction”. As will be described in the hypothesis testing section of the results, Darren is likely to change his construing as a result, as he made a tight prediction with high investment and was invalidated. Darren exemplifies the Experience Cycle pathway of a person who revises their construing as a result of their experience. From this description it is evident how this psychosocial risk-taking experiment was important to Darren’s identity development, especially relating to the opposite sex.

ANTICIPATION PHASE
What things were you predicting would happen?
I knew the conversation would turn that way. I thought she would say that she wasn’t ready for sex- protective and me pushy. If time arose should be prepared and not caught out, without protection.

What options did you see open to yourself at this time?
Wasn’t any real options- it all lead to being prepared; speaking and being open and prepared.

Were you concerned about danger, what others may think, or what you may think of yourself?
Concerned about people knowing- worried she would go and tell her best friend and it got back to me and be embarrassing. Social danger rather than physical.

INVESTMENT PHASE
How much did you want this prediction to come true? How much did it matter?
It became the fulcrum of the relationship- that one issue. It mattered a great deal. Sort of became the most important thing for a couple of weeks.

ENCOUNTER PHASE
Describe the actual experience of doing it?
Just got onto sex- I said “it’s cool to use a condom if we actually do”. She said “without question, do you have one?” “No” “It’s best you go and get one”. I agreed, went and got it. Just as a security thing, I carry one with me.

CONFIRMATION/DISCONFIRMATION PHASE
How did things go compared to what you initially thought would happen?
Things went in a completely opposite direction. She was completely unthreatened which shocked me, completely uninhibited. Helped you because it was less stress. Wasn’t stressful, easier to talk about.

CONSTRUCTIVE REVISION PHASE
What things did you learn from this experience?
Learned to be a lot more upfront. I found out that it wasn’t just guys who were completely driven by sex.
NEXT TIME

Did you change as a result of this experience? **YES**

What things will you change for next time if there is one?  

**Talk a lot earlier in the relationship.**
1) Talk early,
2) Be forceful- do it early,
3) If conversation goes badly, get out, do damage control.

What options do you see open to you now?  

*Not talking is not an option*

How do you now see the advantages and disadvantages?

<table>
<thead>
<tr>
<th>A1</th>
<th>Being involved</th>
<th>A2</th>
<th>Not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred?</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B1</th>
<th>Disadvantage of being involved</th>
<th>B2</th>
<th>Advantage of not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disadvantage of being involved</td>
<td>Advantage of not being involved</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Embarrassing*  

<table>
<thead>
<tr>
<th>C1</th>
<th>Advantage of being involved</th>
<th>C2</th>
<th>Disadvantage of not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advantage of being involved</td>
<td>Disadvantage of not being involved</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Gets a lot of stuff off chest*  

*Won't get heard*

Other comments:

*It was really worthwhile and worth doing. Would do it again, same style.*

**Situation G: “Asking someone out”.**

“Dillon”, a 16 year old male in secondary school, describes his experience of asking a girl out to the movies.

**ANTICIPATION PHASE**

What things were you predicting would happen?  

*She may say yes, no or just laugh. Wasn’t really sure. Probably say no.*
What options did you see open to yourself at this time?

1) Ask her at school
2) Ring her up
3) Not ask her

Were you concerned about danger, what others may think or what you may think of yourself?

What others think - concerned about what she might think afterwards.

INVESTMENT PHASE

How much did you want this prediction to come true? How much did it matter?

Wasn't really worried about her saying no - wouldn't really affect anything.

ENCOUNTER PHASE

Describe the actual experience of doing it?

Rang a girl to ask her out. Couldn't get her phone number. Called her friends, she was there. Asked her out to movies on Saturday night. She had plans because she was moving. Didn't come back because they liked it there.

CONFIRMATION/DISCONFIRMATION PHASE

How did things go compared to what you initially thought would happen?

Quite good. If she didn't have plans she probably would have said yes.

CONSTRUCTIVE REVISION PHASE

What things did you learn from this experience?

Gained confidence.

NEXT TIME

Did you change as a result of this experience? Yes

What things will you change for next time if there is one?

Next time do it with the real life, get to see the reaction on their face. Be more confident.

What options do you see open to you now?

1) Do same thing
2) Ask her straight out

How do you now see the advantages and disadvantages?

Asking someone out

<table>
<thead>
<tr>
<th></th>
<th>A1: Being involved</th>
<th>A2: Not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred?</td>
<td>No preference</td>
<td></td>
</tr>
</tbody>
</table>

|                       | B1: Disadvantage of being involved |
|                       | B2: Advantage of not being involved |
|                       | Saying no-laughing about it with her friends |
|                       | Possibility of "no" wouldn't happen |
C1: Advantage of being involved

She might say yes

C2: Disadvantage of not being involved

Wouldn't, can't get the chance of her saying yes

For Dillon, this proved a useful experiment. The girl he asked affirmed his right to ask her out, but declined for other reasons. Hence, while Dillon did not attain his desired outcome he gained useful experiential knowledge. The hesitation of Dillon is similar to Darren, both finding the opposite sex unpredictable, in personal construct terms. An important difference however, was that Darren when discussing condom-use and sex appeared to have more invested in the risk-taking than Dillon. Dillon by using the phone had decreased his involvement in the psychosocial risk-taking act.

Five further examples of results from the ECM, corresponding to the remaining five elements of the Risky Situations Grid Technique are included in Appendix G. I consider now the quantitative results.

Hypothesis Testing

Using CORRELATION of SPSS for Windows Pearson correlation coefficients were calculated for combinations of: Past Risk-Taking, Intended Future Risk-Taking, PVAFF, Psychosocial Risk Perception, Physical Risk Perception and Identity. These relationships are illustrated in Table 8. Data was examined for symmetry and outliers. No assumptions were violated.

Table 8 illustrates a significant positive correlation ($r = 0.373, p <0.01$) between Past Risk-Taking and Intended Future Risk-Taking. A significant positive correlation ($r = 0.402, p <0.01$) also exists between Psychosocial Risk Perception and Physical Risk Perception. There is a significant negative correlation ($r = -0.253, p <0.01$) between Intended Future Risk-Taking and Physical Risk Perception.
### Table 8

**Intercorrelations Between Variables in the 'Between-situation' Component of the Final Personal Construct Model of Adolescent Risk-Taking**

<table>
<thead>
<tr>
<th></th>
<th>Past R-T</th>
<th>Future R-T</th>
<th>PVAFF</th>
<th>Psychosocial</th>
<th>Physical</th>
<th>Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past R-T</td>
<td>-</td>
<td>.373**</td>
<td>-0.079</td>
<td>-.202*</td>
<td>-.15</td>
<td>-.220*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n=124)</td>
<td>(n=124)</td>
<td>(n=124)</td>
<td>(n=124)</td>
<td>(n=107)</td>
</tr>
<tr>
<td>Future R-T</td>
<td>-</td>
<td>.041</td>
<td>-.233**</td>
<td>-.253**</td>
<td>-.081</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n=104)</td>
<td>(n=124)</td>
<td>(n=124)</td>
<td>(n=107)</td>
<td></td>
</tr>
<tr>
<td>PVAFF</td>
<td>-</td>
<td>.227*</td>
<td>-.007</td>
<td>.051</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n=104)</td>
<td>(n=104)</td>
<td>(n=88+*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychosocial</td>
<td>-</td>
<td></td>
<td>.402**</td>
<td>-.108</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(n=124)</td>
<td>(n=107)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>-</td>
<td></td>
<td></td>
<td>.076</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(n=107)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identity</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * $p < 0.05$, ** $p < 0.01$

Past R-T = Past Risk-Taking, calculated by using the eighth construct of the As If Grid  
Future R-T = Intended Future Risk-Taking, calculated by using the ninth construct of the As If Grid  
PVAFF = Percentage of Variance Accounted for by the First Factor, using the first seven constructs of the As If Grid. This is an index to measure the differentiation between risky situations  
Psychosocial = Psychosocial Risk Perception, calculated using the second construct As If Grid  
Physical = Physical Risk Perception, calculated using the first construct As If Grid  
Identity = Identity, measured by CASPM  
* Identity samples are smaller because some participants chose not to complete the CASPM procedure
The first and second hypotheses correspond to 'within-situation' variables of the final personal construct model of adolescent risk-taking, to be described in the final chapter.

**Hypothesis 1: Construct Revision and other Experience Cycle variables.**

The first hypothesis stated, that within the Experience Cycle Methodology (ECM), a combination of measures of Anticipation, Investment and Confirmation/Disconfirmation would be significantly related to Construct Revision. A Logistic Regression Analysis was performed on Construct Revision as outcome and Anticipation, Investment and Confirmation/Disconfirmation as predictors. Analysis was performed using SPSS for Windows. Assumptions were tested using EXPLORE and no assumptions were violated. Three cases were excluded due to missing data. The analysis included 121 cases. The frequencies of the respective groups are provided in Table 9.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Group 1</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipation</td>
<td>Loose Prediction</td>
<td>n=53</td>
</tr>
<tr>
<td>Investment</td>
<td>Low Investment</td>
<td>n=58</td>
</tr>
<tr>
<td>(Dis)Confirmation</td>
<td>Validation</td>
<td>n=66</td>
</tr>
<tr>
<td>Construct Revision</td>
<td>Minimal Revision</td>
<td>n=58</td>
</tr>
</tbody>
</table>

A test of the full model with all three predictors against a constant only model was statistically reliable, $\chi^2(3, 120)=13.684, p < 0.001$, indicating that the predictors, as a set, reliably distinguished between those participants who reported minimal Construct Revision and those participants who reported significant Construct Revision in their stories about risk-taking. While the model was significant, prediction success was not impressive, with 63.78% of the minimal Construct Revision group predicted correctly and 68.25% of the significant Construct Revision group predicted correctly. This was an overall
success rate of 66.12%. Results from the logistic regression analysis are summarised in Table 10.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>R</th>
<th>Std. B</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Dis)Confirmation</td>
<td>-1.395</td>
<td>.3973</td>
<td>12.319</td>
<td>1</td>
<td>.0004</td>
<td>-0.2482</td>
<td>.2479</td>
</tr>
<tr>
<td>Investment</td>
<td>0.0745</td>
<td>0.3999</td>
<td>0.0347</td>
<td>1</td>
<td>.8521</td>
<td>0.000</td>
<td>1.0774</td>
</tr>
<tr>
<td>Anticipation</td>
<td>0.3769</td>
<td>0.3996</td>
<td>0.8896</td>
<td>1</td>
<td>.3456</td>
<td>0.000</td>
<td>1.4577</td>
</tr>
<tr>
<td>Constant</td>
<td>1.4395</td>
<td>0.8926</td>
<td>2.6008</td>
<td>1</td>
<td>.1068</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hence, Hypothesis 1 was supported in that Anticipation, Investment and Confirmation/Disconfirmation were significantly related to Construct Revision. However, the prediction success was not impressive and the Confirmation/Disconfirmation was the only significant individual predictor.

**Hypothesis 2: Construct Revision with modified Experience Cycle variables.**

The second hypothesis stated that Commitment, and Confirmation/Disconfirmation would be significantly related to Construct Revision. Of the 121 participants who completed the ECM, 97 (80.17%) reported significant Construct Revision. Of those 97 participants who reported significant Construct Revision, 77 (79.38%) made tight predictions in the Anticipation Phase with high investment in the Investment Phase and/or experienced disconfirmation in the Confirmation/Disconfirmation Phase. Of the 24 (19.83%) participants who reported minimal Construct Revision, only 6 (25.0%) reported disconfirmation and eight (33.33%) reported tight predictions with high investment. Two (0.083%) participants from the 24 participants in the minimal Construct Revision group reported tight predictions with high investment and disconfirmation. This preliminary examination of ECM results suggest that tight predictions with high investment and/or disconfirmation are necessary for construct revision.

Based on these results a new variable was calculated termed Commitment. Commitment was calculated by combining Anticipation and Investment. Commitment is a variable involving two groups: (1) those
participants who have tight predictions (Anticipation) with high investment (Investment); and (2) those who do not have this combination.

To test Hypothesis 2, a Logistic Regression Analysis was performed on Construct Revision as outcome and Commitment and Confirmation /Disconfirmation as independent variables. Analysis was performed using REGRESSION of SPSS for Windows. Three cases were excluded due to missing data. The analysis included 121 cases.

A test of the full model with both predictors against a constant only model was statistically reliable, $\chi^2(2, 120)=10.733, p < 0.0047$, indicating that the predictors, as a set, reliably discriminated between those participants who reported minimal Construct Revision and those participants who reported significant Construct Revision in their stories about risk-taking. However, similar to Hypothesis 1, while the model was significant, prediction success was not impressive, with 68.42% of the minimal Construct Revision group predicted correctly and 67.65% of the significant Construct Revision group predicted correctly. The results of the logistic regression analysis are presented in Table 11.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>R</th>
<th>Std. B</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Dis)Confirmation</td>
<td>0.5817</td>
<td>0.5444</td>
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<td>1</td>
<td>0.2853</td>
<td>0.00</td>
<td>1.7891</td>
</tr>
<tr>
<td>Commitment</td>
<td>-1.667</td>
<td>0.5392</td>
<td>9.5578</td>
<td>1</td>
<td>0.0020</td>
<td>-0.2755</td>
<td>0.1888</td>
</tr>
<tr>
<td>Constant</td>
<td>1.4835</td>
<td>1.0000</td>
<td>2.2008</td>
<td>1</td>
<td>0.1379</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Similar to Hypothesis one, Confirmation/Disconfirmation was the only Experience Cycle measure significantly related to Construct Revision. The modification of Anticipation and Investment variables into Commitment (tight predictions and high investment) did not improve the predictive success.

The remaining three hypotheses attempt to relate 'between-situation' variables and 'within-situation' variables of the final personal construct model of adolescent risk-taking, to be described in the final chapter.
Hypothesis 3: Between-situation and within-situation variables related to Intended Future Risk-Taking

The third hypothesis stated that a combination of Experience Cycle Methodology measures (Anticipation, Investment, Confirmation/Disconfirmation and Construct Revision), Physical Risk-Perception and Past Risk-Taking would be significantly related to Intended Future Risk-Taking. A Logistic Regression Analysis was performed on Intended Future Risk-Taking as outcome and the four ECM measures (Anticipation, Investment, Confirmation/Disconfirmation, Construct Revision), Physical Risk Perception and Past Risk-Taking as predictors. Analysis was performed using SPSS for Windows. For the Intended Future Risk-Taking variable the extreme groups method was used selecting those scores less than the 30th percentile as the the low group and those scores higher than the 70th percentile as the high group. Of the original 124 cases, 45 were removed leaving 79 cases in this analysis.

A test of the full model with all five predictors against a constant only model was statistically reliable, $\chi^2(5, 78)=18.726$, $p < 0.0022$, indicating that the predictors, as a set, reliably discriminated between high and low Intended Future Risk-Taking groups. Prediction success was adequate, with 74.36% of the low Intended Future Risk-Taking group predicted correctly and 70.00% of the high Intended Future Risk-Taking group predicted correctly. This was an overall success rate of 72.15%. Results of the Logistic Regression Analysis are summarised in Table 12.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>R</th>
<th>Std. B</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Dis)Confirmation</td>
<td>.7291</td>
<td>.5463</td>
<td>1.781</td>
<td>1</td>
<td>.1820</td>
<td>.00</td>
<td>2.0733</td>
</tr>
<tr>
<td>Past Risk-Taking</td>
<td>1.4059</td>
<td>.5107</td>
<td>7.577</td>
<td>1</td>
<td>.0059</td>
<td>.2257</td>
<td>4.0791</td>
</tr>
<tr>
<td>Physical Risk Perception</td>
<td>-1.5556</td>
<td>.8876</td>
<td>3.072</td>
<td>1</td>
<td>.0797</td>
<td>-.0989</td>
<td>.2111</td>
</tr>
<tr>
<td>Anticipation</td>
<td>-.1018</td>
<td>.5316</td>
<td>0.367</td>
<td>1</td>
<td>.08482</td>
<td>.00</td>
<td>.4951</td>
</tr>
<tr>
<td>Investment</td>
<td>-.7031</td>
<td>.5352</td>
<td>1.725</td>
<td>1</td>
<td>.1890</td>
<td>.00</td>
<td>.4951</td>
</tr>
<tr>
<td>Constant</td>
<td>.8999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hence, Hypothesis three was not supported, as no set of variables involving both 'between-situation' variables and 'within-situation' variables were significantly related to Intended Future Risk-Taking. Hence,
the relationship between the 'between-situation' component and the 'within-situation' components of the personal construct model of adolescent risk-taking is a complex one. The final two hypotheses examine further the complex relationships between the Experience Cycle and Past Risk-Taking, and the Experience Cycle and Intended Future Risk-Taking.

**Hypothesis 4: Past Risk-Taking and the Experience Cycle.**

The fourth hypothesis stated that there would be a significant relationship between the level of Past Risk-Taking and phases of the Experience Cycle. A five way frequency analysis was performed to develop a hierarchical Log Linear Model of Experience Cycle phases and Past Risk-Taking. Dichotomous variables analysed were: (1) high and low Past Risk-Taking; (2) tight and loose predictions within Anticipation; (3) high and low investment within Investment; (4) confirmation or disconfirmation within Confirmation/Disconfirmation; and (5) significant or minimal revision within Construct Revision. The frequencies of the cells of the Log Linear Analysis for Hypothesis four are provided in Table 13.

High and low Past Risk-Taking groups were generated using the extreme groups method, selecting cases below the 30th percentile and above the 70th percentile. Of the 124 cases, 51 cases were omitted leaving 73 cases in the analysis.

The model had a likelihood ratio $\chi^2(8)=8.84, p<0.356$, indicating a good fit between observed frequencies and expected frequencies generated by the model. Table 8 illustrates that cell sizes of frequencies are small and hence results must be interpreted with caution. The two best models involved complex four-way relationships:

(a) Past Risk-Taking, Anticipation, Investment, Construct Revision;
(b) Anticipation, Confirmation/Disconfirmation, Investment, Construct Revision

Model a relates Past Risk-Taking to three of the four ECM variables. The variable excluded from model a is Confirmation/Disconfirmation. Model a confirms Hypothesis four with a relationship between Past-Risk Taking (measured by the As If Grid) and ECM variables. Model b, excludes Past Risk-Taking and hence does not provide support for Hypothesis four. Model b, however, confirms that the ECM phases are inter-related.

The fifth hypothesis stated that there would be a significant relationship between level of Intended Future Risk-Taking and phases of the Experience Cycle. A five way frequency analysis was performed to develop a hierarchical Log Linear Model of Experience Cycle phases and Intended Future Risk-Taking. Dichotomous variables analysed were (1) high and low Intended Future Risk-Taking, (2) tight and loose predictions within Anticipation, (3) high and low investment within Investment, (4)
confirmation or disconfirmation within Confirmation/Disconfirmation, and 
(5) significant or minimal revision within Constructive Revision.

High and low Intended Future Risk-Taking groups were generated 
using the extreme groups method, selecting cases below the 30th percentile 
and above the 70th percentile. Of the 124 cases, 45 cases were omitted 
leaving 79 cases in the analysis. Frequencies for the cells of the Log Linear 
Analysis are provided in Table 14.

The model had a likelihood ratio $\chi^2(10)=3.678$, $p < 0.961$, indicating a 
good fit between observed frequencies and expected frequencies generated 
by the model. Table 14 illustrates that cell sizes of frequencies are small and hence results must be interpreted with caution. Seven final models were generated. Six models involved three-way relationships and one model involved a two-way relationship. The seven models were as follows: 
(a) Anticipation, Confirmation/Disconfirmation, Intended Future Risk­Taking 
(b) Confirmation/Disconfirmation, Construct Revision, Intended Future Risk-Taking 
(c) Investment, Intended Future Risk-Taking 
(d) Anticipation, Confirmation/Disconfirmation, Investment 
(e) Anticipation, Confirmation/Disconfirmation, Construct Revision 
(f) Anticipation, Investment, Construct Revision 
(g) Confirmation/Disconfirmation, Investment, Construct Revision

Models a, b and c are in support of Hypothesis five, whereas the remaining models represent relationships within the ECM and hence provide no support for the Hypothesis five. Model b is relevant to the personal construct model of adolescent risk-taking as it relates the 'between-situation' variable of Intended Future Risk-Taking with the 'within-situation' variables of Confirmation/Disconfirmation and Construct Revision. This means that these sections of narrative within the ECM are empirically related to Intended Future Risk-Taking measured by the As If Grid. This relates to Mancuso's (1996) notion of a story as an anticipatory device, to be discussed in the final chapter. In this chapter I provided four examples of ECM transcripts and the quantitative results corresponding to the five hypotheses designed to test the interim personal construct model of adolescent risk-taking.
Table 14  Experience Cycle Methodology and Intended Future Risk-Taking: Frequencies of Cells for Log Linear Analysis

<table>
<thead>
<tr>
<th></th>
<th>Low Intended Future-R-T</th>
<th>High Intended Future R-T</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Expected</td>
</tr>
<tr>
<td>Loose Prediction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invalidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal Revision</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Significant Revision</td>
<td>6</td>
<td>6.2</td>
</tr>
<tr>
<td>High Investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal Revision</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td>Significant Revision</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>Validation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal Revision</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td>Significant Revision</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High Investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal Revision</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Significant Revision</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Tight Prediction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invalidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal Revision</td>
<td>1</td>
<td>.7</td>
</tr>
<tr>
<td>Significant Revision</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>High Investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal Revision</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Significant Revision</td>
<td>4</td>
<td>3.3</td>
</tr>
</tbody>
</table>

In the final chapter, Chapter 11, I summarise and discuss the findings presented here before describing the propositions of the final personal construct model of adolescent risk-taking and representing it visually. I discuss then the strengths and weaknesses of this project and make suggestions for future research; relating to personal construct approaches to adolescent risk-taking in particular and more general implications for research in the area of adolescent risk-taking.
CHAPTER 11

THE FINAL PERSONAL CONSTRUCT MODEL OF ADOLESCENT RISK-TAKING: EVALUATION, SUGGESTIONS FOR FUTURE RESEARCH AND IMPLICATIONS FOR INTERVENTION
The Final Personal Construct Model of Adolescent Risk-Taking: Evaluation, Suggestions for Future Research and Implications for Intervention

In this chapter I begin by summarising important findings from the two studies of adolescent risk-taking, particularly the second study. I discuss these findings before presenting the final personal construct model of adolescent risk-taking in three parts: (a) the assumptions on which it is based; (b) the final three propositions; and (c) a visual representation relating the propositions. I evaluate the method of this research in terms of the sampling, design and measurement issues of the two studies conducted. I evaluate briefly the product of this research by evaluating this model using standards outlined by Viney and Oades (1998). I provide suggestions for future research; first, that which extends and improves personal construct psychology research that relates to this model; and second, broader research within adolescent risk-taking. I discuss the clinical implications of the personal construct model of adolescent risk-taking for individuals and groups of adolescents. I conclude this chapter by reviewing the aims of the two studies and their achievement.

Summary of the Findings

In this section I summarise the key findings from the two studies.

Key findings from Study 1.

The first study was based on three broad research questions. The first research question asked: What are the processes of adolescent risk-taking? Qualitative data from the Experience Cycle narratives in this study demonstrated that adolescents often did not anticipate that they would “find themselves” in “risky situations” yet still rated them as “risky”. Adolescents perceived situations as involving risk, but were poor at predicting whether or when they would be in such situations. Almost half of the adolescents (44%) spontaneously described a dilemma between physical and psychosocial risk, demonstrated by the ABC technique.

The second research question asked: What are the structures of adolescent risk perception? The Euclidean Distance Models demonstrated no significant differences in the way secondary school-based, university-based
and juvenile justice-based adolescents construed the nine risky situations. However, the findings here suggested that the university and juvenile justice samples had a more differentiated second dimension of risk construal than the secondary school sample. This interpretation was supported by the Percentage of Variance Accounted for by the First Factor (PVAFF) results. The juvenile justice sample was significantly more extreme in their ratings of the risky situations. All three groups consistently rated Unprotected Sex, IV Drug Use, and Passenger in a Fast Car, as the three most risky of the nine risky situations. In terms of the personal construct model of adolescent risk-taking these three situations were seen as being heavily weighted on physical risk.

The third research question asked: What is the content of adolescents' constructs related to identity and risk? Five constructs were generated from the As If Grid of Study 1. These were validated by a second rater who generated 9 out of 10 of the same construct poles. The five constructs are as follows:

(a) dangerous - relaxed/safe
(b) nervous, worried about others - comfortable
(c) peer pressure, no choice, no control - choice, control
(d) close (intimate) - not so close (less intimate)
(e) care, stand up for self - don't care, go-with-the-flow, action, thrill

The results from the Content Analysis Scales of Psychosocial Maturity (CASPM) indicated differences mainly between the juvenile justice sample and the other two samples. The juvenile justice sample was significantly different \( p < 0.01 \) than the other two groups of the following scales: Trust, Mistrust, Autonomy, Constraint and Initiative. This result, however, must be interpreted with caution due to the small size of the juvenile justice sample.

Key findings from Study 2.

The second study involved five hypotheses in addition to the qualitative data. The hypotheses are discussed using the distinction of the final personal construct model of adolescent risk-taking of 'between-situation' and 'within-situation'.

The first and second hypotheses related to ECM descriptions of being 'within risky situations'. The third hypothesis stated, that within the
Experience Cycle Methodology (ECM), a combination of measures of Anticipation, Investment and Confirmation/Disconfirmation would be significantly related to Construct Revision. Results demonstrated that this set of variables was significantly related to Construct Revision. However, Confirmation/Disconfirmation was the only significant predictor within the set of variables.

The second hypothesis stated that Commitment, and Confirmation/Disconfirmation would be significantly related to Construct Revision. Commitment was a variable calculated by combining Anticipation and Investment. Results demonstrated that the calculation and inclusion of the variable Commitment did not improve the prediction of Construct Revision. However, it is important to note that of those 95 participants who reported significant construct revision, 79.38% reported tight predictions with high investment (commitment) or reported disconfirmation of their predictions, or reported both.

The final three hypotheses examined the relationship between the 'between-situation' variables and the 'within-situation' variables. The third hypothesis stated that a combination of ECM measures (Anticipation, Investment and Confirmation/Disconfirmation and Construct Revision), Physical Risk-Perception and Past Risk-Taking would be significantly related to Intended Future Risk-Taking. This hypothesis was not supported. No ECM measures were significantly related to Intended Future Risk-Taking.

The fourth hypothesis stated that there would be a significant relationship between the level of Past Risk-Taking and phases of the Experience Cycle Methodology. This hypothesis was supported with two complex four-way interactions demonstrated. The first model involved Past Risk-Taking, Anticipation, Investment and Construct Revision. The second model, included the four ECM variables.

The fifth hypothesis stated that there would be a significant relationship between level of Intended Future Risk-Taking and phases of the Experience Cycle Methodology. This hypothesis was supported. However, there were six three-way association models and one two-way association model. This makes the relationship difficult to interpret.

In addition to these findings, ECM transcripts provide supporting qualitative evidence. I summarise now, Study 1 and Study 2 findings in eleven points.
From Study 1:

1. Adolescents perceived situations as risky but were poor at predicting whether or when they would be in such situations;
2. Forty-four percent of adolescents spontaneously described a dilemma in decision making between physical risk and psychosocial risk;
3. There were no major differences in the structure of risk perception between secondary school-based, university-based, and juvenile justice-based adolescents;
4. Adolescents consistently reported Unprotected Sex, IV Drug Use and Passenger in a Fast Car as the three most risky situations.
5. Ten important construct poles that adolescents used to construe risky situations are as follows: dangerous; relaxed-safe; nervous-worried about what others think; comfortable; peer pressure-no choice-no control; choice-control; close (intimate); not so close (less intimate); care-stand up for self; don't care-go-with-the-flow-action-thrill.

From Study 2:

1. Past Risk-Taking and Physical Risk Perception were significantly correlated with Intended Future Risk-Taking;
2. Identity and Percentage of Variance Accounted for by the First Factor of the As If Grid were not significantly correlated with Intended Future Risk-Taking;
3. Construct Revision was significantly related to Confirmation/Disconfirmation;
4. When telling stories about risk-taking experiences 80% of the adolescents provided stories reporting construct revision.
5. Almost 80% of participants who reported significant construct revision in their stories of risk-taking also reported Commitment (tight predictions with high investment) or disconfirmation of their predictions, or both; and
6. Some tentative empirical evidence exists for a relationship between the 'between-situation' variables (Past Risk-Taking, Physical Risk-Taking, Intended Future Risk-Taking) and 'within-situation' variables (Anticipation, Investment, Confirmation/Disconfirmation, Construct Revision). However, this evidence exists only in complex Log Linear Models that are open to interpretation.
I discuss now these findings in more detail.

Discussion of the Findings

I discuss first the important findings from the first study and how they influenced the second study. I consider then the findings from the seven hypotheses of the second study.

Relevant to the first research question of Study 1, regarding the process of adolescent risk-taking, an important finding was that adolescents perceived situations as risky but were poor at predicting whether or when they would be in such situations. As demonstrated in Chapter 7, this was a theme which recurred in many of the Experience Cycle narratives. This finding is of significant importance to the development of the final personal construct model of adolescent risk-taking. This finding, dispels a common myth that adolescents do not perceive situations as risky and see themselves as invulnerable (Moore & Rosenthal, 1991; Weinstein, 1984). Between-situations, such as during data collection of this study, adolescents view the situations as risky. The narratives, however, illustrated how, on many occasions, adolescents were unsuccessful at anticipating if or when they would be in such a risky situation. The implications of this finding, in terms of intervention to prevent unhelpful risk-taking, are to help adolescents anticipate situations rather than more education on whether or not situations are risky.

Also relevant to the first research question of Study 1 regarding the process of adolescent risk-taking, was the second finding that forty-four percent of adolescents spontaneously described a dilemma in decision making between physical risk and psychosocial risk. This finding related specifically to condom use. However, given the relationships between many risk taking actions (Irwin, 1993), the dilemma is likely to generalise to other forms of risk-taking. While forty-four percent of the sample may not be sufficient empirical support for the physical risk-psychosocial risk dilemma it does demonstrate that this phenomenon occurs and that it is easily operationalised using the brief ABC Technique (Tschudi, 1977). Further research using the personal construct model of adolescent risk-taking may usefully examine when adolescents experience this dilemma and when they do not. Moreover, if an intraspective definition of risk is taken, psychosocial risk is likely to be inversely proportional to identity development. Hence, as
a person develops who they are they may feel it is less of a psychosocial risk to “stand up for themself” and not take a physical risk. This discussion articulates with the well known social psychological and now folk psychological concept of peer pressure. Consistent with constructivism the concept of psychosocial risk however, gives greater agency to the person rather than an object pressured and pushed by external forces.

The second research question examined the structure of risk perception, operationalised with the Risky Situations Grid Technique. Essentially, there were no major differences in the structure of risk perception between secondary school-based, university-based, and juvenile justice-based adolescents. The older university-based and juvenile justice based adolescents appeared to have a slightly more differentiated factor structure of risk perception, based on the Euclidean Distance Models and Percentage of Variance Accounted for by the First Factor measures, calculated on the As If Grid. This, however was not a convincing finding. This finding combined with a non impressive difference between these three types of adolescents on the Content Analysis Scales of Psychosocial Maturity Scales lead the second study to focus on level of risk-taking experience as opposed to both psychosocial maturity and the setting from which the adolescents were drawn. The omission of a measure of past risk-taking proved a significant weakness of the first study.

In the first study adolescents consistently reported Unprotected Sex, IV Drug Use and Passenger in a Fast Car as the three situations construed as the most risky. This result from the Risky Ranks Grid combined with the Euclidean Distance Models suggest that adolescents use Physical Risk to construe risky situations. From the perspective of the personal construct model of adolescent risk-taking these three situations are all heavily weighted on physical risk. This finding was supported by the Study 2 finding of the significant relationship between Physical Risk Perception and Intended Future Risk-Taking. The Study 2 finding of a significant correlation between Physical Risk and Psychosocial Risk was supportive of the theoretical relationship between these two types of risk.

The final finding of Study 1 was the ten important construct poles that adolescents used to construe risky situations: dangerous; relaxed-safe; nervous-worried about what others think; comfortable; peer pressure-no choice-no control; choice-control; close (intimate); not so close (less
intimate); care-stand up for self; and don't care- go-with-the-flow-action-thrill. This finding is consistent with previous personal construct work with school-based and juvenile justice-based adolescents (Viney, Truneckova, Weekes & Oades, 1994; 1997). These construct labels were used as supplied constructs for the second study and proved meaningful to the participants.

The grid methodology is somewhat restrictive in generating constructs. This task may be better achieved by a thematic analysis on unstructured narratives about risk-taking experiences, with an interviewer endeavouring to elicit contrast poles within narratives.

The first hypothesis of the second study involved the relationship between the first three Experience Cycle Methodology measures and the final measure, Construct Revision. Using a Logistic Regression Analysis, it was found that Construct Revision was significantly related to Confirmation/Disconfirmation alone. This is an important finding for the personal construct model of adolescent risk-taking. In other words, adolescents change when they experience events that they did not anticipate. When telling stories about risk-taking experiences, using the ECM, 80% of the adolescents provided stories reporting construct revision.

While the Logistic Regression Analysis identified Confirmation/Disconfirmation as the only individual variable significantly related to Construct Revision, a more simple analysis of percentages demonstrated that almost 80% of participants who reported significant construct revision in their stories of risk-taking also reported commitment (tight predictions with high investment) and disconfirmation, or both. This finding was corroborated by re-reading some of the ECM transcripts.

The second hypothesis was based on this result. A new ECM variable was generated called Commitment. This modification was theoretical as well as statistical as Kelly (1971, p15) stated, "...it, is commitment - what I have called "self involvment plus anticipation". In fact, in this later paper Kelly revises the Experience Cycle into three phases, effectively collapsing Anticipation and Investment. The Commitment variable used in the fourth hypothesis grouped those participants who made tight predictions and reported high investment in the risk-taking action, and those who had other combinations of Anticipation and Investment. Empirically, this regrouping of data did not add to the prediction of Construct Revision. Considering the first and second hypothesis it is clear that invalidation (disconfirmation) is
the best predictor of Construct Revision. However, theoretically it is likely that such disconfirmation requires certain precursors; the prediction must be specific enough to test, and change is only likely if the person had something “invested” in the risk taking action. This “construct revision pathway” forms an important part of the ‘within-situation’ component of the final personal construct model of adolescent risk-taking and is illustrated in Figure 6. Figure 6 illustrates that if construct revision occurs the most likely pathway involves tight predictions, high investment and disconfirmation. This was demonstrated empirically with both quantitative and qualitative data.

The bold arrows in Figure 6 represent the “construct revision pathway”, that is the pathway through the experience cycle that is most likely to lead to construct revision, as indicated by the empirical results of this study (Oades & Viney, 1999). The dotted arrows in Figure 6 represent other pathways through the experience cycle that are less likely to lead to construct revision.

The remaining three hypotheses examined possible relationships between the ‘between-situation’ variables (Past Risk-Taking, Physical Risk Perception, Intended Future Risk-Taking) and ‘within-situation’ variables (Anticipation, Investment, Confirmation/Disconfirmation, Construct Revision). Some tentative empirical evidence for these hypotheses was demonstrated in the form of Log Linear Models. These models are complex and hence open to interpretation. Moreover, only one ECM story per person was used to generate these models. While the use of Log Linear Models to analyse ECM results is a promising development, the findings for the final two hypotheses are tentative.

In the following section I use these findings to revise the interim personal construct model of adolescent risk-taking to yield the final model.
Figure 6 Experience Cycle Pathway Leading to Construct Revision
The Final Personal Construct Model of Adolescent Risk-Taking

The final personal construct model of adolescent risk-taking is stated in three propositions in Table 15 and represented visually in Figure 6 and Figure 7. The three propositions of the interim personal construct model of adolescent risk-taking, before Study 2, were described in Chapter 7.

I have revised these propositions under three titles: (A) dilemmas of risk-taking, which were empirically demonstrated in the first study; (B) within risky situations, relating to descriptions of personal experience of risky situations and possible construct revision that may result, as measured by the Experience Cycle Methodology, and (C) between risky situations, which corresponds to the period between-situations where an adolescent may think about a risky situation out of the context and make general predictions about future situations. I have added the concept of general experiential knowledge of risk-taking, to represent the individual psychological processes of individuals that occur due to risk-taking experiences. This directly to the psychological interpretations of experiences indexed by the variable “past risk-taking”. I have italicised all terms within the propositions that have been defined or operationalised during the development of the model. The three propositions of the final personal construct model of adolescent risk-taking are presented in Table 15. Table 15 includes also the six theoretical assumptions underlying the personal construct model of adolescent risk-taking that were presented in Chapter 4.

Figure 6 illustrated the ‘construct revision pathway’ which was part of the ‘within-situation’ component stated as proposition B of the final personal construct model of adolescent risk-taking. The final personal construct model of adolescent risk-taking is also presented visually in Figure 8. The five variables illustrated within the boxes of Figure 7 were all operationalised during Study 2. The ‘between-situations phase’, operationalised mainly by the Risky Situations Grid Technique, represents a path diagram as described in the previous chapter. The ‘within-situations phase’ is operationalised by the Experience Cycle Methodology (ECM). The ECM narratives correspond directly to the risky situations upon which the quantitative data of the ‘between-situations phase’ variables are based. Hence, ididiographically one could compare a full ECM narrative of a salient risk experience of a participant with the three variables within the path
diagram for that participant. For example, What sort of story do they tell of risk-taking? Is there a difference between their past and intended future participation in risky situations? Do they construe situations as physically risky?

Figure 7 is usefully interpreted by thinking in a temporal sense from left to right. Hence, an adolescent's past risk-taking will affect their future risk-taking. This is, however, also influenced by their physical risk perception. These measures and predictions are all made out of the context of the risky situation (between-situation component). With time the prediction of whether the individual will or will not be in a risky situation is validated or invalidated. If the individual enters the situation, (within-situation component) a new Experience Cycle begins, moving to the right of Figure 8. This experience then adds to the general experiential knowledge or risk-taking, returning to the left of the diagram. In some ways, the final personal construct model of adolescent risk-taking is an Experience Cycle nested within an Experience Cycle, one Cycle between-situations and one Cycle within the situation. The personal construct model of adolescent risk-taking is, however, more than two Experience Cycles with its emphasis upon risky situations, risky situations and physical versus psychosocial risk taking.

The final personal construct model of adolescent risk-taking, as a model of individual psychological processes, integrates previous experience (as "general experiential knowledge of risk-taking") with current day individual experiences (within-situation component) and future intended behaviour. Mancuso's (1996) notion of a story as an anticipatory device is a very useful concept in this regard. Mancuso asserts that the a story has anticipatory qualities, theoretically linking narrative approaches with the anticipatory emphasis of personal construct psychology. The structure of an Experience Cycle can be seen as very similar to the structure of a story. Stein and Glenn (1970) describe a a story as including; (1) a setting (2) an initiating event, (3) internal states such as goals and emotions, (4) attempt, (5) consequences and (6) reactions including emotions and actions. The ECM narratives, generated as part of this research, included all of these components. Hence, it is likely that this research has implications for episodic memory work examining autobiographical memory and its relationship to storied identities (Lightfoot, 1997). This is supported by the significant correlation demonstrated between Past Risk-Taking and Intended
Future Risk-Taking. The autobiographical memory research is also relevant to this discussion (Barclay & Wellman, 1986; Baumeister & Newman, 1994; Dalton, 1988; Neimeyer & Metzler, 1994; Neisser & Fivush, 1994). The story that is most available to a person is also the story that is most likely to have an influence on their life (White & Epston, 1990). This relates to recalling stories of risk-taking experiences that relate to self (i.e. ECM narratives). As stated in the final personal construct model of adolescent risk-taking, the general experiential knowledge of adolescent risk-taking is likely to be stored cognitively in a storied format.
Table 15
Propositions and Assumptions of the Final Personal Construct Model of Adolescent Risk-Taking

Propositions

A. Dilemmas of risk-taking

Adolescents construe *risky situations* largely in terms of *physical risk*. *Physical risk-taking* must be understood in terms of the psychosocial environment in which it occurs, which is termed *psychosocial risk*. Adolescents often experience *dilemmas* between physical and psychosocial risk-taking but may not be able to verbalise the notion of psychosocial risk.

B. Within risky situations

*Construct revision* occurs often as a result of invalidation of predictions made: (a) when the adolescent is not in the situation; and, (b) when the adolescent is in the situation. Construct revision is also a result of *how specific* the predictions made by the adolescent were and *how important* these things were to the adolescent. Adolescents experience dilemmas between *physical risk* and *psychosocial risk* within *risky situations*.

C. Between risky situations

The cumulative experiential knowledge generated by risk-taking experiences is referred to as *general experiential knowledge of risk-taking*. This represents the individual psychological process of how an adolescent makes sense of experiences of risky situations. This experiential knowledge is likely to be in a storied format. The *general experiential knowledge of risk-taking* is the most important influence on intended future risk-taking. *Physical risk* perception also influences the intention to take risks in the future.

Assumptions

1. Risk and hence risk-taking acts are defined from the person's point of view, before the act
2. Risk refers only to *a priori* perception of a volitional act
3. Risk is conceptualised as having two types; physical risk and psychosocial risk. Risk-taking acts involve different ratios of each type of risk.
4. All risk-taking involves anxiety. Physical risk-taking involves threat. Psychosocial risk-taking involves guilt, shame or both.
5. "Risky situations" is a term meaningful to the adolescent emphasising the interpersonal context.
6. Risk-taking involves foreshortened phases of the Circumspection-Preemption-Control Cycle
Figure 7 Visual Representation of the Final Personal Construct Model of Adolescent Risk-Taking

*Corresponds to Construct Revision Pathway illustrated in Figure 7.
Evaluation of Sampling, Design and Measurement

In this section I evaluate the strengths and weaknesses of the sampling, design and measurement of the two studies used to develop the personal construct model of adolescent risk-taking.

Sampling

While the sample sizes of the university and secondary school samples were reasonable, the participants were voluntary, creating a sampling bias. This brings the generalisability of the results into question. However, due to the appropriate restrictions of the Ethics Committees involved, this limitation was unavoidable. I interpret the sampling bias in two ways. Those who volunteered could be construed as more prosocial adolescents, possibly skewing the sample towards those with higher levels of psychosocial maturity. On the other hand, many of the secondary school volunteers appeared to volunteer simply to get out of class. This is a result that would possibly skew the sample in the opposite direction. Either way, this means that the voluntary nature of the participants is likely to create a sampling bias decreasing the representativeness of the sample. Ultimately this means the model is a "personal construct model of adolescent risk-taking reported by voluntary participants".

Participants were not randomly selected. This is likely to have also decreased the representativeness of the sample. To increase sample size no random selection of participants was conducted. All participants who volunteered and met the inclusion/exclusion criteria were included. Availability of volunteers was influenced by external variables including examination timetables, school excursions and school for incarcerated adolescents. The schools and juvenile correction centre also were not randomly selected. However, as described in Chapters 6 and 9 the demographics of the schools were consistent with broader Australian demographics.

The juvenile justice samples were significantly smaller than the other two samples, particularly in the first study. Moreover, this sample includes no female participants. Even though the majority of incarcerated adolescents are male, the representativeness of this sample is somewhat limited. However, in the second study little emphasis was placed on the setting the sample was drawn from as the three samples were analysed in terms of high and low Past
Risk-Taking rather than in terms of school, university and juvenile justice groups. This is more consistent with the conceptual model.

**Design**

The sampling in three settings provided a wider range of adolescents of differing ages that in turn provided a wider range of risk-taking experiences and identity attainments necessary to develop the model. However, there were restrictions to the cross-sectional design of these two studies. While the cross-sectional design proved practical, in that I could interview a large number of young people because we only had to meet once, it proved limiting in one main way. One of the guiding assumptions of this research was the relationship between adolescent risk-taking and identity development. While the Experience Cycle Methodology and its results usefully demonstrate how a person may change as the result of a single experience, the research design did not enable information to be generated on how a person changes over time as the result of multiple experiences. The importance of this issue was emphasised clearly when some participants stated: "It would take me more than one experience to really change". Hence, a longitudinal design that followed participants' experiences over time would have been more appropriate to demonstrate the relationship between risk-taking and adolescent identity development.

**Measurement**

The RSGT links well with personal construct theory and the personal construct model of adolescent risk-taking. Kelly (1955/1991) used the element of a grid methodology to represent the theoretical notion of an event which is construed. The event of the personal construct model of adolescent risk-taking is the risky situation. These same events were also the topic of the Experience Cycle Methodology.

One criticism that can be made of the methodology of this research is that is focused largely on the individual. While, theoretically, the model attempts to "build in" the interpersonal context by emphasising the risky situation and psychosocial risk, this methodology in particular and some argue personal construct theory in general (Balnaves, Caputi & Oades, in press), remains too individualistic. This methodological individualism poses a problem
in that condom use, for example, is an interaction between people. Moreover, as stated risk-taking often occurs in groups.

In terms of the content validity of the RSGT, the nine elements chosen as risky situations were selected from an original twelve elements as part of the pilot study before Study 1. This was described in Chapter 6. Original element construction was designed to include situations within the range of convenience of the late adolescents from school, university and juvenile justice settings and a mixture of situations incorporating varied degrees of physical and psychosocial risk. The appropriateness of the final nine elements was demonstrated in Study 2. During the Experience Cycle Methodology procedure only two participants out of 124 participants stated that they had not been in one of the risky situations - the element did not relate to them. In terms of risky situations, an element relating to the smoking of cannabis would have been useful. In terms of risk perception there appears a large difference between alcohol and IV needle use. The prevalence of cannabis use in adolescents would also support this future modification.

A significant weakness of variables based on the Risky Situation Grid Technique (Past Risk-Taking, Intended Future Risk-Taking, Physical Risk, Psychosocial Risk, Percentage of Variance Accounted for by First Factor, Extremity of Ratings and Cognitive Complexity) is that issues of reliability and stability are not included in the report (Caputi & Keynes, in press; Feixas, Moliner, Montes, Mari & Neimeyer, 1992).

One interesting aspect of the RSGT was the use of drawings as elements. During the development of the RSGT it soon became evident that a verbal description of the risky situation was necessary to supplement the drawing. The drawings otherwise would become a form of projective test. While this would not be a problem if working clinically with the RSGT, it would not enable valid multiple grid analysis. For this reason, a verbal description was provided of the situation to standardise the type of situation occurring. Further examination of the cognitive processes of the participant in relating to construing the element would be useful. For example, does the participant use a salient previous experience of a situation to give their rating? Does the participant construct a hypothetical prototypical situation to give their rating? These are important questions and relate to the issue of recalling previous experiences within risky situations and their relation to autobiographical memory.
I consider now the Experience Cycle Methodology (ECM). Unlike the RSGT which was essentially an application of an existing methodology, the grid methodology, the ECM is largely a new methodology. I describe the development of the ECM in Appendix C. In Appendix H I evaluate the ECM using the criteria that Guba and Lincoln (1989) suggest to evaluate qualitative analyses. An important question for the ECM is: Do the phases measure what they say they are measuring? This question is particularly important for the Construct Revision Phase. Personal construct researchers and practitioners hold various views of the concept of validation and how construct change occurs (Button, 1996). The ECM requires further work in this area. What is construct revision? How does it occur? Do the questions within the variable Construct Revision really measure construct revision?

A general limitation of the two studies is the reliance on self report measures (Barclay & Wellman, 1986; Lin, Ensel & Lei, 1997). Both quantitative and qualitative reports may vary in their reliability. A prospective diary methodology may be a possible solution to this given the difficulties with using observational methods.

A further general limitation of measurement is that the relationships that were found may, to some extent, reflect common methods variance. One of the aims in developing the personal construct model of adolescent risk-taking was to use genuine “constructivist methods”, hence the use of the RSGT, CASPM, development of the ECM including the ABC. Future research will need to explore additional methods to compare with methods which are clearly constructivist. Convergent validity studies are required. One possibility, as suggested by Caputi and Oades (1999), is the development of a questionnaire to measure the inquiring and non-inquiring dimension of people’s behaviour.

**Evaluation of the Personal Construct Model of Adolescent Risk-Taking**

Viney and Oades (1998) describe functions and standards to assess personal construct models. These functions include: protection from the complexity of events, accountability, heuristic, definitions of both concepts and variables, ways to determine the appropriateness of data collection methods and prediction. These standards include: being properly based in the theory from which they arise, and having clarity and parsimony. Conceptual models should also be internally consistent and related to the events with which they deal. I evaluate now the personal construct model of adolescent
risk-taking using standards described by Viney and Oades (1998). Admittedly, these standards developed at a similar time to the development of the model. Moreover, the standards have been developed, in part, by the researcher. However, in my view, they provide a useful framework to evaluate the final model.

**Standards to Assess this Model**

**Theory based**

The first standard to assess a model, described by Viney and Oades (1998), is that the model must be firmly based in the theory from which it has emerged. Kelly's (1955/1991) *Psychology of Personal Constructs* is a formal theory within psychology with explicitly stated assumptions. The current model was developed using the theoretical concepts of the original theory. The current model and its associated methodologies have been designed to be consistent with the original theory. In my view, this has been achieved in several ways. This report began with reference to Guidano's (1991) view of self-as-process and Berzonsky's (1989b) view of self-as-theorist. That is, the assumptions about self underlying the personal construct model of adolescent risk-taking were explicitly stated. This enables the model to be understood clearly within a developmental context. The theoretical issues were further strengthened by a thorough and explicit definition of terms, particularly risk and risk-taking which were defined in ways consistent with personal construct psychology. The emphasis on experiential knowledge, personal meanings and change through experimentation, are all consistent with the philosophy of personal construct psychology. These important issues were combined in a coherent model rather than unrelated hypotheses. All methodologies discussed are directly related to personal construct theory: the ABC technique, the Experience Cycle Methodology, Risky Situations Grid Technique and Content Analysis of Psychosocial Maturity. Hence, in these terms the personal construct model of adolescent risk-taking is true to its parent theory.

**Clarity**

The second standard to assess a model, described by Viney and Oades (1998), is that the model must be clearly and concisely described. The propositions should be unambiguous and as brief as possible. Words within the propositions of the personal construct model of adolescent risk-taking are
explicitly defined in Chapter 4. The propositions of the final model italicise those words and theoretical constructs that have been defined and operationalised. The propositions are relatively brief. Clarity must be assessed by other researchers. Personal construct psychology contains many words that may be seen as jargonistic. Given that the personal construct model of adolescent risk-taking adopts much of this language, it is also likely to be criticised in this regard.

**Parsimonious**

The third standard to assess a model (Viney & Oades, 1998), is that it should be parsimonious, accounting for maximum data with minimum propositions. The final model contains three propositions using clearly defined and empirically measurable theoretical constructs. This parsimony was achieved largely by the choice of the Experience Cycle as the key theoretical concept underpinning the model. The Experience Cycle, while a single conceptual framework, incorporates many important personal construct psychology concepts.

A possible difficulty with the final model is that it assumes a complex theoretical framework of assumptions. Hence, while the final model may appear parsimonious, the theory upon which it is based is complex.

**Internally consistent**

The fourth standard to assess a model (Viney & Oades, 1998), is that it must be internally consistent. The concepts and assumptions of the model must not be in conflict. The personal construct model of adolescent risk-taking is internally consistent in as much as it only uses theoretical constructs from personal construct psychology. One possible weakness of the personal construct model of adolescent risk-taking is that it defines risk intraspectively as opposed to more traditional extraspective definitions. However, in Study 2, the variables referred to as Past Risk-Taking and Intended Future Risk-Taking do not include a genuine intraspective definition of risk. This could be rectified by multiplying each element by the personal physical or psychosocial risk rating for that element. Hence, it is possible within the methodology provided but was not performed in Study 2.

**Event-related**

The fifth standard to assess a model (Viney & Oades, 1998), is that the model needs to deal adequately with the psychological events on which it focuses. The personal construct model of adolescent risk-taking was inspired
by group based interventions with adolescents, and designed to further inform interventions with adolescents (Viney, Truneckova, Weekes & Oades, 1994; 1997). Moreover, the methods employed, particularly the Experience Cycle Methodology were designed to capture many of the nuances of the events surrounding risk-taking. The first study, being largely exploratory, enabled the model to be data driven as well as theory driven. Clinicians, researchers and adolescents will prove the best judge of whether the model relates to the events of adolescent risk-taking.

Comprehensive yet specific

The sixth standard to assess a model (Viney & Oades, 1998), is that the model must be comprehensive. The model must be sufficiently broad based to include all relevant events. As mentioned, the Experience Cycle, being a general cycle of the process of experimentation enables a comprehensive understanding. This incorporates the adolescents initial perception, experience and possible changes as a result. This can then be compared to broader past and future risk-taking experience. In my view, the personal construct model of adolescent risk-taking is comprehensive. However, if it is compared with the complexity of models such as Trimpop's (1994) Risky Motivation Theory, the personal construct model may appear simple.

The seventh standard to assess a model (Viney & Oades, 1998), is that the model be specific enough to generate hypotheses. This may seem in conflict with the sixth standard of comprehensiveness. An adequate model deals with an appropriate range of events at an appropriate level of specificity. The personal construct model of adolescent risk-taking operationalises its concepts with the Experience Cycle Methodology and the Risky Situations Grid Technique. The concept of a cycle of experience and a risky situation are both operationalised. The researcher is free to make multiple predictions using these methods.

It is ultimately for other researchers, clinicians or adolescents to evaluate the standard of the personal construct model of adolescent risk-taking. The evaluation I have provided however illustrates that the personal construct model of adolescent risk-taking meets, in part, most of the standards outlined by Viney and Oades (1998).
Suggestions for Future Research

I provide first several suggestions for future research programs relating directly to the personal construct model of adolescent risk-taking. I discuss then broader research implications in the area of adolescent risk-taking.

Improving and extending personal construct investigation of adolescent risk-taking.

I believe a further study using the personal construct model of adolescent risk-taking needs to be longitudinal in its design. As mentioned the cross-sectional design was somewhat limiting in that it did not enable exploration of how multiple risk-taking experiments can affect identity development in adolescence. Such a design would also be more consistent with the largely idiographic approach of the model that is useful for intervention.

Future research would usefully develop the ECM in two ways. First, as Boulton (1994) asserts, dissatisfaction with questionnaires has led to increased interest in diary methods as a means of collecting information, particularly with populations that are hard to reach. Hence, the ECM would be usefully connected with a diary methodology. Information could be recorded in the ECM format within diaries closer to when it happens. This is also likely to increase credibility and dependability of information. This relates to the second development of the ECM.

In this study the ECM was used retrospectively, stories were about events in the past. The ECM could be used prospectively. For example, adolescents could record their predictions about what they believe will occur next Saturday night, and then record what happens and if this changes their construing. This leads to the final suggestions regarding future research and intervention.

While future research should involve a longitudinal design and a prospective diary-based use of the ECM, I believe it should be linked to intervention, particularly personal construct group work (Viney, Truneckova, Weekes & Oades, 1997). For example, a longitudinal experimental design with some adolescents experiencing group work, and the others not experiencing group work, all recording their risk-taking experiences with a diary based prospective ECM. The same procedure could also be performed with individual
work with clients. I discuss the implications for intervention later in this chapter.

Broader research in the area of adolescent risk-taking.

In addition to the specific suggestions for future research, within a personal construct framework and for personal construct group work with adolescents there are broader implications for research in the area of adolescent risk-taking. I describe now four implications of the personal construct model of adolescent risk-taking for adolescent risk-taking research in general.

1. **Focus on process.** The personal construct model of adolescent risk-taking provides a useful example for future research of focussing on the process of risk-taking. The current model does this in two ways; the rich description in the ECM and the examination of how past experience relates to future experience. This focus on process is suggested for future research, as like adults, adolescents are likely to experience certain events as *turning points* in their lives (Clausen, 1995) such as risk-taking experiences.

2. **Experiential knowledge.** The personal construct model of adolescent risk-taking provides an example of a model that uses experiential knowledge at its focus. This is a clear departure from the knowledge-attitude-behaviour paradigm that has dominated this area of research. Future research should only focus on knowledge that is reflexive or experiential.

3. **The situation rather than the behaviour as a fundamental unit.** The concept of a risky situation is a step towards a contextualist approach departing from the abstracted behaviour. Future research may continue this theme, particularly given the recent turn in adolescent risk-taking research demonstrating that many risk-taking behaviours occur together rather than as single behaviours (Irwin, 1993). van Dijk and Kintsch's (1983) concept of a *situation model* may be useful for future researchers to develop the notion of a risky situation. These researchers use situation model to refer to an integrated structure of episodic information which collects previous episodic information about some situation as well as general information from semantic memory. Such a
direction would enable researchers to examine how previous experiences interact with knowledge stored in semantic memory.

4. Adolescent predictions of behaviour rather than researcher predictions (Oades & Viney, 1997a). The finding from the first study that adolescents did perceive situations as risky but were poor at anticipating them has important implications. An important suggestion for future research in adolescent risk-taking is a move towards idiographic methods. This does not necessarily mean a move to qualitative methods. Lamiell (1995) describes the notion of 'point predictions' in which hypotheses, contingent upon individual differences, are tested for each adolescent. In many ways such hypotheses are more rigorous as they relate to individuals rather than group means. Methods such as the ECM make such suggestions viable by making meaningful descriptions of experience quantifiable.

In summary, future research in adolescent risk-taking may usefully examine further the processes of adolescent risk-taking and experiential knowledge stored in episodic memory. Research may explore further the notion of a risky situation and the concept of a situation model. Moreover, the use of multiple individual hypotheses contingent upon individual characteristics is likely to prove useful.

Implications for Intervention of the Personal Construct Model of Adolescent Risk-Taking

As I mentioned in Chapter 5, the aim in developing the personal construct model of adolescent risk-taking included its implications for intervention. While these two studies did not involve interventions, the model was developed for praxis (Viney & Oades, 1998). The major arena in which I see a use for the model is with personal construct group work with adolescents (Viney, Truneckova, Weekes & Oades, 1997). I consider now the clinical implications of the final personal construct model of adolescent risk-taking. First, I consider the implications for individual clinical work with adolescents. Second, I discuss personal construct group work with adolescents, linking new initiatives from the personal construct model of adolescent risk-taking with personal construct group work.
Implications for individual clinical work with adolescents.

There are several implications of the personal construct model of adolescent risk-taking for individual clinical work with adolescents. Late adolescents may engage in psychological therapy, including personal construct therapy for multiple reasons including depression, anxiety, learning difficulties or criminal behaviour. Issues of identity development and risk-taking are likely to arise often in individual sessions with adolescents. I describe now eight advantages and implications of the personal construct model of adolescent risk-taking for individual work with adolescents:

(a) The ‘experimentation’ analogy underpinning the personal construct model of adolescent risk-taking is likely to facilitate a collaborative relationship between client and therapist by not assuming an expert authoritative therapist. Therapy based on the personal construct model of adolescent risk-taking would not assume that risk-taking is necessarily negative and would respect knowledge derived through personal experience.

(b) The Experience Cycle Methodology allows the adolescent to tell stories largely in their own terms.

(c) There is a practical advantage of having a working model to train therapists (Mahrer, 1995).

(d) The explicit distinction between physical risk and psychosocial risk provides a useful framework for therapists and young people to make sense of the relationship between many unhelpful physical risks and psychosocial risks (that can be experimented with, in therapy). Psychosocial risk, which includes the social consequences of criminal behaviour, eg incarceration, can be discussed in terms of identity development.

(e) The Experience Cycle Methodology (ECM), particularly if used prospectively and in a diary format, can be used between sessions to collect information to enhance the therapy process. This is designed for young people to tighten their predictions and examine the evidence of their experimentation, based on the empirical relationship demonstrated between tight predictions with psychological investment with change in construing, and the relationship between invalidation and change in construing. Hence, the focus remains on individual
experiential knowledge. The aim becomes to make the adolescent "better scientists" and in so doing develop their identities rather than providing them with more declarative knowledge which they are not likely to see as relevant.

The coloured elements of the Risky Situations Grid Technique (RSGT) may also be used as part of assessments within therapy.

The RSGT may also be used as a pre-post outcome measure to demonstrate any differences in the structures of risk-perception such as the differentiation between the risky situations used in Study 2. This would mean that the outcome measure was directly linked to instruments used within the therapy.

I describe now personal construct group work with adolescents, for which the personal construct model of adolescent risk-taking also has implications.

**Personal construct group work with adolescents.**

The primary aim of personal construct therapy with adolescents is for therapists to help young people to extend and add to their construing of whatever is problematic to them (Fransella & Dalton, 1991; Jackson, 1990; Truneckova & Viney, 1997). As mentioned in Chapter 4, construing, by definition, involves action. In this way, these clients come to experience more alternatives for action, thereby maximising their opportunities to experience validation or confirmation of their construing and so have positive emotions (Epting, 1984; Winter, 1985; Winter & Trippet, 1977).

Viney, Truneckova, Weekes and Oades (1997) describe the aim, membership and structure of personal construct group work with adolescents:

The *aim* is to enable group members to elaborate and extend their systems of construing. This should lead to a greater range of more viable choices for them (Papanek, 1974).

In terms of *membership* groups should be composed of a variety of adolescents, with different views of the world. While personal construct groups start with sharing (Ryle & Lipschitz, 1976), they move on to differentiation of construing, which is aided by including such diversity (Alexander & Follette, 1985). Selection of group
members should, it seems, be based on their ability to change their construing and on an extensive enough construct system to understand something of those of others (Winter, 1992). It also helps if the construing of the selected group members is not too tight, or precise, in terms of its interpretations and predictions.

The *structure* is an integral part of personal construct group work, because higher structure of such groups has been found to be linked with more therapeutic movement (Neimeyer & Merluzzi, 1982). Such groups are usually short, with say 10 sessions, so that a group of 20 sessions would be considered long (Winter, 1992). The tasks that provide structure are selected in order to experiment with the current construing of the group members. They must extend the range of that construing a little, but not require an inconveniently demanding leap of the members, who will find this too difficult. The tasks are selected initially by the leader, but, as the group develops, they can be selected jointly by leaders and group members.

Such tasks can include the Interpersonal Transaction Group (Landfield & Rivers, 1975). Viney, Truneckova, Weekes and Oades (1997) summarise an extensive array of experiments that can be conducted as part of personal construct group work with adolescents. These experiments were derived from experiences of group therapists with different groups in different contexts including school based adolescents and juvenile justice based adolescents.

The juvenile offenders present both a challenge and an opportunity to intervention. This group of adolescents may engage in unhelpful risk-taking actions, that will not necessarily help develop their identities. However, as this group of adolescents has taken many risks they have a wealth of experiential knowledge in this area. From the perspective of the personal construct model of adolescent risk-taking, this is an advantage. The experiential knowledge is used as part of the group work, ensuring Fromm’s (1993) emphasis on reflexive constructs and Novak’s (1993) constructivist emphasis on finding out what the learner already knows and plea to move away from declarative knowledge.

The implications of the personal construct model of adolescent risk-taking described for individual work with adolescents also hold for personal construct group work with adolescents. There are two significant advantages
of the group format: (a) the group format provides a wider opportunity for experimentation and story telling of experiences, and (b) the group process can be used directly to address identity issues and their relationship to psychosocial risk-taking.

Conclusion

The general aim of the first study of this research was to operationalise and extend empirically the preliminary personal construct model of adolescent risk-taking. This aim was achieved with a significant narrowing of focus of the concepts within the model. The aim of the second study was to test empirically the propositions of the interim personal construct model of adolescent risk-taking and present a final personal construct model of adolescent risk-taking. The second study successfully tested hypotheses derived from the propositions of the interim model. It enabled revision of the interim model and yielded specific implications for intervention to prevent unhelpful risk-taking by adolescents.

In this chapter I began with a summary of the findings and then discussed issues relevant to each variable. I revised the interim personal construct model of adolescent risk-taking and presented the final personal construct model of adolescent risk-taking. I evaluated the methods of the research in terms of the strengths and weaknesses of the sampling, design and measurement. I evaluated briefly the final personal construct model of adolescent risk-taking using the standards of a good personal construct model described by Viney and Oades (1998). I considered broader research implications for adolescent risk-taking. In the final section I examined some of the clinical implications of the personal construct model of adolescent risk-taking for individual and group work with adolescents.
References


modeling to the theory of reasoned action. *Journal of Consulting and Clinical Psychology*, 64, 1, 109-120.


Appendices

Appendix A. Measures Administered but not Included in this Report

Several measures were administered in Study 1 and Study 2 that are not included in this report. These measures have been excluded for several reasons: (a) to increase the clarity of the report; (b) because the measures lacked reliability or validity; and (c) during the empirical and theoretical development of the personal construct model of adolescent risk-taking the measures were no longer required. These measures are listed below.

Measures from Study 1 not included in this report.
1. Knowledge of HIV Transmission- 12 item Scale (Dunn et al, 1993).
3. Confidence in Communication About Sex- 6 questions (Dunn et al, 1993).
4. Sources of Information on HIV/AIDS and Sex (Dunn et al, 1993).
7. The “What Others Think Grid” developed as part of the Risky Situations Grid Technique (RSGT).

Measures from Study 2 not included in this report.
3. The “Dilemma Grid” and “Risky Ranks Grid” developed as part of the Risky Situations Grid Technique (RSGT).
5. Content Analysis Scales of Psychosocial Maturity (CASPM) scales, other than Identity.
Appendix B. Sample Consent Forms

Sample consent form from Study 1.

The following is an example of the consent form used with secondary school participants.

UNIVERSITY OF WOLLONGONG
INFORMATION FOR RESEARCH PARTICIPANTS
ADOLESCENT & PRE-ADULT RISK TAKING STUDY

WHY WE NEED YOU
The aim of this research is to understand how the personal characteristics of young people relates to risks they may take. This information will then be useful to understand which people are more likely to take risks or take precautions, such as using a condom or not engaging in sex. This will help develop better educational programs which make more sense to young people, aiming to reduce risk taking which can result in unwanted consequences such as acquiring HIV/AIDS.

WHAT WE WOULD LIKE YOU TO DO

1. Be interviewed on this topic for approximately forty five minutes by the researcher, a trained interviewer. The interview consists of general questions about you, (eg. age, gender, country of birth), your knowledge of HIV/AIDS and its transmission, how confident they feel talking about sexual health, as well as questions about personal sexual behaviour. (These questions are sensitive but sensible and have been developed after long consultations with teachers, education departments, secondary school students, social science researchers and medical practitioners who specialise in young people's health.) Further questions relate to how your child goes about forming their beliefs about themselves, others and the world. An example of such a question would be to rate the following statement "When making important decisions I like to have as much information as possible".

2. Be randomly selected for the extended interview which will need to be taped. In this interview you will be asked to talk for approximately five minutes about themselves in general. Also in this interview you will be asked to rate how risky particular situations seem to them in comparison to other situations, (eg drinking alcohol compared to smoking cigarettes). These situations will be given to you in a series of drawings. The extended interview will take an extra fifteen minutes.
OUR COMMITMENT

We will keep strictly confidential anything you tell our staff. Our records of the information we get from you will never contain identifying data such as your name. You will also be free to stop being involved in the research at any time and free to not answer any particular questions if you do not wish to do so.

Researcher- Lindsay G. Oades, B.A. (Hons). Intern Psychologist
(042 21 4164)

Research Supervisor- Assoc Prof Linda L. Viney, BA.Hons. MA. Ph.D. Clinical Psychologist
(042 21 3742)

(Any enquiries regarding the conduct of the research may be forwarded to the Secretary of the University of Wollongong Human Research Ethics Committee: phone 042 21 3079)

CONSENT FORM

I, ....................................................... have read the account of the research project that has been described and agree to be part of it. I understand that I am free to withdraw or not answer particular questions if I do not wish to do so.

Signed: .......................................................... Date: ........................................
Sample consent form from Study 2.

The following is an example of the consent form used with incarcerated adolescents.

UNIVERSITY OF WOLLONGONG

INFORMATION FOR RESEARCH PARTICIPANTS

ADOLESCENT RISK TAKING STUDY

WHAT IS IT FOR?
This research, supported by the government, is to gain information on how and why young people take risks eg unsafe sex. The information will later be used to improve the ways we help young people like yourself learn about risk.

WHAT DO I HAVE TO DO?
All you have to do is attend a private interview for up to an hour for one time only. The interview has three parts:

a) answering some questions about risk taking eg HIV/AIDS
b) looking at talking about drawings of situations that could be seen as risky
c) talking about how things are going for you in general (5 mins, tape recorded)

WHO GETS THE INFORMATION?
Lindsay (the interviewer) is not part of Juvenile Justice. He will not give individual information to staff of Juvenile Justice. The information does not contain your name. Over 200 people have already been interviewed from schools, universities and juvenile justice centres and most have enjoyed the interview.

SUMMARY

DON'T HAVE TO DO IT BUT IT'S A POSITIVE THING TO DO
ONE HOUR PRIVATE INTERVIEW
SEPARATE FROM JUVENILE JUSTICE
DON'T HAVE TO ANSWER QUESTIONS IF I DON'T WANT TO
YOUR NAME IS NOT ON THE INFORMATION

Researcher- Lindsay G. Oades B.A. (Hons).MAPS Clinical Psychologist (02) 42214164

RESIDENT CONSENT

I, ................................................ have read the above sheet. I have had my questions answered regarding the research. I understand that the information will be kept private. I know that I may finish at any time or not answer particular questions if I do not want to.

Signed: ................................................ Date: ........................................

Resident's signature
Appendix C. Development of the Experience Cycle Methodology

This appendix includes a description of the development of the Experience Cycle Methodology from the less structured narratives and ABC technique of Study 1 to the combined and more structured approach of Study 2 that is referred to as the Experience Cycle Methodology (ECM).

Study 1: Semi-structured interview: Questions from Kelly's Experience Cycle.

In Study 1 the following steps were used to generate narratives about risk taking with participants.

1. The interviewer reiterated confidentiality before turning on the audio-cassette recorder.

2. The interviewer placed the drawing in front of participant. See "Link with elements of RSGT" section in Chapter 6. The interviewer then asked the participant:

   Can you tell me a story about this situation? Maybe something you have been involved in, someone else or if not, just make it up. Try and talk for a couple of minutes and I'll help a little by asking a few questions along the way.

3. The interviewer then asked questions in a manner consistent with a semi-structured interview style (Smith, 1995). The interviewer used the questions whenever they seemed most appropriate in interview sequence. If the participant volunteered the information spontaneously the interviewer did not ask the corresponding question. If this did not occur by the time the participant appeared "finished" the interviewer then included the questions. The questions were derived theoretically from phases of Kelly's (1970) Experience Cycle. The questions are listed below with the corresponding phase of the Experience Cycle in parentheses.

   (a) What things were you (or the person) predicting was going to happen?

   What options went through your (the person's) mind at the time?

   (Anticipation Phase)

   (b) How much did it matter to you (or the person) at the time?
(Investment Phase)

(c) Tell me (more) about what happened? (Encounter Phase)

(d) What emotions did you (the person) experience when that happened?
How was that compared to what you (the person) originally thought would happen? (Confirmation/Disconfirmation Phase)

(e) Did you (or the person) change as a result of this experience?
How will things be different next time?
Would you like to add anything else or give the story an ending? (Constructive Revision Phase).

4. Step 2 and Step 3 were repeated.

As mentioned in Chapter 6, the ABC technique was used to elicit advantages and disadvantages of condom use. This was done independently of the above Experience Cycle narratives.

In Study 2 the Experience Cycle narrative procedure was refined and combined with the ABC Technique. In Study 2 participants were asked to tell only a single story, with a Risky Situation Grid Technique element as a cue. Different from Study 1 the participants in the second study were asked to tell of an actual experience relating to a situation, rather than the option of describing vicarious or imaginative experience in Study 1. A further development of the Study 2 methodology was the change from audio taping in Study 1 to verbatim written recording in Study 2. This was possible due to the slightly more structured and refined set of questions. These questions are described in the "The Experience Cycle Methodology (ECM) proforma" section of Chapter 9.

The remaining section of this appendix describes the development of the Experience Cycle Methodology. There were five main principles that explicitly guided my development of the Experience Cycle Methodology. These principles were as follows:

(a) The methodology will be theoretically consistent with personal construct theory in terms of its theoretical constructs.

(b) The methodology will emphasise the process nature of construing consistent with Kelly's later writings (Butt, 1996);

(c) The methodology will be consistent with the non-questionnaire ethos espoused by Kelly (Viney, 1988).
(d) The methodology will be primarily qualitative and idiographic, (Allport, 1937; Lamiell, 1995; Windelband, 1904); so as to highlight personal meanings through narrative, yet still be able to integrate with quantitative research (Jick, 1979); and

(e) The methodology will be simple and flexible so that it may be used by researchers and clinicians.

Consistent with the first principle of theoretical consistency, the Experience Cycle was chosen as the appropriate theoretical framework, because, in terms of personal construct theoretical concepts, it can be described as the “prototypical” theoretical concept as it includes the greatest number of concepts from personal construct theory (Lakoff, 1987). Hence, if a methodology based on the Experience Cycle is used by a person who is not conversant with its theoretical origin there is a greater chance the methodology will maintain consistency with its parent theory (Viney & Oades, 1998). This has not always been the case with the repertory grid.

Consistent with the second principle of emphasising the process nature of construing, in contrast to the historical focus on the structure of construct systems with grid methodologies, the Experience Cycle was again seen as the appropriate theoretical concept. Being a Cycle, the Experience Cycle emphasises the process of change. The Experience Cycle is consistent with use of the verb “to construe” rather than the noun “construct”. The emphasis on process of the Experience Cycle is consistent with Butt’s (1996) view of person-as-process and viewing personal construct theory as a theory-of-social-action rather than the cognitive readings of personal construct theory (Balnaves, Caputi & Oades, in press; Butt, 1996). The Experience Cycle is also consistent with more contemporary views of the self as constructed and reconstructed (Cox & Lyddon, 1997; Harre & Gillet, 1994; Guidano, 1991).

In terms of the third principle and the type of methodology, Kelly (1955/1991) was critical of questionnaire methodologies (Viney, 1988). For this reason a semi-structured interview format was chosen as the appropriate form of methodology. This relates directly to the fourth principle of focusing on qualitative meanings and the fifth principle of flexibility. Smith (1995) asserts that semi-structured interviewing has a ‘natural’ fit with qualitative analysis (Filstead, 1979). Smith (1995) states that the method gives the researcher and respondent much more flexibility than the more conventional structured interview, questionnaire or survey. This enables the researcher to
follow up particularly interesting avenues that emerge in the interview and the respondent is able to give more information. The difference then by employing qualitative analysis is that it aims to understand the qualitative meanings rather than reduce the responses to quantitative categories (Miles & Huberman, 1994).

Smith (1995, p11) states that in a *structured interview*, the interviewer will aim to: (a) use short specific questions; (b) read the question exactly as on schedule; (c) ask the questions in the identical order specified by the schedule; and (d) ideally, have precoded response categories, enabling the questioner to match what the respondent says against one of the categories on the schedule. Smith (1995, p12) contrasts this with a *semi-structured interview*, wherein: (a) there is an attempt to establish rapport with the respondent; (b) the ordering of questions is less important; (c) the interviewer has more freedom to probe interesting areas that arise; (d) the interview can follow the respondent's interests or concerns.

Consistent with the qualitative and narrative emphasis the Experience Cycle is a flexible framework which allows a personal experience to be described in a natural flow of events. Moreover, the narrative nature of the methodology developed operationalises some of the recent claims from Mancuso (1996) that a story is an anticipatory device and is in line with the general narrative turn in much constructivist literature (Edwards & Potter, 1992; Feixas & Villegas, 1991; Goncalves, 1995; Mair, 1989; Mischler, 1986; Oades & Viney, 1995; Polkinghorne, 1988; Smith, Harre & Van Langenhove, 1995; Viney, 1993; Viney & Bousfield, 1992; Vogel, 1994;).

Kelly was known for novel combinations of quantitative and qualitative methodologies such as the repertory grid technique. This relates to the third principle of a qualititative and idiographic approach. Hence, while the ECM was developed to be primarily a qualitative methodology it is deliberately designed so not to exclude articulation with quantitative variables. As demonstrated, responses within the phases of the Experience Cycle were coded into categories and treated quantitatively.
Appendix D. Nine Elements of the Risky Situations Grid Technique

In this appendix the nine visual elements that were used for the Risky Situations Grid Technique are illustrated.

Element A: Unprotected Sex.
Element B: Refusing Further Alcohol

Element C: Protected Sex.
Element D: Intra-Venous Drug Use.

Element E: Social Situation at Beach on a Sunny Day.
Element F: Discussing Condom Use.

Element G: Asking Someone Out.
Element H: Public Speaking.

Element I: Passenger in a Fast Car.
Appendix E. Study 1: Procedure of the Risky Situations Grid Technique

The “As If” Grid

The verbatim instructions given initially to each participant are italicised in the steps below. The normal text in the steps below correspond to the nonverbal actions performed by the interviewer. The steps used for the administration of the As If Grid are as follows:

1. **Look at these drawings of different situations that you may have been in before, or may come across in the future. Imagine that you are in exactly the same situation as this person and this person etc.** The interviewer pointed to each same-sex key person who was coloured pink. **Spend some time, have a good look at each one. Do you have any questions about what is happening in any of these situations?** The interviewer clarified then the situations in line with the descriptions provided previously.

2. **Now still imagining that you are in the situation of the pink person, I want you to select three situations. Then I want you to tell me how it would be similar to be in two of those situations and different to be in the third.** The interviewer then spent whatever time was required to assist the participant with this task. The interviewer wrote the verbal label for each pole of the construct onto a rectangular cue card, blank at each end with the numbers 4, 3, 2 and 1 in the middle. The interviewer wrote the verbal label of the construct pole corresponding to the similar elements next to the four. Next to the one the interviewer wrote the verbal label of the pole corresponding to the element different to the other two elements.

3. **Step 2 was repeated until five constructs were elicited.**

4. **If the first five constructs did not contain a construct with verbal labels that were very similar to “risky” versus “not so risky” the interviewer added**

---

4 I used this method so participants could pick up the rectangular cue card and move it to look at each drawing element if required. I used this to reduce demands on auditory memory and working memory of the participants (Baddeley, 1986).
this as the sixth construct. Rather than this being a "supplied construct" the interviewer checked its validity by asking:

5. **Please choose two situations that would be “risky" and a third which would be “not so risky”**.

If the first five constructs did contain a construct with verbal labels that were very similar to “risky" versus “not so risky” the interviewer elicited a further sixth construct as in Step 2.

5. **Now again, imagining as if you are in the situation of the pink person, using this sheet with a four for........... down to one for........... (and you can use two and three in between) I want you to tell me whether this situation would be a 1, 2, 3 or 4. For example., would situation A be risky a four, not so risky, a one or two or three in between?”** The "risky" versus "not so risky" construct was used first irrespective of the original order of elicitation. The interviewer then took whatever time required to clarify this task. The interviewer continued requesting ratings for elements a through to i and recorded responses on the grid data sheet.

6. Step 5 was repeated for the remaining five constructs.

The interviewer was careful in general to elicit similar and different poles rather than examples that were logical opposites. The interviewer was also careful to emphasise the imaginative nature of the task and that the participant needed to personalise their construct and rating. It was important to elicit the construct at an appropriate level of abstraction to then be utilised to construe the elements. That is, the construct elicited had to be general enough to be applied to the remaining elements.

---

5 I refer to this as a "negotiated" construct rather than a "supplied" construct or "elicited" construct. All participants who completed the As If Grid either elicited their own construct of "risky "versus "not risky" or when I requested so, all participants produced situations to represent each pole with ease.
The "Risky Ranks" Grid

The following procedural steps were used:

1. For standardisation the interviewer sequenced the drawing cards as follows: h, e, b, i, f, c, g, d, a. This was achieved by first picking up card a at the top of left column of the matrix and sliding it downwards under card d and then card g. The interviewer repeated this action for the right hand column and placed these three cards above the first three. This was repeated for the middle column by placing the remaining three cards above the other six. The cards were placed in front of the participant.

2. I would like you to rank these situations from left to right, from "risky" here at the top left. I point to a space where the first card may be placed. Down to "not so risky" here at bottom right. I point to a space where the final card may be placed. There can't be any that are equal.

3. The ranking was recorded on the data sheet.

An example of the data record sheet for the grid is included overleaf.
<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
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<tbody>
<tr>
<td><strong>RISKY - NOT RISKY</strong></td>
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<th>G</th>
<th>H</th>
<th>I</th>
</tr>
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<tbody>
<tr>
<td><strong>RISKY RANKS GRID</strong></td>
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<td>Situation</td>
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</tbody>
</table>
Appendix F. Study 1: Experience Cycle Narratives of Risk-Taking

In this appendix further examples are provided of sections of narrative that illustrate the categories of (a) predicting and not predicting situations and (b) construct revision. These narratives were important in the early development of the personal construct model of adolescent risk-taking.

Predicting and not predicting situations.

UNI#6

Part

God um...I don't know, they don't look as if they are unhappy to be there so perhaps they um, just got a bit excited and didn't even think about using a condom.

Int

Right so earlier in the night had they predicted this was going to happen or...

Part

Oh no.

Int

Not at all?

Part

Oh they-I think they could see it was going to happen but they kind of, it just happened so fast and they didn't even think about it.

UNI#9

Int

so Don um earlier in the night, did he predict that this was going to happen like earlier on in the night?

Part

Yeah like he and Tom went to the club with the aim of picking up girls so. Yeah that was his plan.

Int

And immediately before he was like when he met the girl like later in the evening, he was still predicting that this was going to happen and that was what was going to go on? What about in terms of...

Part

Are you talking about before when he's sometimes been with someone?
No I was just talking about like earlier in the night, he went out with the intention...

Oh yeah the same intention all night.

Right okay well what about particularly with the condom use, did he intend to use condoms?

I don't know, I don't know Don that well like Tom is my friend and Don is just a friend of his um, so the fact that he went to the you know, club with the intention of picking up girls and didn't take any you know, leads me to, you know, at least I, I'm just guessing that it's not very high up on his list of priorities.

Construct revision narratives.

What did you/they feel afterwards? Did you/they get what you expected? Did you/they change as a result of the experience? Would you/they do it differently next time?

Okay and lets say afterwards, how does she feel, afterwards as a result of it?

Well she's probably a bit more sober by now and she's probably realised what's she's done and what's happened and the consequences of what she's done and he's probably walked out and gone back down to the party or something and she's just there, feeling pretty miserable because of all the things that could happen like STD and pregnancy and all that. And he's probably not too worried about that at the moment.

Okay and does she change at all as a result of that experience or does she stay the same or what happens?
Part

Um she's probably a bit more careful about her drinking behaviour after that. Maybe she won't drink as much or she won't, she'll try not to get involved with guys just that one night or whatever. I'd say she'd be a lot more careful after that.

Int

Okay so lets say she found herself in a similar situation or somewhat similar situation again, what would you predict is going to happen or what would she do?

Part

Well if she was drunk again the same thing might happen but if she wasn't so drunk 'cause she was being more careful this time, she might have protection on her that she could sort of give to the guy and say look, this has to be used kind of thing. And then she could take a bit more control of what happens.
**Appendix G. Study 2: Risky Situations Grid Technique Data Record Sheet**

**RSGT STUDY 2**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>School W</th>
<th>School S</th>
<th>Uni Psych</th>
<th>Uni Residential</th>
<th>JJ1</th>
<th>JJ2</th>
<th>Participant No</th>
</tr>
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<td></td>
<td>4</td>
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<td>3</td>
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<td>2</td>
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<table>
<thead>
<tr>
<th>AS IF GRID</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th></th>
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<tbody>
<tr>
<td>Could be dangerous</td>
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<td></td>
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<td>Relaxed or safe</td>
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<td>I could be nervous or worried about others</td>
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<td></td>
<td></td>
<td>I would be comfortable</td>
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<tr>
<td>I feel pressured by others, no choice, no control</td>
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<td></td>
<td></td>
<td></td>
<td>I would feel no pressure, have choices and control</td>
</tr>
<tr>
<td>Being close or intimate with others</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>Relating is less intimate or close</td>
</tr>
<tr>
<td>I care, stand up for self, think, made a decision</td>
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<td></td>
<td>Would not care, go-with-the-flow, action, thrill</td>
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<tr>
<td>Could be immediate bad consequences</td>
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<td></td>
<td></td>
<td>Could be long term bad consequences</td>
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<tr>
<td>I would have to be responsible for the consequences</td>
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<td>I would not have to be responsible for the consequences</td>
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<tr>
<td>I have been involved in</td>
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<td></td>
<td>I have not been involved in</td>
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<tr>
<td>I could see myself being in, in the future</td>
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<td></td>
<td></td>
<td>I will never be in</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>RISKY RANKS GRID-</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISKY</td>
</tr>
<tr>
<td>POSITION</td>
</tr>
<tr>
<td>ORDER PLACED</td>
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<tr>
<td>ELEMENT RANK</td>
</tr>
</tbody>
</table>
Appendix H. Study 2: Examples of Five Experience Cycle Methodology Transcripts

In this appendix examples are provided of five more Experience Cycle Methodology transcripts. The five provided when added to the four outlined in Chapter 10 make up descriptions corresponding to the nine elements of the Risky Situations Grid Technique.

Experience Cycle Methodology

TYPE School W
Participant No 4

SITUATION B No to more alcohol

ANTICIPATION PHASE
What things were you predicting would happen?
Thought we would end up going to the park and have something to drink. Then get more alcohol to drink.

What options did you see open to yourself at this time?
1) Go to park and not drink
2) Go to park and drink *
3) Stay and play pool and then go home

Were you concerned about danger or what others may think or what you may think of yourself?
I thought if I got too drunk and did something stupid I might end up in some situation which wouldn’t be good.

Not concerned about what others thought.

INVESTMENT PHASE
How much did you want this prediction to come true? How much did it matter?
Half and half. Wanted to go out and have a good time and be with friends- versus drink.

ENCOUNTER PHASE
Describe the actual experience of doing it?
My brother’s friends and I, playing pool were asked to go down to the park. Saying c’mon. Gives us cups of alcohol. They wanted money to get more alcohol. Ended up drinking a fair bit and one of my friends had to drag me home. “Just have one cup, just have another.......”

CONFIRMATION/DISCONFIRMATION PHASE
How did things go compared to what you initially thought would happen?
Everything was exactly the same. Always the same. A regular thing. Same people.

CONSTRUCTIVE REVISION PHASE
What things did you learn from this experience?
How much I could drink without going too stupid. Only bring enough money to play pool and not enough for alcohol. Not to get drunk if my brother is there.
**NEXT TIME**

Did you change as a result of this experience? Yes

What things will you change for next time if there is one? Depends on mood, brother and money.

What options do you see open to you now?
1) Not going to park
2) Staying home
3) Doing something else with other friends
4) Going to park and drinking less
Depends on mood and people

How do you now see the advantages and disadvantages?

<table>
<thead>
<tr>
<th>A1</th>
<th>Being involved</th>
<th>A2</th>
<th>Not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B1</th>
<th>Disadvantage of being involved</th>
<th>B2</th>
<th>Advantage of not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Younger people can blame me for stuff</td>
<td></td>
<td>Save money- feel good in the morning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1</th>
<th>Advantage of being involved</th>
<th>C2</th>
<th>Disadvantage of not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loosen up with friends</td>
<td></td>
<td>Not be able to go out and have a good time with friends. Getting hassled by younger brother with me missing out on something that happened</td>
</tr>
</tbody>
</table>

Other comments:

Experience Cycle Methodology

**TYPE** Uni Psych

**Participant No** 81

**SITUATION** C Sex with a condom

**ANTICIPATION PHASE**

What things were you predicting would happen? Nothing, I thought I would just go home. She had a boyfriend there. I think she was trying to make him jealous. I just ignored it because I didn't want to get killed.

What options did you see open to yourself at this time?
1) Have sex
2) Resist, socially awkward
Were you concerned about danger, what others may think or what you may think of yourself?  
Danger- from her boyfriend. Not at the time no, but after yes.  
What others think- no (see socially awkward)

INVESTMENT PHASE  
How much did you want this prediction to come true? How much did it matter?  
Other than being socially awkward, not a risk. No, didn't matter. Wasn't out feverishly hunting prey.

ENCOUNTER PHASE  
Describe the actual experience of doing it?  
This girl who I'd known for a little while, not much more than her name. Pretty drunk, went home and had sex. We used a condom. I didn't even think about it. If she hadn't pulled me up on it I wouldn't have bothered.

CONFIRMATION/DISCONFIRMATION PHASE  
How did things go compared to what you initially thought would happen?  
Didn't anticipate. Pretty sloshed, not often it happens. Not often that someone actually comes and knocks on my window. The fact that I just totally forgot and didn't even think about it was worrying. It didn't even enter my mind until later. I'll probably think about it.

CONSTRUCTIVE REVISION PHASE  
What things did you learn from this experience?  
To be a bit more picky and choosy who I sleep with. I think that after that well could have been anyone. It was a worry because later on I found out that she had been with a lot of people. It was just lucky she was worried about it. I think she was more worried about pregnancy myself.

NEXT TIME  
Did you change as a result of this experience? Maybe

What things will you change for next time if there is one?  
If I was put in a situation when a girl was coming on very strongly I would find it hard to refuse. The other half of me said well "that's not such a bad thing". Because it was a unique event, awkward, because she was close to me socially, it probably wouldn't happen again that often.

What options do you see open to you now?  
I've always had the option of using a condom and its never been a problem. Oh there was once but that doesn't count.
  1) Not have sex  
  2) Have sex with condom  
  3) Everything except sex, depends on who it is with

How do you now see the advantages and disadvantages?  

<table>
<thead>
<tr>
<th></th>
<th>Preferred?</th>
<th>Unprotected sex</th>
<th>Preferred?</th>
<th>Unprotected sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Being involved</td>
<td>A2</td>
<td>Not being involved</td>
<td>X</td>
</tr>
<tr>
<td>B1</td>
<td>Disadvantage of being involved</td>
<td>B2</td>
<td>Advantage of not being involved</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STD's not know</td>
<td></td>
<td>No STD's, pregnancy and the whole messy thing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pregnancy know</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cl Advantage of being involved
Feels better and more intimate. No interruption
Doesn't cost money. Heaps.

C2 Disadvantage of not being involved
 Doesn't feel as good.
There is a break in the warmup (foreplay).
Costs money. Just having to cart them around. Lacks spontaneity. Almost no females I know carry condoms, it's all up to the guys.

Other comments:
My girlfriend and I, it's never really been an issue. She's got Catholic parents, old fashioned and all that junk. All of my sexual partners except for one; transmitted diseases have never really been an issue. Until she went on the pill, mostly without concern. Birth control has always been the major issue.

Experience Cycle Methodology

TYPE School S
Participant No 56

SITUATION E Social situation on beach on sunny day

ANTICIPATION PHASE
What things were you predicting would happen?
Nothing, go to the beach.

What options did you see open to yourself at this time?
1) Put some cream on
2) Can't be bothered

Were you concerned about danger, what others may think or what you may think of yourself?
Danger- probably wasn't concerned.
What others think. I would have to get out of water and put cream on.

INVESTMENT PHASE
How much did you want this prediction to come true? How much did it matter?
Quite a lot, pretty painful.

ENCOUNTER PHASE
Describe the actual experience of doing it?
Went on holiday with a friend and we decided to go to the beach. And we lay down in the sun and we swam for a couple of hours. After we had finished I got really badly sunburnt; blisters over my back, forehead and side of my ears.

CONFIRMATION/DISCONFIRMATION PHASE
How did things go compared to what you initially thought would happen?
About the opposite. It was a disaster.
CONSTRUCTIVE REVISION PHASE
What things did you learn from this experience?
The importance of putting on sun cream. Sun and safety. Learnt it the hard way.

NEXT TIME
Did you change as a result of this experience? Yes

What things will you change for next time if there is one?
Be more careful. Think about it. Put stuff on. Don't go out in the sun.

What options do you see open to you now?
1) Didn't go out in sun
2) Put stuff on
3) Go out, not care, skin cancer

How do you now see the advantages and disadvantages?

<table>
<thead>
<tr>
<th>Preferred?</th>
<th>Being in the sun</th>
<th>Not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Being involved</td>
<td>A2</td>
</tr>
<tr>
<td>B1</td>
<td>Disadvantage of being involved</td>
<td>B2</td>
</tr>
<tr>
<td>C1</td>
<td>Advantage of being involved</td>
<td>C2 Disadvantage of not being involved</td>
</tr>
<tr>
<td></td>
<td>Long term skin damage</td>
<td>Not getting skin cancer</td>
</tr>
<tr>
<td></td>
<td>Warmth</td>
<td>Swimming</td>
</tr>
</tbody>
</table>

Other comments:

Siteation H: Public speaking.

ANTICIPATION PHASE
What things were you predicting would happen?
That I was gonna make a complete fool of myself. Completely wrong, get a bad mark.

What options did you see open to yourself at this time?
Not much
1) Had to do it, trying to get around the situation

Were you concerned about danger, what others may think or what you may think of yourself?
What others think- that they would think I was an idiot and that they wouldn't agree with me.

INVESTMENT PHASE
How much did you want this prediction to come true? How much did it matter?
The failing, I wasn't worried about the failing. I was worried about being a fool.

ENCOUNTER PHASE
Describe the actual experience of doing it?
Did a speech last year. I got up. I was really nervous. I thought I was gonna make a complete fool of myself.
CONFIRMATION/DISCONFIRMATION PHASE
How did things go compared to what you initially thought would happen?
The opposite. It turned out that people thought it was okay and I got a good mark for it. The majority agreed with my views. I got a good mark and no one laughed at me, they just clapped.

CONSTRUCTIVE REVISION PHASE
What things did you learn from this experience?
That I could write a good speech. That I did have the ability to get there and say it, even though I was nervous, no one noticed.

NEXT TIME
Did you change as a result of this experience? Yes

What things will you change for next time if there is one?
I wouldn't be as nervous. Wouldn't worry about what people would think as much.

What options do you see open to you now?
1) Do it. Do more research, that I'd actually done stuff to support it.

How do you now see the advantages and disadvantages?

<table>
<thead>
<tr>
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<th>A2</th>
<th>Not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Disadvantage of being involved</td>
<td>B2</td>
<td>Advantage of not being involved</td>
</tr>
<tr>
<td></td>
<td>Isn't many now</td>
<td></td>
<td>I wouldn't have to worry what other people would think</td>
</tr>
<tr>
<td>C1</td>
<td>Advantage of being involved</td>
<td>C2</td>
<td>Disadvantage of not being involved</td>
</tr>
<tr>
<td></td>
<td>Just doing it, taking part</td>
<td></td>
<td>I'd fail if I didn't do it</td>
</tr>
</tbody>
</table>

Other comments:
I wouldn't do it if I had the choice unless there was a real reason.

Situation 1: Passenger in a Fast Car.

ANTICIPATION PHASE
What things were you predicting would happen?
We just thought, thought we had enough grog lasting the night.

What options did you see open to yourself at this time?
Car 1) do it 2) don't do it

Were you concerned about danger, what others may think or what you may think of yourself?
What others think - “I better do it or I’ll get picked on by the lads”, so I did it.
Danger- no, I'm a pretty confident driver, don't know about anyone else. Doing about 90, almost ran into the football field. Just felt like one of those simulators. Other guy almost ready to jump out of the door, shitting himself too much. Went back to get boltcutters.

INVESTMENT PHASE
How much did you want this prediction to come true? How much did it matter?
Not much really.

ENCOUNTER PHASE
Describe the actual experience of doing it?
One night me and a few guys and a couple of girls, next to a blackfella church, having drinks and bongs, waiting for a bloke to bring in heaps of dope. Ran out of grog so we went up the street, broke into a shed and there was a car. Drove out smashing side of coupe doing doughies, out in bush. They freaked out because started getting daylight, rolled it. One hundred metres down to the bottom and they screamed out. Cut on my face, it was fine. Ran up hill, just as I got to top of hill it blew up. Told my girlfriend's mum all about it and she told the cops.

CONFIRMATION/DISCONFIRMATION PHASE
How did things go compared to what you initially thought would happen?
Never anticipated we were gonna do crime, nor the changeover of illegal drugs. Ended up having fun but I got sent for it.

CONSTRUCTIVE REVISION PHASE
What things did you learn from this experience?
Make sure once you get drunk you pass out.

NEXT TIME
Did you change as a result of this experience? Yes

What things will you change for next time if there is one?
Probably wont be drinking for next 12 months. Here is one of the silliest things I've had in my whole life.

What options do you see open to you now?
1) Drink and pass out
2) Don’t drink at all
How do you now see the advantages and disadvantages?

<table>
<thead>
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<tr>
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<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B1</th>
<th>Disadvantage of being involved</th>
<th>B2</th>
<th>Advantage of not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you get caught, you go really don't like. If you doup like it, you need a bullet</td>
<td>Instead of being locked I'll have freedom</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1</th>
<th>Advantage of being involved</th>
<th>C2</th>
<th>Disadvantage of not being involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>You have a good time at the time. I wouldn’t do it again.</td>
<td>You wouldn’t have that sort of fun.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Other comments:
I still remember it heaps, even how drunk I was. I still remember every bit of it. I still remember the car.

Criteria to assess the quality of quantitative analyses including reliability and validity are well established. However, equivalent criteria for qualitative analyses have not been well established (Kirk & Miller, 1986; Nagy & Viney, 1994). Such criteria are seen as "safeguards" to ensure rigour in analysis. Guba and Lincoln (1989; Lincoln & Guba, 1985) have, however, described four useful criteria for assessing qualitative analyses: credibility, transferability, dependability, and confirmability. Consistent with similar criteria from Miles and Huberman (1994) I add a fifth criteria entitled utility. I describe and apply now these five criteria to assess the Experience Cycle Methodology.

Credibility is described by Guba and Lincoln (1989) as the qualitative parallel to internal validity of quantitative analysis. The degree of credibility of qualitative analysis relates to how accurately or validly the method and analysis represents the participants' experiences. Three main threats to credibility include: the expectations of the researcher; the interdependence of the researcher and participant; and the data gathering methods that may exclude participant involvement or coverage of issues relevant to the participant. Guba and Lincoln (1989) suggest three possible solutions to these threats: (a) reflexivity to guard against simply confirming the researcher's expectations by selective sampling, restrictive methods, restrictive theoretical perspectives or selective interpretations; (b) supervision or the use of an informant are suggested as ways of overcoming "going native", that is becoming too interdependent with the participant or questioning in a way that preempts answers; and (c) triangulation, which can include: use of quantitative analysis in addition to qualitative (Jick, 1979), checking findings with data, and checking findings with participants (Viney, 1988) or involving participants (Reason & Heron, 1995).

Further ways of increasing the credibility include strict rules for transcription (O'Connell & Kowal, 1995), consideration of demand characteristics and consideration of recall issues such as primacy and recency effects, representativeness bias and availability bias (Kahneman & Tversky, 1984; Lin, Ensel & Lei, 1997). Miles and Huberman (1994) suggest the exploration of competing hypotheses when making an interpretation and
consideration of ulterior motives of participants in presenting themselves as they did. However, from a discursive perspective the postulation of internal states such as cognitions or motives is seen as untenable (Edwards & Potter, 1992; Harre & Gillet, 1994).

I consider now the credibility of the ECM as described in this study. The ECM and its results in this study have a sufficient degree of credibility. In terms of reflexivity, the categories are theoretically determined as phases of the Experience Cycle. This, however, did not prove limiting in the participants' expression of their experiences due to the story based structure of the Experience Cycle and the use of a semi-structured interview. The participants also had a choice of nine different types of risk-taking to discuss ensuring they could choose something meaningful to them. There were no selective interpretations in the current use of the ECM due to the predetermined use of categories and scrutiny of a second rater. Use of other groups within phases is not precluded in future uses of the ECM.

No formal supervision regarding interviewing was used nor was an informant employed to guard against "going native" in this study. These are suggested improvements for future use of the ECM. This would also build in safeguards against the use of leading questions. In terms of triangulation, this study did include quantitative analyses to supplement the qualitative analysis. The numerical data did support the insights that could be garnered from individuals' descriptions of their cycles of experience. The quantitative findings were checked with the qualitative findings. The binary groupings as illustrated in Chapter 9 were checked with the qualitative data to see if they had a "natural fit" with the data. A weakness of the ECM, as used in this study, was that the ultimate interpretations were not verified by participants. However, at the end phase of the Experience Cycle, the information that was transcribed verbatim by the interviewer was checked back with the participant immediately to assure its accuracy. A further improvement of the use of the ECM would involve transcription, with strict rules, from an audio tape. This also relates to verifiability. Demand characteristics may also have been at play during the use of the ECM such as a male interviewer interviewing young females about sexual risk-taking. These issues are, however, not unique to the ECM.

From a cognitive psychology perspective the information provided for the ECM may involve biases including the primacy effect or recency
effect, in which a participant describes their first experience of an event or the most recent because these are the ones that they remember most clearly (Lin, Ensel & Lei, 1997). This is not necessarily a disadvantage for the ECM because first experiences often have significant influences of peoples lives and more recent experiences may be described more accurately. However, from a constructivist perspective it is the construction of meaning around an event that is important rather than an "accurate" description. The same may be said about the representativeness bias and availability bias of cognitive psychology.

In line with Miles and Huberman's (1994) suggestions, competing hypotheses were examined when generating and including/excluding narratives into and out of the binary groups for each of the phases of the Experience Cycle (see Chapter 9). The ulterior motives of the participants were also considered in interpreting the ECM narratives. From narrative and constructivist perspectives the storied constructions that these adolescent participants chose to describe themselves and their experiences are important in themselves. This is regardless of whether the interviewer or an external observer chooses to disagree with the description (Lightfoot, 1992).

In summary, the current use of the ECM demonstrates reasonable credibility of the analysis. Future use would benefit from supervision for the interviewer, an informant to help the interviewer understand better the interview context, audio taping of interviews with strict explicit rules of transcription and checking results with participants. Within the predetermined framework of the Experience Cycle future uses of the ECM may better employ non theoretically driven categories that are more data driven.

Transferability is described by Guba and Lincoln (1989) as the qualitative equivalent to external validity or generalisability of quantitative analysis. This involves consideration of the study context, representativeness of the participants (random sampling of people) and representativeness of the data (random and diverse sampling of phenomena and sites). Strauss and Corbin (1990) propose the notion of "theoretical saturation", that one continues to collect data until there are no new occurrence of themes.

While constructivist approaches reject the notion of universal truths that can be transferred across all contexts, they do hold that similarities may
occur across similar contexts. Guba and Lincoln (1989) advocate for the use of “thick descriptive data” of the context. They state that with qualitative analysis, the onus for decisions about transferability shift from the researcher to the reader of the research.

The current use of the ECM meets the criteria of transferability. The method section includes significant description of context, however it perhaps does not meet the criteria of “thick descriptive data” of context. In this study that examined the risk-taking experiences of 121 adolescents three types of adolescents were sampled from five different sites. Due to practical limitations the participants were, however, not randomly selected. This limitation, however, is particular to the design of the study and not inherent to the ECM. The participants were encouraged to discuss any one of nine different types of risk-taking experience in which they had engaged. Future research would improve the transferability of the ECM results by including more than one ECM per person. Random sampling of sites and participants is the only significant limitation to transferability in the current use of the ECM.

Dependability is described by Guba and Lincoln (1989) as the qualitative equivalent to reliability of quantitative methods including test-retest reliability and inter-rater reliability calculation of inter-rater reliability (Cohen, 1960; Perreault & Leigh, 1989). This can be described as the extent to which variation in the data that can be accounted for, therefore not assuming a static entity to be measured.

Inter-rater reliability was calculated for the current use of the ECM as described previously. Further ways to improve the dependability would be to video tape the interviews and have several independent raters rate the interview. Also, participants may be asked to retell their experiences at a specified time period after their initial interview to examine similarities and differences. A different interviewer could also be used to examine demand characteristics. Different contexts could also be compared, also relating to the issue of transferability. All of these suggestions are however resource intensive hence the common use of simpler inter-rater techniques.

Confirmability is described by Guba and Lincoln (1989) as the qualitative equivalent to verifiability and similar to replicability of quantitative analyses. This may be described as the extent to which conclusions are able to be verified by others. Similar to issues of
transferability, a contextualist world view (Caputi & Oades, 1998), is antithetical to the notion of replicability, hence “thick descriptive data” of the context are useful. Other suggestions made to increase confirmability of the analysis include keeping a journal of reflections to make the analyst’s interpretation process as transparent as possible. A map of the rules used for inclusion and exclusion to categories is also useful, access to the transcript, examples of text to represent categories and useful summaries presented as networks or matrices (Miles & Huberman, 1994).

The current use of the ECM maintains a high degree of confirmability with reasonable description of contexts available along with inclusion/exclusion criteria of the categories stated clearly in Chapter 9. Examples of the ECM are provided and full access to all text could be made available if required. Five additional transcripts are included in Appendix H. In the future better summaries could be made of the ECM data and the researcher could make a journal of reflections to make interpretations more transparent.

I use the term *utility* to describe the final criteria to assess qualitative analyses. This refers to how useful, relevant, and action oriented the results of the qualitative analysis are. If the following questions are answered with a “yes”, the utility of the analysis is likely to be enhanced. Was there a high degree of participant involvement? Were the findings accessible, physically and in the way they were presented? Were there clear implications for action from the findings? Did the findings solve a local problem? Were the users empowered by the research? Did the participants learn from the research? Were ethical issues raised explicitly as part of the research?

I answer now these questions in terms of the current use of the ECM. The participants were involved, in that they had choice from nine risky situations in terms of the story they told and that the semi-structured interview allowed them considerable freedom of expression- the answer is perhaps. The findings have not, thus far, been made available to the participants- the answer is no. There are clear implications for action as discussed in the next section- the answer is yes. The findings are yet to solve a local problem- the answer is not yet. It is difficult to say whether the participants were empowered by the research. Many of the participants stated that they enjoyed telling their story, however politically there have been little tangible benefits to the participants- the answer is probably not.
The participants did learn from the research— the answer is yes. Ethical issues were discussed before, during and after the research. The answer is yes.

Future use of the ECM could better involve participants in the research design (Reason & Heron, 1995; Viney, 1988). Moreover, more feedback from the ECM to participants is necessary and conversely so is feedback to the researcher on whether the participants found the research empowering. From the above analysis it is evident that the current use of the ECM may be improved in several ways. Many of the suggestions however are not unique to the ECM but speak to qualitative analysis in general.