

To the Graduate Council:

I am submitting herewith a dissertation written by N. Jean Love entitled "The Affective and Cognitive Perspectives of Older Adult Tennis Players." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Human Performance and Sport Studies.

Patricia A. Beitel
Patricia A. Beitel
Major Professor

We have read this dissertation
and recommend its acceptance:

Jay D. Delsens
Norma J. Mertz
Joan Paul
Kenneth M. Hall

Accepted for the Council:

C. W. Mink
Associate Vice Chancellor and
Dean of The Graduate School

THE AFFECTIVE AND COGNITIVE PERSPECTIVES
OF OLDER ADULT TENNIS PLAYERS

A Dissertation
Presented for the
Doctor of Education
Degree
The University of Tennessee, Knoxville

N. Jean Love
December 1991

Copyright © 1991 by N. Jean Love

All rights reserved

ACKNOWLEDGEMENTS

To Dr. Patricia Beitel, whose understanding, guidance, and encouragement have meant so much to me.

To Dr. Joy DeSensi, whose technical and moral support of this research project were invaluable.

To Dr. Joan Paul and Dr. Norma Mertz, whose scholarly input and service as committee members were greatly appreciated.

To Dr. Evelyn Hall and Dr. Graham Hatcher, whose friendship and mentorship have meant so much to me throughout my educational career.

To the participants in this research project, whose willingness to share their tennis experiences with me made this research project possible.

To my parents, whose love, support, and sacrifice made my educational journey possible.

ABSTRACT

The purpose of this investigation was to describe the perceptions of older adult tennis players from an affective (Csikszentmihalyi, 1975a) and from a cognitive perspective (Rybash, Hoyer, & Roodin, 1986). An additional purpose of the present investigation was to explore the potential interrelationship between Flow Theory (Csikszentmihalyi, 1975a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) in the experiential accounts of the participants. The investigation was limited to a demographic questionnaire, the Progen Sport Flow Q-Sort (1978), and interview responses of five male and five female tennis players ranging in age from 40-75 years of age.

The information generated by the Progen Sport Flow Q-Sort (1978) and the interview responses indicated that the older adult tennis players perceived the experiential feeling state of flow to be more descriptive of their tennis experiences than the experiential feeling states of worry and boredom. Also, the six elements of the flow experiential feeling state were perceived by the older adult tennis players to be characteristic of their tennis experiences. A comparison with previous research (Progen,

1978, 1981; McGirr, 1979) utilizing the Q-sort suggested some similarities and differences in the participants' perceptions of flow.

The information generated by the interview responses also supported the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986), i.e., knowledge is domain-based and the domain of personal knowledge experiences great change during the adult years. Two main themes emerged from an analysis of the interview responses: (a) the game of tennis was a self-revealing activity, and (b) the game of tennis was a shared experience.

The analysis of the older adult tennis players' perceptions of their tennis experiences suggested four related factors: (a) gender, (b) skill level, (c) socialization, and (d) individual differences. The basis for and nature of these relationships was discussed.

The information generated by the demographic questionnaire, the Progen Sport Flow Q-Sort (1978), and the interview responses allowed the interrelationship of Flow Theory (Csikszentmihalyi, 1975a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) to be explored. The emergence of personal knowledge occurred in tennis experiences, which respondents described as being most like the experiential feeling state of flow. The older adult

tennis players' personal involvement in and commitment to the game of tennis strengthened the interrelationship of the flow experience and the emergence of personal knowledge.

TABLE OF CONTENTS

CHAPTER	PAGE
1. INTRODUCTION	1
Purpose of the Study	7
Definitions	8
Assumptions of the Study	16
Scope of the Study	17
Significance of the Study	17
2. REVIEW OF LITERATURE	19
Theoretical Assumptions of Csikszentmihalyi . .	19
Motivation	20
Subjective Experience	25
Attention	27
Flow Theory	28
The Anatomy of Flow	29
Characteristics of Flow	32
Flow and the Self	36
Maslow and Csikszentmihalyi	40
Assumptions of Human Nature	41
Self-Actualization and Peak Experience . . .	43
The Way to Personal Growth	47
Csikszentmihalyi and Sport	51
Related Research in Sport Utilizing	
Flow Theory	59
Maslow and Sport	69
Related Research in Sport Utilizing	
Peak Experience	70
The Encapsulation Model	78
Domain-Specific Knowledge	79
Emergence of Personal Knowledge	81
Cognition and Affect	82
3. PROCEDURES	87
Selection of the Participants	88
Rationale for Selection and Development	
of Assessment Techniques	89
Assessment of the Affective Perspective . .	91
Assessment of the Cognitive Perspective . .	94
Collection of the Data	95
The First Data Collection Session	96
The Second Data Collection Session	97
The Third Data Collection Session	99

CHAPTER	PAGE
Methods Used to Analyze the Data	100
4. RESULTS AND DISCUSSION	104
Description of the Participants	105
Guiding Question 1: How Is the Flow Experience Described by the Older Adult Tennis Players?	110
The Experience of Flow	111
The Flow Elements	115
Comparisons with Previous Q-Sort Research	133
Commentary	140
Guiding Question 2: How Has the Personal Knowledge of the Older Adult Tennis Player Changed Through His or Her Participation in the Sport?	146
Tennis: A Self-Revealing Activity	146
Tennis: A Shared Experience	164
Commentary	173
Guiding Question 3: How are Csikszentmihalyi's (1975a) Flow Theory and Rybash, Hoyer, and Roodin's (1986) Encapsulation Model Interrelated in the Experience of the Older Adult Tennis Player?	176
The Interrelationship of Affect and Cognition	176
Commentary	180
Related Factors	183
Gender	183
Skill Level	196
Socialization	198
Individual Difference	200
5. SUMMARY, CONCLUSIONS, AND IMPLICATIONS	201
Summary	201
Conclusions	213
Implications for Future Research	214
REFERENCES	217
APPENDIXES	224
A. INTERVIEW GUIDE	225
B. PROGEN SPORT FLOW Q-SORT (1978)	227
C. DEMOGRAPHIC QUESTIONNAIRE	232

APPENDIXES	PAGE
D. INFORMED CONSENT STATEMENT	235
E. LETTER TO DR. JANICE PROGEN	237
F. Q-SORT DIRECTIONS	239
G. RESPONSE SHEET	240
H. START LIST OF CODES	241
VITA	242

LIST OF TABLES

TABLE	PAGE
1. Rank Order of Q-Sort Statement Types for All Participants	112
2. Rank Order of Q-Sort Elements for All Participants	117
3. Comparative Rank Order of Q-Sort Statement Types	134
4. Comparative Rank Order of Q-Sort Flow Elements	136
5. Rank Order of Q-Sort Statement Types for Men and Women	184
6. Rank Order of Q-Sort Flow Elements for Men and Women	185

LIST OF FIGURES

FIGURE	PAGE
1. A Typology of Endogenous Motives	22
2. A Model of the Flow Experiential Feeling State . . .	30
3. The Dynamics of Flow	38

CHAPTER 1

INTRODUCTION

The increase in numbers of older adults in our society has prompted a special concern with the behavior of adults throughout their later years. Since 1980, the fastest growing segment of the United States population has been the 35 to 44 age group (Fairon, 1988). As improved medical care extends the life span, the next fastest growing groups have been those 85 and over, and 75 to 84 years of age (Fairon, 1988). Despite this, data are limited on motivational patterns of adults in the wide variety of contexts that are characteristic of adult life, sport included (Kleiber & Maehr, 1985; Maehr & Kleiber, 1981; McPherson, 1984). With only a few exceptions (Harootyan, 1982; Hobart, 1975; McPherson, 1982, 1984; Wohl & Szwarc, 1981), individuals in the middle and later years of the life cycle have received little attention with respect to their sport participation. Because of the scarcity of information on the motivational patterns of older adults, one of the fastest growing segments of the U.S. population, further investigation and elaboration of the nature of motivation in the older adult sport participant is indicated.

Motivation is a popular topic in the psychological literature. Much of this literature focuses on the most obvious--the extrinsic reward, which means that a person acts in terms of fixed goals and rewards that are either genetic in origin or reinforced by the culture. This supports a mechanistic model of human behavior (Csikszentmihalyi, 1978, 1982a, 1985; Deci & Ryan, 1985). On the other hand, an organismic model of human behavior underlies the study of intrinsic motivation. An organismic model suggests that a "considerable proportion of behavior cannot be explained in terms of anticipated goals or rewards but rather in terms of goals and rewards that arise out of direct involvement with an ongoing activity" (Csikszentmihalyi, 1978, p. 206). Influenced by this organismic model, Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985) took a qualitative approach to the understanding of human behavior; one which considered the description and understanding of subjective experience to be of paramount importance.

In Csikszentmihalyi's (1975a) study of people who spent much of their life in activities like chess, modern dance, rock climbing, basketball, and music, emphasis was on the intrinsic, subjective dimension of enjoyment that occurred in the interaction between a person and their

environment. Much of everyday behavior provided intrinsic rewards, such as enjoyment, that served to motivate behavior. When deprived of these everyday inherently enjoyable activities like talking with friends, humming, reading a book, watching television, etc., individuals experienced negative changes in physical feelings, cognitive functioning, and self-perception (Csikszentmihalyi, 1975a).

Activities were inherently rewarding presumably due to the participant's subjective feeling of enjoyment which Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985) described as the flow experience. While flow may occur in any interaction, there were two important prerequisites. First of all, the central requirement seemed to be that the situation provided information to the person about whether his or her actions were meeting a set of challenges in the environment. "The whole issue of intrinsic rewards eventually boils down to this--the acquisition of skills" (Csikszentmihalyi, 1978, p. 211). If the skills were not present, then feedback that conveyed information about how the person was meeting the environmental challenges was unavailable. Secondly, a meaningful context for the performance of skill was necessary for intrinsic rewards to be effective. This implied that the person must care

enough about the activity to devote time and energy to skill development. The individual's concern for the activity lent reality to the challenges. When these two prerequisites were both in place, Csikszentmihalyi (1975a) described the experience as deep flow. This was very similar to the phenomenon which Maslow (1964, 1968, 1970, 1971) described as a peak experience. Csikszentmihalyi (1975a) and Maslow (1964, 1968, 1970, 1971) noted that there were people who never experienced deep flow nor had peak experiences. However, the common element in all flow activities was the "matching of personal skills against a range of physical or symbolic opportunities for action that represent meaningful challenges to the individual" (Csikszentmihalyi, 1975a, p. 181).

Current literature supported the flow model in sport and leisure activities (Chalip, Csikszentmihalyi, Kleiber, & Larsen, 1984; Gray, 1977; Harris, 1984; McGirr, 1979; Progen, 1978, 1981; Progen & DeSensi, 1984). With the exception of Gray (1977), the literature focused on the flow experiences of the young and the elite athlete. In addition, Csikszentmihalyi (1975a) projected that the experiencing of intrinsic reward was positively related to age, socioeconomic status, and education. Only Gray (1977) gave serious consideration to any of these variables. He

found that the nature of enjoyment in leisure activities for middle-age (40-50) and old-age (65+) persons conformed to the flow model and was positively related to age, socioeconomic status, and education. There was a scarcity of literature concerning the flow experience of the older adult sport participant.

In a related perspective, Rybash, Hoyer, and Roodin (1986) presented an Encapsulation Model of adult cognition that has some important implications for the study of an older sport population. Rybash, Hoyer, and Roodin (1986) postulated that the growth and encapsulation of domain-specific knowledge was the most salient feature of adult cognitive development. Like Flow Theory (Csikszentmihalyi, 1975a), the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) emphasized the issue of meaningful context, i.e., adults actively constructed domains of knowledge through their interaction with the environment. Furthermore, Rybash, Hoyer, and Roodin (1986) suggested that the adult years involved more changes in the knowledge of self than in any other domain of knowledge. They proposed the emergence of a domain of personal knowledge, which represented a combination of self-knowledge (intrapersonal) and knowledge of others (interpersonal). Personal knowledge emerged from one's interaction with the social

environment. The Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) suggested that through their participation in an activity imbued with personal meaning, the older adult sport participant was actively involved in the process of the growth and encapsulation of knowledge within the personal domain.

The integration of the theories of Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985) and of Rybash, Hoyer, and Roodin (1986) provided the theoretical framework for understanding the intrinsic value of sport participation and the personal knowledge gained through sport participation in the older adult sport experience. Since Csikszentmihalyi's (1975a, 1975b, 1978, 1982a, 1985) Flow Theory necessitated skill acquisition and depended upon a meaningful context, it followed that the older adult sport participant was ideally suited to have experienced flow. The relevance of the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) of adult cognition for the study of flow in an older adult sport population was that the domain of personal knowledge was resistant to decline. And, since the older adult use group is one of the fastest growing segments of the United States population and since the personal knowledge gained through sport has not been investigated with any age group, there is no known

information concerning the value and/or knowledge of sport to the older adult from their experiential viewpoint.

Purpose of the Study

The purpose of this study was to describe the perceptions of older adult tennis players from an affective (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) and a cognitive perspective (Rybash, Hoyer, & Roodin, 1986) based on their responses to a demographic questionnaire (Appendix C), the Progen (1978) Sport Flow Q-Sort (Appendix B), and an interview technique (Appendix A). It was an attempt to expand knowledge regarding the sport experience of older adult tennis players who, through years of skill development in a personally meaningful context, have accumulated expertise in the experiential knowledge base surrounding their sport experience.

The following questions served to guide the investigation.

1. How is the flow experience described by the older adult tennis player?
2. How has the personal knowledge of the older adult tennis player changed through his/her participation in the sport?

3. How are Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) interrelated in the experience of the older adult tennis player?

Definitions

The following section includes terms that are theoretically and operationally defined for the purposes of this study.

ENCAPSULATION MODEL:

The Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) conceptualizes cognition as consisting of three interrelated dimensions, i.e., processing, knowing, and thinking. While addressing the age-related declines that take place in processing, it postulated the gains that may occur in knowing and thinking. As one grows older, the gains in knowing and thinking are possible because the processing of knowledge becomes encapsulated within particular domains, and these domains are actively constructed. The adult negotiates real-life situations via the implementation of domain-specific knowledge and domain-specific styles of thinking. In this investigation, the

Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) was represented by questions in the interview.

EXPERIENCE:

A segment of life is made the object of one's consciousness. In this study, the older adult was asked to focus on a segment of life related to his/her participation in tennis.

FLOW THEORY:

At any given moment, people are aware of only a minimal number of opportunities which challenge them to act; at the same time, they are also aware of their skills or capacities to cope with the demands of the environment (Csikszentmihalyi, 1975a, p. 50). Optimal experience, which Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985) called flow, occurs when an activity provides opportunities for action which a person can act upon without worry or boredom. A balance between the individual's perceived skills or action capabilities and the environment/task demands or action opportunities of an activity results in flow. Five experiential states of the person and six elements or qualities that occur in the interaction of

person and environment mediate the person's potential to experience flow.

EXPERIENTIAL STATE:

A state of consciousness results from an individual's perception of the balance between their skill/action opportunities and the environment/task demands or action opportunities. Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985) outlined five experiential states:

(a) boredom, (b) anxiety-boredom, (c) flow, (d) worry, and (e) anxiety-worry.

(a) Boredom. An experiential state occurs when skills are perceived to be greater than opportunities for using them. This state is represented by items 9, 10, 12, 14, 21, 25, 27, 31, and 44 of the Progen Sport Flow Q-Sort (1978).

(b) Anxiety-boredom. An experiential state results when skills are perceived to be greatly superior to the opportunities for using them. This state is represented by items 6, 11, 15, 37, 39, 42, 50, 58, and 59 of the Progen Sport Flow Q-Sort (1978).

(c) Flow. An experiential state occurs when the skills are perceived to be in balance with the opportunities for using them; a holistic sensation is felt

when one acts with total involvement (Csikszentmihalyi, 1975a, p. 36) as a result of this perceived balance; total enjoyment. Flow is represented by items 4, 17, 20, 23, 24, 28, 29, 30, 32, 35, 36, 38, 45, 48, 49, 56, 57, and 60 of the Progen Sport Flow Q-Sort (1978).

(d) Worry. An experiential state occurs when skills are perceived to be inadequate to meet the opportunities for using them. This state is represented by items 1, 2, 13, 33, 34, 41, 51, 53, and 55 of the Progen Sport Flow Q-Sort (1978).

(e) Anxiety-worry. An experiential state that results when skills are perceived to be greatly inferior to the opportunities for using them. This state is represented by items 5, 7, 8, 19, 22, 26, 40, 43, and 54 of the Progen Sport Flow Q-Sort (1978).

FLOW ELEMENTS:

Characteristics of qualities arising out of the interaction of person and environment enhance the potential for the person to experience flow; Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985) outlined six flow elements:

(a) merging of action and awareness, (b) centering of attention, (c) loss of ego, (d) control of action and the

environment, (e) noncontradictory demands for action with clear, unambiguous feedback, and (f) autotelic nature.

(a) Merging of action and awareness. A concentration temporarily excludes irrelevant thoughts and feelings, and stimuli outside the activity; a focus on the present; the past and future cease to exist subjectively. This element is represented by items 20, 28, and 32 of the Progen Sport Flow Q-Sort (1978).

(b) Centering of attention. The perceptual field of relevant stimuli is limited with a heightened concentration on the activity. This element is represented by items 4, 56, and 57 of the Progen Sport Flow Q-Sort (1978).

(c) Loss of ego. Self-forgetfulness; the self-as-object of awareness is lost, not the awareness of bodily sensations or movements. This element is represented by items 35, 38, and 60 of the Progen Sport Flow Q-Sort (1978).

(d) Control of action and the environment. It is an individual's perception of being able to cope with the demands of the task/environment; it is more of a sensation of not being worried about the possibility of lack of control as it is one of mastery or an ability to affect the environment. This element is represented by items 24, 29, and 36 of the Progen Sport Flow Q-Sort (1978).

(e) Noncontradictory demands for action with clear, unambiguous feedback. The nature of the flow experience is that it contains ordered rules which make action and the evaluation of action automatic and unproblematic (Csikszentmihalyi, 1975a, p. 47). This element is represented by items 30, 45, and 48 of the Progen Sport Flow Q-Sort (1978).

(f) Autotelic nature. Intrinsically rewarding; an autotelic activity appears to need no goals or rewards external to itself for participation to continue; rewards come during the process of the endeavor as well as at the completion. This element is represented by items 17, 23, and 49 of the Progen Sport Flow Q-Sort (1978).

INTERVIEW:

A purposeful conversation; it is a research technique designed to explore an individual's personal reflections about his/her experience. The interview may be composed of semistructured or open-ended questions that allow the interviewer and the respondent to explore the aspects of the respondent's experience that he or she perceives as important. In this investigation, the interview questions (Appendix A) were based on the theories of Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985) and Rybash, Hoyer, and

Roodin (1986). The process of the interview consisted of two sessions with each participant. The first session included questions related to the subject's responses to the Progen Sport Flow Q-sort (1978) and the theories of Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985) and Rybash, Hoyer, and Roodin (1986), while the second session was a follow-up interview. During the follow-up interview, interpretation of the information collected in the Progen Sport Flow Q-Sort (1978) and the previous interview was shared with the respondent. The respondent then had the opportunity to ask questions about and/or clarify the information.

INTRINSIC MOTIVATION:

Intentions originate within the individual (Csikszentmihalyi, 1985a) and arise out of interaction; a matter of whether people's inner experiences cause behavior; it is based on people's need to feel competent and self-determining in relation to their environment (Deci, 1978). In this study, intrinsic motivation is referred to as flow, and flow is measured by the Progen Sport Flow Q-Sort (1978).

OLDER ADULT:

Most developmental studies (Veroff & Smith, 1985) consider the ages 21-39 as young adulthood. Later adulthood (age 40+) was the focus of this study.

PERSONAL KNOWLEDGE:

Perceptions about oneself, others, and life gathered in real-life experiences and in reflecting upon those experiences. In this study, the interview was designed to elicit personal knowledge of the older adult tennis player.

Q-SORT:

It is a systematic procedure for sorting a number of self-descriptive statements along a continuum from "most like me" to "least like me" with various degrees of agreement between the two extremes. The Progen Sport Flow Q-Sort (1978) was the instrument used to generate the data in this study (Appendix B).

SPORT:

A structured game event is one that is marked by spatial and temporal limitations, controlled by rules, and requires the demonstration of physical prowess. Demonstration of physical prowess implies that formal

practice and learning have gone into the attainment of physical skills, and that these physical skills are employed to conquer an opposing object of nature (Loy, 1972). The sport in this investigation was tennis.

Assumptions of the Study

The following section includes assumptions that were made in reference to this study:

1. The concepts inherent in Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985) have sufficient semantic integrity to be evaluated by older adult sport participants' with regard to their sport experience.
2. The Progen Sport Flow Q-Sort (1978) is a valid and reliable measure of Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985) in the context of sport.
3. The interview technique is a valid tool for eliciting information about a person's understanding of the statements in the Progen Sport Flow Q-Sort (1978) and of his or her sport experience.
4. There is an interrelationship of Flow Theory (Csikszentmihalyi) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986), and sport provides an arena in which to explore this interrelationship.

5. Subjective experience is important in understanding the nature of motivation in the older adult tennis player.

6. Older adult tennis players can provide personal accounts of their sport experience.

Scope of the Study

The investigation was limited to the Progen Sport Flow Q-Sort (1978) and interview responses of 10 older adult tennis players over forty years of age. Both male and female tennis players comprised the sample of volunteers. The results are representative only of the older adult tennis players who participated in the study.

Significance of the Study

The potential significance of the study was fourfold. First, later adulthood has received little attention with respect to sport participation. This is noteworthy in light of increasing longevity and changing life styles in the middle and later years (Fairon, 1988; Kleiber & Maehr, 1985; Maehr & Kleiber, 1981; McPherson, 1984). Secondly, the application of Flow Theory (Csikszentmihalyi, 1975a) and of the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) to a broader age-range of sport participants may

contribute to a greater understanding of the phenomenon of motivation in sport across the life span. Third, Ryff (1985) contends that understanding motivation in adulthood is not complete without consideration of personal growth and development. By integrating Flow Theory (Csikszentmihalyi, 1975a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986), the pursuit of inner meaning and self-knowledge are acknowledged as important forces in adult life. Fourth, Progen and DeSensi (1984) stressed the value of applying theoretical framework to the study of complex, elusive phenomena in sport. Through the theoretical frameworks of Csikszentmihalyi (1975a) and of Rybash, Hoyer, and Roodin (1986), an awareness and understanding of subjective meaning in sport for older adults has been facilitated.

CHAPTER 2

REVIEW OF LITERATURE

The literature reviewed identified the underlying theoretical frameworks that influenced this researcher and thus the research itself. Specifically, the review was organized into the following sections: (a) theoretical assumptions of Csikszentmihalyi, (b) Flow Theory, (c) Maslow and Csikszentmihalyi, (d) Csikszentmihalyi and sport, (e) related research in sport utilizing Flow Theory, (f) Maslow and sport, (g) related research in sport utilizing peak experience, and (h) the Encapsulation Model.

Theoretical Assumptions of Csikszentmihalyi

The assumptions underlying the Flow Theory of Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985, 1988a) were important to understanding his research. These influential assumptions fell into three areas: (a) motivation, (b) subjective experience, and (c) attention.

Motivation

Csikszentmihalyi (1985, 1988a) outlined two distinct theoretical positions on motivation. The first position equated motivation with the reduction of needs, and behavior was often explained in terms of forces external to the self. Despite the preponderance of evidence in its favor, this "reductionist psychology fails as an accurate theory of human behavior because it ignores the phenomenon of the self" (Csikszentmihalyi, 1988a, p. 16). In general, people do what they want to do. They eat when they are hungry, and they work hard if they are rewarded for it. However, it is excessive simplification that the needs of the self can be reduced to a stimulus-response link. Often these simple motivational mechanisms work because people want them to work. Initially, these simple motivational mechanisms help build the self, but once the self is operational it becomes an independent causal agent directing one's behavior.

The second theoretical position on motivation recognized the autonomy of the self. This position was advocated by Csikszentmihalyi himself, and it had some important implications for motivation.

From an evolutionary perspective, to recognize the possibility of being motivated, rather than

simply determined, is in itself a new principle of causality that could not be operating at previous phylogenetic levels. Freedom consists in the capacity of conceiving freedom. As soon as a person believes that by intending to do something the goal can be accomplished, purpose enters as a new causal determinant of behavior. (Csikszentmihalyi, 1985, p. 94)

Based on this theoretical position, Csikszentmihalyi (1985) developed a classification system of human motives. Motives were classified as either endogenous or exogenous. "It is convenient to distinguish between intentions that a person interprets as being forced on him or her by external circumstances (or exogenous motives), and intentions that are seen to originate within the individual him or herself (or endogenous motives)" (Csikszentmihalyi, 1985, p. 94). He dealt only with the endogenous motives because they had been neglected in psychological accounts of human behavior.

As shown in Figure 1, the typology proposed by Csikszentmihalyi (1985) was based on two dichotomies: (a) the first dichotomy distinguished between individual and social processes, and (b) the second dichotomy distinguished between open and closed motives. A "closed" motive was one that was programmed in the organism by genes or by conditioning the organism received. An open motive was not preprogrammed but developed as the person interacted with the environment. The "closed" versus open distinction was noteworthy.

	Primarily Intra-Individual Processes	Primarily Inter-Individual Processes
Primarily Closed Systemic Goals	1. "Needs": Hunger Thirst Safety Optimal Activation, etc.	2. "Socialization": Sex Affiliation Achievement Presented Life Theme
Primarily Open Systemic Goals	4. "Emergent Motives": Intrinsic Motivation Flow Self-development Discovered Life Theme	3. "Cultivation": Values Social Goals Identification Ideologies, etc.

Figure 1. A typology of endogenous motives
(Csikszentmihalyi, 1975a, p. 49).

This distinction is made necessary by what seems to be a very important mechanism in human evolution--namely, that people do not do things only because they have to, but also because they want to. And the latter cannot be always reduced to the former. People . . . adopt new behaviors for reasons that did not exist before. The motivation to climb mountains, for instance, can in part be explained with reference to prior states of the organism like a need for optimal stimulation, a need for achievement, and so forth. Yet mountain climbing also produces experiences that only it can provide, and these unique experiences become a reason which motivates people to repeat the particular activity. (Csikszentmihalyi, 1985, p. 96)

While Csikszentmihalyi (1985) chose the experiences of mountain climbing to illustrate "open" motivation in human behavior, he also recognized a variety of other examples of emergent motives, which included "playing baseball to video games" (p. 97).

At this point, a more detailed discussion of the types of motives represented in Figure 1 is warranted. In the first cell, the motives relate behavior "to an imbalance in the state of the organism with reference to some optimal setting that is inherent to the structure of the organism itself" (Csikszentmihalyi, 1985, p. 97). Some of the motives in the second cell are also listed in the first cell, however, the distinction occurs as the motives in the second cell relate behavior to "an imbalance due to some

discrepancy between what a person has learned to want as a result of socialization (in addition to organismic needs)" (Csikszentmihalyi, 1985, p. 97). Csikszentmihalyi (1985) noted that social learning theory, achievement motivation theory, and attribution theory were included in the second cell because they referred to a "closed" system of motivation including a prestructured society and predetermined individual. According to Csikszentmihalyi (1985), "most approaches do not consider other potential sources of explanation for behavior outside the two listed above. But human action . . . remains inexplicable without considering additional sources of motivation" (pp. 97-98).

The third cell in Figure 1 introduces the class of "open" motives, motives that arise out of the interaction between people and the symbol systems of their culture. "People are not only socialized to their environment; they occasionally create new patterns of values and beliefs by combining and transforming existing ones" (Csikszentmihalyi, 1985a, p. 98). Csikszentmihalyi and Rocheberg-Halton (1981) coined the term "cultivation" to refer to the creation of new goals from an individual's interaction with the symbol systems of a culture.

The fourth cell in Figure 1 refers to a class of "open" motives with a most revealing appellation, "emergent

motives." These motives are discovered by the person as he or she interacts with the environment.

Emergent personal motives are "intrinsic" in the sense that they arise out of interaction. They were not there "before" in the matrix of the person's genes, brain cells, or learned behavior patterns. They are not based on some external, extrinsic goal. They get triggered by specific experiences which provide unique rewards never before encountered. (Csikszentmihalyi, 1985, p. 99)

As shown in Figure 1, the typology of endogenous motives proposed by Csikszentmihalyi (1985) highlights one of the most influential assumptions underlying his research: motivation is a "relatively autonomous process which represents the strivings of the self as a whole rather than just the various needs of the biological organism" (Csikszentmihalyi, 1985, p. 94).

Subjective Experience

A second assumption of Csikszentmihalyi concerned the primacy of subjective experience in understanding human behavior.

It is useful to remember occasionally that life unfolds as a chain of subjective experiences. Whatever else life might be, the only evidence we have of it, the only direct data to which we have access, is the succession of events in consciousness. The quality of these experiences determines whether and to what extent life was worth living (Csikszentmihalyi, 1982a, p. 13).

Subjective experience exists in consciousness, and for Csikszentmihalyi, what passes in consciousness was of prime importance.

Csikszentmihalyi (1982a) stated that "psychology has neglected experience for the sake of behavior" (p. 13). He explained that psychologists in general have assumed that what people do is more important than how they feel; behavior takes precedence over inner states. However, as Csikszentmihalyi (1982a) pointed out, "what we need to know about others is their actions, but what counts about ourselves is our feelings" (p. 14). Subjective feelings reveal the condition of the person more than observable behavior.

According to Csikszentmihalyi (1982a), another reason psychology emphasizes behavior over experience is to remain scientific, that is, to concentrate on the objective dimension of human behavior. It is much more tangible to know what a person does than what a person feels. "But an emphasis on objective qualities in science is only appropriate when dealing with objects [emphasis added]. It is misplaced when subjectivity is the paramount feature of the object investigated" (Csikszentmihalyi, 1982a, p. 14). The emphasis on the objective behavior of human beings obscures the emergent nature of human motivation.

New configuration of experiences keep emerging as people interact with their cultural and physical environment, and some will produce rewards that people who have not experienced them could never imagine and therefore cannot perceive as being rewarding. Most of us cannot really understand why some people climb mountains or why some live a life of dedication to an ideal. Not having experienced what the climber or the believer experiences, we cannot imagine what the motives could be. (Csikszentmihalyi, 1985, p. 97)

Psychology then must utilize methods appropriate to the description and understanding of subjective experience.

Attention

A third assumption of Csikszentmihalyi concerned the attentional process. If the emergent nature of the human motivational system unfolds through subjective reality, then the allocation of a finite human resource, namely attention, becomes important. Csikszentmihalyi (1978) stated the following:

The ability to focus attention is the most basic way of reducing ontological anxiety, the fear of impotence, of nonexistence. This might be the main reason why the exercise of concentration, when it is subjectively interpreted to be free, is such an enjoyable experience. (p. 344)

The voluntary focusing of attention assumes a crucial role in human interaction with other people and the environment. Thus, attention plays an integral part in the flow experience and in self development.

The optimal subjective experience or flow (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) is made possible when a person voluntarily focuses his or her attention on a limited range of stimuli. People voluntarily concentrate on tasks when they perceive environmental demands for action to be in line with their capacity to act. "If, for whatever reason, a person chooses to pay undivided attention to a set of stimuli, he or she will enjoy the experience" (Csikszentmihalyi, 1978, p. 343). In the flow experience then, attention is the means by which a person receives information from the environment, and this information becomes subjective experience. This exchange not only supplies information about the environment, but about the self as well.

Flow Theory

Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985, 1988a) emphasized enjoyment in the directing of behavior. The goal of intrinsically motivated behavior is the inherent experiential feeling of true enjoyment that accompanies the activity or experience after which one says: "that was fun," or "that was enjoyable." "It is presumably the subjective feeling of enjoyment that is responsible for the continuation of the activity; it is

this feeling that constitutes the intrinsic reward" (Csikszentmihalyi, 1978, p. 213). In essence, Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985, 1988a) conceptualized intrinsic motivation in terms of the feeling of enjoyment that is psychological in nature.

The Anatomy of Flow

Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985, 1988a) described what the experience of enjoyment is like and what makes it intrinsically rewarding. He referred to this experience of enjoyment as flow, a term often used by respondents in his studies to describe their feelings while participating in enjoyable activities.

Flow is generated by an individual's interaction with the environment. Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985, 1988a) theorized that when one engages in an optimally challenging activity, he or she experiences flow. The flow experience is felt when opportunities for action are in balance with the individual's skills (Figure 2). When challenges in the environment are perceived by the individual to greatly overwhelm his or her skills, anxiety is experienced. Worry is felt when challenges slightly outweigh skills. When skills are slightly greater than challenges, boredom is experienced which results in anxiety

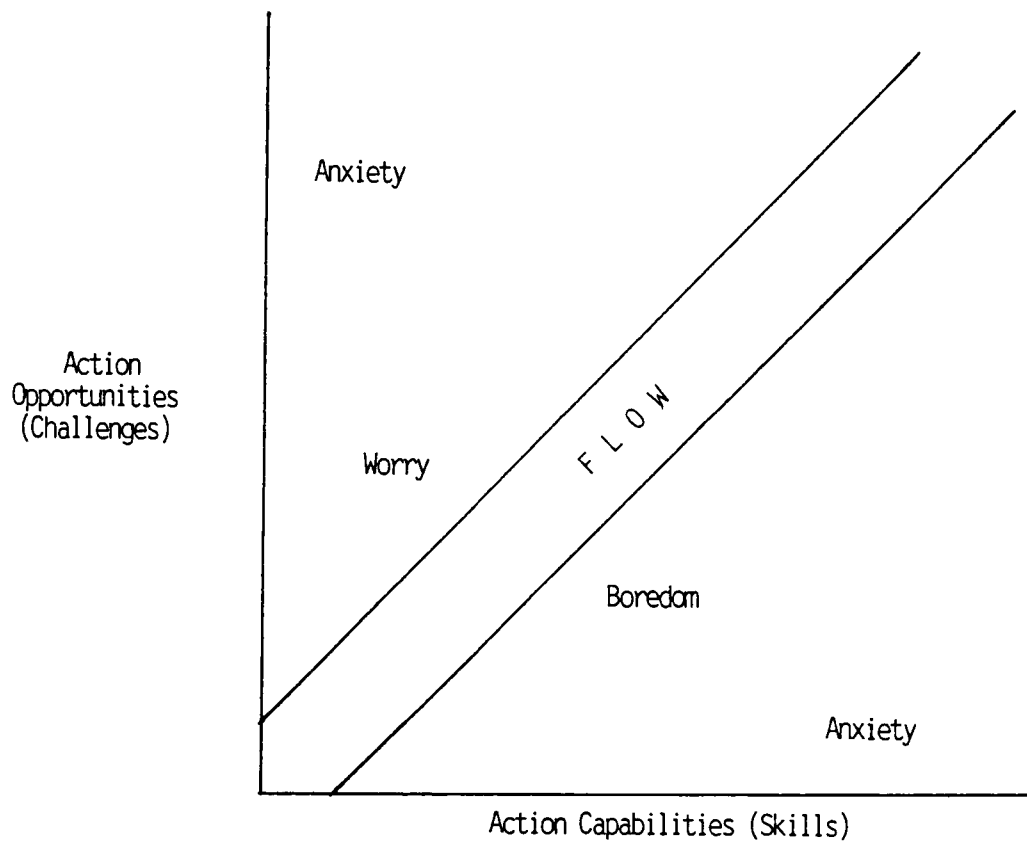


Figure 2. A model of the flow experiential feeling state (Csikszentmihalyi, 1975a, p. 49).

when the ratio is extremely out of balance. Hence, there are two dimensions of the flow experience: (a) what there is to do (action opportunities or challenges), and (b) what one is capable of doing (action capabilities or skills).

"When artists, athletes, or creative professionals describe the best times experienced in their favorite activities, they all mention this dynamic balance between opportunity and ability as crucial" (Csikszentmihalyi, 1982a, p. 17).

Also, Csikszentmihalyi (1982a) describes flow in terms of attentional processes. Basically, as long as one attends to the environment, flow can occur. When attention is disrupted, flow cannot occur. This is because attention is the means by which a person receives information from the environment, and this information fills one's consciousness. "Part of the information that gets processed in consciousness consists in an evaluation of the opportunities for action present in a given situation. At the same time, we also tend to be aware of what our abilities are in terms of those opportunities"

(Csikszentmihalyi, 1982a, p. 16). When the person's attention is focused on the activity and the person perceives his/her skills to be equal to the opportunities, the flow experience occurs. The experience is so pleasant

in its own right that people keep attending to the information.

One plays, for instance, generally because the experience is enjoyable. There might be a variety of ulterior reasons motivating the activity, but even when these are absent people keep playing for the sheer fun of it. Art, creative work of any kind, sports, and religious practices also often provide this kind of self-justifying optimal experience.
(Csikszentmihalyi, 1985, p. 103)

Characteristics of Flow

Theoretically, the flow experience (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) involves a certain ratio of information input, i.e., a balance between challenges and skills. However, this relationship does not reveal how the flow experience is felt subjectively. Thus, Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985, 1988a) outlined six elements or characteristics that contribute to the subjective feeling of enjoyment. These elements or characteristics, which have been commonly mentioned by people who describe how they feel at the height of enjoyment, include: (a) merging of action and awareness, (b) centering of attention, (c) loss of ego, (d) control of action and environment, (e) noncontradictory demands for action with clear unambiguous feedback, and (f) autotelic nature.

The clearest sign of flow is the merging of action and awareness. "A person in flow does not operate with a dualistic perspective: one is very aware of one's actions, but not of the awareness itself" (Csikszentmihalyi, 1975b, p. 45). An intense concentration is required that temporarily excludes irrelevant stimuli, thoughts, and feelings from consciousness. Flow connotes a natural unfolding of consciousness in which there is little distinction between past, present, and future; flow occurs in the "here-and-now" focus of attention on the interaction with the environment. Sometimes, one subjectively experiences a distortion of time perspective. "Minutes seem to stretch for hours, or hours elapse in minutes: clock time is replaced by experiential sequences structured according to the demands of the activity" (Csikszentmihalyi, 1982a, p. 22).

Another characteristic of flow is a centering of attention on a limited perceptual field. Total involvement with the on-going activity is necessary to experience the enjoyment of flow. While the rules of a sport often define the relevant stimuli and exclude everything else as irrelevant, rules alone are not always enough to induce a total involvement with the environment. Other motivational elements, such as competition, material gain, and danger,

often draw the player into play by encouraging a focus of attention on relevant cues in the environment.

Loss of ego is another characteristic of the flow experience.

Immersion in the activity produces as one of its consequences a loss of self-consciousness. There is neither need nor opportunity to reflect on oneself--the self as an object of awareness recedes while the focus of attention is taken up by the demands of the activity and by the responses given to them. (Csikszentmihalyi, 1982a, p. 22)

Subjectively, the loss of ego or loss of self-consciousness results in a feeling of transcendence or of oneness with the world. This loss of ego does not necessarily mean that a person loses the awareness of his or her body. In some flow experiences, one becomes more intensely aware of kinesthetic sensations accompanying muscular movement.

A person in flow experiences a sense of control of his or her actions and the environment. Instead of an active awareness of mastery, Csikszentmihalyi (1975a, 1975b) conceived this flow element as simply not being worried about the possibilities of losing control of oneself and the environment. In reflecting on the activity, a person senses the balance between challenges and skills. Hence, subjectively, a sense of control is one of the most important flow elements.

Another characteristic of the flow experience is that it usually contains coherent, noncontradictory demands for action with clear, unambiguous feedback. There is no need to stop and evaluate action because it is so well-practiced that it is automatic. The clear feedback enables the participant to adjust his or her behavior as the interaction proceeds. The means needed to reach the goals of an activity are compatible. One clearly knows what is "good" and what is "bad" in the flow experience. "When contradictory actions are made possible (for instance, when cheating is introduced into a game), the self reappears to negotiate between the conflicting definitions of what needs to be done, and the flow is interrupted" (Csikszentmihalyi, 1975a, p. 47).

A final characteristic of the flow experience is its autotelic nature. In other words, the flow experience needs no goals or rewards external to itself.

Although one often gets involved in activities that produce optimal experiences either accidentally or for extrinsic reasons, once a person has had a taste of the exhilaration produced by the ordered interaction, he or she will continue the involvement for intrinsic reasons. Thus optimal experience [or flow] is autotelic, or intrinsically rewarding. With time it might become addictive. In any case, it is experienced as something one chooses to do freely and for its own sake. (Csikszentmihalyi, 1982a, pp. 22-23)

Csikszentmihalyi (1975a) proposed that the flow elements are linked together and interdependent.

By limiting the stimulus field, a flow activity allows people to concentrate their actions and ignore distractions. As a result, they feel in potential control of the environment. Because the flow activity has clear and noncontradictory rules, people who perform in it can temporarily forget their identity and its problems. The result of all these conditions is that one finds the process intrinsically rewarding.
(Csikszentmihalyi, 1975a, p. 48)

These then are the conditions or defining characteristics of the flow experience.

Flow and The Self

Any activity that occurs in a personally meaningful context and that provides information about a person's ability to meet a set of challenges has the potential to create the subjective feeling of flow. Furthermore, Csikszentmihalyi (1978) suggested that intrinsic rewards and/or flow are possible when an activity meets the following requirements:

1. The activity should be structured so that the actor can increase or decrease the level of challenges being faced in order to match exactly his or her skills with the requirements for action.
2. It should be easy to isolate the activity at least at the perceptual level from other stimuli--external or internal--that might interfere with involvement in it.

3. There should be clear criteria for performance; one should be able to evaluate how well or how poorly one is doing at the time.
4. The activity should provide concrete feedback to the actor so that one can tell how well one is meeting the criteria of performance.
5. The activity ought to have a broad range of challenges and possibly several qualitatively different ranges of challenge, so that the actor may obtain increasingly complex information about different aspects of the self. (p. 213)

In the final requirement listed above, a relationship between flow and the self is implied. Csikszentmihalyi (1982a) described this relationship:

Intense involvement in a complex activity provides the most concentrated feedback for the nourishment of the self. The higher the challenges of the activity, the more unlikely it is that one can meet them, and therefore the greater the experience of order upon success. Enjoyment builds the self. (p. 32)

Csikszentmihalyi (1982a) provided an example to illustrate the relationship between flow and the self. The flow model predicts that a beginning tennis player, who plays against other beginners, enjoys the game because challenges and skills are matched. This situation is represented by position A in Figure 3. As the beginning tennis player keeps playing the game, one of three different scenarios is likely to occur. First, both the beginning tennis player and his or her opponent learn new skills and improve existing skills as a result of practicing the game. If this scenario occurs, the

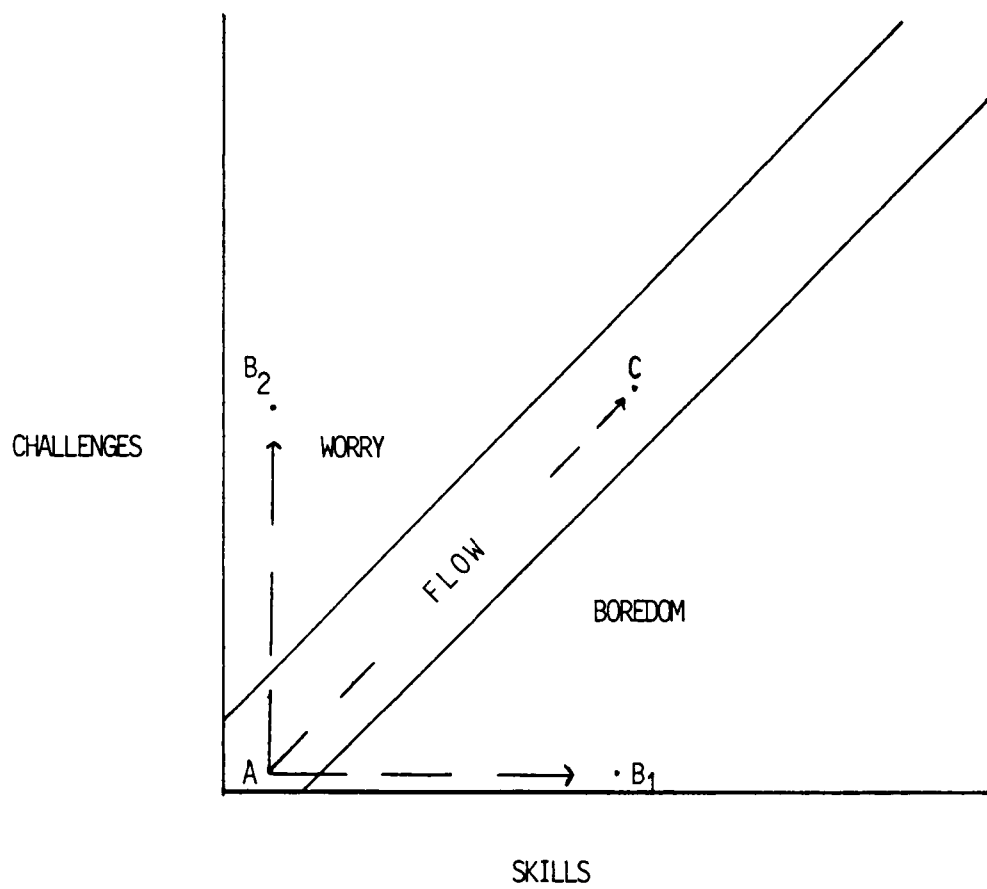


Figure 3. The dynamics of flow (Csikszentmihalyi, 1985, p. 108).

beginning tennis player moves to position C in Figure 3. A second possibility is that the beginning tennis player improves, but his or her opponent does not. In this case, the tennis player, who may no longer be a beginner talent-wise, moves to position B_1 and tends to get bored when playing. If the tennis player is bored, he or she either stops playing tennis or finds more skillful opponents, thus moving back into flow at position C. And finally, the third alternative is that the player's opponents improve at a faster rate. If this occurs, the player moves to position B_2 in Figure 3. At this point, the player does not enjoy the game because he or she keeps losing and the experience is frustrating. Now the player has the option of quitting the game or returning to flow. For example, if the player returns to the game, he or she may do so by playing a less skilled opponent (a move down the flow diagonal to position A perhaps) or by improving his or her skills matching the opponent's skill (a move up the flow diagonal to position C perhaps).

Of particular concern in the relationship between flow and the self is movement up the flow diagonal.

But what does a move up the flow diagonal imply? What is the difference between positions A and C in Figure 3? It is not necessarily true that the quality of the experience changes as one matches higher challenges with greater skills. . . . The difference between A and C on the diagonal is

that C is a more complex experience. It means that the opportunities for action are more difficult to meet and that the abilities being used are more refined. Higher up the diagonal, behavior is more complex because more differentiated responses are required to meet the demands of the situation. Therefore, the experience might be described as being more "deep," since the cognitive and affective skills involved require more psychic energy to acquire, and the attention is more concentrated. It follows that a person who stays in flow will necessarily become a more complex person because the dynamics of the flow process must become more complex as a condition for continued enjoyment. This increased complexity of the self is what is meant by personal growth. (Csikszentmihalyi, 1985, pp. 108-109)

It seems then that Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) has implications for the understanding of the self.

Maslow and Csikszentmihalyi

Csikszentmihalyi (1988a) acknowledged the influence of Abraham Maslow. "His distinction between process and product orientations in creative behavior, which led him to identify peak experiences, was the conceptual framework closest to the phenomena I was trying to understand" (Csikszentmihalyi, 1988a, p. 5). Csikszentmihalyi (1982a) stated that "the relationship between optimal flow experience, boredom, and anxiety seems to hold not only in peak experiences, but to be diffused through everyday life" (p. 17). In addition, Csikszentmihalyi (1985) noted that

Maslow's (1968, 1970, 1971) ideas of metamotivation and growth motivation implied a conception of human motivation similar to his, i.e., behavior cannot always be understood by relating it to reduction or satisfaction of needs already present within the person. More specifically, there are three areas in which Maslow's influence on Csikszentmihalyi can be seen:

1. assumptions about human nature,
2. writings on self-actualization and peak experience, and
3. emphasis on personal growth.

Assumptions of Human Nature

Maslow's (1968, 1970, 1971) work was essentially an effort to build upon the classical psychological approaches, such as behaviorism and psychoanalysis, in the study of human behavior. Maslow (1970) stressed the "profoundly holistic nature of human nature in contradiction to the analytic-dissecting-atomistic-Newtonian approach of the behaviorisms and of the Freudian psychoanalysis" (p. ix). Maslow certainly accepted the available data derived from the classical psychologies while rejecting "the images of man" (Maslow, 1970, p. ix) which they generated. Self-actualization theory and the

concept of peak experience were proposed as additional conceptualizations of human nature to complement rather than repudiate the classic psychological approaches.

Similarly, Csikszentmihalyi (1975a) offered a new model of intrinsic rewards which he termed the flow experience. This new model of flow complemented but did not replace existing mechanistic theories which gave reasonable yet limited interpretations of human behavior. In fact, Csikszentmihalyi (1975a) cautioned against considering any psychological approach or model as an exclusive, "nothing but" explanation of behavior rather than an "as if" explanation of behavior.

There is nothing wrong with the behaviorist or psychoanalytic accounts, as long as they are understood to be as-if models of the phenomena they deal with. But psychologists and laymen often assume that a likely explanation of a behavior is the only explanation, that the explanatory model exhausts the reality in question. The model then ceases to be as if and becomes nothing but. (p. 8)

Underlying the work of Maslow (1968, 1970, 1971) and Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985, 1988a) is a fundamental assumption recognizing a holistic and "as-if" approach to human behavior.

In addition, Maslow's influence on Csikszentmihalyi involved the acceptance of subjective experience as a

legitimate source of information. Maslow (1968) did not question the value of a person's inner experience:

It is unfortunate that we cannot ask a rat to give subjective reports. Fortunately, however, we can ask the human being, and there is no reason in the world why we should refrain from doing so until we have a better source of data. (p. 22)

Furthermore, Maslow (1968) stressed the importance of subjective experience because "the best way of understanding another human being . . . is to be able to see his world through his eyes" (p. 14). Like Maslow, Csikszentmihalyi's (1975a, 1975b, 1978, 1982a, 1985, 1988a) psychological investigations focused on the inner events experienced by the individual and therefore valued experiential data.

Self-Actualization and Peak Experience

Maslow's (1962, 1964, 1968, 1970, 1971) writings on self-actualization and the concept of the peak experience offered similarities with Csikszentmihalyi's (1975a, 1975b, 1978, 1982a, 1985, 1988a) Flow Theory. Maslow's (1968) definition of self-actualization specifically related to Flow Theory:

Self actualization is an episode, or a spurt in which the powers of the person come together in a particularly efficient and intensely enjoyable way, and in which he is more integrated and less

split, more open for experience, more idiosyncratic, more perfectly expressive or spontaneous, or fully functioning, more creative, more humorous, more ego-transcending, more independent of his lower needs, etc. He becomes in these episodes more truly himself, more perfectly actualizing his potentialities, closer to the core of his being, more fully human. (p. 77)

Persons in peak experiences temporarily take on many of the characteristics of self-actualizing people. Maslow (1968) described these peak experiences as "moments of highest happiness" (p. 73).

In addition, peak experiences include characteristics similar to those of the flow experience. The flow element of centering of attention on a limited stimulus field is comparable to the "narrowing of consciousness" and "the total attention, a fascination, a complete absorption" (Maslow, 1968, p. 74) of the peak experience. The loss of ego flow element is similar to descriptions of "egoless" or "ego transcendent" (Maslow, 1968, p. 79) peak experiences. The ego and the world fuse and become one. "The person has incorporated himself with the world" (Maslow, 1971, p. 312). The flow element of merging action and awareness involves a distortion of time perspective, which is comparable to the disorientation of time and space in the peak experience.

It would be accurate to say that in these moments the person is outside of time and space

subjectively . . . so that a day may pass as if it were a minute but also a minute so intensely lived may feel like a day or year. (Maslow, 1968, pp. 80-81)

And finally, analogous to the autotelic nature of the flow experience is the self-validating quality of the peak experience. "The peak experience is felt as a self-validating, self-justifying moment which carries its own intrinsic value with it" (Maslow, 1968, p. 79).

Akin to the autotelic nature and self-justifying moment is an important conceptual similarity between Maslow and Csikszentmihalyi concerning the "end-experience." Maslow himself described his psychology of being as a study of ends rather than means (Hardeman, 1979). As Maslow (1964) wrote, "there are ends in life, i.e., experiences which are so precious in themselves as to prove that not everything is a means to some end other than itself" (p. 75). Because the peak experience is self-validating, that is, carrying its own intrinsic value, it gives meaning to life. "Since peak experiences are end-experiences, they prove that there are things or objects or experiences to yearn for which are worthwhile in themselves. Thus, life is worthwhile" (Maslow, 1964, pp. 62-63). Perfection or subjective completion experienced in anything is an end. The peak experience may occur "any place where perfection

can happen, where means become ends or where a job is done right" (Maslow, 1967, p. 18).

Likewise, Csikszentmihalyi (1978) expounded this same "means-ends" theme. The mechanistic, reductionistic orientations to human motivation consider skills as purely means to ends. However, to recognize the autotelic nature of experience, Csikszentmihalyi (1978) wrote:

We shall have to accept the fact that the exercise of any skill is an end in itself. It is justified first in terms of its own "aesthetics"--whatever structural difficulty is implied by the challenges the skills attempt to overcome. . . . Second, a skill is justified because it provides information about the actor: By exercising his or her skills, a person discovers who he or she is, and this is the main reward of an open interactive system. . . . Finally, a skill is justified, because variation is the first requirement for evolution. If the only skills we emphasize are the currently adaptive ones, we will end up being unable to respond creatively to the new challenges that will have to be overcome if the human race is to take the next step in its development. (p. 211)

Or as Maslow (1970) reported in a study outlining the characteristics of self-actualizing people:

Our subjects make the situation more complex by often regarding as ends in themselves many experiences and activities that are, for other people, only means. Our subjects are somewhat more likely to appreciate for its own sake, and in an absolute way, the doing itself; they can often enjoy for its own sake the getting to some place as well as the arriving. (p. 169)

As suggested in the preceding quotes, the self-validating, autotelic experience itself holds implications for understanding personal growth (Csikszentmihalyi, 1978; Maslow, 1970).

The Way to Personal Growth

Maslow (1964, 1968, 1970, 1971) and Csikszentmihalyi (1982a, 1985, 1988a) emphasized personal growth. Maslow's (1968) focus was on each individual's potential for growth and well-being. He organized human motivation into a hierarchy of needs:

1. Physiological Needs--food, water, air, sleep, sex.
2. Safety Needs--security, stability, protection, order, freedom from anxiety and fear.
3. Belonging and Love Needs--to love and be loved, to establish caring relationships with another, to be a part of a group.
4. Esteem Needs--feeling worthy, confident, secure in oneself, having positive regard for others.
5. Need for Self-Actualization--full development of one's potentiality, to become everything one is capable of becoming.

All human beings are born with the need to grow and develop. When the "lower" or first four needs are mostly

satisfied, then the need for self-actualization appears. Fulfilling the needs at the first four levels is termed "deficiency motivation", i.e., the person is motivated to reduce the tension produced by the deficiency of a specific, lower need. On the other hand, self-actualization is not fulfilling a deficit but enlarging and enriching oneself. Maslow (1968, 1970, 1971) described the self-actualizing individual as "growth-motivated" or "metamotivated." "Self-actualizing people are suitably gratified in their basic needs (of belongingness, affection, respect, and self-esteem) and now are motivated in other higher ways, called metamotivation" (Maslow, 1971, p. 229).

Csikszentmihalyi (1985) also assumed that a person can be motivated "in other higher ways." His classification of human motives moved beyond the basic needs. His concept of "open" motivation was similar to the notions of "metamotivation" and "growth motivation." The issue was not whether behavior could be explained by a deficit or discrepancy in terms of biological or learned needs. The question became one of whether behavior could be explained best "by relating it to causes already present in the organism or in its environment, or to reasons emerging from the organism's interaction with the environment"

(Csikszentmihalyi, 1985, p. 96). Csikszentmihalyi (1985) viewed the distinction crucial, as human beings do things not only because they have to (deficiency motivation), but because they want to (growth motivation).

Additionally, Csikszentmihalyi (1982a, 1985) outlined the implications of flow for the growth of the self. The concept of "open" motivation presupposes an internally organized self capable of interacting with the environment. The self is an ordered pattern of information a person has about him or herself. Since information consists of events in consciousness, the self is also a content of consciousness and survives by assimilating feedback to intentions.

If the intention is accomplished, the information will be incorporated into the self, which will appear to be that much stronger the next time it shows up in consciousness. Of course, if the intention fails, the feedback will usually result in a weakening of the self. (Csikszentmihalyi, 1982a, p. 30)

The constant interchange of information in the interaction of the person and the environment results in a modification of the self. Hence, the potential of the flow experience is seen, i.e., intense involvement in an activity produces feedback that nourishes the self.

It follows that a person who stays in flow will necessarily become a more complex person because the dynamics of the flow process must become more

complex as a condition for continued enjoyment. This increased complexity of the self is what is meant by personal growth. (Csikszentmihalyi, 1985, p. 109)

Maslow (1964, 1968) emphasized that there is knowledge to be gained in the peak experience. The experience itself is a kind of knowledge gained which is self-validating. Another kind of self-validating knowledge gained in the peak experience is "the experience of being oneself, the feeling of what it is like to be really me" (Maslow, 1964, p. 75). Maslow (1968) described the peak experience as an acute identity experience in which a person becomes more truly himself.

We learn what we are good at, what we really like or dislike, what our tastes and judgments and capacities are. In a word, this is the way we discover the self and answer the ultimate questions, Who am I? What am I? (Maslow, 1968, p. 45)

Furthermore, Maslow (1968) suggested that the peak experience has aftereffects upon the person. Some of the suggested aftereffects relate to personal growth, i.e., the peak experience can change a person's view of him or herself, of other people, and of life in general. "This new 'knowledge' can be a change in attitude, valuing reality in a different way, seeing things from a different perspective, from a different centering point" (Maslow, 1964, p. 78).

Both Maslow's (1964, 1968) and Csikszentmihalyi's (1982a, 1985, 1988a, 1988b) emphasis on personal growth suggested the interrelationship of cognition and affect in human experience. Maslow (1968) wrote:

Growth takes place when the next step forward is subjectively more delightful, more joyous, more intrinsically satisfying than the previous gratification with which we have become familiar and even bored; that is the only way we can ever know what is right for us is that it feels better subjectively than any alternative. (p. 45)

Likewise, it seemed clear to Csikszentmihalyi (1988b) that the way of personal growth "depends on the cumulative history of positive feedback one gets in high-challenge, high-skill interactions. It is impossible to develop a strong self by spending most of the time in situations of apathy, boredom, or anxiety" (p. 370).

Csikszentmihalyi and Sport

Sport, and in particular the experience of the sports person, was at the heart of Csikszentmihalyi's (1975a, 1975b, 1978, 1982a, 1985, 1988a) view of human motivation. Indeed, in Beyond Boredom and Anxiety, he utilized the world of play and games as a model to explain Flow Theory. For him, play, games, and sport were one of the few places in modern society where the active, creative, self-motivated dimension of the human being is preserved.

Csikszentmihalyi (1975a) asked 173 respondents, composed of rock climbers, composers, modern dancers, chess players, and basketball players, to rank eight reasons for enjoying the activity in which they were engaged. The reasons they gave ranged from intrinsic (enjoyment of the experience, use of skills, the activity itself) to extrinsic (competition, prestige, glamour, regard). The rankings showed that intrinsic reasons for enjoying the activity were more important than extrinsic ones. There was strong agreement in the sample as a whole concerning what provides enjoyment. However, five of the six responding groups rated the two intrinsic rewards highest, while the sixth group, the basketball players, rated competition and the development of personal skills more highly. It was noteworthy that the basketball players were the youngest and the lowest in socioeconomic status.

Because the tendency to find intrinsic enjoyment is positively related to age, to father's income, and to education, the deviant pattern of the basketball players might be explained by their youth and their relative economic deprivation. Possibly, however, the pattern reflects the activity, rather than the players' background. In other words, basketball, or other competitive sports, may provide a reward structure in which enjoyment comes from measuring oneself against others and from developing one's skills, rather than from experiencing the activity itself. Which of these two explanations fits the facts better is a question for future research. (Csikszentmihalyi, 1975a, p. 18)

As suggested by Csikszentmihalyi (1975a), it is more likely that autotelic reasons for involvement become stronger as one grows older and more affluent. Such an explanation is similar to Maslow's (1968, 1970) "hierarchy of needs" theory, which states that a person is not concerned with self-actualization unless more basic needs--safety, esteem, etc.--are satisfied.

Next, Csikszentmihalyi (1975a) asked why some activities are enjoyable and others are not. He developed a list of 20 items, each a common activity, such as "running a race." The 173 respondents, composed of rock climbers, composers, modern dancers, chess players, and basketball players, checked whether their feelings during a typical bout of their activity were very similar, neutral, different, or very different with respect to the 20 items. The checklist was devised to find out whether the respondents in each activity agreed about the kinds of experiences that their activity provided. The items that the respondents checked as very similar to their own activities had an underlying similarity. The items were those that gave the participants a feeling of novelty and challenge.

It would be difficult to overemphasize the importance of this finding. The fact that some people climb mountains whereas others make up tunes at a piano or push chess pieces across a

board is in a sense incidental to the fact that they are all exploring the limits of their abilities and trying to expand them. Whatever the specific structure of an autotelic activity is like, it seems that its most basic requirement is to provide a clear set of challenges. These can be of two types: the challenge of the unknown, which leads to discovery, exploration, problem solution, and which is essential to activities like composing, dancing, climbing, and chess; or the most concrete challenge of competition, which is important in activities like basketball. (Csikszentmihalyi, 1975a, p. 30)

As Csikszentmihalyi (1975a) noted, competition provides the individual with a set of challenges in which he or she can go beyond the known, stretching his or her capabilities toward new dimensions of skill and competence. Such an explanation fits Csikszentmihalyi's (1982a, 1985a, 1988a) theorizing on the psychology of optimal experience and personal growth.

In The Meaning of Things: Domestic Symbols and The Self, Csikszentmihalyi and Rocheberg-Halton (1981) described their research concerning how and why people in urban America relate to things in their immediate environment--the home. To understand what people are and what they might become, the authors believe that it is essential to look at the relationship between people and things. In their study, sport equipment and sport itself were considered things.

We are to a large extent reflections of the things with which we interact. The things with which people interact are not simple tools for survival, or for making survival easier and more comfortable. Things embody goals, make skills manifest, and shape the identity of their users. (Csikszentmihalyi & Rocheberg-Halton, 1981, p. 1)

Csikszentmihalyi and Rocheberg-Halton (1981) theorized that the things which surround us and the things in which we choose to invest our psychic energy are inseparable from who we are. These things "constitute the framework of our experience that gives order to our otherwise shapeless selves" (Csikszentmihalyi & Rocheberg-Halton, 1981, p. 16). In the interaction between people and things, one becomes conscious of the goals operating in oneself, among other people, and in the environment at large.

Csikszentmihalyi (1982b) addressed the topic of the value of sport for the individual and for society. He suggested that the outcomes of sport are not inherently good or bad but rather there is potential for either. "The same is true of atomic energy, and everything else, including sports. Whether a thing is to be valued or not depends on how it is used; on its consequences within a context of goals" (Csikszentmihalyi, 1982b, p. 123). The role of the sport psychologist is to specify the conditions under which the outcomes of sport are beneficial and

contrarily those conditions under which the outcomes are negative.

In real life, every historical example of sporting activity has some beneficial as well as some harmful consequences. The task of the sport psychologist is to be able to tell the two apart, and then to maximize the positive elements while reducing the negative ones. (Csikszentmihalyi, 1982b, p. 123)

Consequently, Csikszentmihalyi (1982b) proposed a model for guiding the evaluation of sport activities. The model was based on the premise that there were four main types of consequences of sport involvement. The consequences were personal enjoyment, personal growth, social harmony, and social change (growth). An ideal sport activity was one that involved all four outcomes. To the extent that the activity lacked one or more of the four dimensions it might be considered harmful and it surely fell short of its potential.

Whether such sports are to be considered beneficial or harmful depends on what alternatives are available. If this is the best one can do at the moment, they might serve a useful purpose. But there is no question that compared to an optimal activity, which combines all four dimensions of sports, the other combinations are limiting and therefore wasteful. (Csikszentmihalyi, 1982b, pp. 123-124)

Csikszentmihalyi (1982b) reported research pertaining to the personal enjoyment outcomes associated with various

activities, including sports. Utilizing the Experiential Sampling Method (ESM), the personal enjoyment dimension was operationalized. The ESM consisted of giving a person an electronic pager to wear and a booklet containing identical response sheets. Eight times a day, when a person was paged, he or she completed a page in the booklet. Each page contained 30 items of information, ranging from present location of respondent to respondent's feelings on several dimensions. The data reported were from 75 adolescents (14-17 years of age) from the Chicago area; approximately half were male and lower class. So, how did sports compare with other activities on three dimensions of experience (activation, affect, motivation) measured by the ESM?

Considering all three dimensions of experience, sport appears to be over-all the most positive. Hobbies are also enjoyable, but the quality of affect when doing hobbies is much more neutral. Eating and socializing are also very positive, but the activation dimension is much lower than in sports. Thus one can say without qualification that in the lives of these teenagers sport provides the most positive experiences. (Csikszentmihalyi, 1982b, p. 125)

The results confirmed that sport in general was a very positive experience for adolescents.

Chalip, Csikszentmihalyi, Kleiber, and Larson (1984) utilized the ESM to monitor the ongoing experience of 75

adolescents (37 male, 38 female). The underlying assumption of the study was that an important component of the value of sport was in the experience itself. Of the 4,489 ESM observations, 114 were coded into one of the following sport experiences: (a) organized sport, (b) informal sport, and (c) gym class. The researchers interpreted the 114 observations in relation to Flow Theory (Csikszentmihalyi, 1975a). The results showed that most of the adolescents reported challenges to be greater than their skills in organized sport. In gym class, a similar pattern occurred as the adolescents reported an even greater imbalance between challenges and skills because their perception of their skills was lower prior to entering the gym class. It was only in the informal sport setting that a matching of challenge and skill appeared. This suggested that flow was easiest to obtain in informal sport where involvement was controlled by the participant.

Csikszentmihalyi (1975a, 1982b), Csikszentmihalyi and Rocheberg-Halton (1981), and Chalip, Csikszentmihalyi, Kleiber, and Larson (1984) argued that the value of sport cannot be discussed in simple good-versus-bad terms. Rather, the value of sport lies in the experience itself as it is subjectively interpreted by the participant.

Related Research in Sport Utilizing Flow Theory

While Csikszentmihalyi's (1975a, 1975b, 1978, 1982a, 1985, 1988a) Flow Theory was acknowledged to have relevance for understanding motivational and performance concerns in sport, physical education, and leisure, there were few actual data-based studies utilizing Flow Theory to investigate behavior in such settings (Begley, 1979; Gray, 1977; Harris, 1984; McGirr, 1979; Progen, 1978, 1980). Several authors (Deci & Ryan, 1985; Gallwey, 1974; Harris, 1978; Progen & DeSensi, 1984) commented on the worth of flow for understanding behavior in the sport setting. These commentaries, along with the research studies, are reviewed in this section.

Since the interview schedules used by Csikszentmihalyi (1975a) and Gray (1977) were time-consuming, Begley (1979) developed the Activity Experience Questionnaire (AEQ), a self-report measure, to assess flow experiences in physical activities. Fourteen essential dimensions of flow were identified by the author. A five-point Likert scale format was used for the instrument, and three statements were written for each flow dimension. The AEQ was given to one hundred experienced and skilled college performers in seven different physical activities (lacrosse, sailing, tennis, canoeing, dance, gymnastics, running). A factor analysis

and item analysis was used to evaluate the AEQ. Twenty-three statements were selected for the revised AEQ. Both validity and reliability were established for the AEQ. In addition to developing the AEQ, Begley (1979) used a background questionnaire to identify any subject who might have had extensive knowledge of the flow effect. While few of the subjects had been exposed to literature on flow and peak experience, 74% spent from 1 to 4 hours per week seeking information on their activity; 58% owned seven or more books related to their activity; and 42% subscribed to periodicals related to their activity.

In a leisure context, Gray (1977) expanded Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) to middle- and older-age participants and new insights were gained about their favorite leisure activities. No differences were found in the leisure behavior pattern of middle- and older-age persons. The similarity of the two groups in terms of involvement (participation hours, information, clubs, etc.) were noted, and both competitive and noncompetitive involvement forms were prevalent. Reasons for enjoying leisure activities were similar for middle- and older-age participants. The enjoyment response to favorite leisure activities of middle- and older-aged persons reflected the matching of perceived personal skills

with environmental challenges. In essence, flow was descriptive of the middle- and older-aged person's subjective leisure experience. Both the middle- and older-aged persons described their favorite leisure activities in terms of values that emphasized the moral and personal dimensions of their beings rather than competence and social dimensions.

The implications of Gray's (1977) study had relevance for the present investigation. It expanded Flow Theory (Csikszentmihalyi, 1975a) to the middle- and older-aged population. Since the middle- and older-aged persons described their favorite leisure activities in terms of values that emphasize the moral and personal dimensions of their being, the notion of sport as a potential personal growth experience was promoted. This finding also suggested that the behavior of the older adult population needed to be understood in terms of personal meanings attached to the leisure activity.

While Gray (1977) expanded Flow Theory (Csikszentmihalyi, 1975a) to middle- and older-aged persons, Harris (1984) focused on the flow experience in a younger population. Through observation, interview, and group discussion, she developed an understanding of the concepts of fun, excitement, danger, and boredom for 28 Little

League baseball players ages 10-12. Not only did the more experienced players emphasize the fun of baseball more than the less experienced players, but they also included boredom as part of their experience, while the less experienced players did not. Meanwhile, the less experienced players were more concerned with the scary and dangerous elements of their experience than the fun and excitement. Basically though, baseball was fun for the players. In addition, all players concurred that positions with more action, and hence more opportunities to control the game, were the most fun to play. Within Csikszentmihalyi's (1975a, 1975b, 1978, 1982a, 1985, 1988a) theoretical framework, Harris (1984) concluded that the players sought increased environmental complexity in the form of positions with the highest level of action.

Progen (1978, 1981) and McGirr (1979) conducted data-based studies of professional, amateur, and high-risk sports persons. The 60-item Sport Flow Q-Sort developed by Progen (1978) was utilized to generate the data in these studies and yielded evidence to support Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) as descriptive of the high-risk sport experience. Q-Sort responses of 96 high-risk sports persons ranging in age from 17 to 75 were obtained. These 20 women and 76 men

participated in whitewater canoeing and kayaking, parachuting, hang gliding, rock climbing, soaring, backpacking, cross-country skiing, and mountaineering. Analysis of the Q-Sort responses revealed that the flow statements were identified as most descriptive of the high-risk sport experience. Both worry and boredom statements were perceived by the high-risk sport persons as somewhat descriptive of their experience, while the anxiety extremes of worry and boredom and the nonflow statements were uncharacteristic of their experience. Both men and women perceived the high-risk sport experience similarly.

McGirr's (1979) study of 78 professional and highly skilled amateur female golfers provided additional support for Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a). Analysis of the Q-sort (Progen, 1978) responses revealed are that women golfers perceived the flow experiential state and the flow elements to be most descriptive of their sport experience. The boredom statements were least characteristic of the women golfers, while worry statements were somewhat like them. Overall, women professional and amateur golfers perceived their sport experiences similarly. However, more specifically, there were statistically significant differences between the professionals and amateurs on three flow elements:

(a) loss of ego, (b) autotelic nature, and (c) flow. As a group, amateur golfers perceived these flow elements to be more descriptive of their experience than the professional golfers. McGirr (1979) suggested that age and financial security contributed to the differences between the two groups, since the majority of professional golfers were young and not particularly secure financially. Her suggestion was congruent with Csikszentmihalyi (1975a), who theorized that one's ability to experience flow is enhanced as one grows older and as one moves up the socioeconomic ladder.

Progen (1981) explored Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) as it related to the experience of collegiate athletes. Progen refined the Sport Flow Q-Sort as a means of generating flow data and of expanding the generalizability of both Flow Theory and the Sport Flow Q-Sort to more structured competitive sports. An 80-item revised version of the original Progen Sport Flow Q-Sort (1978) was developed and tested on 358 male and female collegiate athletes in the sports of baseball, basketball, field hockey, football, golf, gymnastics, lacrosse, softball, tennis, track, and volleyball. Data analysis included descriptive statistics, correlation coefficients to assess relationships among Flow Theory

constructs, test-retest reliability of the revised Sport Flow Q-Sort, factor analysis, and t-test and analysis of variance to assess differences among the athletes' Q-sorts according to gender and sport.

Progen (1981) confirmed Flow Theory (Csikszentmihalyi, 1975a) as descriptive of the collegiate athlete's competitive experience and her 80-item Sport Flow Q-Sort as a reliable instrument to generate data about flow. Specifically, the flow experiential state and elements were perceived by the athletes to be more descriptive of their experience than the worry and boredom experiential state or the anxiety extremes of worry and boredom. As for the flow elements in particular, centering of attention and control were most like the athletes, whereas clarity and loss of ego were least characteristic of the athletes. No gender or sport differences were found. Both male and female athletes perceived the flow experiential states and elements similarly. Athletes' perceptions of enjoyment were similar regardless of their sport affiliation.

Several authors (Deci & Ryan, 1985; Gallwey, 1974; Harris, 1978; Progen & DeSensi, 1984) implied that flow was important for understanding motivational and performance concerns in sport and for understanding the significance of the inner experience of the athlete. While these authors

did not provide an empirical design to generate data, they were nevertheless worthy of mention.

Harris (1978) proposed a perspective of play and sport incorporating Csikszentmihalyi's (1975a, 1975b, 1978, 1982a, 1985, 1988a) Flow Theory. She acknowledged the potential of experiencing enjoyment, as well as worry and boredom, in both play and goal-directed behavior such as sport. Furthermore, by combining worry, boredom, and flow with two other internal psychological states of playfulness and goal-directedness, Harris (1978) outlined six internal attitudes that an individual may experience while participating in an activity: boring goal-directedness, anxious goal-directedness, enjoyable goal-directedness, boring playfulness, anxious playfulness, and enjoyable playfulness.

Since the study of subjective experience has always been difficult for psychologists, it was largely ignored in favor of a behavioristic orientation. In the realm of sport, however, some writers took a more experiential approach. For example, Progen and DeSensi (1984) advocated the application of theoretical frameworks from outside physical education to study subjective interpretations of the sport experience. They presented the theoretical concept of flow (Csikszentmihalyi, 1975a) as an example of

how theory could be used to study elusive and often complex phenomena in sport.

Meanwhile, Gallwey (1974) emerged in the popular literature to champion the cause of the inner, subjective experience in sport, specifically in tennis. He outlined two experiential states within the athlete, which he designated Self 1 and Self 2. Self 1 or the ego-mind, the conscious teller, involves the experience of a judgmental inner voice that tells the athlete how to perform a certain skill and then evaluates the "goodness" or "badness" of the performance as well as the performer himself or herself. Gallwey proposed that the activity of Self 1 interferes with the natural doing processes of Self 2, and thus performance is hindered. Self 2 was experientially described as the non-self-conscious, spontaneous, automatic doer. One is completely absorbed in the task at hand. There is a quieting of the ego-mind (Self 1) and a trusting of the body.

When a tennis player is "on his game," he's not thinking about how, when, or even where to hit the ball. He's not trying to hit the ball, and after the shot he doesn't think about how badly or how well he made contact. The ball seems to get hit through an automatic process which doesn't require thought. There may be an awareness of the sight, sound, and feel of the ball, and even of the tactical situation, but the player just seems to know without thinking what to do. (Gallwey, 1974, p. 31)

Essentially, Gallwey's (1974) description of Self 2 was similar to descriptions solicited in Csikszentmihalyi's (1975a, 1975b) interviews with individuals who had experienced flow.

Deci and Ryan (1985) argued that sport was one of the few places left in today's world where intrinsic motivation was most germane because people engage in sport to have fun and to feel free. The nature of modern economic and technological forces provides little opportunity for intrinsic enjoyment and the experience of self-determination. Indeed, their discussion highlighted Csikszentmihalyi's (1975a, 1975b, 1978, 1982a, 1985, 1988a) major premise, i.e., flow emerges when the opportunities for action are in balance with one's capabilities. Whereas Deci and Ryan (1985) agreed with this premise, they added that the experience of self-determination is an implicit condition of the flow experience.

Truly intrinsically motivated activity may produce the experience of flow, the total, non-self-conscious involvement with the activity that yields the fullest experience and most refined performance. Further, the study of inner experience, particularly with respect to self-determination, may yield the fullest understanding of motivation for sports. Indeed, we suggested the study of inner experience is necessary for a full understanding of human motivation, and perhaps for the most interesting and useful psychology. (Deci & Ryan, 1985, p. 333)

Maslow and Sport

Maslow (1962, 1964, 1968, 1971) himself made reference to the experiential aspect of sport involvement. His basic assumption was that human movement provides an avenue to peak experience.

The rhythmic experience, even the very simple rhythmic experience--the good dancing of a rumba, or the kinds of things that kids can do with drums: I don't know whether you want to call that music, dancing, rhythm, athletics, or something else. The love for the body, awareness of the body, and a reverence of the body--these are clearly good paths to peak experiences. (Maslow, 1971, p. 176)

As in the quotation above, Maslow (1968) assumed that peak experiences occur in "certain forms of athletic fulfillment" (p. 73). And furthermore, he insisted that if one equates the peak experience with a religious experience then "religious experiences can be produced by athletic success" (Maslow, 1964, p. xii).

However, Maslow (1964) noted that peak experiences come from many sources and to every kind of person. Peak experiences occur "in the kitchen, or the factory, or on the basketball court--anyplace where perfection can happen, where means become ends or where a job is done right" (Maslow, 1962, p. 18). While there are many paths to peak experiences, the subjective experience tends to be similar.

If a mathematician and a poet use similar words in describing their peak-experiences from a successful poem and a successful mathematical proof, maybe they're more alike subjectively than we thought. I can make parallels between a high school athlete running to a touchdown, a businessman describing his feelings over plans for a perfect fig canning factory, a college student catching on to the Adagio movements of Beethoven's Ninth Symphony. (Maslow, 1962, p. 12)

Related Research in Sport Utilizing Peak Experience

Maslow's (1962, 1964, 1968, 1970, 1971) conceptual framework was applied to the realm of sport and leisure activities. Martens (1978), Ravizza (1973, 1977), Ibrahim and Morrison (1976), Schindler and Waters (1986), and Privette (1981a, 1981b, 1982) studied the peak experience in sport. Although methodologies of the studies differed, the conclusions reached were similar in their support of Maslow's (1962, 1964, 1968, 1970, 1971) framework for understanding behavior in sport.

Martens (1978) identified the peak experience (Maslow, 1962, 1964, 1968, 1970, 1971) and the flow experience (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) as experiences that provided a clue into the nature of the sport peak experience. She utilized a philosophic method of inquiry which allowed her to create a framework from which to draw conceptual relationships. Characteristics common to both the peak experience and the sport peak

experience were spontaneity, purposelessness of the experience, ego transcendence and loss of self, altered perception, ineffability, continuum of intensities, and union with an Other. Similarities between the individual's internal perceptions of the peak experience and the sport peak experience included a different perceptual orientation, intuitive rather than rational cognition, richer understanding, increased sensitivity, awareness of perfection and correctness of experience, simultaneous feelings of power and helplessness, and union with a greater entity. The physical element was important in the sport peak experience, whereas it was relegated to an inferior position to the mind and spirit in the peak experience. And finally, similar preexisting conditions of the peak experience and the sport peak experience were found, i.e.: (a) letting-go, (b) readiness, (c) proficiency, (d) positive attitude, (e) total commitment, (f) concentration, and (g) intention.

Ravizza (1973, 1977) interviewed twenty athletes about the experience of their greatest moments in sport to determine if these moments were peak experiences and to describe the nature of these experiences. He concluded that the athletes' reports contained many similarities to Maslow's (1964, 1968, 1970, 1971) description of the peak

experience. Furthermore, the athletes' descriptions of their greatest moments yielded many similarities with the concepts proposed in Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a): (a) total attention (centering of attention), (b) transcendence of ordinary self (temporary loss of ego), (c) union with the experience as a whole (merging action and awareness), (d) self-validating experience (autotelic nature), (e) disorientation of time and space, and (f) ultimately enjoyable, pleasant, ecstatic (flow). Hence, Ravizza's (1973, 1977) description of the state of consciousness during a sport peak experience was like those of Csikszentmihalyi (1975a, 1975b) in reporting on the flow experience.

Ravizza (1973, 1977) pointed out that both the emotional and cognitive aspects of sport could be very intense and were important for understanding the total sport experience. "The inclusion of athletes' subjective experiences along with more traditional sport research will allow for a more complete investigation of the total sport experience than has been previously possible" (Ravizza, 1977, p. 40). It was interesting to note that Ravizza (1977) reported that few of the athletes he interviewed view their sport peak experiences of pivotal importance in

their lives. The athletes participating in Ravizza's (1973, 1977) study ranged in age from 19 to 40. These young adults reported sport peak experiences that tended to be more of a body experience and less of a cognitive or reflective experience.

Ibrahim and Morrison (1976) compared 200 high school and college athletes and nonathletes along two dimensions: self-actualization and self concept. In general, both male and female high school and college athletes were average in their self-actualizing traits and less than average in their self concepts than their nonathletic counterparts.

Schindler and Waters (1986) investigated whether men and women at different levels of athletic involvement differ in their levels of self-actualization. Along with the Personal Orientation Inventory (POI), 200 subjects completed a questionnaire to assess their level of involvement in sport and physical activity (athlete, recreational, participant, nonathlete). In general, women scored higher on self-actualization than men, but male and female athletes were similar. Male athletes were significantly more self-actualized than the nonathletic males only, while women's self-actualization scores were not affected by level of involvement. The researchers

concluded that men needed the athletic environment to attain self-actualization, whereas women did not.

Privette (1981a, 1981b, 1982) initiated research to determine if there were common elements among peak performances in different activities, such as the arts, sports, heroic deeds, intellectual pursuits, human relationships, etc. For the purposes of her research, Privette defined peak performance as "behavior that transcends or goes beyond a person's usual or average functioning" (Privette, 1981a, p. 58). While peak performance shared semantic similarities with Maslow's (1962, 1964, 1968, 1971) peak experience, it was defined as an independent experience by Privette.

In her initial investigation, Privette (1981a) collected data from 120 subjects, 45 men and 75 women ranging in age from 16 to 65. The subjects were members of four equal-size groups: (a) college students in introductory psychology, (b) college students in creative arts, (c) people enrolled in adult education, and (d) graduate students in counselor education. The data were generated by a questionnaire developed by the researcher. The questionnaire consisted of four parts: (a) an open question eliciting a narrative of personal peak performance, (b) a Likert-type scale rating the importance

of 73 items for peak performance, (c) an open question related to average behavior, and (d) a Likert-type scale of 73 items rating average behavior. "To explore a level of behavior, the appropriate control was not a different, comparable group but a different, comparable experience. Thus, the anchor or control was the typical behavior of the same person in the same activity" (Privette, 1981a, p. 60). The methodology outlined in this initial study provided the basis for further study by Privette (1981b; 1982).

Privette (1981a) identified the following factors as having a positive association with peak performance: clear focus, immediate involvement, involvement vs. doubt/other orientation, impulsion toward closure, spontaneity, freedom from outside restraints, inner freedom, awareness of peak performance, peak experience, intentionality, expression/understanding of self, and meaningful response to another person. Comparing peak performance among the four groups (psychology, creative arts, adult education, and graduate counseling) and between males and females yielded no significant statistical differences at the .001 level using Wilk's Lambda criterion and canonical correlations. Privette (1981a) concluded that peak performance was an independent experience perceptually different from average behavior.

In further research, Privette (1981b) identified a subgroup of 20 subjects from the total group (N=120) whose personal peak performance was a sport experience. The following nine factors had a strong positive association with peak performance for both the total group and the sports subgroup: clear focus, involvement vs. doubt/other-orientation, awareness of peak performance, peak experience, intentionality, immediate involvement, movement toward closure, spontaneity, and inner freedom. Furthermore, an additional factor, prior interest and fascination vs. newness, was an important descriptor of peak performance for the sport subgroup, but not the total group of respondents in Privette (1981a).

From these results, Privette (1981b) described a picture (albeit a tentative one) of athletic peak performance. It began with clear focus. Attention and energies were focused in a single direction. With an object clearly in focus, a person responded in a spontaneous, effortless, and unrestrained manner. Privette mentioned that Csikszentmihalyi's (1975a) flow was an "elegant fit" for the behavior athletes described as characteristic of peak performance in sport. Also, with the clear focus came intentionality--the will to behave in a superior way. Nothing extraneous interfered as the

athlete moved toward successful closure. Many athletes expressed their awareness of performing at a superior level. Privette (1981b) reported that the athletic peak performance was also a peak experience as described by Maslow (1962, 1964, 1968, 1970, 1971). "The picture that emerges in critical incidents of peak performance in sports is one that includes involvement of self and intention. In the moment of peak performance the centered self encounters the object of focus in a dynamic interaction" (Privette, 1981b, p. 57).

In continued study, Privette (1982) further analyzed the data collected in Privette (1981a) and developed a topology of peak performance. "Key experiential discriminators of peak performance in sports include spontaneity, a click of functional autonomy, power and joy, loss of time and space intention, peak experience, a strong sense of self, and fascination" (Privette, 1982, p. 247). Privette stressed clear focus, strong sense of self, and the association of power with joy as the key results of the experiential topology.

Privette (1981a, 1981b, 1982) concluded that Maslow's (1962, 1964, 1968, 1970, 1971) peak experience occurred frequently sport, and the accompanying inner experience of the athlete was similar to the subjective experience of

individuals in other areas of life. Implicit in her investigative approach was the belief that experiential correlates of behavior were essential to not only understanding the sport participant but sport itself.

The Encapsulation Model

The predominant assumption about cognitive change during the adult years is that cognitive performance becomes slower with age. However, in a review of the cognitive aging literature, Hoyer (1985) advocated a more comprehensive model of cognition; one that took into account both the empirically demonstrated gains and losses in various aspects of cognitive functioning with age. His model of cognition recognized that while some information processing skills may show decline with age, some age-related gains in cognitive performance were common on tasks which were dependent on experienced-based accumulated knowledge, or which were personally meaningful.

The Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) of adult cognition addressed both the deficits and the advances of cognitive functioning that may occur in older adulthood. It acknowledged declines that take place in the information processing aspect of cognition while highlighting the cumulative learning and experience-based

knowledge that enables older adults to continue to perform adequately and even more skillfully in real world contexts. The Encapsulation Model (Rybash, Hoyer & Roodin, 1986) was unique in that it considered the individual's personal history and commitment to self as major influences of cognition in older adulthood.

Domain-Specific Knowledge

Essentially, the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) proposed that the processing, knowing, and thinking strands of human cognition become encapsulated in domains as one grows older. The authors described the growth of domain-specific knowledge during the adult years:

Constructed through direct experience, such knowledge is not necessarily diminished nor lost as a function of advanced age. It remains extant, whole, and accessible, rarely undergoing major deficit unless pathological degeneration of the nervous system occurs. Adults maintain and enhance their knowledge domains, such that encapsulated knowledge becomes more sophisticated, automated, and intuitive with advances in chronological age. These domains of expertise are a product of the individual's unique personal history, accumulated experience, and perceived mastery, control, and competence.
(p. 152)

The encapsulation of processing, knowing, and thinking within specific domains was a necessary and adaptive feature of adult cognitive development.

Exactly what is meant by domain? From a neurophysiological perspective, Baddeley (1982) defined a domain as an area of memory containing a rich network of links and associations. Human cognition involves the representation and use of substantive knowledge, and knowledge is roughly organized into categories called domains. Rybash, Hoyer, and Roodin (1986) described the domain:

Individuals, we propose, construct unique domains of knowledge via the encapsulation process. From this functionalist perspective, domains are acquired representations of different areas of cognitive involvement. Thus, we suggest that the developing organism is relatively self-organizing with regard to the number and nature of domains.
(p. 17)

In other words, individuals create their own unique domains of knowledge based on their cognitive involvements with others and the environment. While there may be some innateness to the development of some knowledge domains (e.g., language), wide individual differences are seen in the domains constructed. "People seem to build their own knowledge systems to forms (or foundations) that represent how they use their mental resources. In this sense, domains are representations of different cognitive involvement on the part of individuals" (Rybash, Hoyer, & Roodin, 1986, p. 4).

Emergence of Personal Knowledge

Viewing the adult years as involving more changes in the self than any other domain, Roodin and Rybash (1985), Roodin, Rybash, and Hoyer (1986), and Rybash, Hoyer, and Roodin (1986) proposed a domain of personal knowledge which emerges from interactions with the social environment. Knowledge of self and others is derived from the matrix of interactions in which one assesses the impact of his or her behavior on other people and the impact of others' behavior on him or her. Both the evaluation of the self and the social environment are integral components of adult cognitive development.

Although not addressing the issue of adult cognitive development, Gardner (1983) wrote of a similar idea regarding a domain of personal knowledge. He argued for the existence of several relatively autonomous human intellectual competencies, which he termed human intelligences. His family of six intelligences included language, music, spatial, logical-mathematical, bodily-kinesthetic, and personal. According to Gardner (1983), there were two forms of personal intelligence:

To be sure each form has its own pull, with the intrapersonal intelligence involved chiefly in an individual's examination and knowledge of his own feelings, while the interpersonal intelligence looks outward, toward the behavior, feelings, and motivations of others. (pp. 240-241)

The influence of one's culture on his or her personal knowledge was also emphasized. "It is indeed through the symbol system of one's culture that personal intelligences come to assume their characteristic form" (Gardner, 1983, p. 274).

Cognition and Affect

Psychologists in general ignored the role of affect in cognitive development (Dunlop, 1984; Gruenich, 1985; Roodin & Rybash, 1985; Zajonc, 1980). Although feeling and emotion are extremely elusive phenomena empirically, Zajonc (1980) argued that affect should be treated with more respect.

If we stop to consider just how much variance in the course of our lives is controlled by cognitive processes and how much by affect, and how much the one and the other influence the important outcomes in our lives, we cannot but agree that affective phenomena deserve far more attention than they have received from cognitive psychologists and a closer cognitive scrutiny from social psychologists. (Zajonc, 1980, p. 172)

The import of affect in cognitive development was recognized by Roodin and Rybash (1985), who stated that "affect provides the 'glue' or attention for intense social cognitive processing" (p. 124).

Recently, the relation between cognition and affect was debated in the literature (Lazarus, 1982; Zajonc, 1980, 1984). Zajonc (1980, 1984) asserted that affect and cognition were under the control of separate and partially independent psychological systems that influenced each other in a variety of ways and that affect (emotions) could occur prior to cognitive processes. Meanwhile, Lazarus (1982) viewed cognitive activity as a necessary condition of emotion. All emotional responses were preceded by some basic cognitive processing, which he termed appraisal. "Cognitive appraisal means the way one interprets one's plight at any given moment and this is crucial to an emotional response" (Lazarus, 1982, p. 1019).

A third perspective on the relation of affect and cognition developed in the literature (Dunlop, 1984; Lazarus & Lazarus, 1990; Rybash, Hoyer, & Roodin, 1986); a perspective that did not debate the primacy of affect or cognition but one that stressed integration and interdependence. Dunlop (1984) noted that affect and cognition were present in all experience and could not be disentangled. While prominence may be given to one or the other, ultimately they formed an indistinguishable whole. From a therapeutic vantage point, Lazarus and Lazarus (1990) left the primacy issue and postulated that "affect

is the product of the reciprocal interaction of behavior, sensation, imagery, cognitive factors, and biological inputs, usually within an interpersonal context" (p. 200).

There was an emphasis on the interdependence of cognition and affect in the emergence and growth of the domain of personal knowledge (Roodin & Rybash, 1985; Rybash, Hoyer, & Roodin, 1986). The same stimuli may be processed by both affective and cognitive means. According to Roodin and Rybash (1985), "one of the more powerful triggers of basic schematic representations appears to be affect" (p. 123). Furthermore, the authors contended that with affective involvement in an activity, cognitive processes were maintained and enhanced as one grows older. Because Rybash, Hoyer, and Roodin (1986) painted a different picture of adult cognition than "the irreversible decrement model developed from affectively neutral and ecologically irrelevant laboratory studies of componential processes" (p. 144), they also postulated that through the encapsulation process, both cognition and affect were employed to construct the domain of personal knowledge.

In summary, the major points of the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) as they relate to the present investigation were as follows:

1. Both the deficits and the advances of cognitive functioning that may occur in adulthood must be addressed.
2. The growth and encapsulation of domain-specific knowledge was the most salient feature of adult cognitive development. Furthermore, the knowledge which adults possessed within self-constructed domains did not fit a universal decrement model of aging.
3. Since the evaluation of the self and the social environment were integral components of adult cognition, the emergence of a domain of personal knowledge was proposed.
4. The interdependence of affective and cognitive means of processing experience was crucial to the emergence of the domain of personal knowledge.

The importance of the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) was that it did not neglect real-world cognitive functioning. Human cognition had a functionally adaptive, goal-directed quality that could be observed

within the context of real-life, personally meaningful activities.

CHAPTER 3

PROCEDURES

The purpose of this investigation was to describe the perceptions of older adult tennis players from an affective (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) and a cognitive perspective (Rybash, Hoyer, & Roodin, 1986). The intent of the investigation was to examine the subjective experience of the participant. It was committed to understanding motivation from the participant's own perspective. Accordingly, the methodological approach taken was a qualitative one. Qualitative methodology referred to research that yields descriptive data, such as people's own written or spoken word (Taylor & Bogdan, 1984). A demographic questionnaire, the Progen Sport Flow Q-Sort (Progen, 1978), and an interview were used to generate the data of the study. This chapter includes information on: (a) the selection of participants, (b) the rationale for selection and development of assessment techniques, (c) the collection of the data, and (d) the methods used to analyze the data.

Selection of the Participants

Because of the scarcity of information on the motivational patterns of older adults, one of the fastest growing segments of the U.S. population, older adult tennis players were the focus of the present investigation. The participants were selected from among personal acquaintances of the investigator. The objective in selecting the participants was to include a range of ages and not to limit representation to a few ages. This method of selecting participants was chosen because it was the sampling technique used by Maslow (1970) in his study of self-actualizing people.

Due to the nature of qualitative research and the time constraints of the dissertation process, the present investigation was limited to 10 participants with an equal number of males and females. The 10 older adult tennis players ranged in age from 40-75 years. The age range for the female participants was 40-75 years, while the age range for the male participants was 52-73.

The investigator contacted each participant by phone to explain the research project and to invite them to participate in the project. If the participant indicated a willingness to participate, a time and place was scheduled for the first data collection session.

Rationale for Selection and Development
of Assessment Techniques

Due to the complexity of human behavior in real-life settings, several techniques were utilized to generate the data in this study: (a) a demographic questionnaire provided information about each participant's tennis history and current experience, (b) the Progen Sport Flow Q-Sort (Progen, 1978) and an interview generated information concerning the older adult's affective perspective (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a), and (c) an interview generated information regarding the older adult's cognitive perspective (Rybash, Hoyer, & Roodin, 1986). The use of several research techniques was essential if the perceptions of older adult tennis players in real-life sport contexts were to be explained.

The demographic questionnaire (Appendix C) provided a framework from which the investigator interpreted the older adult tennis player's affective and cognitive perspectives. This framework was obtained by having each participant complete the demographic questionnaire (Appendix C), which asked for information about the participant's age, gender, socioeconomic status, educational achievement, personal tennis history, and current tennis experience.

Since the interview played such an integral part in generating information about the affective (Csikzentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) and the cognitive perspectives (Rybash, Hoyer, & Roodin, 1986), the rationale for its development and use was important. After reviewing the theories of Csikszentmihalyi (1975a, 1975b, 1978, 1982a, 1985, 1988a) on the flow experience, and of Rybash, Hoyer, and Roodin (1986) on adult cognition, interview questions (Appendix A) were developed to capture the essence of each of these theories and were evaluated by an expert. Also, the interview questions (Appendix A) were pilot tested with a comparable age group ($N = 3$) of individuals and were modified to accomplish the objectives of the investigation. Modifications consisted of rewording some of the questions. The process of pilot testing allowed the investigator to gain experience in conducting an interview and to practice the audiotaping of the interview. The audiotaped practice interviews and investigator's interpretations were evaluated by an expert.

Because of the complexity of affective and cognitive phenomena in a real-life context, the use of a qualitative research technique, such as the interview, was essential. The interview allowed the older adult to describe his or

her tennis experience relatively free of the investigator's own bias toward the older adult experience. In addition, the inductive nature of qualitative methodology allowed for the development of insight and understanding from patterns in the data rather than simply assessing data in terms of preconceived hypotheses (Lincoln & Guba, 1985; Taylor & Bogdan, 1984).

Assessment of the Affective Perspective

A combination of research techniques were utilized to assess the perceptions of the older adult tennis players from an affective perspective. The two research instruments chosen to generate the data were the Progen Sport Flow Q-Sort (Progen, 1978) and the interview.

The Progen Sport Flow Q-Sort (1978) (Appendix B) was systematically designed to represent the theoretical constructs of Csikszentmihalyi (1975a) in the context of sport. There were two versions of the Progen Sport Flow Q-Sort (1978, 1981). The major difference between the 1978 and the 1981 versions was the number of items; the 1981 version contained the original 60 items plus an additional 20 items. Based on her experience utilizing both

instruments, Janice Progen recommended the original 60-item Q-sort rather than the bulkier 80-item Q-sort.

Sixty statements comprised the Progen Sport Flow Q-Sort (1978) (Appendix B). By sorting the self-reference statements, the theoretical constructs of flow (Csikszentmihalyi, 1975a) were measured. Eighteen statements reflected the experiential state of flow. Of these, three statements pertained to each of the six flow elements: (a) merging of action and awareness, (b) centering of attention, (c) loss of ego, (d) control of action and the environment, (e) noncontradictory demands for action with clear, unambiguous feedback, and (f) autotelic nature. The experiential state of worry was represented by 18 items; nine reflected the feeling (worry) that occurs when skill is slightly inferior to the challenges at hand, and nine reflected the intensified feeling (anxiety-worry) that occurs when skill is greatly inferior to the challenges at hand. The experiential state of boredom was also represented by 18 statements or items. Of these, nine items depicted the feeling (boredom) that results when skill is slightly superior to meeting the challenges of the activity, while the other nine items depicted the intensified feeling (anxiety-boredom) that

occurs when the skill of the performer is greater than that required by the challenges of the activity. And finally, six nonflow items, corresponding to each of the flow elements, completed the Progen Sport Flow Q-Sort (1978).

Of the original 60 statements in the Progen Sport Flow Q-Sort (1978), four were revised by Progen (1981) based on her research experience with the instrument. The revised statements (6, 32, 37, 50) more accurately represented the constructs of Csikszentmihalyi (1975a), and thus, they were included in the Q-sort utilized in this investigation.

An unforced distribution of the sort responses was obtained in the collection of the data. The sorters were free to assign any number of statements to the seven columns on a self-descriptive continuum ranging from "most like me" to "least like me" (Appendix G). This meant that each sorter's distribution of statements did not approximate a normal curve in most instances. However, overriding consideration was given to the freedom of the sorter. Gaito (1962) and Jones (1956) related that imposing a fixed distribution on the sorter has the potential to distort the participants' self-perceptions by eliminating their spontaneity in the sorting exercise. Also, Janice Progen recommended the unforced distribution.

Progen (1981) found the Sport Flow Q-Sort to be reliable as Kendall Tau correlation coefficients for test-retest data were positive and significant ($p \leq .05$). Since each statement in the Q-sort was approved by Csikszentmihalyi himself (Progen, 1978, 1981), the instrument had face validity for assessing the constructs of flow theory in sport.

The interview (Appendix A) allowed the older adult to elaborate on the experience of taking the Progen Sport Flow Q-Sort (1978) and to describe his or her own tennis experience from an affective perspective free from the constraints of quantitative measurement. Interview questions 1, 2, and 3 asked the older adult to describe his or her experience in taking the Progen Sport Flow Q-Sort (1978). Interview questions 4, 5, 6, 7, 8, 9, and 10 asked the older adult to describe his or her perceptions of the tennis experience from an affective perspective. In the closing or debriefing section of the interview, question 16 asked the older adult to describe the experience of the interview itself.

Assessment of the Cognitive Perspective

Due to the complex nature of the phenomena under study, a qualitative research technique was the used to

assess the perceptions of the older adults from a cognitive perspective. The interview (Appendix A) developed for the present study also provided a cognitive, reflective line of questioning. Interview questions 10, 11, 12, 13, 14, 15, 17, and 18 asked the older adult about his or her perceptions about the tennis experience from a cognitive perspective. The interview allowed the investigator to explore the potential interrelationship of affect and cognition in the older adult's perception of his or her tennis experience. Interview questions 10 and 11 provided information about this potential interrelationship.

Collection of the Data

The schedule for collection of the data consisted of three sessions with each participant. The first session involved the completion of the informed consent, the administration of the Progen Sport Flow Q-Sort (1978), and the demographic questionnaire. The second session consisted of the initial interview between the participant and the investigator. And, the third session involved the participant and the investigator in a follow-up interview. The first and second data collection sessions occurred within 48 hours of each other, while there was a time span

of 1-2 weeks between the second and third data collection sessions.

The First Data Collection Session

The first data collection session involved the completion of a statement of informed consent (Appendix D) describing the purpose of the study and the nature of the individual's participation was presented in accordance with the University of Tennessee regulations. Then the Progen Sport Flow Q-Sort (1978) (Appendix B) was administered. The participant was given a pencil, a Q-sort response sheet (Appendix G), and a deck of 60 cards. Each card contained a numbered statement from the Progen Sport Flow Q-Sort (1978). The investigator explained the Q-sort directions to the participant from a prepared script (Appendix F). The participant was asked to complete the demographic questionnaire (Appendix C) after which a time and a place for the second session was scheduled.

As a part of the data collection process, the investigator kept a reflexive journal (Lincoln & Guba, 1985) or diary in which the investigator, after each data collection session, recorded such information as the following: (a) the investigator's impressions of the interview, (b) any pertinent conversations that might have

occurred outside the interview setting, (c) any methodological concerns or decisions made during the analysis of the interview data, and (d) the themes emerging from the interview data and the investigator's interpretations of these themes. Journal entries were also made as the transcribed interviews were read and reread by the investigator. The role of the reflexive journal in the analysis of the interview data will be mentioned later in the chapter.

The Second Data Collection Session

During the second data collection session, consisting of the initial interview, a nonjudgmental manner was assumed by the investigator. This attitude of understanding and empathy was intended to reassure the participant that his or her thoughts and feelings were worthy (Benjamin, 1981). When the participant was talking, the investigator allowed him or her to talk freely and not only listened to what was said, but also attended to the nonverbal gestures of the participant. The investigator brought to the interview an attitude of sensitivity and respect for the participant (Taylor & Bogdan, 1984). Initially, the approach of the investigator was to establish rapport with the participant. Every attempt was

made to conduct the interview in a professional, yet relaxed manner, i.e., a manner that resembled the way people naturally talk to each other.

The initial interview was audiotaped for subsequent transcription. While the participant knew that he or she was being audiotaped, the recorder's presence was minimized. The setting of the initial interview was chosen by the participant, but in a place where the interview occurred without interruption.

The interview questions (Appendix A) dealing with the participant's experience of taking the Progen Sport Flow Q-Sort (1978) allowed the investigator and the participant to develop rapport and to ease into the interview. It was important not to "push the agenda too early" (Taylor & Bogdan, 1984, p. 88).

The interview guide (Appendix A) reminded the investigator of the pertinent questions to ask concerning the affective and cognitive perspectives. Probing questions were included for the affective perspective and were designed to encourage the participant to provide a thorough description of his or her tennis experience. The investigator played a crucial role in deciding how to phrase the questions and when to ask them during the course of the initial interview. The initial interview concluded

with a debriefing or closing section, which allowed the participant to share his or her thoughts and feelings about the content and the procedures of this session.

The Third Data Collection Session

The third data collection session consisted of a follow-up interview between the participant and the investigator. A summary of the information generated by the Progen Sport Flow Q-Sort (1978) and the investigator's interpretations of the themes emerging from the initial interview was shared with the participants, and they were asked if this was an accurate picture of what they were meaning. The participant then had the opportunity to clarify and to elaborate on this information. Taking the information back to the participant for comment, verification, and elaboration served as a means of validating the investigator's interpretation of the information. This procedure has been called a member check (Lincoln & Guba, 1985), source checking (Locke, 1989), and getting feedback from the informants (Miles & Huberman, 1984). The follow-up interview concluded with the participant sharing his or her thoughts and feelings concerning any aspect of the study.

Methods Used to Analyze the Data

For the group of participants as a whole, descriptive statistics were derived from the demographic questionnaire and the Progen Sport Flow Q-Sort (1978). This information provided a framework to aid the investigator in interpreting the interview data.

Analyzing the interview data was a two part process, proceeding: (a) simultaneously with the collection of the data, and (b) after the data collection was finished. This continual process was an important facet of an inductive methodology in analyzing qualitative research.

Analysis of the interview data actually began after the first data collection session with a participant as an entry was made in the investigator's reflexive journal. This journal entry provided information that helped the investigator in the next data collection session or in the organization and interpretation of the patterns or themes that emerged from the interview data. As described earlier, the investigator made a reflexive journal entry after each data collection session. Also, after the second and third data collection sessions, the audiotaped interviews were transcribed. Only the investigator knew the identity of the participant.

Prior to the investigator reading the transcription of the initial participant's first interview, a start list of codes was developed (Appendix H) to help the investigator organize and retrieve pieces of interview data. For clarification, a code was simply an abbreviation for a segment of words, usually a sentence or paragraph of transcription that stood on its own (Miles & Huberman, 1984). The code was not an a priori theme into which the interview data would be forced, rather the code described what the participant said. The start list of codes (Appendix H) corresponded to the interview questions (Appendix A) and simply identified the participant's response to a specific interview question. For easy reference, the start list of codes (Appendix H) was displayed before the investigator during the analysis of an interview transcription. When the participant's response was not related to a specific interview question, an additional code was instituted to identify the particular segment of words. The reflexive journal provided the means of noting the additional code.

The first reading of a transcription served to reorient the investigator to a particular participant and the environment of the interview. Then the transcription was reread and coded according to the start list of codes

(Appendix H). On subsequent readings of the transcription, the remaining interview data was coded. The investigator recorded in the reflexive journal an explanation of the code. A final reading of a transcription served to code any material that had not been coded at an earlier reading but which now clarified the motivation of the participant.

The coded interview data provided the investigator with a filing system (Miles & Huberman, 1984). For example, all units of information coded - FEXP - were placed together. This allowed the investigator to compare pieces of data that contained similar content within the participant's interview. Based largely on an intuitive process on the part of the investigator, patterns or themes seemed to emerge from the coded interview data. The reflexive journal noted the investigator's interpretation of emergent patterns or themes. The validity of these emergent patterns or themes was checked with the participant during the third data collection session.

After the completion of the data collection sessions for all the participants and the coding of all the interview transcriptions, the coded interview data allowed the investigator to compare pieces of data that contained similar content between the participants. Patterns or themes seemed to emerge from the coded interview data. The

investigator's interpretation of the emergent patterns or themes from all of the participants was aided by the documentation in the reflexive journal of previous emergent patterns or themes from within each participant's interview that had been validated by the participant. The investigator conceptualized these patterns or themes in terms of the affective (Csikszentmihalyi, 1975a) and cognitive (Rybash, Hoyer, & Roodin, 1986) perspectives.

CHAPTER 4

RESULTS AND DISCUSSION

The purpose of this study was to describe the perceptions of older adult tennis players from an affective (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) and a cognitive perspective (Rybash, Hoyer, & Roodin, 1986).

A demographic questionnaire, the Progen Sport Flow Q-Sort (1978), and an interview were used to generate the data for this investigation. Each participant had unique experiences and responded to the interview questions based on their own personal history of tennis experiences. The quotations used in this chapter were taken directly from the transcriptions of participant interviews. They reflected the participant's unique way of responding and do not always fit the writing style of the investigator. For clarity in reading the quotations, the investigator added punctuation where needed. However, the meaning of the responses remained unaltered.

The presentation and discussion of the results of this investigation were organized in the following manner. First, a description of the participants as a whole is

presented from the information generated by the demographic questionnaire (Appendix C). Then, the analyzed Progen Sport Flow Q-Sort (Progen, 1978; Appendix B) and the transcribed responses to the interview questions (Appendix A) are reported according to the three guiding questions of the research project (Chapter 1, p. 7). At the end of the chapter, a discussion of related factors is presented.

Description of the Participants

Of the 10 older adult tennis players who participated in this research project, 5 were women and 5 were men. They ranged in age from 40-75, with a mean age of 59 years. All of the participants resided in East Tennessee within a 100 mile radius of Knoxville, Tennessee. The mean annual income level for the group was between 20,000 and 30,000 dollars. The mean annual income level was lower than expected because 6 of the 10 participants were retired. Each of the participants had been employed outside the home for an extended period of time. In addition, all of the participants held a college degree with 8 of the 10 attaining educational levels beyond the college degree. Four of the participants had a master's degree, three had doctoral degrees (one medical doctor), and one had graduate education but no degree. This information was noteworthy

because Csikszentmihalyi (1975a) postulated that older people and persons with higher socioeconomic and educational levels were more likely to perceive intrinsic rewards. Similarly, in his hierarchy of needs theory, Maslow (1968) stated that a person cannot become concerned with higher order needs until more basic needs are met. The older adult tennis players attained socioeconomic and educational levels which suggest that a majority of their basic needs have been met. Hence, they were more receptive to higher order needs, such as self-actualization, that are more intrinsic in nature.

The length of participation in tennis for the participants ranged from 8-60 years with the mean length of participation being 37 years. Eight of the 10 participants were introduced to the game of tennis while in their teens to early twenties, while the other two participants started playing tennis at the ages of 35 and 56. Half of the participants began playing competitive tennis in tournaments and leagues after the age of 40. Only three of the participants were former interscholastic and/or intercollegiate performers.

Membership in tennis organizations or clubs and extracurricular involvement in tennis indicated a strong interest and commitment to the game. All of the

respondents were members of the United States Tennis Association (USTA) and the Tennessee Tennis Association (TTA). In addition, six of the participants were members of the Greater Knoxville Tennis Association (GKTA) with one of these holding a dual membership in the GKTA and a hometown tennis association. Another participant, who did not reside in Knoxville, Tennessee, was actively involved in his local tennis association. Four of the participants served as elected officers in state and/or local tennis associations. Eight of the 10 participants provided special services to their tennis community at the local and/or state level, such as instructor, coach, tournament director, tournament referee, and/or USTA certified umpire.

All participants subscribed to World Tennis, a magazine that comes with the USTA membership, while seven of the participants owned books related to tennis. The magazine articles that most interested the participants were those that provided instructional and strategic tips. The majority of tennis-related books owned by the participants were instructional in nature. The emphasis on instructional tennis literature by the participants suggested that they wanted to improve their skills to meet the challenges provided by the game.

As a whole, the participants reported playing tennis at least three times per week. Half of the participants indicated they usually played at least four times per week all year round. A typical on-court session for the participants consisted of playing either singles or doubles. Four of the participants mentioned utilizing certain drills to improve particular shots or strategies. The gender and ages of the participants' practice partners varied. Seven of the 10 participants (3 male, 4 female) practiced with both male and female partners. Only three of the 10 participants (2 male, 1 female) practiced exclusively with same sex partners. All of the participants reported practicing with partners of varying ages ranging from 15-75 years. Only three of the 10 participants (1 male, 2 female) practiced with teenagers, and these three were the youngest of the participants. It seemed that for the group as a whole, as the participants grew older, the age of their practice partners was similar to their own age. In general, the participants sought practice partners of similar or better skill level, regardless of gender or age. Only two of the 10 participants, both female, reported taking lessons from a tennis pro, but only on an infrequent basis.

Currently, eight of the 10 participants (4 male, 4 female) declared themselves to be tournament players. The mean number of tournaments played per year by the participants was 6 with a range of 2 to 12 tournaments. Four of these tournament players (2 male, 2 female) were involved in competition at the local, state, sectional, and national level of the USTA. The other four tournament players (2 male, 2 female) limited their participation to local and state tournaments. Only two of the 10 participants (1 male, 1 female) indicated no current tournament participation because of the financial expense involved or because job or family responsibilities made demands on their time. Seven of the eight tournament players achieved a state, sectional, and/or national ranking during the last five years. This included one participant who won a USTA National Championship in Men's 60 Doubles. Five of the eight tournament players had a state ranking, four had a sectional ranking, and three had a national ranking in their respective age groups.

In addition to tournament participation, eight of the 10 participants were involved in tennis league play associated with Volvo or club sponsorship. In these leagues, the participants played opponents of similar skill

level, gender, and age. This similarity was the basis for league play.

In summary, the information generated by the demographic questionnaire on length of participation, extracurricular involvement, ownership of tennis literature, frequency and type of participation was evidence of involvement in the game of tennis. It appeared that the participants involvement in the game of tennis fell along a continuum ranging from competitive involvement in tennis to more noncompetitive forms of involvement in tennis. For example, some of the older adult tennis players responded to competitive opportunities for action, like participating in tournament and league play, or striving to achieve local, state, or national rankings. Others responded to more noncompetitive opportunities for action, such as playing in informal settings, learning new techniques and strategies, relating to other tennis players in a club or organization, or serving as officers in tennis organizations.

Guiding Question 1: How Is the Flow Experience
Described by the Older Adult Tennis Players?

Data collected from the Progen Sport Flow Q-Sort (Progen, 1978) and the interviews provided information relevant to answer Guiding Question 1. Basic descriptive

statistics of the participants' Q-sorts and an analysis of the participants' interview responses are reported.

The Experience of Flow

The Progen Sport Flow Q-Sort (Progen, 1978) is composed of four types of statements representing the theoretical constructs of flow theory (Csikszentmihalyi, 1975a):

(a) flow, (b) worry, (c) boredom, and (d) nonflow. The results of the Q-sort for the older adult tennis players produced a distinct ordering of these theoretical constructs (Table 1). As compared to all other Q-sort statement types, the obtained mean of all flow statements was highest indicating that more of the flow statements were placed in the "Most Like Me" columns of the participants' Q-sorts than any other statement type. This meant that the experiential feeling state of flow was most descriptive of the participants' tennis experiences.

Csikszentmihalyi (1975a) maintained that people devote time and effort to an activity because they gain a peculiar state of experience from it, namely flow. The flow experience was not boring nor did it produce anxiety, rather it was one of complete involvement of the participant with the activity. In turn, the activity presented challenges that did not allow the participant to

Table 1

Rank Order of Q-Sort Statement Types for All Participants

Statement Type	Mean*	S.D.
1. Flow	5.72	.64
2. Worry	3.53	.86
3. Boredom	3.36	.60
4. Nonflow	2.70	.79

*Values may range from 1-7.

get bored or to worry. Certain activities more readily provided the flow experience, and games were obvious flow activities. Since the results of the Progen Sport Flow Q-Sort (Progen, 1978) showed the experiential feeling state of flow to be most descriptive of the older adults' tennis experiences (Table 1), the game of tennis appeared to be a flow activity which provided the corresponding flow experience for the participants in this study.

The interviews also supported the same two contentions, i.e.: (a) the game of tennis was a flow activity, and (b) the experiential state of flow was most descriptive of the older adult tennis players in this study. The words of the participants themselves illustrated what flow meant for different individuals.

According to a male participant, the flow experience unfolded naturally. One action followed by another needing no conscious intervention by the self:

Things are going the way you want them to go without having to force anything. That means you're doing your footwork properly, and you are doing all these things without any conscious effort, racing of your mind, or anything of this nature. So you don't have to go through any of that. You just go out there and play and enjoy it and do the best you can.

Other participants experienced this unified flowing from one moment to the next in which there is little

distinction between the self and the environment. Two words, either rhythm or flow, were commonly found in the older adult's response. A female participant described the flow experience as being "in sync, in rhythm, everything seems to be going okay." The same sentiment was reflected in the quotes of two male participants:

When you are playing that level of tennis--that good--I don't really focus on a whole lot. I mean, you aren't thinking about your backhand, or how I hit the last shot, everything's just going natural. It's kind of a flow. Your rhythm's there you know.

There is an ultimate . . . I just get into the flow of things to the point that there's a certain rhythm, a certain centeredness about it, that is pretty neat. It's what runners get when they get a kind of runner's high, when they get that involved. But, I don't think in tennis it has to do with the endorphins or that sort of thing. I think it has to do with the combination of the emotional, physical, mental. We didn't talk this way when I was in school, but we'd get to talking about the concept of holistic approach--the unity--the sense of unity . . .

Meanwhile, a female participant likened the flow experience to "being in the zone" and provided a description of "the zone" as it occurred in her most memorable tennis experience.

During the event itself--the competition, because you are so totally aware of what you are doing you're probably not aware of your feelings particularly. Again, I think it's the flow of your body moving the way you want it to move. You know, there is a certain exhilaration of putting a tremendous amount of effort into a shot, and it working right, and seeing the

results, and that's exhilarating. That kind of pumps you on and gives you confidence for the next one. But it's probably afterwards that you get that nice sensation. And I don't think it's so much beating somebody. It's that you've really played your sport well.

She added that "it's just a lot of confidence that the shots I hit were going to be okay and were going to be good shots. I wasn't worried about pulling the ball wide, or pushing it long." Another female participant described this same feeling of confidence: "You feel in control. That's one of the big things I guess. You are in control of the situation, and your game plan is working and you're happy with that."

The flow experience was vividly described as a part of doubles play. A male participant, who is a United States Tennis Association National 60 & Over Doubles Champion, phrased it as follows:

I feel that I am merged into a force, or a phase, of something happening on our side of the court that is reacting in rhythm with the ball. I have that experience a lot, . . . It's like dancing in concert with another person, except instead of dancing, you're moving together to do something with this ball that only it takes two of you to do. You've got to do it together. And there is a union of forces, an emotion there that's rather unique.

The Flow Elements

Since the flow statements of the Progen Sport Flow Q-Sort (1978) represented the theoretical flow elements

proposed by Csikszentmihalyi (1975a), six elements of the flow experiential feeling state were also perceived by the participants to be descriptive of their tennis experiences. The results of the Q-sort for the older adult tennis players produced a rank order of the flow elements (Table 2). Autotelic nature and merging of action and awareness were the flow elements most like the participants, whereas control of action/environment and loss of ego were least characteristic of the older adult tennis players. However, it may be misleading to say that control of action/environment and loss of ego were not descriptive of the older adults' tennis experiences, because the obtained means of all flow element statements ranged from 5.30-6.33 indicating that most of the flow element statements were placed in the "Most Like Me" columns of the participants' Q-sorts.

The interviews also confirmed that the six elements of the flow experiential feeling state were perceived by the older adult tennis players to be characteristic of their tennis experience. The words of the participants themselves illustrated what the flow elements meant for different individuals.

Table 2

Rank Order of Q-Sort Flow Elements for All Participants

Flow Elements	Mean*	S.D.
1. Autotelic Nature	6.33	.59
2. Merging of Action and Awareness	5.96	.89
3. Centering of Attention	5.83	1.02
4. Control of Action and Environment	5.43	1.22
5. Noncontradictory Demands	5.43	.94
6. Loss of Ego	5.30	1.21

*Values may range from 1-7.

Autotelic nature. The flow element of autotelic nature had the greatest mean value for the participants (Table 2). According to Csikszentmihalyi (1975a), the flow experience was noted for its autotelic nature; it needed no goals or rewards external to itself. The autotelic nature of the flow experience was not only the quintessential intrinsic motivator, but was the quintessential intrinsic reward as well. The quotes of two male participants exemplified the autotelic nature of flow in their tennis experience.

I just like to do it, and it's enjoyable in its own right. . . . I'd think that would be a reason to do it. And I don't know how to describe that, but I just have a passion for the game, just to play it.

That in itself is enough to keep me coming back even though you know you are not going to get that satisfaction everytime you play. I guess that's the reason I keep playing.

The autotelic nature of flow was evident in the participants' enjoyment of playing tennis. A female participant phrased it this way: "I think you want to enjoy the experience of playing. If I were playing someone who was totally obnoxious, I wouldn't bother with it you know." She added that with "most of the players that I play against, we don't just hit, we play sets and we're both trying to win, but it's pure fun." In addition, a

male participant echoed a similar sentiment: "Get in a good singles match, I'll go out and play two and a half or three hours of tennis, and chase every ball, and enjoy it." Meanwhile, the following quotes put the autotelic nature of flow, this experience of enjoyment, in a broader perspective.

And, you know, it seems like money, money, money --it speaks for everything, and that's not what it's all about. I'm just out there to have a good time, and enjoy the recreation, enjoy the fellowship, and give some benefit to your body. . . . Keep your body so you can live a long time and be healthy in this world.

In this world you don't get to do many things you like to do. So that's why tennis stands out for me. . . . It's a matter of just enjoying really. I think its just the joy of living.

The autotelic nature of flow was also interpreted as the interaction of the person and the environment in meeting the challenges provided by playing tennis. There seemed to be something inherently enjoyable about the challenge of doing something as well as one can, perfecting one's skill. A female participant described it in this manner: "I like the challenge of really feeling like I've done some things to improve my game." Likewise, a male counterpart found enjoyable the "continuation of a set of reasonably well-developed skills--the honing and the actual application of the skills." In addition, there seemed to

be something inherently enjoyable in the competition itself, the testing of one's skills against another. Here are some ways in which older adult tennis players described the inherently enjoyable nature of competition:

It's interesting because no two shots are alike; no two people play alike.

And there is the psychological--I enjoy the challenge, and I enjoy the satisfaction out of it when I do play good.

I enjoy the challenge, and when someone plays well, then they make me play well, or better.

The autotelic nature of flow was manifested in the pure physical sensations or the kinesthetic awareness of playing tennis. For example, a female participant described her most memorable tennis experience as "just a pleasurable, wonderful, physical experience." Another female participant illustrated the power of the kinesthetic awareness of the autotelic nature of flow in words that are difficult to improve: "I just play for the feel of it . . . and the fun--the doing--trying to control your body and the ball." It was evident that "the feel" was a main goal for her in playing tennis. Furthermore, she believed that this kinesthetic awareness or feel was important because "it adds more to the enjoyment of the sport. I mean, if they can feel it, I know it does. . . . And it

probably improves their game, too, if they are aware of it. Further explanation of "the feel" was found in the discussion of the flow element, merging action and awareness.

Merging action and awareness. Perhaps the clearest sign of flow was the merging of action and awareness (Csikszentmihalyi, 1975a). Here are a few quotes that illustrate how the older adult tennis players described the merging of action and awareness:

And I think during that time I was just seeing the ball and just totally involved in that match. I really wasn't aware of anything else. . . . I wasn't even particularly concerned about winning or losing that match.

When I play hard, I pay very little attention to what's going on. You get a bulldozer up next to the court, or anything, well it wouldn't bother me. . . .

When I get to that point playing, generally I'm not particularly aware--I'm not thinking about something else; I'm concentrating on the match. . . .

I can get into it, and it becomes a form of meditation.

As well as being characteristic of the autotelic nature of the flow experience, "the feel" was a kinesthetic manifestation of the merging of action and awareness for the older adult tennis players. As a male participant said, "The teacher doesn't have to tell you when you make a

good shot. You feel it--the feel of the racquet." A female participant concurred, "Yeah, I felt that I stepped into the ball, or I was able to get the pronation on the overhead, or the serve has the bounce to it. It feels good." The following quotes revealed the importance of "the feel" as a manifestation of the merging of action and awareness:

You can feel if you've made the right contact with the ball with your body and the racquet. I mean, you feel that rhythm. You feel that you've got the proper rhythm, and you hit the ball just in the center.

Well, when I go out on the court, and first start warming up, I really try to feel and experience good strokes and really holding the follow through--trying to develop a rhythm during the warm up--the feel of it, that's the main thing.
. . . .

And like when you hit the ball right, when you hit it just at the right point in front of your body, you don't feel a thing. . . . And, you know, if you're feeling okay physically, I think I get to the point where all your shots are feeling really good.

I feel good when I hit the ball solid. I would rather almost hit the ball solid than keep it in. I just want to hit a good solid ball in the sweet spot. That's to me the ultimate sensation of tennis . . . something rather special happens with your body as it feels the racquet doing that--doing the work when it hits the sweet spot.

It seemed that "the feel" was a kinesthetic inducement that drew the older adult tennis player into the game and ultimately into flow.

Centering of attention. According to Csikszentmihalyi (1975a), the merging of action and awareness occurred because of another characteristic of the flow experience: centering of attention on a limited stimulus field. For an individual to concentrate on the action, potentially interfering stimuli must be kept out of attention. Maslow (1968) wrote of a similar process which he called "a narrowing of consciousness," "a fascination," "a complete absorption," and "a giving up the past and the future" (pp. 73-75). A female participant described this centering of attention in relation to her most memorable tennis match. "I was just totally focused on that very moment of hitting the ball and really seeing it and feeling like whatever I did was going to work." The preceding quote alluded to a here-and-now quality of consciousness. Other female participants phrased it as follows:

I'm playing for the present. I don't think about what's happened before or what's going to happen. I think what I'm doing when I'm on the court is just thinking of that situation. . . .

I'm not in the past of last week, last month, last year, no. I'm not looking off to the future either. I'm right there on the court.

When you are playing you have to think about the now. You can't think the last time you did this. To play tennis and win now you cannot think about the roast in the oven or the date you had last night. You have to think about the match at hand and put everything else on hold.

The here-and-now quality of consciousness allowed the individual to focus his or her attention on a limited stimulus field. The following quotes illustrated that the participants focused their attention on strategy and performance cues.

During play I was just trying to keep the ball in play as deep as I could and not do anything fancy.

I just concentrate on trying to see the ball as quick as I can, and to react as quickly as I can; and getting to the ball and making a good swing; and try not to hit too close to the line.

The first thing I want to find out is the strengths and weaknesses of my opponent. That's first and foremost. The second thing, I want to concentrate on keeping score . . . because that can be one of the most disconcerting things when you lose track of the score. . . . And then, after that, I want to move forward on every single shot--every shot. If I don't, I'm giving away thirty to forty percent of the power I have and that's difficult.

I think about some of the things that I've learned as a result of teaching that will help me. In other words, on my serve, I'll say, "All right now, hold your head up longer and you'll get a deeper serve."

I try to focus on tennis things, not necessarily form, but "Keep the feet moving and be aggressive." And I do try to visualize--let's say when I serve, I do try to think about somebody and how they--what I've seen or read of how the serve should be.

No matter how they described their attentional focus, the participants had one thing in common; they kept it simple.

The older adult tennis players also mentioned the tenuous nature of their concentration. It was difficult to sustain for long periods of time without interruption. As one female participant said, "I do try to concentrate on the game at hand, although I do tend to wander to extraneous things--a bird flying over, people walking by the fence, people on the next court . . ." Another female participant put it this way:

I have always felt that when I'm playing, even when I'm playing well, in that event that there will be things that will "pop" in and out that are unrelated to tennis in terms of concentration for a second or two or a minute or sometimes the whole game I might be thinking about something else.

In addition, a male participant described how he regains his attentional focus.

I find this, you know, like occasionally you're playing and you just sort of wake up and realize you're not concentrating. And I always feel, for me anyway, from the point I realize that, I really start concentrating, trying to watch the ball, and react to the ball, you know, all the biofeedback--It takes me a good three games before I see any result. But, after three games, I start to seem to get a better position on the ball. And you start to seem to be setting up better on the ball, you know, firmer and more solid.

The considerations of daily life can interfere with the here-and-now quality of consciousness in the flow experience. A male participant said, "if I have something that is worrying me or on my mind, and I'm preoccupied with

something away from tennis, my game suffers." This preoccupation with something outside tennis diminished the enjoyment he experienced while playing, and then "the lack of enjoyment is interfering with your concentration." He believed that the importance of the external influence in one's life determines whether one can get back into the flow of the game. Likewise, a female participant found that sometimes there was difficulty in separating one's daily life from one's sport life.

I think what I find sometimes is going out and playing my sport, and still being at work . . . A lot of times I'll be playing and I'll be thinking--all of a sudden, I'll be floating back to something I need to do.

Control of the action and the environment. Another characteristic of a person in flow was a sense of control over one's actions and the environment (Csikszentmihalyi, 1975a). According to one male participant in this study, the sense of control was an essential element of the flow experience. "If you do not have that sense, you would not be in the zone." A female participant agreed, "Yeah, oh, yeah! You feel in control. That's one of the big things." Here are some different ways in which the older adult tennis players described the feeling of control:

When I was playing in the early rounds, I got a good lead, and felt that I had control, and I knew what was going on. . . . Like, this is my court.

If my serve is ---If my rhythm's on, and I can hit whichever corner I want and change the pace, I feel complete control of that game. Because I know I can do just about anything I want to do with that serve.

. . . there's a lot of that that you get a comfort zone where you feel that you are in phase with the ball, in union with the ball, so that no matter where it goes you still are going to be able to get in position to do with it what you must do.

The preceding quotes suggested that the feeling of control comes from one's own performance, one's own mastery of the skills, not one's mastery of an opponent.

A male participant provided an insightful perspective on the feeling of control. He experienced a feeling of control while playing, but only in the sense that he was confident of his own abilities. "If I can get to the ball, I can usually figure a way to keep it in the court. When I get in a certain position, I have control over whether I make the shot or not." He felt that total control of the situation was rare because that depends so much on the opponent.

One thing I try to judge by is that if my opponent misses a shot, would I have been in a position to return his shot? And, if I feel I am, then I feel I'm in control of the situation. If the shots he hit would have been winners or had gone in, then I know I have to be really careful, because that guy may start hitting those in. And, then I wouldn't be in control of the situation.

Hence, for this participant, there were two aspects to this feeling of control: (a) an individual cannot control what his or her opponent does on a given day, and (b) when one speaks about control, it is a feeling of confidence in his or her abilities, "whether you're hitting your first serves in the court, whether you're making all the returns you get your racquet on, whether you're keeping the ball reasonably deep in the court, and mixing up your shots," rather than a feeling of complete domination of an opponent.

Another aspect of the feeling of control was that the person was not particularly concerned with the mistakes he or she makes or with the possibility of lack of control. For example, a female participant put it this way:

Well, you could do some of what you wanted to but you still realize you are going to make mistakes, even though you are in the zone. But your mistakes don't seem to bother you as much. You're ready to go on with it.

In playing doubles with the same partner over many years, one female participant reported that she was not concerned about losing control because she had confidence in her partner's abilities. "When you are playing because you want to play with that person, you are out there because this is something you have chosen and you want to do it." A similar feeling was expressed by a male participant concerning his association with a long time doubles

partner. "We felt that we had the edge. . . . We've almost always felt in control".

The feeling of control was difficult to sustain though. This difficulty was evidenced in the following quotes:

Again, it wasn't so much being concerned with my opponent as being concerned about my own . . . about what I could do and not really concerned with what she was going to do. That may not make sense, but I kind of felt in control as much as one can in tennis, because you're not in control just because of too many other factors involved.

Sometimes you feel that you're in control of your shots, and they seem to be all going where you want. And other times you feel that they're completely out of control, and they're all going in the alleys instead of inside [the singles court].

That feeling sort of moves. I mean, you have certain times say like when you're in the zone, you can't do anything wrong. Then there are other times that you can't do anything right. But it depends on alot of circumstances beyond your control. So, I've experienced both.

Loss of ego. Another characteristic of the flow experience was loss of ego (Csikszentmihalyi, 1975a). When a person became immersed in meeting the demands of an activity, there was neither need nor opportunity to be self-conscious. The loss of ego flow element was similar to Maslow's (1968, 1971) descriptions of "egoless" or "ego transcendent.". "The person has incorporated himself with

the world" (Maslow, 1971, p. 312). This loss of ego was described by a male participant. "I feel that I am merged into a force or a phase of something happening on our side of the court that is reacting in rhythm with the ball." Although the male participant related the loss of ego in his doubles play, he also mentioned that he experienced a similar feeling in singles play.

While Csikszentmihalyi (1975a) described loss of ego subjectively as a merging with the world, this did not mean that a person lost awareness of his or her own physical reality. It has already been reported that "the feel" was an extremely important subjective element of the flow experience of the older adult tennis players. This supported the contention that in most flow activities one became more intensely aware of kinesthetic sensations accompanying muscular movement (Csikszentmihalyi, 1975a).

Noncontradictory demands. Csikszentmihalyi (1975a) described another element of the flow experience, i.e., it usually contained coherent, noncontradictory demands for action with clear unambiguous feedback. The goals of the activity were clear. Ambiguity and conflict, so typical of everyday life, were replaced with purpose and intentionality (Csikszentmihalyi, 1975a). A male participant

described it as follows: "Like any athletic endeavor, you have clearly defined rules that decide the outcome of the thing. And life doesn't have that. The rules in life are not clear at all." A female participant agreed. "I think sport can be a way of filtering out the confusion of daily life. . . . I think when you can concentrate well, and play your sport, you do filter out that confusion." Since attention was centered on a limited stimulus field, confusion was eliminated and one knew what action needed to be taken. As one female participant put it, when concentrating on the present match, "you don't have to worry about other things. You can devote yourself mentally and physically right into that game." And finally, for a male participant, one of the most rewarding aspects of tennis was "the chance to compete in a closed forum, with well-established rules."

As long as the participants of an activity followed the same rules, there was no need for the self or the ego to appear to negotiate what should or should not be done, and flow was likely to occur. However, "when contradictory actions are made possible (for instance, when cheating is introduced into a game), the self reappears to negotiate between the conflicting definitions of what needs to be done, and flow is interrupted" (Csikszentmihalyi, 1975a,

p. 47). Three of the older adult tennis players vividly recalled unpleasant competitive experiences. A male participant described his unpleasant experience as follows:

I've had a few episodes of--particularly in tournament play where I've had to call for a linesman--where my opponents were behaving rather badly. And, when that happens, I don't wait. I just tell them, "Look, we both need help. I'm not pointing fingers, but I think we just need help in this match." I try to share the burden, but they know what I'm talking about, and we get somebody.

In reflecting on a cheating incident, a female participant said, "it bothered me. Our play wasn't as good after the incident. . . . You don't feel like you are getting a fair shake." Another female participant put it this way:

I had one really bad experience. It was with a person cheating, and I didn't handle it very well. I never had had that really happen to me in such a blatant way . . . I play tennis for the enjoyment and that took so much out of it. That unnerved me to the point where I did not play well.

These unpleasant experiences emphasized that when the rules changed and the ego appeared, it was difficult for the flow experience to occur.

In summary, the information gathered in the interviews suggested that tennis was a flow activity for the participants, and that the flow elements were interrelated and dependent on each other. Because tennis was described

by the participants to be a flow activity, it allowed them to limit their stimulus field, focus their attention on relevant cues, and ignore distractions. In turn, the participants felt in control of the environment. Because tennis had clear and noncontradictory rules, the participants temporarily forgot themselves. The result of all these conditions was that the older adult tennis players experienced the intrinsically rewarding feeling state of flow.

Comparisons with Previous Q-Sort Research

The comparison of the rank ordering of the Progen Sport Flow Q-Sort (1978) statement types suggested a similarity between the older adult tennis players in the present study and the sport persons in the Progen (1978, 1981) and McGirr (1979) studies (Table 3). Flow was perceived by the participants to be most descriptive of their sport experience, worry and boredom were less descriptive, and nonflow was not descriptive. However, the obtained mean of the flow statements for the older adult tennis players in the present study was highest. This finding supported for Csikszentmihalyi's (1975a)

Table 3

Comparative Rank Order of Q-Sort Statement Types

Study	Mean	S.D.
<u>Progen (1978)</u> N=96*		
1. Flow	5.47	.55
2. Worry	3.95	.67
3. Boredom	3.59	.86
4. Nonflow	2.88	.86
<u>McGirr (1979)</u> N=78*		
1. Flow	5.27	.63
2. Worry	3.97	.61
3. Nonflow	3.37	.84
4. Boredom	3.16	.73
<u>Progen (1981)</u> N=358**		
1. Flow	7.51	.67
2. Worry	5.45	.67
3. Boredom	5.21	.62
4. Nonflow	4.83	1.17
<u>Present Study</u> N=10*		
1. Flow	5.72	.64
2. Worry	3.53	.86
3. Boredom	3.36	.60
4. Nonflow	2.27	.79

*Mean values may range from 1-7.

**Mean values may range from 1-11.

contention that older people value intrinsic rewards more highly than younger people. This finding also may support Maehr and Kleiber's (1981) view of motivation in adulthood, i.e., with age there is a gradual shift from defining one's competence in terms of salary, status, occupational prestige, social and political power toward more intrinsically defined activities.

The comparison of the rank ordering of the Progen Sport Flow Q-Sort (1978) flow elements suggested another similarity between the older adult tennis players in the present study and the sport persons in the Progen (1978, 1981) and the McGirr (1979) studies (Table 4). The two flow elements, loss of ego and noncontradictory demands, were least associated with the flow experience of the older adult tennis players in the present study and the sport persons in the Progen (1978, 1981) and McGirr (1979) studies. Progen (1978, 1981) mentioned that the transcendental nature of loss of ego was difficult to capture in the format of a Q-sort statement. This explanation seemed plausible for the Q-sorts of the older adult tennis players in the present investigation, especially since the participants' interview responses provided descriptions of loss of ego. Also, it was not unexpected that the flow element, noncontradictory demands

Table 4

Comparative Rank Order of Q-Sort Flow Elements

Study	Mean	S.D.
<u>Progen (1978)</u> N=96*		
1. Autotelic Nature	5.92	.97
2. Control of Action and Environment	5.84	1.04
3. Centering of Attention	5.64	1.07
4. Noncontradictory Demands	5.57	1.04
5. Loss of Ego	5.48	.92
6. Merging of Action and Awareness	4.39	.83
<u>McGirr (1979)</u> N=78*		
1. Control of Action and Environment	5.89	1.07
2. Centering of Attention	5.84	1.08
3. Autotelic Nature	5.53	1.07
4. Noncontradictory Demands	4.98	1.06
5. Loss of Ego	4.70	1.30
6. Merging of Action and Awareness	4.69	.85
<u>Progen (1981)</u> N=358**		
1. Centering of Attention	7.79	1.22
2. Control of Action and Environment	7.72	1.16
3. Merging of Action and Awareness	7.64	1.17
4. Autotelic Nature	7.63	1.34
5. Noncontradictory Demands	7.03	1.34
6. Loss of Ego	6.82	1.34
<u>Present Study</u> N=10*		
1. Autotelic Nature	6.33	.59
2. Merging of Action and Awareness	5.96	.89
3. Centering of Attention	5.83	1.02
4. Control of Action and Environment	5.43	1.22
5. Noncontradictory Demands	5.43	.94
6. Loss of Ego	5.30	1.21

*Values may range from 1-7.

**Mean values may range from 1-11.

was least descriptive of the older adult tennis players in the present study and the sport persons in Progen (1978, 1981) and McGirr (1979). Csikszentmihalyi (1978) himself considered noncontradictory demands to be more descriptive of a flow activity than an inner feeling state of a person. This contention was supported by the older adult tennis players' interview responses.

There were differences in the rank ordering of the Q-sort flow elements between the older adult tennis players in the present study and the sport persons in the Progen (1978, 1981) and McGirr (1979) studies (Table 4). The older adult tennis players in the present study and the high risk sport persons in the Progen (1978) study perceived autotelic nature to be most descriptive of their sport experiences. This is evidenced in the top ranking of the flow element, autotelic nature, by the participants in both studies. However, the sport participants in the Progen (1981) and McGirr (1979) studies did not rank autotelic nature in the top spot indicating that perhaps other flow elements were more descriptive of their sport experience than autotelic nature. This difference was noteworthy because the participants in the present investigation and the Progen (1978) study were older than the participants in the Progen (1981) and McGirr (1979)

studies. In addition to the older adult tennis players in the present study, 25% of the high risk sport persons in the Progen (1978) study were over the age of 36. It seemed that the older adult sport participants were more receptive to the intrinsic reward of flow in the sport setting. Csikszentmihalyi (1975a) noted that older people were more likely to perceive the intrinsic rewards available in an activity.

Another discrepancy in the rank ordering of the Q-sort flow elements of the older adult tennis players in the present investigation and of the sport participants in the Progen (1978) and the McGirr (1979) studies involved the flow element, merging of action and awareness (Table 4). The older adult tennis players in the present investigation rated merging of action and awareness second, indicating that this flow element was highly descriptive of their tennis experiences. Meanwhile, the sport participants in the Progen (1978) and the McGirr (1979) studies ranked merging of action and awareness last, indicating that this flow element was least descriptive of their sport experiences. It was postulated that this difference was due to the nature of the task demands in the sport, i.e., whether the tasks were primarily open or closed skills, rather than to the age of the sport participant. The older

adults in the present investigation participated in the sport of tennis, a game in which the environmental demands of the tasks involved were constantly changing, and thus the player responded to challenges in an unpredictable environment, i.e., the ball and an opponent. Skills for tennis were classified as "open" because of the constantly changing, unpredictable environment. However, the high risk sport participants in the Progen (1978) study and the golfers in the McGirr (1979) study were involved in activities where the environment was relatively "fixed" and the individual mainly concentrated on internal feedback related to the performance of movement. Skills for such activities were classified as "closed" because of a relatively predictable environment. It was suggested that the merging of action and awareness was more characteristic of the flow experience of a participant in a constantly changing environment than of a participant in a relatively "fixed" environment. The Progen (1981) study confounded the postulation because the rank ordering of flow elements reflected the Q-sorts of participants who were involved in both open and closed-skilled sport activities.

Finally, another difference in the rank ordering of the Q-sort flow elements between the older adult tennis players in the present investigation and the sport

participants in the Progen (1978) and the McGirr (1979) studies involved the flow element, control of action and environment (Table 4). Once again, it was postulated that this discrepancy was due to the nature of the task demands in the sport, i.e., whether the tasks were primarily open or closed skills, rather than to the age of the participant. The sport participants in the Progen (1978) and the McGirr (1979) studies ranked the flow element, control of action and environment, higher than did the older adult tennis players in the present investigation. This suggested that control of action and environment is more likely to be perceived by participants in a relatively "fixed", predictable environment than by participants in a constantly changing, unpredictable environment. The Progen (1981) study confounded the postulation because the participants were involved in both open and closed-skilled sport activities.

Commentary

Information generated by the Progen Sport Flow Q-Sort (1978) and the interview responses indicated that the older adult tennis players perceived the experiential feeling state of flow to be most descriptive of their tennis experience. In addition, the six elements of the flow

experiential state were perceived by the participants to be most descriptive of their tennis experiences. While the current literature supported Flow Theory (Csikszentmihalyi, 1975a) in the sport and leisure setting (Chalip, Csikszentmihalyi, Kleiber, & Larsen, 1984; Gray, 1977; Harris, 1984; McGirr, 1979; Progen, 1978, 1981), the focus was on the flow experiences of the young and the elite athlete. Gray (1977) studied older adults, but these adults were not in a competitive sport setting. Hence, the present investigation expanded Flow Theory (Csikszentmihalyi, 1975a) to the older adult sport population, thereby enhancing an understanding of the older adult sport experience.

There were two important prerequisites for the occurrence of flow: (a) skill acquisition, and (b) meaningful context in which to perform skills (Csikszentmihalyi, 1975a). The information generated by the demographic questionnaire indicated that the older adult tennis players were highly skilled and that tennis was a meaningful context for them. In addition, the older adult tennis players had attained socioeconomic and educational levels which suggested that a majority of their basic needs had been met. Hence, the older adult sport

population was an ideal setting in which to explore the experience of flow.

The information generated by the Progen Sport Flow Q-Sort (1978) and the interview responses suggested that the older adult tennis players in the present investigation perceived the game of tennis as a flow activity. The main challenge of the game seemed to be found in matching one's skills against those of one's opponent. However, some participants responded to the challenges of more noncompetitive opportunities for action. Csikszentmihalyi (1975a) recognized that flow typically occurred in clearly structured activities that provided a gradient of challenges for the participant.

Csikszentmihalyi (1975a, 1978, 1985) outlined a view of human behavior which recognized that a considerable amount of behavior could not be fully explained in terms of a "closed" system of motivation, i.e., in terms of fixed goals or rewards that are either genetic in origin or reinforced by culture. Instead, he emphasized that behavior might also be motivated by goals and rewards that arose out of one's interaction with the environment. He referred to this as an "open" system of motivation, and considered flow to be an example of such a system. Both

systems are needed to explain the diversity in human behavior.

The information generated by the Progen Sport Flow Q-Sort (1978) and the interview responses provided insight into motivational considerations of the older adult sport population. Since the participants in the present investigation perceived flow to be most descriptive of their tennis experience, it seemed that an "open" system of motivation was needed to understand the older adult sport experience. Since Maehr and Kleiber (1981) and Ryff (1985) underscored the necessity for a more complete understanding of motivation in adulthood, they emphasized that older people lived in a slightly different world than the young and perhaps they went beyond the importance placed on external rewards in earlier years. With age, there appeared to be a gradual shift in focus from defining oneself in terms of salary, status, occupational prestige, social and political power toward defining oneself in activities where rewards were more intrinsic and emerged out of the interaction with the activity itself. The older adult sport participants in the present investigation described themselves in terms of an activity where rewards were more intrinsic in nature and emerged out of an

interaction with the environmental challenges created by an opponent.

According to Wohl and Szwarc (1981), in the past the treatment of the older adult sport population was approached from two basic viewpoints: (a) a biological/health perspective which focused on sport as it enhanced health and the quality of life, and (b) an objective, social determinant perspective which focused on the many sociological factors that determined sport participation in later adulthood. Gray (1977) promoted a biological/health perspective of adult leisure participation, while Harootyan (1982), Hobart (1975), and McPherson (1982, 1984) approached the older adult sport experience from an objective, social determinant perspective. The literature was devoid of an approach to the older adult sport population that emphasized the experiential aspect or the meaning of sport to the participant.

Furthermore, Wohl and Szwarc (1981) advocated treatment of the older adult sport population from a subjective, experiential perspective. Such a vantage point was important because it "opens up perspectives for greater intergenerational integration than existed so far, for a broadening of the scale of joy and hope in the life of elderly people and a humanistic revelation of their life

content" (Wohl & Szwarc, 1981, p. 10). Also, they believed that a subjective, experiential emphasis had the potential to redefine the negative stereotyping placed upon the aged.

While the Progen Sport Flow Q-Sort (1978) revealed that flow was most descriptive of the older adult tennis players in the present investigation, the interview responses allowed the participants themselves to describe how they experienced flow. The vivid accounts of flow and the flow elements provided a very different picture of the older adult sport experience from that provided in the sport literature, i.e., one that contrasted with the prevalent disengagement-from-sport theory, which says that individuals cease to participate in sport and physical activity as they grow older, and with the predominantly negative images of the older adult in society.

The value of sport participation is often discussed in rather simplistic, good-versus-bad terms, i.e., sport builds character or it does not. For the older adult tennis players in the present investigation, the value of their sport experience was found in terms of the experience it provided as it was subjectively interpreted by each individual. This investigation suggested that any discussion of the value of sport participation must include

the experience it provides as it is subjectively interpreted by the participant.

Guiding Question 2: How Has the Personal
Knowledge of the Older Adult Tennis
Player Changed Through His or Her
Participation in the Sport?

For this investigation, personal knowledge was operationally defined as the perceptions one holds about oneself, others, and life gathered in real-life experiences and in reflecting on those experiences. Data collected from the interviews provided information relevant to answer Guiding Question 2. Two main themes emerged from an analysis of the interviews: (a) the game of tennis was a self-revealing activity, and (b) the game of tennis was a shared experience.

Tennis: A Self-Revealing Activity

Roodin and Rybash (1985), Rybash, Hoyer, and Roodin (1986), and Roodin, Rybash, and Hoyer (1986) postulated that the growth and encapsulation of domain-specific knowledge was the most salient feature of adult cognitive development. Furthermore, they suggested that the adult years involved more changes in the knowledge of self than in any other domain. Hence, the emergence of a domain of personal knowledge was proposed. Tennis as a self-revealing activity, which was mentioned by all the

participants, provided evidence for a domain of personal knowledge. The words of the participants themselves illustrated how the domain of personal knowledge emerged from their tennis experiences.

Two participants, one female and one male, summed up the theme succinctly:

I definitely think your personality shows up on the tennis court in your reactions and the way you handle yourself.

You learn about yourself and other people and what you can stand and what you can't stand. That's what games are for, really, is to broaden your perspective for living.

In reflecting upon his most memorable tennis experiences, a male participant understood more clearly what he was aware of during these experiences.

And what I was feeling is that not only was I involved in a contest with rules, and participation modes, and all that kind of stuff. I was further speaking to who I am as a person. . . . And, so it's through those activities--specifically the ones I mentioned--that I have a little bit more of a relationship with myself.

The participant realized that through the activity he was not just playing a game, but he was also discovering himself. "I was in the process of finding out who I am and enjoying what I was doing . . . enjoying the feedback I was getting about myself."

Another male participant described the self-revealing nature of tennis:

Tennis gives you an opportunity of reassessing and reevaluating priorities about yourself. You learn a lot about yourself when you get out on the tennis court and play somebody--How you play the game, what your feelings are about yourself before and after you play. . . . And I think we should learn to use this as a growing opportunity as we learn about ourselves.

It was evident in this quote that tennis was not only a game, but an opportunity for personal growth, an avenue for self-knowledge.

Five of the participants, 3 female and 2 male, suggested that their tennis experiences provided feedback that nurtured their self-confidence. As a female participant put it:

In tennis, it has certainly given me the confidence to tackle some things I might not have. . . . Tennis throws you into many different challenges. You know you are out there and if you put it on the line then you have got to see it through. That has helped in a lot of other things I have done in adult life.

A male participant echoed this sentiment. "I think being successful through the years, and in a variety of different types of tournaments, certainly affects how I view myself and life in general. . . . I'd say athletics in general are certainly a big confidence builder."

Furthermore, this same male participant explained that his feeling of self-confidence came from knowing not only that he could compete, but that he could compete well. In describing a most memorable tournament match, he related,

"the reason that was so enjoyable was that I felt like, you know, I was forty-four years old, and being able to have that much stamina to play hard for four hours and ten minutes." He knew that he had the physical and mental stamina to compete. Also, he mentioned that a positive influence of his years of tennis participation was that "you learn how to compete and how to accept defeat. And how to maximize your progress toward your goals."

Two female participants related similar feelings of confidence after episodes of competition. As one player stated: "Singles is such a physical feat to be able to endure and possibly to win. It is exhilarating." Still another participant remarked that her most memorable tennis experience reinforced what she has always thought about herself. "I think I'm a competitor and that I try hard, and I think that [most memorable experience] reinforced that I really have that spirit." She also believed that this confidence carried over into other life endeavors.

Meanwhile, another male participant described how the game of tennis nurtured his self-confidence. His most memorable tennis experiences had occurred when "everything's just going natural. It's kind of a flow. Your rhythm's there you know." He felt that these

experiences "probably made me feel better about myself, in that I had the ability to get into that [flow]." He likened the feeling of his most memorable tennis experiences to the feeling he got from restoring old cars:

When you care for something like that, you learn something new from it . . . the job's going well, and the results are coming out as well as you expected or better and you get that same feeling. And this is the thing--it's a feeling of accomplishment. And, I think this flow type thing is the very similar feeling.

The game of tennis, like restoring old cars, provided feedback that nurtured the participant's self-confidence. Furthermore, the same participant explained: "It's a self satisfaction to know that you came up to your potential. And I think everybody really tries to do that, whether it's tennis or whatever it is, you try to come up to your potential"

Csikszentmihalyi (1982a) supported the notion that the self could be nurtured through participation in an activity. He added that this was especially true if the activity was freely chosen, presented opportunities for complex interactions, and allowed the formulation of unpredictable intentions by the participant. "As a result of such an activity--and assuming it was moderately successful--the self emerges strengthened from the evidence of its accomplishments" (Csikszentmihalyi, 1982a, p. 31).

Another manifestation of the theme, tennis as a self-revealing activity, was seen as the participants related tennis experiences that provided insight into their personalities. For example, two participants, one male and one female, commented that they were people who liked a challenge. For the male participant, tennis had most significantly influenced his life in terms of the psychological challenge. "I enjoy the challenge, and I enjoy that satisfaction out of it when I do play good . . . I don't guess I would go back if I didn't have it." This challenge was important to him, especially since his retirement. Likewise, a female participant noted her love of a challenge when she stated her preference for playing singles. "I'm willing to risk, and I think the risk is higher when you don't have a partner. You are out there by yourself. I think it is the premiere activity, as choosing between doubles and mixed doubles and singles." Furthermore, she saw this side of her personality in other life endeavors:

I remember when I was working in our religious organization. We had bingo. And I got bored. . . . I said, "Why are women in the kitchen? Why can't they get out and do part of it?" And then I learned how to do this and before I knew it I was one of the few women bingo callers in the southeastern United States. . . . I had to keep myself challenged.

As evidenced in the quotes of these two participants, their tennis experiences provided them with an opportunity to understand themselves better.

Also, a male participant mentioned that through his participation in tennis he had cultivated the emotional, feeling side of his personality.

I feel that I am both a mental and emotional person. I do know that as a young person I was far more mental than emotional, and it's been a deliberate process of change in my adult life for me to have cultivated that portion of who I am. And again, I've used my tennis in that process.

Upon further reflection, he added:

I think another way to perceive it . . . is that we talk about the locus of control as being either internal or external. And in my models, the locus of control becomes increasingly more internal versus external. I think trophies and prizes and recognition are external, and relationships and meaning and even competition, in the sense I'm talking about, is internal. . . . And I think sports, particularly tennis here, can help us with that, in becoming more comfortable with an internal center of control.

This participant viewed tennis as a means of cultivating certain dimensions of his personality.

Still another participant utilized her tennis experiences as a player and a teacher to develop a certain aspect of her personality. "I've learned to be more patient, that I need to be more patient." She added, "When I first started teaching, I think I was too driving, and I realized I needed to not demand so much from my students."

Also, she learned to have an "understanding of the other fellow's inabilities. That's not the right word, but, you know, understanding they all have them."

While some participants utilized tennis to develop their personalities, a male participant recognized an aspect of his personality on the tennis court that had implications for life in general. He commented on the success he and his doubles partner had experienced over the last few years, which included a national championship:

I think that probably the area of greatest success that we have is that we know when to change strategy. We'll even, on occasion, change position--who receives on the deuce side. I'm left-handed and he's right-handed, so normally we keep our forehands down-the-middle because that's where most of the shots are. But if for any reason they are getting to us in that position, the second set, we'll switch. I'll play the ad side. So, we have that flexibility built-in, that if we have to, we will change depending on our opposition. I think that's important--that flexibility.

Furthermore, he related this type of flexibility evident in his doubles play to life in general. To explain this relationship, he described the research of a Dr. Charles Siebert.

There's a fellow named Siebert who wrote a paper, oh, twenty or thirty years ago. He joined the Army parachute division--the paratroopers--from Korea, and and out of about a thousand men, only 15 survived an attack from the Chinese. And, he made his doctorate to see what enabled these people to survive. At first, he thought it was just happenstance. But, then he found out it wasn't just happenstance. There was a lot more

involved. . . . They had a union of opposites. They were gentle, yet could be firm. They could be serious, but playful. They could be passive, but active. In other words, they had a type of resilience and flexibility that went beyond the norm. . . . It's these things we're talking about for a successful game of tennis, and you can apply it to life. . . . It's a microcosm of a whole lot of other things going on out there.

This participant realized the importance of having a resilient, yet flexible perspective not only about the game of tennis but about life. In addition, tennis was not only a self-revealing activity for this participant, but a microcosm of life as well.

Another manifestation of the theme, tennis as a self-revealing activity, was seen as the participants discussed how their ability to play tennis had changed over the years. Although the older adult tennis players realized some decrement in their physical attributes, namely strength and quickness, they maintained that one could compensate for this physical loss. As one male participant stated:

I know that my body is not what it was at the age of twenty, but as far as exercise stamina, I feel no loss for that . . . of course, I'm playing smart tennis too. . . . It may look like I have more stamina, when in reality, I'm simply playing smart tennis with economy of energy and movement. . . . Today, at 65, I could beat myself at any other age in the past.

A female participant described her play in a similar manner. "I think the longer you play the craftier you get.

. . . I feel like I understand the situation and know what to do." Another female participant put it this way:

As you get older, you don't hit the ball as hard, but you've learned so much about it - your choice of shot. I'm not as strong, but I'm craftier I guess you'd say. That's important in a game. Experience brings it on.

And finally, a male participant remarked, "One of my main strengths is understanding what's happening on the court." For the older adult tennis players, their mental ability to better understand the game compensated for the loss of some physical attributes.

The following quotes provided evidence that six of the participants believed their ability to play tennis had improved over the years.

My ability to perform as a tennis player has improved tremendously over what I could do as a twenty year old.

I have maintained and added to my mental skills, and maintained and improved some of my physical skills over time.

As the years have gone on, I've improved, so I guess my physical abilities in that area have improved with coaching.

You definitely get smarter. And you know that definitely can compensate, and I know I still work on improving certain stroke techniques.

They [strokes] probably haven't changed. I don't want to say as good as ever, because there is always room for improvement.

My strokes have improved . . . even though I've gotten older, I can still play the same level of tennis.

From these quotes, it seemed that the participants' perceptions of their ability to play tennis had changed, and they perceived the change as basically a positive one.

Furthermore, a female participant mentioned that playing tennis had a positive effect on her mental abilities. "I mean this keeps me alert; It maintains the concentration; It maintains the ability to think quickly, to process information."

And finally, a female participant's perspective on her change in playing ability hinted at an entirely different issue.

I noticed my backhand was not as sharp--I also knew that is okay--not as sharp as it was at 18, 19, or 20, but sharper than anybody I would be playing with now. Then the question always comes up: Is that important?

This participant's perspective begged much deeper issues, i.e., Is winning as important now as it was earlier? What is the purpose of competition? The following quotes provided insight into the older adult tennis players' perspectives regarding competition.

I think the whole aging process affects the attitude of a lot of old athletes compared to when they were twenty. When you're twenty, you think you're invincible. Now, . . . you not only know that you are not invincible, but that you have lived most of your life. That's just reality. So, your perspective should change

appropriately, as far as putting things in proper order, that you are not able to do at age twenty.

I have a better grasp of it [competition] now than I did earlier see . . . I don't worry as much about the winning or losing and I'm more philosophical about the good that can come from it.

As you get older you want to win without devastating your opponent versus your years in high school when you want to win and kill. Later on you want to win and winning is enough--not being crushing.

I don't take winning that seriously. My feeling is if I go out and play, and if I play up to my level of tennis that I can play and get beat, that doesn't particularly bother me. It just tells me the other person was a better tennis player.

It's fun to win, but for every winner there's a loser.

It seemed that the participants' views concerning competition changed over the years. Furthermore, this change in perspective on competition provided insight into the nature of tennis as a self-revealing activity.

The participants' change in perspective on competition was perhaps due in part to a diminishing ego-involvement in the outcome of competition. For a male participant, the issue of ego-involvement was evident. "Learning to win and lose gracefully and not allow it to affect your self-image, I think that's the most important thing I've learned in tournament tennis." This insight led him to develop a personal perspective regarding competition.

Nobody really develops top quality until they are tested. . . . Now, there are a lot of small tests, many mini-tests that you have, such things in the business and professional world, academic, sports--tennis--in which you are tested. And I can learn a tremendous amount about a person's internal make-up after I've played two, three hours of tennis with him. . . . It's a window and you pick up on everything. That person's integrity, their perspective, their self-image, their priorities. It's a form of testing really.

He elaborated:

If there are some neurotic things going on in the game of tennis, then there will be mirrored components in other aspects of that person's life. If they are going to hook and cheat on line calls, then they are going to hook and cheat in the game of life. If their self-image is dependent on the outcome of this thing, this match, then their self-image is going to be dependent upon dozens of things throughout life that are totally unreasonable. They are not relevant to their self-image and they end up with a very, very neurotic existence.

This participant's philosophy on competition led directly to some self-revealing questions for this older athlete: "Are you happy? Are you contented? Do you have unfulfilled goals or dreams?" Tennis became a microcosm of life itself.

A female participant described her ego-involvement in competition.

My tennis competition is a more relaxed, laid-back kind of thing. I'm not one who feels that one has to go out and win all the matches. . . . I go out to have a good time and hope I can give the person a good game. And I will say that I gave some people--like myself, to let others go up the ladder. If they don't have any of us down here, then there's no fun for them.

Perhaps because of her age, she felt that her view on competition was different from most people.

The younger you are, the more that you are apt to do that [put stress on winning], but once you get older, your goals change and your thoughts change, and you don't need to, you know, try to prove yourself to other people.

This older adult player noted a change in her perspective on competition.

Likewise, another female participant echoed a similar sentiment. As she has grown older, "it [tennis] is a lot more fun because proving yourself is not as important." Upon further reflection, she explained an unpleasant aspect of ego-involvement in the outcome of competition.

The negatives are remembering the terrible people, the people who were extremely egotistical. They just felt that it was important who they were and who they beat and what event they played. I was not sure it was for the joy that they were in this sport . . . for an inner growth or anything. It was who they had to be and who they could only play with. .

This participant realized that a diminishing ego-involvement in the outcome of competition allowed the game of tennis to become an avenue for enjoyment and personal growth. Csikszentmihalyi (1982a) provided theoretical support for this notion. He contended that concentration on an activity produced feedback for the nourishment of the self. "Attention turned inwards on the self tends not to be productive. Self-consciousness does not accomplish

anything--it does not produce feedback" (Csikszentmihalyi, 1982a, p. 31). When a participant was completely involved in the game of tennis, the opportunity for self-revelation occurred. However, when ego-involvement in the outcome of competition was heightened, the opportunity for self-revelation diminished.

Another manifestation of the theme, tennis as a self-revealing activity, was seen in the emphasis the participants placed on the process of competing itself, instead of on the outcome of the competition. As a male participant succinctly stated: "I know I'm not going to win every set I ever play, but I do strive to play my best tennis for my own satisfaction." A female participant put it this way:

You know when you've played well. You know when you haven't played well. And that doesn't necessarily reflect in the score. I mean, you can play very poorly and win, and you don't feel particularly good about that. Or you can play very, very well and lose, and you're disappointed, but you have the satisfaction of good athletic movement, good exercise, and sort of a mental satisfaction that you participated at a high level.

Both of these participants highlighted the importance of the contest itself or the process of competing.

Yet another participant acknowledged the importance of competing well. "If I go out and watch the ball as well as I can, react to it as quick as I can, take a good swing as

I could at the ball, you know, and I can't do any better than that." He elaborated:

The thing is you can't say, "I should have made those shots, you know." What you want to be able to say is, "I tried to the best of my ability, you know. And, if I missed them, I missed them because I couldn't make them that day." Now, maybe I can figure out something different. But at the moment, I couldn't figure out a better way to play it, you know, and it's pretty good for me.

He also mentioned that when he was younger he did not subscribe to the philosophy he does now. It was more important to win then, but his perspective had changed as he has grown older.

A female participant reported a similar change in perspective regarding competing well versus winning. "When I was younger, winning was probably the most important thing to me, and now playing well is more important." She added:

There's two different types of feelings in defeat: One is when you've been beaten and played lousy, and then you're really down. And then when you've been beaten and you've played well. I mean, even though [you lost], you still felt like you played well, that's just as important.

The emphasis on playing well corresponded with the most rewarding aspect of tennis for this participant, which was "the satisfaction you get out of accomplishing something that you're trying to do."

And finally, a male participant realized the importance of the process of competition as he reflected on his most memorable tennis experiences. "Part of the thing is that even while I was playing tournament tennis, it wasn't the total agenda for me to win." Instead, it became clear to him that the reward was the process of competition, the playing itself, and he provided an example of what he meant.

We had a crew that played doubles together. . . . We didn't play the same way. But we were friends, and we played regularly, at least once a week, and sometimes two, three times. . . . We'd play two out of three, and we'd say, "Well, this team's behind, let's make it three out of five." And you'd think something very, very important was riding on it, you know. There were never any examples of poor sportsmanship, or bad calls, or anything, but yet was played with quite a bit of intensity. There was no prize that went with it. The contest itself was significant.

Furthermore, he added:

It's become plain to me--it hasn't always been that way--that when we build up the prize too heavily, we trivialize the contest. And that's a good example of it, because there was no prize. . . . The contest was everything. . . . It reminds me that sometimes we do a great disservice to participants in athletic events when we play the prize up so importantly that we trivialize the contest. And it becomes important to get the prize at whatever the odds. Well, that's a low, that's a cheapening of the experience.

The value of this participant's tennis experience was not derived from the outcome but from the process of competition, the playing itself.

In summary, the theme, tennis as a self-revealing activity, highlighted the emergence of knowledge in the personal domain and how this personal knowledge changed through the older adults' participation in tennis. Manifestations of the theme, tennis as a self-revealing activity, were seen as the participants described tennis experiences that: (a) nurtured their self-confidence, (b) provided insight into their personalities, and (c) affected their ability to play tennis over the years. Also, it was noted that the participants' views regarding competition had changed through the years, and this change provided insight into the nature of tennis as a self-revealing activity. This change in perspective on competition was due in part to the participants' diminishing ego-involvement in the outcome of competition and to the participants' realization that the process of competing is more important than the outcome of the competition.

Tennis: A Shared Experience

Roodin and Rybash (1985), Rybash, Hoyer, and Roodin (1986), and Roodin, Rybash, and Hoyer (1986) postulated that the personal knowledge domain represented a combination of self-knowledge (intrapersonal) and knowledge of others (interpersonal). Since humans have a social nature, personal knowledge emerged from interactions with the social environment and allowed effective functioning within the social environment. Tennis as a shared experience, which was mentioned by 9 of 10 participants, recognized the social nature of human existence as well as the emergence of knowledge in the personal domain. As a female participant succinctly stated: "We don't do tennis alone."

Perhaps a male participant illustrated the theme best as he described three of his most memorable tennis experiences. First, his college tennis experience was special because of his friendship with teammates. Secondly, a father/daughter tennis tournament was memorable because it gave him an opportunity to "develop our relationship even further, and to relate to her in an area that was very meaningful to her." And finally, as he described a doubles foursome that played on a regular basis over the years, "what a good way to be involved with your

friends." As he reflected on these experiences, it became apparent to him that a relationship was central to each one of them. He elaborated:

Now, the assumption is that in the one case it [relationship] was my teammate, and my daughter was mentioned, and then my friends. Well, the assumption is that a relationship is stronger with your teammates than your opponent. Now, I play tennis with an old college friend, and this is becoming the fourth one of those [most memorable experiences]. . . . We are playing singles, and we are across the net from each other, and yet it's a good relationship. It really doesn't matter who wins, but it really is important for us to go at it. . . . So it's not a matter of, "Well, I need to win" on the part of either of us, but it's a matter--it's kind of fun; it has to do with relationships. It's the playing itself, and it's the relationships of the other participants that makes it special. I think we might draw from that, that the most satisfactory experiences over the long haul are the experiences which foster, take advantage of, or cultivate relationships.

This participant not only discovered the importance of tennis as a shared experience in his own life, but recognized that the process of competition itself fostered relationships in which one learns about oneself and others.

A male participant's most memorable tennis experience occurred when he competed against a nationally-renowned tennis player at a national grass court tournament in front of a large crowd. A part of the experience that made it special for the participant was the sense of oneness he felt with his opponent.

He was such a nice fellow to play. I was just really appreciative of how human he was, because naturally with him suffering his cancer--I don't know of what nature--but it's bound to take some toll on him physically, and so he wasn't trying to make me look bad or anything like that. He was just trying to win points to get off the court, which is what most anybody should do when they're out there to play tennis, instead of trying to humiliate somebody or something like that.

Once again, the process of competition itself fostered a relationship between opponents.

For a female participant, a memorable tournament victory was recalled with "mixed feelings," because her opponent was also her mentor and practice partner. She explained:

It was sort of like respect and sort of like, "I know you have worked long to get my game up here." At the same time, I also knew all a long that she did not work all that time on my game without me working on her game. It was a mutual thing. It was a very appreciative, giving, mutual thing. . . . I wanted to win so I could advance, not because I wanted to crush her, not because I wanted her to experience the loss.

Tennis as a shared experience was seen in the participant's description of competition as a mutual thing.

Another female participant mentioned the idea of relationship during competition.

If that's a person that I've played against and always beaten, the thoughts do come across my mind as to whether I should--how she might feel being beaten all the time. And, whether it wouldn't be nice to have her win, to keep her spirits and her enthusiasm going.

This participant's ability to relate to her opponent was not surprising considering her view on competition: "I go out to have a good time and hope that I can give the person a good game." Her view on competition implied a sharing of the experience.

Still another female participant discussed the idea of relationship with an opponent. She explained:

There are some people that have the knack--but I notice this in social situations or life in general--that even though you might be in an oppositional kind of situation. . . . in this case tennis, that they are very nice people. And I imagine that they are very nice people off the court as well as on the court. And that getting beat by them is not as much--well, they don't make you feel that way. The score is zero and zero, and they will say something like, "Well, the score doesn't show what we really played like." Or, "I enjoy playing with you. I'd like to play with you in the future."

This participant observed that the relationship was based on the process of competition not the outcome of competition.

Another manifestation of the theme, tennis as a shared experience, was seen in the participants' experiences of teaching and coaching tennis. For a female participant, the most enjoyable tennis moments were those in which she shared the game with her children. "I think as you get older, or somewhere in there, you will want it for others too. You will understand that you have got it for yourself

and it's okay to share it." When she was younger, she was obsessed with her own game; tennis was a self-centered activity. Now, her perspective had changed.

A male participant echoed a similar sentiment. Since his retirement, he has coached both junior and senior tennis players and conducted numerous clinics and tournaments. He added: "It's a wonderful experience just to be a part of seeing somebody find out they can do something. Those are the things that I've enjoyed more than just any momentary thrill of winning or something like that." Furthermore, his teaching and coaching experiences revealed to him that "the joys of life are small things rather than anything big that you might be searching for."

Another female participant mentioned that "you can give a lot to people by teaching them the game so that they enjoy it." She related a recent incident to explain what she meant.

Just the other day at the racquet club, there were two teenagers hitting on the next court. . . . Then the girl walks up to me and she said, "You don't remember me, but I went through your class about four or five years ago, and I'm still playing." I said, "Are you doing well?" She said, "Yeah, I'm on the tennis team." Things like that mean a lot of satisfaction to you.

The sharing of the tennis experience was very gratifying to this participant.

Still another female participant related that she enjoyed practicing with younger players. "I really liked playing with kids and seeing them grow up and become good tennis players." She added:

That's kind of nice to have someone that you wouldn't have connected with because of your age difference, but you do connect with now because of tennis. And then if they are ten or fifteen years younger than you, but you go out and play and you talk about things that are not related to tennis, and you do relate to one another. I think that's one thing you need that tennis has allowed. And I'm not sure that many other things . . . do allow that. Because in tennis, say you worked with a junior player, and you drilled them for years, and then they get better, and they start drilling you, they feel a certain compassion for you. They'll play with you, you know. I don't know that that happens in other areas of life so much. .

This participant realized that she developed relationships with other people that probably only happened because tennis was a shared activity.

Another manifestation of the theme, tennis as a shared experience, was seen in the participants' experiences of playing doubles. A male participant related the significance of his doubles play.

It's a good experience to play with people, to interact and find people that you can play with. I've found some people who I just can't possibly play with. I mean because of what you call personality conflicts or something of this nature. You can't even say, "Good Day!" to them without hurting their feelings. So you have to learn this in a hurry and pass on.

This participant learned about himself and other people by playing doubles. It "tells you a lot about how you get along with people outside of tennis. . . . It gives you a model for bigger areas of life." In this instance, tennis became a microcosm of life.

A female participant's most memorable tennis experience involved playing doubles with a teammate, who was a very talented player in her own right.

Everyone always thought we would be the better doubles team. However, we did not play well together. The thing that struck me about that was I would not dive for a ball for her and she would not dive for a ball for me. And in doubles, you need that if you are going to have a good team. I will never forget telling my tennis coach that I wanted to play with this other girl. He said, "She's not very way up there." I said, "I know but I would dive to get a ball for her." And we did, and we just won all kinds of things for two or three years, because we had that relationship where you have to feel that they are worth everything.

She elaborated:

You had to have somebody you would work well with. All the skills in the world would not take the place of being compatible. It is just like a marriage. You have to admire and respect your partner at all times to make it work. And in doubles it is the same. If you don't care or disagree all the time then you will not have it even given the strengths.

This participant implied that "skill" in the domain of personal knowledge was part and parcel of successful

doubles performance. For a male participant, doubles was a special experience. He explained:

The sharing of excitement with another person--the winning and losing--has another dimension with doubles. In fact, years ago, after I got out of the Air Force, I spent four months in Europe bumming around. The first three months I was with two Air Force buddies; the fourth month I was by myself. It taught me a lesson. And, that is, that anything in life that's enjoyable you will double or triple the enjoyment if you share it. If you're alone, you can only go up to here, but if you can share it with somebody in any way, then the enjoyment is much, much greater. And that's true of winning and losing in tennis. The enjoyment--there's another degree up there where you can share it with someone in a rather special way.

The importance of tennis as a shared experience was seen in this participant's experience.

The importance of tennis as a shared experience for the older adults was evident in the words of the participants themselves.

I think older people use it to meet people and be with people.

I've learned to know some people I care a lot about and enjoy their company. So the social aspect of it is important. I think there is a social thread throughout, but I think it probably gets stronger as you get older.

The fellowship of the people that are out there playing is a lot of fun. Being in tournaments, and meeting the people from all over, and enjoying their companionship, and it's a good group of people . . . they are out there for the health of it, and so it's a joy.

I still plan on being active in it, because one of my main purposes is meeting people and getting to know people, you know, making friends. I've met several good friends just this last year.

Well, for me, after I retired, it gave me something else to go to. . . . I found a new set of friends, which was important, because I had been in my field some thirty years, and to retire could have meant being lonely. This gave me a new set of friends, a very healthy way of life, and a way to put my energies into action.

I enjoy being with people, and particularly with retirement, this [tennis] is an opportunity to be out there with people. . . . Something in which I can feel life to its fullest in the form of physical exertion, the camaraderie with other people.

Tennis was an important social vehicle for the older adults in this investigation.

In summary, the theme, tennis as a shared experience, highlighted the social nature of human existence as well as the emergence of knowledge in the personal domain. This personal knowledge changed through the older adults' participation in tennis. Manifestations of the theme, tennis as a shared experience, were seen as the participants described tennis experiences in which:

(a) the process of competition itself fostered relationships with opponents as well as friends, (b) they were involved in the teaching and coaching of the game, (c) they played doubles, and (d) the importance of tennis as a social vehicle was noted. It seemed that tennis as a shared experience was a setting for social interaction

where the participants could recognize limits and satisfactions within the domain of personal knowledge.

Commentary

The interview responses of the older adult sport participants in the present investigation supported the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986), i.e., knowledge is domain-based and the domain of personal knowledge experiences great change during the adult years. The comments of the participants themselves revealed that the domain of personal knowledge emerged, changed, and developed through the older adults' tennis participation.

There were several ways in which the changes in personal knowledge were manifested. The participants described tennis experiences that nurtured their self-image and self-confidence. This nurturance came from knowing that one could compete well, that one had played close to his or her potential regardless of the outcome of the match. The participants related tennis experiences that provided insight into their personalities. Also, the participants discussed how their abilities to play the game had changed over the years. This change in personal knowledge allowed them to compensate for the loss of some physical attributes, such as strength and speed. This

finding supported Rybash, Hoyer, and Roodin's (1986) suggestion that domain-specific knowledge might have the potential to help one compensate for loss of physical abilities. The participants commented that their views on competition had changed. These changes impacted the domain of personal knowledge in the following ways: (a) a diminished ego-involvement in the outcome of competition was recognized, and (b) the participants placed more emphasis on the process of competing well than on the outcome of competition. And finally, the participants described tennis as an activity that involved relationships with others. Through these relationships, they learned about themselves and others.

The interview responses supported the contentions of several theorists. Hoyer (1985) proposed a model of adult cognitive development that recognized the potential for cognitive gain in older adulthood. Cognitive gain in the domain of personal knowledge was evident for the older adult sport participants in the present investigation. Roodin and Rybash (1985) suggested that change in the knowledge of self was greatest in the adult years. The older adult sport participants in the present investigation described many changes in the domain of personal knowledge. And finally, Ryff (1985) advocated a view of motivation in

adulthood that attended to "more personal, internal processes such as striving for personal growth, self-awareness, personal insight, and self-knowledge" (p. 56). She contended that the traditional emphasis on motivation in adulthood, i.e., educational and occupational achievement, the work ethic, the achieving society, was not adequate to fully explain the diversity of adult behavior. The interview responses in the present investigation suggested that the "more personal, internal processes" were important motivational concerns in older adulthood.

The value of sport participation for the older adult tennis players in the present investigation was seen in the emergence and the development of the domain of personal knowledge. Tennis was an avenue for a better understanding of self and others. As one male participant put it:

Tennis gives you an opportunity of reassessing and reevaluating priorities about yourself. You learn a lot about yourself when you get out on the tennis court and play somebody - How you play the game, what your feelings are about yourself before and after you play. . . . And I think we should learn to use this as a growing opportunity as we learn about ourselves.

This quote suggested that the sport experience provided the opportunity to not only learn about self and others, but to reformulate ways of being, to experience new modes of evaluation and acceptance. Hence, the implication was that the value of sport participation is considerable.

Guiding Question 3: How are Csikszentmihalyi's
(1975a) Flow Theory and Rybash, Hoyer, and
Roodin's (1986) Encapsulation Model
Interrelated in the Experience
of the Older Adult Tennis Player?

Data collected from the demographic questionnaire, the Progen Sport Flow Q-Sort (1978), and the interview provided information relevant to answer Guiding Question 3. Also, the theoretical frameworks from an affective perspective (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) and from a cognitive perspective (Roodin & Rybash, 1985; Roodin, Rybash, & Hoyer, 1986; Rybash, Hoyer, & Roodin, 1986) provided insight into the interrelationship of the flow experience and the emergence of knowledge in the personal domain.

The Interrelationship of Affect and Cognition

Roodin and Rybash (1985) noted that it was important to consider both affect and cognition because human beings may process stimuli by both means. Moreover, affect appeared to be one of the powerful triggers of basic schematic representation in adulthood. "Affect provides the 'glue' or attention for intense social cognitive processing. Without affect, it is likely that processing is rather automatic, superficial, and not very 'deep'" (Roodin & Rybash, 1985, p. 124). Also, they theorized that

under appropriate motivational conditions, such as the combination of personal commitment and affective involvement, cognitive processes could be efficiently maintained and enhanced in later adulthood.

Meanwhile, Csikszentmihalyi (1985) also recognized the interrelationship of affect and cognition. The interrelationship was explained by Csikszentmihalyi (1985) as he described how a person remains in flow, or "moves up the flow diagonal" (p. 109):

The experience might be described as being more "deep", since the cognitive and affective skills involved require more psychic energy to acquire, and the attention is more concentrated. It follows that a person who stays in flow will necessarily become more complex as a condition for continued enjoyment. This increased complexity of the self is what is meant by personal growth. (p. 109)

By considering both affect and cognition, the theoretical frameworks of Csikszentmihalyi (1985) and Roodin and Rybash (1985) suggested the potential interrelationship between the flow experience and the emergence of personal knowledge for the older adult tennis players in the present investigation.

An analysis of the Progen Sport Flow Q-Sort (1978) and the interview responses suggested an interrelationship between the flow experience and the domain of personal knowledge. The Progen Sport Flow Q-Sort (1978) and the

interview responses showed that the experiential feeling state of flow was most descriptive of the older adults' tennis experiences. Meanwhile, the interview responses also revealed that personal knowledge emerged from the older adults' participation in tennis. Hence, for the participants in this investigation, the emergence of personal knowledge occurred in tennis experiences, which they described as being most like the experiential feeling state of flow.

Two male participants illustrated this interrelationship. One participant related his most memorable tennis experience in the following manner:

And what I was feeling is that not only was I involved in a contest with rules, and participation modes, and all that kind of stuff. I was further speaking to who I am as a person. . . . I was in the process of finding out who I am and enjoying what I was doing . . . enjoying the feedback I was getting about myself.

Another participant described how the flow experience nurtured and developed the domain of personal knowledge. His most memorable tennis experiences occurred when, as he described it, "everything's just going natural. It's kind of flow. Your rhythm's there you know." He noted that these experiences "made me feel better about myself, in that I had the ability to get into that [flow]." The emergence of the domain of personal knowledge was overtly

seen in both these participants' flow experiences. As Csikszentmihalyi (1982a) himself stated, "intense involvement in a complex activity provides the most concentrated feedback for the nourishment of the self. . . . Enjoyment builds the self" (p. 32).

In addition, the interview responses suggested that the older adult tennis players' perspective on competition had changed, in part, due to a diminished ego-involvement in the outcome of competition. Csikszentmihalyi (1975a, 1982a) realized that ego-involvement inhibited the flow experience. Because of the change in personal knowledge regarding competition, the participants in the present investigation were more receptive to the flow experience. As one female participant put it: "I think as you've had more experiences in life, you can enjoy the flow, because you begin to put it in a different perspective."

Another aspect of the potential interrelationship of flow and personal knowledge dealt with the participants' personal involvement in and commitment to the game of tennis. As discussed previously, the information generated by the demographic questionnaire indicated a strong personal involvement in and commitment to tennis. A male participant stated his strong personal commitment to tennis in this way: "I've been more interested in the game

progressing rather than my own little bit of it." As mentioned previously, Roodin and Rybash (1985) contended that under appropriate motivational conditions where personal commitment stimulates affective involvement, cognitive processes may be efficiently maintained and even enhanced. As one female participant exclaimed: "I mean this [tennis] keeps me alert; It maintains the concentration; It maintains the ability to think quickly, to process information."

In summary, the interrelationship of Flow Theory (Csikszentmihalyi, 1975a, 1975b, 1978, 1982a, 1985, 1988a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) was seen in the tennis experience of the older adult sport participants in this investigation. Through their tennis experiences, which they described in terms of the experiential feeling state of flow, the participants developed, maintained, and enhanced their personal knowledge. Also, the participants' personal involvement in and commitment to the game of tennis seemed to strengthen the interrelationship of flow and personal knowledge.

Commentary

Progen and DeSensi (1984) argued that "utilization of theories developed in various disciplines outside physical

education provided viable and valuable strategies for studying subjective interpretations of the sport experience" (p. 80-81). The value of an affective (Csikszentmihalyi, 1975a) and a cognitive (Rybash, Hoyer, & Roodin, 1986) theoretical framework for the exploration of the older adult sport experience was illustrated in the present investigation. These theoretical frameworks allowed insight into the potential interrelationship between the flow experience and the emergence of the domain of personal knowledge. Hence, the use of theoretical frameworks provided a better understanding of the older adult sport experience and a unique way to view enjoyment, intrinsic reward, personal meaning, and self-knowledge in the sport setting.

Tennis seemed to be an ideal setting in which not only personal knowledge, but in some instances, overall cognitive performance was maintained and enhanced because: (a) flow provided the participants with an avenue for affective involvement in the activity, and (b) the motivation of personal commitment to tennis on the part of the participants was great. Considering the range of conditions which impact older adults in society, reducing their personal involvement with the environment, reducing their affective self-involvement, and limiting their

cognitive performance, the value of sport participation was considerable for the older adult tennis players in this investigation. The older adult tennis players not only described tennis as a flow activity, but as a social vehicle in which they maintained personal involvement, thereby enhancing their cognitive development in the domain of personal knowledge. Thus, it seemed that tennis was a type of life event with the potential for producing personal growth outcomes.

The interrelationship of the flow experience and the emergence of personal knowledge provided another explanation for the tendency of older people to experience flow more readily than younger people. For the older adult sport participants in this investigation, their personal knowledge changed regarding their ego-involvement in the outcome of competition. They indicated that as they grew older, their ego-involvement in the outcome of competition diminished, and thus, they were more receptive to flow. Csikszentmihalyi (1975a) already noted the older person's tendency to experience flow, but theorized that it was related to educational and socioeconomic factors only. While these factors could hold true in the present investigation, the interview responses suggested an additional explanation, i.e., a change in the domain of

personal knowledge regarding one's ego-involvement in the outcome of competition. Not only did the interrelationship of the flow experience and the emergence of personal knowledge provide insight into the tendency of older people to more readily experience intrinsic rewards, but it also provided support for both Flow Theory (Csikszentmihalyi, 1975a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986).

Related Factors

An analysis of the older adult tennis players' perceptions of their tennis experience suggested four related factors: (a) gender, (b) skill level, (c) socialization, and (d) individual differences. The information generated by the demographic questionnaire, the Progen Sport Flow Q-Sort (1978), and the interview responses are discussed in light of these related factors.

Gender

The comparison of the rank ordering of the Progen Sport Flow Q-Sort (1978) statement types and flow elements suggested a gender-related difference (Tables 5 & 6). The experiential feeling state of worry seemed to be more descriptive of the female tennis experience than of the

Table 5

Rank Order of Q-Sort Statement Types for Men and Women

Statement Type	Mean*	S.D.
<u>Men</u>		
1. Flow	5.96	.46
2. Boredom	3.32	.34
3. Worry	3.10	.61
4. Nonflow	2.57	.98
<u>Women</u>		
1. Flow	5.48	.75
2. Worry	3.96	.92
3. Boredom	3.38	.83
4. Nonflow	2.83	.98

*Values may range from 1-7.

Table 6

Rank Order of Q-Sort Flow Elements for Men and Women

Flow Elements	Mean*	S.D.
<u>Men</u>		
1. Autotelic Nature	6.80	.30
2. Merging of Action and Awareness	6.33	.53
3. Control of Action and Environment	5.86	.80
4. Centering of Attention	5.80	1.26
5. Loss of Ego	5.47	1.04
6. Noncontradictory Demands	5.46	1.09
<u>Women</u>		
1. Autotelic Nature	5.87	.40
2. Centering of Attention	5.86	.87
3. Merging of Action and Awareness	5.60	1.09
4. Noncontradictory Demands	5.40	.90
5. Loss of Ego	5.13	1.47
6. Control of Action and Environment	5.00	1.49

*Values may range from 1-7.

male tennis experience. Also, it seemed that the female participants perceived themselves to be in less control of the action in their tennis experience than did the male participants. Csikszentmihalyi (1975a) mentioned a reciprocal relationship between the feelings of control and worry, i.e., as one feels in control of the action, an absence of worry results. So, as the female participants perceived themselves to be in less control of the demands for action, their experience of worry intensified. These suggested gender-related differences in the participants' perceptions of the experiential state of worry and of the flow element, control of action and environment, provided a potential explanation for the male participants' higher mean scores on the flow statement type and on each of the flow elements (Tables 5 & 6). If the female participants tended to describe their tennis experience in terms of worry, they would probably spend less time experiencing flow and, thus, the flow elements.

The interview responses also suggested a gender-related difference in the older adult tennis players' perceptions of the experiential state of worry. While both male and female participants described worry as a part of their tennis experiences, three of the female participants seemed to experience worry more intensely than the

remaining female and male participants. Csikszentmihalyi (1975a) referred to the intense form of worry as anxiety.

One female participant described her feelings about playing an opponent who was more skilled than she. "It's like putting a lightweight in the ring with a heavyweight." The boxing analogy used in this quote suggested the participant experienced anxiety, which stemmed from a perceived discrepancy between her skill level and that of her opponent. According to Flow Theory (Csikszentmihalyi, 1975a), when a person perceives challenges in the environment to be greater than his or her skills, the resulting experience is anxiety, not flow. In this case, the female participant perceived the challenges posed by a more skilled opponent to be too demanding for her. Thus, she experienced anxiety.

Another female participant described her feelings of anxiety about playing a tournament match. "I would hope but it was never assumed that I should win in my mind. It was always something I had to prove and work toward." The notion of having to prove oneself created anxiety. This notion reoccurred as the participant explained why she sought older adults to be her practice partners when she was a teenager.

You needed an older experienced player to be able to work on your game without having to prove

anything versus when you played someone your age. . . . Even knowing that I would practice with an adult and that I would lose would be more beneficial than practicing with a junior and having that anxiety of now I need to prove myself.

She mentioned that this perspective of proving herself changed as she grew older. "It [tennis] is a lot more fun because proving yourself is not as important as realizing you are doing this for your health."

Another female participant echoed a similar sentiment. "Once you get older, your goals are changed, and your thoughts change, and you don't need to try and prove yourself to other people." Perhaps at one time, this participant's tennis experience produced anxiety because competition was a means of proving herself.

The interview responses of the previous three female participants suggested feelings of anxiety in their tennis experience. It seemed that anxiety stemmed from, in one case, a perceived discrepancy in skill level between oneself and one's opponent, and in two cases, from an ego-involvement in the outcome of competition, i.e., having to prove oneself by winning. Although these two participants believed they did not have to prove themselves any more, it was possible that their anxiety was still reflected in their responses to the Progen Sport Flow Q-Sort (1978).

Meanwhile, there remained seven participants (2 female and 5 male) who did not describe their tennis experience in terms of anxiety. Of these seven participants, the interview responses of six are discussed. There was one male participant who simply did not describe worry as a significant part of his tennis experience.

First of all, it was evident in the quotes of two female participants that: (a) they perceived no great discrepancy between their skill level and that of their opponents, and (b) they were not concerned with having to prove themselves through competition. For example, one female participant described a feeling of nervousness when playing in front of people she knew. "I think you tend to get a little more uptight when you're playing locally and people that usually haven't beaten you. You might be concerned sometimes when the score goes the wrong way." Another female participant described the occasional worry she feels in competition.

If you're talking about the stress of competition, I think everybody who's played has probably had times when they're so worried about winning and losing that they "choke" a match, and I think I've done that. . . . I think it's one of those things where you've lost your timing and you can't quite get it, and your opponent's playing better than you are and then you get tentative and you don't hit your stroke and you're so worried about making a mistake that you do.

This participant also mentioned that some of the statements on the Progen Sport Flow Q-Sort (1978) were troublesome for her.

Terms like anxiety were troubling because I'm not sure what level. I guess maybe there's a tendency to feel anxiety is more intense than what you are meaning. I don't know if it was a slight nervousness or if it was more extreme. So not really knowing how you were defining the terms made some of the questions difficult to answer.

Her problematic interpretation of the term, anxiety, could have influenced her Q-sort score for the worry and boredom statement types. However, it seemed from the interview responses that her tennis experience contained occasional moments of worry, but not anxiety.

Two of the male participants also commented on the troublesome nature of the Progen Sport Flow Q-Sort (1978) statements. One male participant stated:

The sorting exercise, the part that was most difficult for me to answer, were the frequent references to stress and anxiety. . . . Because I think probably my anxiety level must be lower than typical. I don't sense anxiety as much as that sort would suggest might be the case with people.

He speculated that if his tennis experience was as anxiety-filled as some of the Q-sort statements suggested, he would probably not continue to play tennis. "Who wants to stay around an activity and deliberately participate if it's likely to lead to anxiety?"

Another male participant found the term, anxiety, to be problematic. "The only problem I had with it [Progen Sport Flow Q-Sort] was the word, anxiety. I guess some people do get that upset over a game, but that don't ever get to me that's all." For these two male participants, it seemed that feelings of anxiety were not particularly descriptive of their tennis experience.

A male participant thought that it was important to describe what worry meant to him. He recalled the USTA National Championship Tournament that he and his partner won in 1986.

Most of the matches we played went three sets, which means that in any match we could have been blown away. But there was a tremendous amount of pressure, excitement. You have to define what you mean by worry. And to me that kind of excitement or worry or feeling pressure is to be expected. . . . But it's not the sort of thing we wanted to get away from. We wanted the competition; we wanted to be there.

Worry was not only a very individualistic experience, but it was a ubiquitous one according to this participant. "I think we would all like to do well, but when you've played in as many tournaments as I have, we are going to have good days and bad days, and we learn to take it in our stride."

Another male participant echoed this same sentiment regarding the ubiquity of worry in the tennis experience. "I think most tennis players go through a situation where

learning to deal with anxiety is probably the biggest hurdle."

The interview responses of the preceding six participants (2 female, 4 male) suggested that: (a) feelings of worry, not anxiety, were part of the competitive tennis experience, and (b) worry was an individualistic experience. In addition, the interview responses of three male participants illustrated the concept of worry as an individualistic experience. Their quotes revealed how different individuals may deal with feelings of worry or boredom, i.e., the idea of restructuring one's perception of a situation was introduced. As Csikszentmihalyi (1975a) pointed out, "a state of flow does not depend entirely on the objective nature of the challenges present or on the objective level of skills; in fact, whether one is in flow or not depends entirely on one's perception of what the challenges and skills are" (p. 50).

For one male participant, the challenge of playing the famous Bobby Riggs in front of a large crowd could have produced anxiety.

That was one of my memorial experiences, getting to him in front of a crowd of about 300 or 400 people. The important thing, not that I got beat or anything of that nature, was that it didn't bother me. In other words, usually you would think something like that would fluster you, but

I am just enough of a ham to where I played just about as well as I could. I got beat 6-0, 6-1. But that one game I won, I won. . . . But it just shows what an interesting game tennis is. You can be below the level of the other fellow, but when you serve, he has the responsibility of hitting the ball back and you can do what you can to make it a game for him.

The objective nature of the challenges and skills did not result in anxiety for this participant because of his perception of the situation.

Another male participant described how he used the idea of restructuring perception to "broaden the flow that leads to enjoyment," thereby avoiding boredom and worry. He explained:

The situations where I would be playing someone who was not as skilled as I, I would have to change the game just a bit. Where part of my strategy was to hit the shots that they could do well on, and get positive feedback from having done so. . . . What I did is to fundamentally change the nature of the contest. I didn't change the rules of tennis. I just played a different game, where tennis was only a part of the game.

He also employed the restructuring idea in situations that could potentially produce anxiety.

When the challenge end exceeds the skills end, you set alternate goals in the process. For example, if winning a set is not feasible, then winning a game in a set might be feasible. And I've played in matches where winning a game was, in fact, a pretty good challenge. So, redefine your challenge. . . . If the outcome is not defined in terms of victory alone as far as success, then one's able to do that.

This participant realized that he redefined what he was about in his tennis experience, so that the opportunity to experience flow was broadened.

In the preceding quote, the male participant said that he was able to redefine the situation because he did not define success in terms of victory alone. Since two of the female participants' anxiety stemmed from defining themselves in terms of victory alone, i.e., having to prove themselves, this was a potential explanation regarding the gender-related difference in the older adult tennis players' perceptions of the experiential state of worry.

One male participant described restructuring his perception of a situation as just doing "your own mind set." He elaborated:

Honestly, no matter who you're playing, unless the person just can't hit any balls back at all, you can always sort of structure things so that you can work on things. You can set special rules for yourself, the way you're going to play against the person. You can structure things to make it a good experience for both people, and you can still work on things you want to work on.

This participant also mentioned utilizing visual imagery to restructure the situation so that he could work on his game no matter what the objective challenges of the situation. Csikszentmihalyi (1975a) commented that "artists, poets, religious visionaries, and scientists are among those who have learned to use cognitive techniques to order symbols

so that they can 'play' with them any time and anywhere, to a certain extent regardless of environmental conditions" (p. 53). It seemed that this participant could be added to the preceding list of those who use cognitive techniques.

The interview responses of the preceding three male participants illustrated that by restructuring their perception of the environment they could, as one of the participants said himself, broaden the flow that leads to enjoyment. For one female participant, the perceived discrepancy between her skills and the challenges posed by her opponent created anxiety. She was unable to restructure her perception of the situation. The ability to restructure one's perception of the environment was a potential explanation for the gender-related difference in the older adult tennis players' perceptions of the experiential state of worry.

In summary, the information generated by the Progen Sport Flow Q-Sort (1978) and the interview responses suggested a potential gender-related difference in the participants' perceptions of the experiential state of worry in their tennis experiences. While worry was acknowledged to be a part of the competitive tennis experience, three of the female participants seemed to experience anxiety more intensely than the other female and

male participants. The individual's ability to restructure his or her perception of the environment was a potential explanation for the gender-related difference. The interview responses of three male participants illustrated this concept of restructuring.

Skill Level

Skill level was a factor that had the potential to influence the participants' perceptions of their tennis experience. The National Tennis Rating Program (NTRP) was a measure of skill level. The NTRP rankings of the female participants ranged from 3.5-5.0, while the male participants ranged from 4.0-5.0. In general, the skill level of the male participants seemed to be greater than the skill level of the female participants.

Csikszentmihalyi (1975a) commented that the flow experience depended on the acquisition of skill. Flow occurs when there was a balance between the skills of the actor and the challenges or opportunities for action posed by the environment. On the other hand, "when a person believes that his action opportunities are too demanding for his capabilities, the resulting stress is experienced as anxiety" (Csikszentmihalyi, 1975a, p. 49). This imbalance of skill and challenge was a potential

explanation for the feeling of anxiety described by one female participant as "putting a lightweight in the ring with a heavyweight." She perceived the challenges posed by her opponent as too demanding for her skill level.

Furthermore, the acquisition of skills was important because it provided information about the actor. In the flow experience, a person's skills are adequate to meet the environmental demands. Reflection on this experience might become an important component of self-concept (Csikszentmihalyi, 1975a). Two of the female participants thought they had to "prove" themselves through competition. If they perceived that their skills were not adequate to meet the challenges of the environment, their perceptions of themselves were probably not favorable, and thus they experienced anxiety.

In summary, skill level was a factor that had the potential to influence the older adult tennis players' perceptions of the experiential state of worry. In general, the female participants seemed to be less skilled than the male participants, and seemed to experience worry more intensely than the male participants. Thus, it seemed possible that the differences in the older adult tennis players' perceptions of worry could be explained just as well by skill level as by gender.

Socialization

Socialization was a factor that had the potential to influence the participants' perceptions of their tennis experience. Four of the five male participants learned the game of tennis in their teenage years, while only two of the five female participants were introduced to the game of tennis in their teens. In addition, the length of participation in tennis for the male participants ranged from 25-60 years with the mean length of participation for the group being 40.8 years. Meanwhile, the length of participation in tennis for the female participants ranged from 8-55 years with the mean length of participation for the group being 33.8 years. This data suggested that the differences in the older adult tennis players' perceptions of the experience of worry could be influenced by early socialization.

Csikszentmihalyi (1975a) recognized that early socialization had an influence on the available opportunities for participation and subsequent levels of skill development. With regard to the experience of worry or anxiety, the opportunity to participate and to gain experience in competitive tennis was mentioned by two male participants. As one male participant remarked: "I think most tennis players go through a situation where learning

to deal with anxiety is probably the biggest hurdle."

Another male participant stated: "When you've played in as many tournaments as I have, we are going to have good days and bad days, and we learn to take it [worry] in our stride." These comments suggested the importance of experience in the competitive setting in dealing with feelings of worry. Perhaps, the early socialization of the male participants fostered their skill development in tennis and allowed them greater opportunities to participate in the competitive setting than did the early socialization of the female participants.

In summary, socialization was a factor that had the potential to influence the participants' perception of the experiential state of worry in their tennis experience. It was suggested that the earlier socialization of the male participants in competitive tennis allowed them greater opportunities to develop skill in tennis and in dealing with the pressure of competition than their female counterparts who were initiated into the competitive tennis setting later in life. Thus, it seemed possible that socialization could explain the differences in the older adults' perceptions of worry just as well as gender or skill level.

Individual Difference

Individual difference was a factor that had the potential to influence the participants' perceptions of their tennis experience. Csikszentmihalyi (1975a) assumed that there was "an autotelic personality" (p. 22), because he found that individuals varied in the degree to which they responded to flow in the same activity. It seemed possible that the differences in the older adult tennis players' perceptions of worry could be explained by individual personality differences as well as gender, skill level, or socialization.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

A summary of the results and conclusions about the affective and cognitive perspectives of the older adult tennis players are presented in this chapter. Implications for future research are also suggested.

Summary

The purpose of this investigation was to describe the perceptions of older adult tennis players from an affective (Csikszentmihalyi, 1975a) and from a cognitive perspective (Rybash, Hoyer, & Roodin, 1986) based on their responses to a demographic questionnaire, the Progen Sport Flow Q-Sort (1978), and an interview technique. An additional purpose of the present investigation was to explore the potential interrelationship between Flow Theory (Csikszentmihalyi, 1975a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) in the experiential accounts of the participants. There were 10 participants selected for the investigation with equal representation of males and females. The participants ranged in age from 40-75 years.

The information generated by the demographic questionnaire on length of participation, extracurricular involvement, ownership of tennis literature, frequency and type of participation provided evidence of the older adult tennis players' involvement in and personal commitment to the game of tennis. The participants involvement in the game of tennis seemed to fall along a continuum ranging from competitive involvement in tennis to more noncompetitive forms of involvement in tennis. Considering the range of conditions which impact older adults in society, reducing their personal involvement, the value of participation in the game of tennis was considerable for the older adult tennis players in the present investigation.

The information generated by the Progen Sport Flow Q-Sort (1978) and the interview responses indicated that the older adult tennis players perceived the experiential feeling state of flow to be more descriptive of their tennis experiences than the experiential feeling states of worry and boredom. Also, the six elements of the flow experiential feeling state were perceived by the older adult tennis players to be characteristic of their tennis experiences. Csikszentmihalyi (1975a) maintained that

people devoted time and effort to an activity because they gain a peculiar state of experience from it, namely flow. The flow experience was not boring nor did it produce anxiety, rather it provided complete involvement of the participant with the activity. In turn, the activity presented challenges that did not allow the participant to get bored or to worry (Csikszentmihalyi, 1975a). The game of tennis was perceived to be a flow activity by the older adult tennis players providing a gradient of challenges for them to enjoy. The participants indicated that by limiting their stimulus field they could focus their attention on relevant cues and ignore distractions. In turn, the participants felt in control of their actions and the environment. Because tennis had clear and noncontradictory rules, the participants temporarily forgot themselves. The result of all these conditions was that the older adult tennis players experienced the intrinsically rewarding feeling state of flow.

The comparison of previous research (Progen, 1978, 1981; McGirr, 1979) utilizing the Progen Sport Flow Q-Sort (1978) with the present investigation suggested some similarities and differences in the participants' perceptions of the flow experiential feeling state and the

flow elements. While some similarities were seen, the differences were particularly noteworthy.

The comparison of previous Progen Sport Flow Q-Sort (1978) research with the present investigation suggested that the older adult tennis players in the present investigation perceived their sport experiences similarly to other sport persons in the previous Progen Sport Flow Q-Sort (1978) studies in regard to the flow experiential state and two of the flow elements. First, the older adult tennis players in the present investigation and the sport persons in the Progen (1978, 1981) and McGirr (1979) studies perceived the experiential feeling state of flow to be most descriptive of their sport experiences. Second, the flow elements, loss of ego and noncontradictory demands, were least characteristic of the flow experience of the older adult tennis players in the present investigation and the sport persons in the Progen (1978, 1981) and McGirr (1979) studies.

The comparison of previous Progen Sport Flow Q-Sort (1978) research with the present investigation suggested that the older adult tennis players in the present investigation perceived their sport experiences differently than the sport persons in the Progen (1978, 1981) and McGirr (1979) studies in regard to the flow experiential

state and two of the flow elements. First, the older adult tennis players in the present investigation and the high risk sport persons in the Progen (1978) study perceived the flow element, autotelic nature, to be most descriptive of their sport experiences. However, the sport participants in the Progen (1981) and McGirr (1979) studies did not perceive the flow element, autotelic nature, to be most descriptive of their sport experiences, indicating that other flow elements were more characteristic of their sport experiences than autotelic nature. Since the older adult tennis players in the present investigation and the high risk sport persons in the Progen (1978) study were older than the sport persons in the Progen (1981) and McGirr (1979) studies, it seemed that the older sport participants were more receptive to the autotelic nature of the activity. Csikszentmihalyi (1975a) noted that older people were more likely to perceive the intrinsic rewards available in an activity.

Secondly, another difference in the perceptions of the older adult tennis players in the present investigation and the sport persons in the Progen (1978) and McGirr (1979) studies centered on the flow element, merging of action and awareness. The older adult tennis players perceived merging of action and awareness to be the second most

descriptive flow element of their tennis experiences in a rank ordering of all the flow elements. Meanwhile, the sport persons in the Progen (1978) and McGirr (1979) studies ranked merging of action and awareness last, indicating that this flow element was least descriptive of their sport experiences. It was possible that this difference might be due to the task demands of the sport, i.e., whether the tasks were primarily open or closed skills, rather than to the age of the participants.

And finally, the older adult tennis players in the present investigation and the sport persons in the Progen (1978) and McGirr (1979) studies differed in regard to their perceptions of the flow element, control of action and awareness. The sport persons in the Progen (1978) and McGirr (1979) studies perceived control of action and awareness to be more characteristic of their sport experiences than did the older adult tennis players in the present investigation. Once again, it was postulated that this difference was due to the nature of the task demands of the sport, i.e., whether the tasks were primarily open or closed skills, rather than to the age of the participants.

The information generated by the interview responses of the older adult tennis players also supported the

Encapsulation Model (Rybash, Hoyer, & Roodin, 1986), i.e., knowledge is domain-based and the domain of personal knowledge experiences great change during the adult years. Two main themes emerged from an analysis of the interview responses: (a) The game of tennis was a self-revealing activity, and (b) The game of tennis was a shared experience.

The theme, tennis as a self-revealing activity, highlighted the emergence of knowledge in the personal domain, and how this personal knowledge changed through the older adults' participation in tennis. Manifestations of the theme, tennis as a self-revealing activity, were seen as the participants described tennis experiences that: (a) nurtured their self-confidence, (b) provided insight into their personalities, and (c) affected their ability to play tennis over the years. Also, the participants' views regarding competition had changed through the years. This change was due in part to the participants' diminishing ego-involvement in the outcome of competition and to the participants' realization that the process of competition, i.e., the playing itself, is more important than the outcome of the competition.

The theme, tennis as a shared experience, highlighted the social nature of human existence as well as the emergence of knowledge in the personal domain and how this knowledge changed through the older adults' participation in tennis. Manifestations of the theme, tennis as a shared experience, were seen as the participants described tennis experiences in which: (a) the process of competition itself fostered relationships with opponents and friends, (b) they were involved in the teaching or coaching of the game, (c) they played doubles, and (d) tennis was an important social vehicle. It seemed that tennis as a shared experience was a setting for social interaction where the participants could recognize limits and satisfactions within the domain of personal knowledge.

The analysis of the older adult tennis players' perceptions of their tennis experiences suggested four related factors: (a) gender, (b) skill level, (c) socialization, and/or (d) individual difference. Each of these factors was discussed in relation to the older adult tennis players' perceptions of the experiential feeling state of worry.

The information generated by the Progen Sport Flow Q-Sort (1978) and the interview responses suggested a potential gender-related difference in the participants'

perceptions of the experiential feeling state of worry in their tennis experiences. While worry was acknowledged to be a part of the competitive tennis experience by all the participants, three of the female participants seemed to experience worry more intensely than the other female and male participants. The individual's ability to restructure his or her perception of the environment was a potential explanation for the gender-related difference. The interview responses of three male participants revealed this concept of restructuring one's perceptions.

Skill level was a factor that had the potential to influence the older adult tennis players' perceptions of the experiential feeling state of worry. Csikszentmihalyi (1975a, 1978) commented that the flow experience depended on the acquisition of skills. In general, the female participants seemed to be less skilled than the male participants, and seemed to experience worry more intensely than the male participants. Thus, it was possible that the differences in the older adult tennis players' perceptions of worry could be explained just as well by skill level as by gender alone.

Socialization was another factor that had the potential to influence the participants' perception of the experiential feeling state of worry in their tennis

experiences. Csikszentmihalyi (1975a) recognized that early socialization had an influence on the available opportunities for participation and the subsequent levels of skill development. It was suggested that the earlier socialization of the male participants in competitive tennis and other sports allowed them greater opportunities to develop skill in tennis and in dealing with the pressure of competition than their female counterparts, who were initiated into the competitive tennis setting later in life. Thus, the differences in the older adults' perceptions of worry in their tennis experiences could be explained by socialization as well as by gender or skill level.

And finally, the individual difference factor had the potential to influence the participants' perceptions of their tennis experiences. Csikszentmihalyi (1975a) assumed that there was "an autotelic personality" (p. 22), because he found that individuals varied in the degree to which they responded to flow in the same activity. It seemed possible that the differences in the older adult tennis players' perceptions of worry could be explained by individual personality differences as well as by gender, skill level, or socialization.

The information generated by the Progen Sport Flow Q-Sort (1978) and the interview responses allowed the interrelationship of Flow Theory (Csikszentmihalyi, 1975a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986) to be explored. The Progen Sport Flow Q-Sort (1978) provided evidence that the experiential feeling state of flow was most descriptive of the older adults' tennis experiences. Meanwhile, the interview responses revealed that personal knowledge emerged and changed through the older adults' participation in tennis. Hence, for the older adult tennis players in the present investigation, the emergence of personal knowledge occurred in tennis experiences, which they described as being most like the experiential feeling state of flow. In addition, the interview responses suggested that the older adult tennis players' perspectives on competition had changed, in part, due to a diminished ego-involvement in the outcome of competition. Csikszentmihalyi (1975a, 1982a) realized that ego-involvement inhibited the flow experience. Because of the change in personal knowledge regarding competition, the participants in the present investigation were more receptive to the flow experience. It seemed that through the older adults' tennis experiences, which they described in terms of the experiential feeling state of flow, they

developed, maintained, and enhanced the domain of personal knowledge.

The information generated by the demographic questionnaire highlighted another aspect of the interrelationship of Flow Theory (Csikszentmihalyi, 1975a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986). The information generated by the demographic questionnaire on the length of participation, extracurricular involvement, ownership of tennis literature, and frequency and type of participation indicated a strong personal involvement in and commitment to the game of tennis. Roodin and Rybash (1985) contended that under appropriate motivational conditions where personal commitment stimulates affective involvement, cognitive processes may be efficiently maintained and even enhanced. It seemed that the older adult tennis players' personal involvement in and commitment to the game of tennis strengthened the interrelationship of the flow experience and the emergence of personal knowledge.

The implications of this investigation are twofold and are based in the shared, subjective experience of the older adult tennis players. Their tennis experience had value in terms of rewards which were intrinsic in nature and of knowledge gained about self and others.

Conclusions

Based on the analysis of the demographic questionnaire, the Progen Sport Flow Q-Sort (1978), and the interview, the following conclusions are offered.

1. The results of this investigation supported Flow Theory (Csikszentmihalyi, 1975a) and expanded it into an older adult sport population.

2. The concepts inherent in Flow Theory (Csikszentmihalyi, 1975a) had sufficient semantic integrity to be evaluated by the older adult tennis players in regard to their sport experience.

3. The Progen Sport Flow Q-Sort (1978) was a valid and reliable measure of Flow Theory (Csikszentmihalyi, 1975a) in the older adult sport experience.

4. The interview responses of the older adult tennis players supported the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986), i.e., knowledge is domain-based and the domain of personal knowledge experiences great change during the adult years.

5. The interview technique was a valid research tool for eliciting information about the affective (Csikszentmihalyi, 1975a) and cognitive (Rybash, Hoyer, & Roodin, 1986) perspectives from the older adult tennis players.

6. Sport was an excellent arena in which to explore the interrelationship of Flow Theory (Csikszentmihalyi, 1975a) and the Encapsulation Model (Rybash, Hoyer, & Roodin, 1986). With flow providing the affective involvement and with the motivation of personal commitment on the part of the older adult sport participants in the present investigation, tennis was an ideal setting in which personal knowledge was developed, maintained, and enhanced. The sport of tennis was a type of life event with the potential for producing personal growth outcomes.

Implications for Future Research

Based on the results of this investigation, implications for further research are suggested.

1. Clarification of the contribution of the related factors (gender, skill level, socialization, and/or individual differences) to the proposed difference in perception between men and women regarding the experiential state of worry is needed. Utilizing statistical procedures to control for the related factors, a larger number of participants could be included in an analysis of the Progen Sport Flow Q-Sort (1978). A qualitative research strategy could be initiated as a follow-up procedure to explore

in-depth the differences in perceptions between the men and women, if any are found.

2. The identification of personality variables that contribute to the concept of an "autotelic or flow personality" (Csikszentmihalyi, 1975a) is needed. Perhaps through the combination of psychological inventories and in-depth interviewing, the concept of an "autotelic or flow personality" could be better understood.

3. As suggested by the related factor of individual difference in the present investigation, perhaps an in-depth case study approach should be undertaken to fully understand the sport experience as it is experienced by the athlete. This approach might include the Progen Sport Flow Q-Sort (1978), the interview, and selected psychological inventories.

4. Further exploration into the relationship between the nature of the task demands within the sport, e.g. open vs. closed, and the flow experience, particularly the flow elements, is suggested. In the present investigation, differences in the rankings of Q-sort flow elements between the older adult tennis players and sport participants of

other Q-sort studies raised questions about this relationship.

REFERENCES

REFERENCES

- Baddeley, A. D. (1982). Domains of recollection. Psychological Review, 89 (6), 708-729.
- Begley, G. C. (1979). A self-report measure to assess flow in physical activities. Unpublished master's thesis, Pennsylvania State University.
- Benjamin, A. (1981). The helping interview (3rd ed.). Boston: Houghton Mifflin.
- Chalip, L., Csikszentmihalyi, M., Kleiber, D., & Larson, R. (1984). Variations of experience in formal and informal sport. Research Quarterly for Exercise and Sport, 55(2), 109-116.
- Csikszentmihalyi, M. (1975a). Beyond boredom and anxiety. San Francisco: Jossey-Bass.
- Csikszentmihalyi, M. (1975b). Play and intrinsic rewards. Journal of Humanistic Psychology, 15(3), 41-63.
- Csikszentmihalyi, M. (1978). Intrinsic rewards and emergent motivation. In M. R. Lepper & D. Greene (Eds.), The hidden costs of rewards (pp. 205-216). New York: John Wiley & Sons.
- Csikszentmihalyi, M. (1982a). Toward a psychology of optimal experience. In L. Wheeler (Ed.), Review of personality and social psychology (Vol. 3, pp. 13-36). Beverly Hills: Sage.
- Csikszentmihalyi, M. (1982b). The value of sports. In J. T. Partington, T. Orlick, & J. Salmela (Eds.), Sport in perspective (pp. 122-127). Ottawa, Ontario, Canada: The Coaching Association of Canada.
- Csikszentmihalyi, M. (1985). Emergent motivation and the evolution of the self. In D. A. Kleiber & M. L. Maehr (Eds.), Advances in motivation and achievement: Motivation and adulthood (Vol. 4, pp. 93-119). Greenwich, CT: JAI Press.
- Csikszentmihalyi, M. (1988a). The flow experience and its significance for human psychology. In M. Csikszentmihalyi & I. S. Csikszentmihalyi (Eds.), Optimal experience: Psychological studies of flow in consciousness (pp. 15-35). New York: Cambridge University Press.

- Csikszentmihalyi, M., & Rocheberg-Halton, E. (1981). The meaning of things: Domestic symbols and the self. Cambridge, MA: Cambridge University Press.
- Deci, E. L. (1978). Intrinsic Motivation: Theory and application. In D. M. Landers & R. W. Christina (Eds.), Psychology of motor behavior and sport--1977 (pp. 388-396). Champaign, IL: Human Kinetics.
- Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. (New York: Plenum Press.
- Dunlop, F. (1984). The education of feeling and emotion. London: George Allen & Unwin.
- Fairon, J. (1988). Tennis U.S.A., 10(8), 11.
- Gaito, J. (1962). Forced and free q-sorts. Psychological Reports, 10(2), 251-254.
- Gallwey, W. T. (1974). The inner game of tennis. New York: Random House.
- Gardner, H. (1983). Frames of mind: The theory of multiple intelligences. New York: Basic Books.
- Gray, H. R. (1977). Enjoyment dimensions of favorite leisure activities of middle- & old-aged adults based on the flow model of enjoyment. Unpublished doctoral dissertation, Pennsylvania State University.
- Grueneich, R. (1985). Personality, affect, and cognition: Reflections on social-cognitive development. In T. M. Schlecter & M. P. Toglia (Eds.), New directions in cognitive science (pp. 135-146). Norwood, NJ: Ablex.
- Hardeman, M. (1979). A dialogue with Abraham Maslow. Journal of Humanistic Psychology, 19(1), 23-28.
- Harootyan, R. (1982). The participation of older people in sport. In R. Pankin (Ed.), Social approaches to sport (pp. 122-147). East Brunswick, NJ: Associated University Press.
- Harris, J. C. (1984). Interpreting youth baseball: Players' understandings of fun and excitement, danger, and boredom. Research Quarterly for Exercise and Sport, 55(4), 379-382.

- Harris, J. C. (1978). Play and enjoyment: Perspectives and implications. Quest, 29, 60-72.
- Hobart, C. (1975). Active sports participation among the young, the middle-aged, and the elderly. International Review of Sport Sociology, 10(3-4), 27-44.
- Hoyer, W. J. (1985). Aging and the development of expert cognition. In T. M. Schlecter & M. P. Toglia (Eds.), New directions in cognitive science (pp. 69-87). Norwood, NJ: Ablex.
- Ibrahim, H., & Morrison, N. (1976). Self actualization and self concept among athletes. Research Quarterly, 47(1), 68-79.
- Jones, A. (1956). Distribution of traits in current q-sort methodology. Journal of Abnormal and Social Psychology, 53, 90-95.
- Kleiber, D. A., & Maehr, M. L. (Eds.) (1985). Advances in motivation and achievement: Motivation and adulthood (Vol. 4). Greenwich, CT: JAI Press.
- Lazarus, A. A., & Lazarus, C. L. (1990). Emotions: A multimodal therapy perspective. In R. Plutchik & H. Kellerman (Eds.), Emotion: Theory, research, and experience: Vol. 5. Emotion, psychopathology, and psychotherapy (pp. 195-208). San Diego: Harcourt Brace Jovanovich.
- Lazarus, R. S. (1982). Thoughts on the relations between emotion and cognition. American Psychologist, 37(9), 1019-1024.
- Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry. Beverly Hills: Sage.
- Locke, L. F. (1989). Qualitative research as a form of scientific inquiry in sport and physical education. Research Quarterly for Exercise and Sport, 60(1), 1-20.
- Loy, J. W. (1972). The nature of sport: A definitional effort. In E. W. Gerber (Ed.), Sport and the body: A philosophical symposium (pp. 44-53). Philadelphia: Lea & Febiger.
- Maehr, M. L., & Kleiber, D. A. (1981). The graying of achievement motivation. American Psychologist, 36(7), 787-793.

- Martens, V. (1978). The peak experience as it relates to sport: A philosophical inquiry. Unpublished master's thesis, The University of North Carolina at Greensboro, Greensboro, NC.
- Maslow, A. H. (1962). Lessons from the peak experiences. Journal of Humanistic Psychology, 2(1), 9-18.
- Maslow, A. H. (1964). Religions, values, and peak experiences. Columbus: Ohio State University Press.
- Maslow, A. H. (1968). Toward a psychology of being (2nd ed.). Princeton, NJ: D. Van Nostrand.
- Maslow, A. H. (1970). Motivation and personality (2nd ed.). New York: Harper & Row.
- Maslow, A. H. (1971). The farther reaches of human nature. New York: Viking Press.
- McGirr, M. B. (1979). Women professional and amateur golfers' self-perceptions with respect to flow theory. Unpublished master's thesis, University of North Carolina at Greensboro, Greensboro, NC.
- McPherson, B. D. (1982). Leisure life-styles and physical activity in the later years of the life-cycle. Recreation Research Review, 9(4), 5-14.
- McPherson, G. D. (1984). Sport participation across the life cycle: A review of literature and suggestions for future research. Sociology of Sport Journal, 1(3), 213-230.
- Miles, M. G., & Huberman, A. M. (1984). Qualitative data analysis: A sourcebook of new methods. Beverly Hills: Sage.
- Privette, G. (1981a). Dynamics of peak performance. Journal of Humanistic Psychology, 21(1), 57-67.
- Privette, G. (1981b). The phenomenology of peak performance in sports. International Journal of Sport Psychology, 12(1), 51-60.
- Privette, G. (1982). Peak performance in sports: A factorial topology. International Journal of Sport Psychology, 13(4), 242-249.

- Progen, J. L. (1978). A description of stimulus seeking in sport according to flow theory. Unpublished master's thesis, University of North Carolina at Greensboro, Greensboro, NC.
- Progen, J. L. (1981). An exploration of the flow experience among selected collegiate athletes. Unpublished doctoral dissertation, University of North Carolina at Greensboro, Greensboro, NC.
- Progen, J. L., & DeSensi, J. T. (1984). The value of theoretical framework for exploring the subjective dimension of sport. Quest, 36, 80-88.
- Ravizza, K. (1973). A study of the peak-experience in sport. Unpublished doctoral dissertation, University of Southern California at Los Angeles, Los Angeles, CA.
- Ravizza, K. (1977). Peak experiences in sport. Journal of Humanistic Psychology, 17(4), 35-40.
- Roodin, P. A., & Rybash, J. M. (1985). Social cognition: A life span perspective. In T. M. Schlecter & M. P. Toglia (Eds.), New directions in cognitive science (pp. 116-134). Norwood, NJ: Ablex.
- Roodin, P. A., Rybash, J. M., & Hoyer, W. J. (1986). Qualitative dimensions of social cognition in adulthood. Educational Gerontology, 12, 301-311.
- Rybash, J. M., Hoyer, W. J., & Roodin, P. A. (1986). Adult cognition and aging: Developmental changes in processing, knowing, and thinking. New York: Pergamon Press.
- Ryff, C. D. (1985). Adult personality development and the motivation for personal growth. In D. A. Kleiber & M. L. Maehr (Eds.), Advances in motivation and achievement: Motivation and adulthood (Vol. 4, pp. 55-92). Greenwich, CT: JAI Press.
- Schindler, T. M., & Waters, M. (1986). Athletic involvement and aspects of self actualization. Journal of Sport Behavior, 9(2), 59-69.
- Taylor, S. J., & Bogdan, R. (1984). Introduction to qualitative research methods: The search for meanings. New York: John Wiley.

- Veroff, J., & Smith, D. A. (1985). Motives and values over the adult years. In D. A. Kleiber & M. L. Maehr (Eds.), Advances in motivation and achievement: Motivation and adulthood (Vol. 4, pp. 1-53). Greenwich, CT: JAI Press.
- Wohl, A., & Szwarc, H. (1981). The humanistic content and values of sport for elderly people. International Review of Sport Sociology, 16(4), 5-13.
- Zajonc, R. B. (1980). Feeling and thinking preferences need no inferences. American Psychologist, 35(2), 151-175.
- Zajonc, R. B. (1984). On the primacy of affect. American Psychologist, 39, 117-123.

APPENDIXES

APPENDIX A

INTERVIEW GUIDE

INTRODUCTION

1. Are there any comments that you would like to make about the experience of the Q-Sort? Tell me about them.
2. Were there any statements that evoked strong feelings or vivid memories? Tell me about them.
3. Were there any problematic or confusing statements? Tell me about them.

AFFECTIVE PERSPECTIVE

4. Describe a most memorable experience in tennis, such as a most enjoyable experience or a peak experience.

PROBING QUESTIONS

5. What were you aware of while playing? Were you feeling separate from or a part of the experience?
6. What were you concentrating on while playing? Was your focus in the here-and-now of the experience? Tell me about this.
7. Have you ever experienced a sense of oneness, unity, or belonging with others or the surroundings while on court? Tell me about this.
8. Was there a feeling of being in control of the situation? Describe this for me.
9. Was the experience effortless? Tell me about this. Have you experienced this feeling in everyday life? Describe this for me. How do you know when you have done something good or when you have "messed up" on court?
10. What is most enjoyable for you about playing tennis? Why do you play tennis?

COGNITIVE PERSPECTIVE

11. You have just described a most memorable experience. What has this experience revealed to you about yourself?
12. How has your participation in tennis affected your understanding about yourself, others, and/or life in general? Tell me about a tennis experience that has changed your way of thinking about yourself, others, and/or life in general.
13. How have your abilities (physical and mental) changed over your tennis career? How do you feel about these changes?
14. What are your future plans for tennis participation?

CLOSING OR DEBRIEFING

15. Can you think of any other thoughts or feelings that might shed some light on the things we have talked about? If so, tell me about them.
16. How do you feel about what we have discussed?
17. Have you thought about your tennis experience in the manner suggested by my questions?
18. In general, how has tennis influenced your life? What are some of the positives and negatives?

APPENDIX B

PROGEN SPORT FLOW Q-SORT (1978)

<u>Statement Category</u>	<u>Statement</u>
Worry	1. I sometimes worry about my abilities to meet the challenges of a situation prior to an event, but that disappears once I get into the activity.
Worry	2. Sometimes I perceive similar conditions differently, one day they seem within my ability and produce fun and the next they seem beyond my ability and cause me to worry.
Nonflow control	3. Seldom do I experience the thrill and satisfaction of having total control in my sport.
Flow centatt	4. There's a pleasant feeling of total involvement, getting lost in the action.
Anxiety w	5. The anxiety caused by engaging in a situation beyond my mental and physical skills decreases as I seek less demanding challenges.
Anxiety b	6. When there is no opportunity to use any of my skills, I become irritated and anxious.
Anxiety w	7. I make an effort to maintain the pleasure of my sport by developing my skills sufficiently to avoid the anxiety that is associated with too difficult challenges.
Anxiety w	8. There are times when the anticipation of an event causes me to lose sleep.
Boredom	9. No task is so routine that it bores me.
Boredom	10. To avoid boredom, I restructure my environment to allow me to use more of my skills.

- | | |
|----------------------|--|
| Anxiety
b | 11. As my skills completely outweigh a challenge, my boredom increases to a point of anxiety. |
| Boredom | 12. Unless I seek increased challenges, I get bored. |
| Worry | 13. Challenges in my sport rarely cause me to worry. |
| Boredom | 14. I tend to become bored when faced by unchallenging situations. |
| Anxiety
b | 15. I rarely engage in an undertaking so tedious and dull that it causes me to be anxious. |
| Nonflow
autotelic | 16. I pursue my sport for many reasons <u>not</u> primarily concerned with the enjoyment I feel in my movements. |
| Flow
autotelic | 17. The primary satisfaction of sport comes from enjoyment of the experience itself rather than from external rewards such as status, glamour, money, etc. |
| Nonflow
centatt | 18. I am rarely absorbed in the flow of my movements. |
| Anxiety
w | 19. Sometimes I worry about coping with the demands of my sport to the extent that it leads to anxiety. |
| Flow
merga+a | 20. I experience a thrill in my sport when my thoughts and actions merge in a momentary sense of unity. |
| Boredom | 21. As I've increased my skill, situations that were once challenging and exciting are now boring. |
| Anxiety
w | 22. I'd rather not take part in an event beyond my capabilities than suffer the consequences and anxiety of not being able to handle the situation. |
| Flow
autotelic | 23. My sport needs no other justification than my pursuing it. |

- | | |
|-----------------|---|
| Flow control | 24. I derive a tremendous sense of well-being from having complete control of my world in sport. |
| Boredom | 25. Situations that do <u>not</u> have a constant variety of challenges to test my skills are boring. |
| Anxiety
w | 26. No challenge is so great that I feel anxious and uptight about it. |
| Boredom | 27. I only engage in events that are technical enough to challenge my skill so that they will not become dull. |
| Flow
merg+a | 28. When I have everything together, my actions are like breathing, automatic, and unconscious; I am unaware of them. |
| Flow control | 29. Control and self-confidence in my abilities provide a grand expansive feeling in my sport. |
| Flow clarity | 30. In sport, the confusion of daily life is filtered out and I can act with a clarity of purpose. |
| Boredom | 31. When I misjudge the skill required for a task and it is not up to par with my expertise, the experience is boring. |
| Flow
merg+a | 32. I experience more joy and satisfaction while I am actively engaged in my sport than in thinking about past events or future performances. |
| Worry | 33. I worry when confronted by excessive challenges. |
| Worry | 34. To alleviate the worry I experience in meeting challenges beyond my capabilities, I seek easier tasks. |
| Flow
lossego | 35. I forget my "hang-ups" and get lost in the action. |
| Flow control | 36. Part of the thrill of my sport comes from mastering myself and the environment by minimizing the dangers and uncertainties. |

- | | |
|--------------------|--|
| Anxiety
b | 37. When a situation is misclassified by over-rating its difficulty, I feel frustrated and anxious about <u>not</u> having opportunities to exercise my skills. |
| Flow
lossego | 38. My sport provides a "getting away from it all" feeling; I am liberated from the ordinary world. |
| Anxiety
b | 39. I feel a sense of anxiety in my sport when the challenge I face is far below my capabilities. |
| Anxiety
w | 40. When I get into an event that is too difficult for my experience, the thrill and exhilaration changes to sheer anxiety. |
| Worry | 41. As I become more competent, there are fewer situations in which I worry. |
| Anxiety
b | 42. By creating my own "rules" and/or "handicapping" myself, I have added enough challenge to my environment to change a tediously anxious situation to one that is fun. |
| Anxiety
w | 43. Facing overwhelming challenges makes me anxious. |
| Boredom | 44. In sport I have experienced similar conditions as exciting and matching my skill one day and yet simple and boring the next. |
| Flow
clarity | 45. The clear continuous feedback provided in my sport gives me a sense of satisfaction. |
| Nonflow
merg+a | 46. The past and the future absorb me, and my thoughts rarely focus on the here and now of my actions. |
| Nonflow
lossego | 47. I almost never lose myself in the activity to the extent that time seems to pass much faster. |
| Flow
clarity | 48. Unlike the ordinary world, in sport I immediately know the results of my actions and what I must do next. |

- | | |
|--------------------|---|
| Flow
autotelic | 49. The pleasure I experience in my movements is enough to compensate for the time, energy, and money invested in my sport. |
| Anxiety
b | 50. Repeating the same old routine with no opportunity to test my skills is so boring that it makes me anxious. |
| Worry | 51. Improved skill tends to eliminate the worry previously produced by challenges beyond my capabilities. |
| Nonflow
clarity | 52. In sport I must question and judge my every action, what I must do next is <u>not</u> usually automatic. |
| Worry | 53. I limit my sports participation rather than worry about the consequences of situations that are too difficult for me to handle. |
| Anxiety
w | 54. I've considered quitting my sport altogether to eliminate the anxiety caused by too challenging an event. |
| Worry | 55. When I underestimate the risk involved in a situation that's over my head, I experience worry rather than enjoyment. |
| Flow
centatt | 56. When I'm really into my sport, I concentrate so completely that I'm <u>not</u> distracted by other things. |
| Flow
centatt | 57. To feel most satisfied, my sport requires a high pitch of concentration. |
| Anxiety
b | 58. I get anxious when there is no uncertainty about the outcome of an undertaking. |
| Anxiety
b | 59. I'd rather forego an event than suffer the anxiety that results from conditions far below my expertise. |
| Flow
lossego | 60. I never feel self-conscious when I'm doing my thing in sport; I just float along and have fun. |

APPENDIX C

DEMOGRAPHIC QUESTIONNAIRE

1. Age

2. In the space provided below, put the number which represents the highest educational level you have achieved.

- _____
1. Less than 7 years of schooling
 2. Junior High Graduate
 3. Partial High School (10th grade)
 4. High School Graduate
 5. Junior College Graduate
(completed at least 2 years)
 6. College Graduate
 7. Graduate Training (no degree)
 8. Master's Degree
 9. Doctoral Degree

3. How do you make your living? (If you are retired, indicate this. In addition, please identify your occupation prior to retirement.)

4. In the space provided below, put the number which represents your yearly income.

- _____
1. \$1,000-5,000
 2. \$5,000-10,000
 3. \$10,000-15,000
 4. \$15,000-20,000
 5. \$20,000-30,000
 6. \$30,000-50,000
 7. \$50,000-100,000
 8. \$100,000 or above
 9. No outside income

5. What is your NTRP rating? _____
What is your state ranking? _____
What is your sectional ranking? _____
What is your national ranking? _____

6. How long have you played tennis? (How many years, months?)

7. List the tennis organizations, clubs, or teams that you have been or currently are a member of, and indicate for how long. Denote if you have held offices in the club.

Organization,
Club, or Team

Duration

Office

8. List special involvement/services (what, where, when) that you have provided for tennis, such as tournament director, tournament referee, coach/teacher, etc.
9. What tennis periodicals, magazines, etc., do you subscribe to?
- (a) Why do you subscribe to these?
- (b) What articles interest you the most?
10. How frequently do you play tennis?
11. Describe your typical practice experience. (This excludes tournament and league play.) Be specific.

Does the experience include working out with drills, playing games, or a combination of both?

Do you normally play singles, doubles, or both?

What are the ages of your partners and/or opponents?

12. Are you a tournament player? _____ If so, how many tournaments do you play a year? _____ Which tournaments do you play?

If you are not a tournament player, why do you choose not to play tournaments?

13. Do you participate in a league, ladder, round robin? If so, describe your involvement.

What is the name of your league, ladder, or team?

How did you qualify for participation in the league, ladder, or team?

Are the skill levels of your partners and/or opponents in the league, ladder, or team similar to your own skill level?

What are the ages of your partners and/or opponents?

APPENDIX D

INFORMED CONSENT STATEMENT

THE UNIVERSITY OF TENNESSEE, KNOXVILLE
DEPARTMENT OF HUMAN PERFORMANCE AND SPORT STUDIES

INFORMED CONSENT STATEMENT

The purpose of this study is to explore the affective and cognitive perspectives of adult tennis players. In other words, the purpose is to understand what you are feeling while playing tennis and what you know about yourself as a result of your tennis participation.

Your participation in the project consists of three sessions, each of which is expected to last 60-90 minutes. The first two sessions occur within 48 hours of each other, while the final session takes place 1-2 weeks after the second session. The initial session includes the completion of the Progen Sport Flow Q-Sort and a demographic questionnaire. The Progen Sport Flow Q-Sort consists of 60 statements about the sport experience. After reading a statement, you decide if the statement describes your tennis experience and place it on a continuum from "most like me" to "least like me" with various degrees of agreement between the two extremes. The demographic questionnaire asks for written responses to questions about your personal tennis history. The last two sessions involve an interview in which your oral responses will be audiotaped.

Your identify will be kept confidential. Only the researcher will have access to your Q-sort response sheets and demographic questionnaire, which will be locked and stored in a file cabinet in her home. The audiotape of your interviews will remain confidential as well, and the audiotapes will be anonymously transcribed. Both the audiotapes and transcriptions will be kept in a locked file cabinet in the home of the researcher. The audiotapes will be erased at the conclusion of the project. While examples

from the interviews may be cited in reporting the research, any reference to a specific individual will be omitted to protect your identity. Likewise, information from the Q-sort and demographic questionnaire will be reported for the group as a whole. Any reference to individual performance will be disguised to protect your identify.

If you have any questions about the research, please contact Jean Love or Dr. Patricia Beitel at the addresses listed at the bottom of the page. Your participation in this project is voluntary and you may choose not to answer any question and/or withdraw your consent to participate at any time.

I have read and understood the explanation of this study and agree to participate.

Name _____ Date _____

Witness _____ Date _____

Addresses: Jean Love
 Women's Tennis Coach
 Box 2058
 Carson-Newman College
 Jefferson City, TN 37760
 (615) 475-9061

Jean Love
1526 Laurel Hills Circle
Jefferson City, TN 37760
(615) 475-2832

Dr. Patricia Beitel
Department of Human Performance & Sport Studies
The University of Tennessee, Knoxville
Knoxville, TN 37996-2700
(615) 974-5111

APPENDIX E

LETTER TO DR. JANICE PROGEN

1526 Laurel Hills Circle
Jefferson City, TN 37760
September 22, 1989

Dr. Janice Progen
408 W. Columbia Avenue
Champaign, IL 61820

Dear Dr. Progen,

I am writing to confirm our phone conversation concerning the use of the Progen Sport Flow Q Sort in my dissertation entitled "The Affective and Cognitive Perspectives of Older Adult Tennis Players." The essence of our conversation is summarized as follows:

- (1) Permission was secured from Dr. Janice Progen to utilize the Progen Sport Flow Q Sort in the dissertation entitled "The Affective and Cognitive Perspectives of Older Adult Tennis Players."
- (2) Dr. Progen recommended a 60 statement Q-sort and an unforced distribution of sort responses.
- (3) Dr. Progen recommended utilizing an interview technique with the Progen Sport Flow Q-Sort to achieve in-depth information on the flow experience in sport.

If you feel that this summary reflects the main points we discussed, please sign at the bottom of the page, and return one copy of the letter in the self-addressed stamped enveloped.

I admire the uniqueness, creativeness, and scholarship of your thesis and dissertation. I appreciate your help with, and support of my dissertation project.

Sincerely,

Jean Love

As presented above, I concur with the summary of our telephone conversation.

Name

Date

Additional Comments:

APPENDIX F

Q-SORT DIRECTIONS

You have a set of 60 cards, a diagram of boxes, and a pencil. On each card is a statement that describes a feeling you may experience while playing tennis. Your task is to sort the statements according to how each one describes you as you generally perceive your tennis experience. In other words, you are to place each statement along a continuum ranging from "most like me" to "least like me."

The diagram of boxes contains 70 boxes and is organized in seven columns. In the extreme left column, A, record the numbers of the statements that are most like you in tennis; in column B, record the numbers of statements that are next like you in tennis. Continue in this manner. The numbers recorded in column G are those reflecting the statements that are least like you in tennis. Keep in mind that you are sorting the statements along a continuum.

There is no limit to the number of statements you may place in each column. You are encouraged to place one statement in each column. If you need to place more statements in a column than there are boxes, you may record additional numbers of statements in the space provided below the column. Since there are more boxes than there are statements, you are not recording a number in every box. However, you must record each numbered statement once.

For each statement, you are encouraged to take as much time as you need to make a thoughtful response. There are no "right" or "wrong" answers because the sorting of the statements reflects your perceptions of your own tennis experience. Therefore, each person's sort is unique.

There is no special way to go about the sorting activity. One suggested method is to read through the statements and decide which ones are like you or not. Place the "like me" cards on the left; the "not like me" cards on the right. Then, read through the "like me" stack of statements and decide which one is the most descriptive of you in tennis. Continue through the "like me" stack of statements and set aside all the cards that are equally most like you. These statements belong in column A. Next, change to the "least like me" stack of cards and proceed in a similar manner. After selecting cards that are placed in column G, continue this process with the remainder of the cards until the sorting is completed in the middle. When you are certain of the arrangement of cards, record each statement number in a box in the appropriate column.

[illegible]

APPENDIX H

START LIST OF CODES

<u>General Category</u>	<u>Specific Code</u>	<u>Interview Question</u>
Q-SORT	QCOM	1
	QFEEL or QMEM	2
	QPROBLEM	3
FLOW	FEXP	4
	FAWARE	5
	FCONC	6
	FUNITY	7
	FCONTROL	8
	FEFFORT	9
	FWHY	10
SELF	SREVEAL	11
	SUNDERSTAND	12
	SABILITY	13
	SFUTURE	14
DEBRIEF	DOTHER	15
	DFEEL	16
	DTEX	17
	DPOS or DNEG	18

VITA

Nancy Jean Love was born in Knoxville, Tennessee, on December 17, 1960. She attended elementary school in Jefferson City, Tennessee, and graduated from Jefferson County High School in May 1979. She entered Carson-Newman College and in May 1983 received a Bachelor of Science degree in Health and Physical Education. In August 1983, she accepted a graduate teaching assistantship at George Peabody College of Vanderbilt University. She completed a Master's degree in Physical Education in May 1985. During the 1985-86 academic year, she was a nondegree seeking graduate student in Physical Education at the University of Tennessee, Knoxville. From 1986 to 1988, she was a full-time graduate student in Physical Education at Louisiana State University and then at Temple University. In the fall of 1988, she returned to the University of Tennessee, Knoxville, and will receive the Doctor of Education degree with a major in Human Performance and Sport Studies in December 1991.