A REVISION AND VALIDATION STUDY OF THE HOWE SPORT BEHAVIOR ASSESSMENT SCALE

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ABSTRACT

The use of general personality inventories in sport psychology research has not yielded satisfactory results. An urgent need exists for the development of accurate sport-specific measurement instrumentation. The Howe Sport Behaviour Assessment Scale (HSBAS) was selected as a promising sport-specific measurement instrument requiring formal revision and validation.

The purposes of this study were both to revise and to validate the HSBAS. A single sample of 426 physical education students from the University of Victoria and School District #63 completed the unrevised version of the HSBAS. In addition, 105 of the subjects were retested in order to provide test/retest data.

The HSBAS was revised by the author of the scale using information gained from factor analysis and item score/total score intercorrelations. Test/retest reliabilities and internal consistency reliability coefficients were calculated using revised HSBAS data. The reliabilities exceeded criterion levels established by previous research in sport psychology. Construct validity of the HSBAS was partially examined by comparing the group scores of male and female high school and university subjects. Statistically significant differences were found confirming a priori hypotheses. The HSBAS' ability to distinguish between groups was considered a

positive indication of the scale's applicability to the sport setting.

Further testing of the HSBAS was recommended in light of the study's promising results.

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DEDICATION

For my parents.

CHAPTER I

INTRODUCTION

A fundamental goal of science is the development of valid and reliable measurement instruments. With proper instrumentation, science is given a means of perception with which to make new discoveries and insights (Bateson, 1979).

In the evolving discipline of sport psychology a number of researchers have advocated the development of sport-specific instruments (Kenyon, 1968; Rushall, 1975; Harris, 1978). Little, however, has been achieved in this regard until recently. Kroll (1976), for example, stated that "almost nothing has been accomplished on developing specific and pertinent measurement tools for assessment of personality attributes in athletic situations" (p. 387). Research investigations into the behavioral dispositions of athletes have generally used a variety of objective personality questionnaires originally designed for the selection of personnel in business or industry (Ogilvie, 1978). As a result "many of the dispositions assessed in general personality inventories may not be pertinent to an athletic context" (Carron, 1980, p. 36) and, more importantly, the use of general personality inventories could be "the major cause of discouraging results in athletic personality research" (Kroll, 1976, p. 387).

In the field of motivation, two behavioral dispositions deemed especially salient in the athletic context are affiliation

and achievement. Affiliation refers to an athlete's predisposition to seek, attain and maintain social bonds with other athletes while achievement refers to an athlete's predisposition to have standards of excellence applied to his or her performance (Alderman, 1974).

Research investigations into the affiliative and achievement qualities of athletes, however, have yielded ambiguous and inconsistent results (Howe, 1976). Specific literature reviews in the area support the view that part of the confusion may be due to ineffective instrumentation (Donnelly & Birrell, 1978; Donnelly, Carron & Chelladuri, 1978). Given the importance of achievement and affiliation in sport, relatively little has been done to develop sport-specific instruments to measure those constructs. There is a clear need, therefore, for the development and validation of an effective measurement instrument dealing with the affiliative and achievement characteristics of athletes.

In an attempt to examine these characteristics in athletes, Howe (1976) developed the Howe Sport Behavior Assessment Scale (HSBAS). The HSBAS in its original form was a 35 item self-report questionnaire conceptually based on the achievement and affiliation incentives in Birch and Veroff's behavioral model of motivation (1966). As a sport specific testing instrument, the HSBAS sought to measure an athletes' behavioral propensities to perceive and act in accordance with stimuli revolving around affiliation

and achievement. Despite some promising results, however, validation procedures for the HSBAS were incomplete thus undermining the usefulness of the findings.

Statement of the Purpose

The purposes of this study were both to revise and to validate the HSBAS. The procedures used included factor analysis, item score/total score intercorrelations, test/retest reliability determination, internal consistency determination and comparison between group mean scores.

CHAPTER II

REVIEW OF LITERATURE

Any review of literature related to psychometric validation can be boundless in diversity and expansiveness. This chapter, thus, will summarize pertinent psychometric validation procedures and review the conceptual basis and the evolution of the HSBAS.

Psychometric Validation Procedures

Reliability and validity define the technical qualities of behavioral measurement instruments. Reliability involves the consistency among observed scores (Kane, 1982), while validity deals with the "soundness and relevance of a proposed interpretation of scores" (Cronbach, 1984, p. 125).

The practical purpose of estimating reliability centres around the computation of the error of measurement. With the error of measurement one can predict "the range of fluctuation likely to occur in a single individual's score as a result of irrelevant, chance factors" (Anastasi, 1982, p. 102). This study calculated two widely used types of reliability assessment: test/retest reliability and coefficient alpha.

The validity of a behavioral measurement instrument is determined through a continual, open-ended process. Current thinking in the area now tends to view all validation as construct validation (Cronbach, 1984; Messick, 1975). A psychological construct

is a theoretical idea developed to explain and to organize some aspects of existing knowledge. The assessment of construct validity is said to occur when a test or other set of operations is evaluated in light of the specified constructs. Construct validity enables the test user to assign a degree of confidence to a test score as being representative of a construct. A major difficulty with construct validation is the obscure nature of psychological constructs. The inability to explicate a construct necessitates indirect measurement approaches (Lord & Novick, 1968). Two such approaches used in this study were factor analysis and comparison between group scores.

Factor analysis provides descriptive information by grouping interrelated behavioral tendencies underlying a set of data. Understanding of a particular construct and its associated test is gained by careful examination of the behavioral groupings. Factor analysis has been used in intelligence test development since the 1940's (Burt, 1941; Thurstone, 1947) and in personality test development since the 1950's (Guilford & Zimmerman, 1956; Guilford, 1959). Through the years factor analysis has gained wide respect as a useful tool in the development and validation of psychometric scales. Two notable examples of the effectiveness of factor analysis in this area are the doctoral dissertations of Wood (1980) and Collis (1984). In both dissertations factor analysis played a central role in the development of highly specific psychometric scales.

Comparison between group scores can support a given formulation of a construct and its test if results confirm related a priori hypotheses. This technique has been used in validating many scales including the Sensation Seeking Scale (Zuckerman, 1979), The Trait Anixety Inventory (Spielberger, et al., 1970) and the Sport Competition Anxiety Test (Martens, 1977).

Conceptual Basis of the HSBAS

The study of human motivation strives to understand the selection, intensity and persistence of behavior. It is a complex field of study relying on many different approaches. One approach which is seemingly able to integrate empirical data derived from various theoretical positions is Birch and Veroff's (1966) general behavior model. It is a comprehensive model composed of four major components; availability, expectancy, motive, and incentive. Availability is defined as the extent to which a particular stimulus situation makes available a particular course of action. Expectancy is defined as the expectancy that engaging in an activity will lead to a particular goal. Motive refers to the strength of the attraction or repulsion to a general class of behavior consequences while incentive refers to an organism's attraction or repulsion to a particular class of behavioral consequences. Birch and Veroff posited seven major incentive systems (independence, power, affiliation, achievement, curiosity, sensory and aggres-

sion) which in combination with the model's other components, determine an organism's behavioral tendency strength. The strongest of a number of competing behavioral tendencies is assumed to be translated into actual goal-directed behavior.

Two sport related behavioral tendencies which have impressive research traditions and are by nature particularly well suited for exploring athletic behavior are achievement and affiliation. Participation in sport provides a clear opportunity to gain membership into a tightly knit group and to establish close social bonds with fellow athletes. Sport also conforms to three major criteria of any achievement situation, namely, that the outcome is challenging and uncertain, that the behavior displayed is evaluated by a definite standard of excellence and that the athlete perceives the outcome as determined by his or her own skill and not by chance (Donnelly & Birrell, 1978).

Numerous authors have recognized the importance of affiliation and achievement in sport motivation. Robert's (1984) comprehensive sport motivation model, for example, includes components of both competitive ability (achievement) and social approval (affiliation). Preliminary testing of the model has verified the predominance of these two components. In a review of group cohesion in sport Widneyer, Brawley and Carron (1985) relate cohesion (affiliation) with effectiveness (achievement) and state "it is not surprising that some social scientists have considered cohe-

sion to be the most important small group variable" (p. 2). On a non-theoretical level, the Coaching Association of Canada (1983) stresses to coaches of all levels the importance of affiliation and achievement and provides detailed information on how to exploit these motivators. It is interesting to note that the coaching manual provides no methods for evaluating psychological "fitness" in contrast to extensive sections provided for evaluating physiological fitness.

Previous attempts to develop instruments to measure achievement and affiliation motivation in athletes have been few and largely unsuccessful. The most comprehensive recent effort has been the Alberta Incentive Motivation Inventory (IMI) as devised by Alderman (1976) and validated by Wood (1980). The IMI is conceptually based on Birch and Veroff's (1966) motivational model with the major modification of splitting the achievement motive into two components labelled excellence and esteem. Excellence was defined as an intrinsic asocial type of achievement while esteem was defined as social achievement involving status, prestige and recognition. The reliabilities of the IMI affiliation, esteem and excellence tests are relatively low while the respective validities can be described as mixed.

Evolution of the HSBAS

The Birch and Veroff (1966) model provides a readily adaptable conceptual framework for specific situations such as sport. In order to adapt the model to a sport context, however, the strength of the incentives must be operationalized in terms of the setting (Veroff, 1978). Development of the HSBAS, therefore, began by forming a pool of items obtained mostly from various socio-psychological measures used by physical educators. The measures included the Behavior Attitude Checklist, the Peterson Social Efficiency Scale, the Mercer Attitude Inventory and the Nelson Self Concept Statement Test. Items were selected on the basis of the content validity and were subsequently modified to ensure each item's comprehensibility by athletes 13 years of age and older. A pool of 50 items was then administered to a group of community and college athletes. Item analysis on the resultant data was used to revise the scale down to 35 items.

An unusual feature of the unrevised HSBAS was that 17 of the 35 items were used simultaneously for both the affiliation and achievement subtests (see Appendix A) (29 items comprised the achievement sub-test while 23 items made up the affiliation sub-test). The unrevised HSBAS was, therefore, employing a partial ipsative scoring system--that is, the strength of each incentive system was not being represented in completely absolute terms. The frame of reference used was partially individual and partially

normative. This scoring system made the unrevised HSBAS's conceptual base highly complex.

In a preliminary pilot study, Howe (1976) compared coaches' rankings of the achievement and affiliative qualities of a small group of canoeists with the athletes' HSBAS responses to the scale. Rank order correlation coefficients were .85 and .76 for the achievement and affiliation constructs respectively.

A second study (Howe, 1976) examined the ability of the scale to discriminate between different groups. Subjects were grouped according to membership in either a provincial all-star rugby side ($n = 19$) or a college rugby side ($n = 20$). The HSBAS was administered toward the conclusion of the playing season and the data treated by the Mann-Whitney U-Test. The results indicated that provincial all-star rugby players had higher achievement and affiliation scores than did college rugby players at the $p < .002$ and the $p < .10$ levels respectively.

A third study (Howe, 1977) examined the affiliative and achievement qualities of 200 high school athletes. One-way analysis of variance compared four groups of athletes formed on the basis of age and sex (senior secondary boys, senior secondary girls, junior secondary boys, junior secondary girls). The Scheffe method was used to examine differences between groups. Results indicated that boys at both the senior and the junior secondary levels had higher ($p < .01$) achievement HSBAS scores than

did senior secondary girls. The senior secondary boys had lower ($p < .01$) affiliation HSBAS scores than both the senior secondary girls and the junior secondary boys. No other differences were significant. Two-way analysis of variance was used to examine the effects the independent variables of success (determined by whether an athlete's team made the local play-offs) and sex had on the criterion variable of HSBAS scores. Males scored higher ($p < .01$) on achievement while females score higher ($p < .06$) on affiliation. Successful athletes scored higher ($p < .08$) on affiliation than did unsuccessful athletes. Interaction effects between the two independent variables were significant for affiliation scores only. Successful males, successful females, and unsuccessful females had statistically identical affiliation scores while unsuccessful males had significantly lower affiliation scores.

A fourth study (Howe, 1980) investigated the affiliative and achievement qualities of 163 synchronized swimmers. A discriminant analysis was applied using HSBAS scores and various demographic data. Sixty-four percent of the subjects were correctly classified.

A fifth study (Robinson, 1985) assessed four behavioral characteristics of 30 elite rock climbers and 28 elite games players. The behavioral characteristics measured included achievement and affiliation motivation as measured by the HSBAS, sensation seeking as measured by the Sensation Seeking Scale and trait anxiety as

measured by the Trait Anxiety Inventory. A MANOVA was performed on the data and a significant multivariate difference was found between the elite rock climbers and elite games players groups. No significant differences were found for achievement and affiliation motivation when the variables were tested individually.

The HSBAS underwent minor revision after use in each of the first four studies. Instructions were modified and certain items reworded according to user input. The scale was shown to be practical, inexpensive and easy to administer.

The author of the HSBAS, through discussion with sport psychologists, decided to make major revisions to the scale. The revised HSBAS was to employ the standard questionnaire scoring format of one score per item and was to be 15 items per subtest in length.

CHAPTER III

Procedures and Results

Three stages were used to revise and validate the HSBAS. Stage one consisted of item analysis and revision. Stage two consisted of reliability estimation. Stage three consisted of a comparison between group score means. Data obtained from a single sample were used for each stage, excepting that data which were eliminated through stage one revisions.

Subjects

The sample consisted of 426 students aged 15 to 25. Subjects were obtained from physical education classes in School District 63 Saanich (grades ten, eleven, twelve) and the University of Victoria. Selection was not random but included all students who participated in physical education classes during the test period. The distribution of the sample is summarized in Table 1.

Table 1

Sample Distribution

Class	Male	Female
High School	118	137
University	84	87

Data Collection Procedures

Data were collected over a period of one month during spring term. Subjects were introduced to the general purpose of the research and given minimal instruction in order to replicate field conditions for which the HSBAS was originally designed. Demographic data were collected by asking subjects to self-report their sex and age. In addition, two groups of University of Victoria subjects were retested one week and six months after initial testing. Seventy-four subjects were in the one week retest group while thirty-one subjects were in the six month retest group. Data gathered from the retest groups were used to calculate test/re-test reliability co-efficients.

Stage One: Item Analysis and Revision

For the purpose of revision, items which initially measured both affiliation and achievement were to be eliminated from one or both subtests. Items which measured one construct solely were considered for retention along with the other items which measured both constructs. Each item and its corresponding variable number for each construct in the unrevised HSBAS is listed in Appendix A.

Item analysis and revision was conducted by the author of the HSBAS. Each item was scrutinized individually using a subjective relativistic criteria. This approach was deemed prudent for two reasons: (a) selection of a "double barrelled" item for one sub-

test could affect the quality of the other subtest, (b) the lack of a clear consensus in the area of psychometric scale construction as to what constitutes the correct method of scale revision. A "good" item in this study was one which was thought to contribute to the breadth and depth of the scale while retaining its contribution to the scale's overall psychometric integrity.

Questionnaire development has generally relied on a number of different techniques for the formulation, selection and grouping of items. It is not unusual to find two or more procedures used in the construction of a particular inventory. The various procedures available are not mutually exclusive and can all be combined theoretically in the construction of a single scale (Anastasi, 1982).

Statistical information used in this stage consisted of factorial analysis, Pearson product-moment correlations of each item score with its related total test score and frequency distribution of responses for each item.

Factor Analysis

In order to test the hypothesis that the correlations in the correlation matrixes of both the affiliation and achievement subscales represented random variations around the true values of zero, Bartlett's test of sphericity (1950) was performed using SPSS-X (SPSS Inc., 1983). The hypothesis was rejected ($p < .000$)

for each sub-test matrix. An examination of the datas' factor structure could, therefore, proceed.

The factor analysis used was a principal component analysis with varimax rotations using SPSS-X (SPSS Inc., 1983). The number of factors retained for rotation was equal to the number of eigenvalues greater than one.

The variable loadings and the eigenvalues of the eight rotated factors for the achievement sub-test are shown in Tables 2 and 3. The variable loadings and the eigenvalues of the seven rotated factors for the affiliation sub-test are shown in Tables 4 and 5.

Table 2

Variable Loadings on Eight Rotated Factors for the Achievement Sub-test

Achievement Variable Listings	Factors I - VIII							
	FI	FII	FIII	FIV	FV	FVI	FVII	FVIII
1	.111	.589	-.093	.213	.070	-.019	.069	.301
2	.636	-.004	.159	-.101	.101	.156	-.077	.185
3	.129	.501	.198	-.085	-.426	-.039	.005	-.020
4	.177	.582	.038	-.039	.072	.323	.082	.052
5	-.360	.434	.016	-.216	-.111	.042	-.111	.032
6	-.243	.312	.054	.086	.164	-.010	.525	-.217
7	.749	-.001	.080	-.169	-.017	.024	-.022	.045
8	-.075	.074	.062	.048	.132	.579	.182	.195
9	.007	-.004	.014	.062	.612	-.094	-.005	-.026
10	.111	.067	.093	-.035	.587	-.332	.042	-.167
11	.727	.214	-.013	-.004	-.067	-.041	-.024	-.110
12	.178	.658	.095	.222	.044	-.084	.054	.061
13	.062	-.062	-.114	-.125	-.301	.180	.585	-.078
14	-.124	.041	.015	.038	.057	.066	.729	.232
15	-.040	.065	-.043	-.094	.056	.017	.065	.764
16	.017	.650	.169	.114	.027	.059	.077	-.250
17	.044	-.058	.037	.676	.078	.129	.194	.007
18	.584	.068	.154	.066	.099	-.217	-.023	-.051
19	.473	.419	.193	.094	-.033	.149	-.069	-.012
20	.094	.170	.220	.589	-.016	-.056	.155	-.002
21	.495	.302	.449	.008	.130	.083	-.106	-.013
22	.618	.105	.305	.200	.089	.279	-.151	.000
23	.229	.090	.743	.106	.202	.000	-.022	-.049
24	-.437	.385	.124	.023	-.074	.249	-.119	.242
25	.141	.015	-.050	-.004	.592	.188	-.048	.112
26	.087	.109	.813	.017	-.110	-.021	.068	.033
27	.441	.038	.458	-.101	-.013	.168	-.243	-.128
28	-.224	.101	-.068	.553	-.194	.229	.151	-.316
29	.161	-.088	-.008	-.170	.081	.671	.028	-.215

Table 3

Eigenvalues for the Achievement Sub-test

		Variance Explained	
Factor	Eigenvalues	Percentage of Variance	Cummulative Percentage
I	4.750	16.4	16.4
II	2.786	9.6	26.0
III	1.823	6.3	32.3
IV	1.357	4.7	37.0
V	1.245	4.3	41.2
VI	1.201	4.1	45.4
VII	1.139	3.9	49.3
VIII	1.060	3.7	53.0

Table 4

Variable Loadings on Seven Rotated Factors for the Affiliation Sub-test

Affiliation Variable Listings	Factors I - VII (Rotated)						
	FI	FII	FIII	FIV	FV	FVI	FVII
1	.452	-.084	.246	.171	-.079	.296	-.100
2	-.143	.672	.034	.326	-.156	.118	-.025
3	.099	.707	-.040	.207	.003	-.088	-.054
4	.516	-.067	.112	-.080	.028	-.010	.494
5	.646	-.059	.136	.270	-.010	-.126	-.060
6	.146	.043	.672	-.017	.055	-.047	.053
7	.334	.494	-.065	.169	.214	.091	-.178
8	-.006	.413	.370	-.199	.435	.110	.107
9	.241	.094	.043	.473	.055	-.239	-.029
10	-.092	.051	-.032	.077	-.028	.065	.855
11	.379	-.382	-.421	-.048	-.050	.117	.204
12	.682	.001	.077	-.028	-.055	.179	-.031
13	.002	-.062	.063	.179	.781	-.008	.114
14	-.002	.076	.070	.702	.182	.159	-.034
15	.688	.183	.060	-.114	.019	.096	.087
16	-.236	.468	.348	.166	-.050	-.292	.019
17	-.144	.317	.071	.556	.067	.050	.149
18	.163	-.056	.032	.085	-.063	.798	.040
19	-.587	.342	.224	.055	.128	-.024	.058
20	.136	.070	.683	.207	-.124	.166	-.021
21	-.131	.652	.212	-.071	.158	.001	.152
22	.082	.460	.026	-.088	.150	.502	.089
23	-.128	.145	-.150	.119	.609	-.039	-.189

Table 5

Eigenvalues for the Affiliation Sub-test

	Variance Explained		
Factor	Eigenvalues	Percentage of Variance	Cummulative Percentage
I	3.538	15.4	15.4
II	2.888	12.6	27.9
III	1.384	6.0	34.0
IV	1.310	5.7	39.7
V	1.163	5.1	44.7
VI	1.087	4.7	49.4
VII	1.012	4.4	53.8

The revealed patterns of variance was similar for both the achievement and the affiliation sub-tests. A relatively strong first factor was followed by several smaller factors with lower eigenvalues. Simple structure was approximated by variable loadings on the retained factors for both sub-tests.

Additional Analyses

The intercorrelations of items with their related total test scores are shown in Appendix B. Higher correlations were preferred over lower correlations in order to enhance internal consistency.

The frequency distributions of responses for each item are shown in Appendix C. This analysis was of minor importance for revisional purposes. The information was used only when items appeared equal on the other analyses.

Scale Revision

Throughout the revision each item and its associated test was compared and examined for content validity. Conceptual purity of the items and a balanced overall test as judged by the originator of the HSBAS was an essential priority. The revision of the scale also attempted to best describe the common factor structure underlying the data while simultaneously utilizing item/sub-test score correlational information.

The major decision of HSBAS revision occurred when examination of the variable loadings of both the achievement and affiliation sub-tests revealed that the first factor of the affiliation sub-test was composed solely of the following items:

* I accept defeat in games without being distressed.
* I am single-minded in my approach to winning.
* I accept easily not being the best in my sport.
* I hate to lose.
* I am selfish in my desire to succeed.
* I enjoy being a leader in my sport.

and that five out of the same six items formed essentially the second factor extracted from the achievement sub-test. Since the listed items were seen to hold greater relevance to the achievement construct conceptually, the achievement sub-test retained every item except "I enjoy being a leader in my sport" which was retained by the affiliation sub-test. The remaining revisions proceeded without difficulty. Appendix D compares the unrevised with the revised HSBAS by variable number. The final revised version of the HSBAS (referred subsequently to as HSBAS-R) complete with user instructions is shown in Appendix E.

Stage Two: Reliability Estimation

Test/retest and internal consistency reliability coefficients were calculated using SPSS-X (SPSS Inc., 1983). The reliabilities of the revised achievement and affiliation subtests are described in Table 6.

Table 6

HSBAS-R Reliabilities

	Achievement k=15	Affiliation k=15
One week test/retest (n=74)	.86	.81
Six month test/retest (n=31)	.80	.82
Internal consistency (alpha) (n=426)	.78	.68
Standard error of measurement (n=426)	3.53	2.88

One week and six month test/retest reliability coefficients for the achievement subtest were .86 and .80 respectively. One week and six month test/retest reliability coefficients for the affiliation subtest were .81 and .82 respectively. Coefficients alpha using the entire data set (n=426) for the achievement and affiliation sub-tests were .78 and .68 respectively. (Coeffi-

cients alpha using the male sample data (n=202) for the achievement and affiliation subtests were .76 and .69 respectively. Coefficients alpha using the female sample data (n=222) for the achievement and affiliation subtests were .76 and .69 respectively. Coefficients alpha using the high school sample data (n=255) for the achievement and affiliation subtests were .75 and .62 respectively. Coefficients alpha using the university sample data (n=171) for the achievement and affiliation subtests were .75 and .55 respectively.)

In an extensive review of test validation as related to sport research Martens (1977) recognized test/retest reliability as acceptable when between .60 and .70. Alpha coefficients of .60 or greater have also been considered acceptable in past sport psychology research (Gould, Weiss & Weinberg, 1981; Highlen & Bennett, 1983; Weiss, Bredemeier & Shewchuk, 1985). The reliabilities of the HSBAS-R are within these criterion levels.

Stage Three: Comparison Between Group Scores

Two research hypotheses were selected for this stage. Hypothesis one: male subjects would score higher on achievement than female subjects. Hypothesis two: female subjects would score higher on affiliation than male subjects.

The formulation of the hypotheses were determined by a review of sport-related literature (Donelly & Birrell, 1978; Donelly et

al., 1978; Loy et al., 1976; Williams, 1978) and by consideration of developmental influences common to North Americans. As was noted previously, research investigations into the affiliative and achievement qualities of athletes have yielded ambiguous and inconsistent results. The hypotheses, therefore, were based more on inference than on hard empirical evidence.

A multivariate analysis of variance using the dependant variables of achievement and affiliation compared group scores based on sex and grade (high school vs university). Univariate analyses of variance followed up significant multivariate F's. HSBAS-R data was used in the analysis. The Multivariate analysis of variance results are shown in Table 7. The appropriate univariate follow-ups are shown in Table 8. Cell means and sample numbers are displayed in Table 9.

Table 7

Results of the Multivariate Analysis of Variance

Effect	Multivariate F	Significance of F
Grade	53.22	.000
Sex	21.22	.000
Grade x sex	1.12	.326

Table 8

Results of the Univariate F-test Follow-Ups

Dependent Variable	Effect	F	Significance of F
Ach	Sex	22.21	.000
Aff	Sex	8.08	.005
Ach	Grade	30.82	.000
Aff	Grade	99.89	.000

Table 9

Cell Means and Sample Numbers

Independent Variable	Achievement Mean	Affiliation Mean	Sample Number
High School Males	47.36	48.69	116
High School Females	43.30	50.63	135
University Males	50.26	54.96	84
University Females	47.93	56.47	87

As is shown male subjects scored significantly lower on affiliation and significantly higher on achievement than did female subjects confirming the a priori hypotheses. Additionally, high school subjects scored significantly lower on affiliation and achievement than did university subjects. The ability of the HSBAS-R to discriminate between these groups provides a positive indication of HSBAS-R construct validity.

CHAPTER IV

Discussion and Conclusions

Discussion

Lewin (1935) has stated that cohesion (affiliation) is necessary for group movement toward the achievement of objectives and for group maintenance. Evidence gathered from research in sport confirms the importance of achievement and affiliation as motivating variables. Hampering investigations, however, has been the lack of effective conceptual models and related measurement instruments. The purposes of this study were both to revise and validate the HSBAS; a sport-specific instrument for the measurement of achievement and affiliation motivation.

Determining the effectiveness of the HSBAS-R in light of the study's positive results is difficult. Few absolute or relative landmarks exist with which to take bearings. Perhaps the most highly regarded and extensively tested sport-specific motivational inventory developed to date has been the Alberta Incentive Motivation Inventory (IMI). HSBAS-R reliabilities are compared with IMI reliabilities in Table 10.

Table 10

Comparison of HSBAS-R and IMI Reliabilities

	HSBAS-R		IMI		
	Achievement	Affiliation	Excellence	Success	Affiliation
Internal consistency	.78	.68	.61	.54	.62
One Week test/retest	.86	.81	N/A	N/A	N/A
Three week test/retest	N/A	N/A	.69	.74	.67
Six month test/retest	.80	.82	N/A	N/A	N/A

As reported the HSBAS-R is a superior inventory in terms of internal consistency and test/retest reliability. However, the comparison of validities is more complex. The validity of the excellence, success and affiliation portions of the IMI can be described as mixed. As Wood (1981) states "the analyses of the construct validity of the IMI by the first method of correlational criteria as outlined by Campbell and Fiske (1959) and by the second method of principal axis factoring, varimax rotation and orthogonal procrustean transformation led to different results" (p. 187). Comparison between group IMI scores also led to uneven

results. Expected differences between male and female athletes in excellence and affiliation did not consistently appear. Firm conclusions regarding IMI validity, however, should not be drawn without further testing.

The HSBAS-R's ability to distinguish between groups similar to the IMI sample is a positive indication of the scale's construct validity. Other inventories developed to date generally lack the HSBAS-R's grounding of a solid conceptual basis and verification of high internal consistency and test/retest reliability.

Conclusions

This study examined several particular features of HSBAS-R validity in an exploratory manner. Based on the results the following conclusions can be made:

1. The HSBAS-R measures stable constructs considered to be affiliation and achievement.
2. The HSBAS-R is able to discriminate between groups.
3. Both HSBAS-R sub-tests meet sport psychology's standards for internal consistency.

Although the results have provided evidence supporting the reliability and validity of the HSBAS-R further research is required to fully delineate the scale's potential. Only through examination of the relationships between a test's scores and other

external empirical data can the true meaning of what a test measures be discovered (Anastisi, 1982). The following recommendations for further research are made based on the results of the present study:

1. Exposure of the HSBAS-R to multitrait-multimethod analysis as outlined by Campbell and Fiske (1959).
2. Development of HSBAS-R norms.
3. Assessment of the relationships between HSBAS-R scores and other psychological, behavioral and performance measures.

REFERENCES

Alderman, R. B. (1974). Psychological behavior in sport. Philadelphia: Saunders.

Alderman, R. B., & Wood, N. L. (1976). An analysis of incentive motivation in young Canadian athletes. Canadian Journal of Applied Sport Sciences, 1, 169-175.

American Psychological Association. (1985). Standards for educational and psychological tests and manuals. Washington, DC: APA.

Anastasi, A. (1982). Psychological testing (5th Ed.). New York: Macmillan.

Andrulis, R. S. (1977). Adult assessment. Springfield: Thomas.

Atkinson, J. W. (1964). An introduction to motivation. Princeton: Van Nostrand.

Bateson, G. (1979). Mind and nature: A necessary unity. Toronto: Bantam Books.

Birch, D., & Veroff, J. (1966). Motivation: A study of action. Belmont: Brooks/Cole.

Burt, C. (1941). The factors of the mind: An introduction to factor-analysis in psychology. New York: Macmillan.

Campbell, D.T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 56, 81-105.

Carron, A. V. (1980). Social psychology of sport. Ithaca, NY: Mouvement Publications.

Coaching Association of Canada. (1983). National coaching certification program. Ottawa: Author.

Collis, B. (1984). The development of an instrument to measure attitudes of secondary school males and females toward computers. Unpublished doctoral dissertation, University of Victoria, British Columbia.

Cronbach, L. J. (1984). Essentials of psychological testing (4th Ed.). New York: Harper & Row.

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. Psychological Bulletin, 281-302.

Donnelly, P., & Birrell, S. (1978). Motivation and sport involvement: The needs for stimulation and achievement. Canadian Association for Health, Physical Education and Recreation Monograph.

Donnelly, P., Carron, A. V., & Chelladurai, P. (1978). Group cohesion and sport. Canadian Association for Health, Physical Education and Recreation Monograph.

Gould, D., Weiss, M., & Weinberg, R. (1981). Psychological characteristics of successful and nonsuccessful big-10 wrestlers. Journal of Sport Psychology, 3, 69-81.

Guilford, J. P. (1959). Personality. New York: McGraw-Hill.

Guilford, J. P., & Zimmerman, W. S. (1956). Fourteen dimensions of temperament. Psychological Monographs, 70.

Harris, D. V. (1978). Assessment of motivation in sport and physical education. In W. F. Straug (Ed.), Sport psychology an analysis of athlete behavior. New York: Mouvement Publications.

Helmstadter, G. C. (1964). Principles of psychological measurement. New York: Appleton-Century-Crofts.

Highlen, P. S., & Bennett, B. B. (1983). Elite divers and wrestlers: A comparison between open and closed skill athletes. Journal of Sport Psychology, 5, 390-409.

Howe, B. L. (1976). Validating a new scale of personality traits important in sport performance. In J. Broekhoff (Ed.), Physical education, sports and the sciences. Eugene: University of Oregon Microform Publications.

Howe, B. L. (1977). Achievement and affiliation in sport for junior and senior secondary school athletes. Proceedings International Congress of Sport Psychology. Prague: Olympia.

Howe, B. L. (1980). Psycho-social characteristics of Canadian synchronized swimmers. (Available through the University of Victoria.)

Kane, M. K. (1982). A sampling model for validity. Applied Psychological Measurement, 6, 125-160.

Kenyon, G. S. (1968). Six scales for assessing attitude toward physical activity. The Research Quarterly, 39(3), 566-574.

Kline, P. (1976). Psychological testing: The measurement of intelligence, ability and personality. London: Malaby Press.

Kroll, W. (1976). Current strategies and problems in personality assessment of athletes. In A. C. Fisher (Ed.), Psychology of sport: Issues and insights. Palo Alta: Mayfield.

Lemke, E., & Wiersma, W. (1976). Principles of psychological measurement. Chicago: Rand McNally.

Lewin, K. (1935). A dynamic theory of personality; selected papers. New York: McGraw-Hill.

Lord, F., & Novick, M. (1968). Statistical theories of mental test scores. Reading, MA: Addison-Wesley.

Loy, J. W., Birrell, S., & Rose, D. A. (1976). Attitudes held toward agonetic activities as a function of selected social identities. Quest, 26, 81-93.

Martens, R. (1977). Sport competition anxiety test. Champaign, IL: Human Kinetics Publishers.

McClelland, D. C. (1961). The achieving society. Princeton: Van Nostrand.

Messick, S. (1975). Standard problem: Meaning and values in measurement and evaluation. American Psychologist, 30, 955-966.

Ogilvie, B. C. (1976). Psychological consistencies within the personality of high-level competitors. In A. C. Fisher (Ed.), Psychology of sport: Issues and insights. Palo Alto: Mayfield.

Roberts, G. G. (1984). Toward a new theory of motivation in sport: The role of perceived ability. In J. M. Silva and R. S. Weinberg (Eds.), Psychological foundations of sport. Champaign: Human Kinetics Publishers.

Robinson, D. (1985). Stress-seeking: An examination of selected behavioral characteristics of elite rock-climbers. Unpublished thesis, University of Victoria, British Columbia.

Rushall, B. S. (1975). Psychodynamics and personality in sport: Status and values. In H. T. A. Whiting (Ed.), Readings in sport psychology. Lepus.

Safrit, M. J. (1973). Evaluation of physical education. NJ: Prentice-Hall.

Spielberger, C. D., Gorsuch, R. L., & Luchene, R. E. (1970). STAI manual for the state-trait anxiety inventory. Palo Alto, CA: Consulting Psychologists Press.

SPSS, Inc. (1983). SPSS-X: Statistical package for the social sciences. New York: McGraw-Hill.

Thurstone, L. L. (1947). Multiple factor analysis. Chicago: University of Chicago Press.

Veroff, J. (1978). Personal communication with N. L. Wood. In N. L. Wood, Incentive motivation in sport: A theoretical analysis and the development of a measuring instrument. Unpublished doctoral dissertation, University of Alberta, Alberta.

Weiss, Bredemeier, & Shewchuk. (1985). An intrinsic/extrinsic motivation scale for the youth sport setting: A confirmatory factor analysis. Journal of Sport Psychology, 7, 75-91.

Widmeyer, N. W., Brawley, L. R., & Carron, A.V. (1985). The measurement of cohesion in sport teams: The group environment questionnaire. London, Ontario: Sports Dynamics.

Williams, J. M. (1978). Personality characteristics of the successful female athlete. In W. F. Straub (Ed.), Sport psychology an analysis of athlete behaviour. New York: Movement Publications.

Wood, N. L. (1981). Incentive motivation in sport: A theoretical analysis and the development of a measuring instrument. Unpublished doctoral dissertation, University of Alberta, Alberta.

Zuckerman, M. (1979). Sensation seeking: Beyond the optimal level of arousal. Hillsdale, NJ: Erlbaum.

APPENDIX A

Unrevised HSBAS Item Variable Listing

POS. - Normal Scoring
NEG. - Reverse Scoring

ITEM NUMBER	VARIABLE LISTING: ACHIEVEMENT	VARIABLE LISTING: AFFILIATION
1. I accept defeat in games without being distressed.	#1 NEG	#1 POS
2. I give of my best in sport.	#2 POS	
3. I make friends easily with others in my sport.		#2 POS
4. I gain pleasure from the success of others in my sport.		#3 POS
5. I am single-minded in my approach to winning.	#3 POS	#4 NEG
6. I accept easily not being the best in my sport.	#4 NEG	#5 POS
7. I find it difficult to accept advice from other athletes.	#5 POS	#6 NEG
8. I consider the feelings of other athletes as much as my own.	#6 NEG	#7 POS
9. I am willing to	#7 POS	

	work hard to correct my weaknesses.		
10.	I am a fair competitor.		#8 POS
11.	I believe I owe more to others than to my own efforts.	#8 NEG	#9 POS
12.	I believe friendships in sport detract from my performance.	#9 POS	#10 NEG
13.	I believe officials are a major reason for my poor performances.	#10 NEG	
14.	I am prepared to sacrifice a great deal to achieve my goals.	#11 POS	#11 NEG
15.	I hate to lose.	#12 POS	#12 NEG
16.	I am prepared to break the laws to win a game.	#13 POS	#13 NEG
17.	I share my knowledge with my rivals.	#14 NEG	#14 POS
18.	I am not worried by poor performances.	#15 NEG	
19.	I am selfish in my desire to succeed.	#16 POS	#15 NEG
20.	I believe luck is important in achieving success.	#17 NEG	
21.	I enjoy partici-	#18 POS	#16 POS

	pating against new opponents.		
22.	I believe that I show more potential than my opponents.	#19 POS	
23.	I consider friendships made through sport are a major reason for my participation.		#17 POS
24.	I enjoy unsettling my opponents through "psyching" them.	#20 POS	#18 POS
25.	I enjoy being a leader in my sport.	#21 POS	#19 POS
26.	I am one of the hardest workers in my sport.	#22 POS	
27.	I enjoy the recognition from other athletes.	#23 POS	
28.	I accept criticism easily.	#24 NEG	#20 POS
29.	I am loyal to my team members.		#21 POS
30.	I believe that new situations will affect my performance negatively.	#25 NEG	
31.	I love the praise of my coach.	#26 POS	
32.	I have the respect of my opponents for my skill.	#27 POS	

33.	I argue with officials.	#28 POS	#22 NEG
34.	I recognize my lack of skill will always prevent me from being the best.	#29 NEG	
35.	I am upset when my friends do not succeed.		#23 POS

APPENDIX B
Intercorrelations of Items With Own Sub-test Score

ITEM NUMBER	ACHIEVEMENT VARIABLE LISTING	ITEM/SUB-TEST SCORE CORRELATION	AFFILIATION VARIABLE LISTING	ITEM/SUB-TEST SCORE CORRELATION
1	1	.433	1	.364
2	2	.403		
3			2	.420
4			3	.454
5	3	.431	4	.291
6	4	.540	5	.365
7	5	.134	6	.330
8	6	.200	7	.481
9	7	.389		
10			8	.426
11	8	.255	9	.310
12	9	.046	10	.195
13	10	.083		
14	11	.474	11	-.063
15	12	.520	12	.340
16	13	.157	13	.354
17	14	.171	14	.423
18	15	.103		
19	16	.494	15	.410
20	17	.088		
21	18	.380	16	.289
22	19	.581		
23			17	.425
24	20	.351	18	.299
25	21	.610	19	.158
26	22	.547		
27	23	.483		
28	24	.186	20	.409
29			21	.428
30	25	.174		
31	26	.451		
32	27	.422		
33	28	.078	22	.429
34	29	.335		
35			23	.207

APPENDIX C

Response Frequencies of Affiliation Scores

(Based on Scores from 426 Subjects)

VARIABLE LISTING	MEAN	STANDARD DEVIATION	CATEGORY PERCENTAGES (NEVER) 1	(OCCASIONALLY) 2	(AN AVERAGE AMOUNT) 3	(OFTEN) 4	(ALWAYS) 5
AFF 1	3.35	1.11	6.6	16.4	26.5	36.9	13.6
AFF 2	3.71	0.89	.5	9.2	27.7	44.1	18.5
AFF 3	3.46	1.01	2.1	16.4	30.8	34.7	16.0
AFF 4	3.57	1.13	6.1	12.2	21.4	39.0	21.4
AFF 5	3.49	1.17	4.9	16.4	27.5	26.8	24.4
AFF 6	4.06	0.91	2.1	4.0	13.4	46.5	34.0
AFF 7	3.48	1.00	2.1	14.1	33.8	33.6	16.4
AFF 8	4.15	0.86	.5	3.5	16.9	38.7	40.5
AFF 9	2.63	0.95	9.2	39.0	35.7	12.4	3.8
AFF 10	4.17	0.99	2.4	4.5	14.3	31.5	47.4
AFF 11	2.81	1.10	13.6	25.6	31.7	24.2	4.9
AFF 12	3.29	1.25	12.9	14.8	16.2	42.3	13.9
AFF 13	3.17	1.62	24.9	16.0	10.1	15.3	33.8
AFF 14	2.72	1.16	15.5	31.7	25.8	19.5	7.5
AFF 15	3.96	1.01	2.4	6.8	18.3	38.0	34.7
AFF 16	4.06	0.97	.7	7.8	16.7	34.7	40.1
AFF 17	3.08	1.15	8.7	24.4	27.7	28.2	11.0
AFF 18	3.38	1.26	11.0	14.1	21.8	32.4	20.7
AFF 19	3.19	1.18	8.7	21.6	25.8	29.6	14.3
AFF 20	3.26	1.05	4.0	20.0	35.7	27.2	13.2
AFF 21	4.20	0.97	.9	7.3	11.7	30.8	49.3
AFF 22	3.80	0.95	2.6	7.8	18.5	49.8	21.4
AFF 23	2.73	1.08	13.6	28.9	34.3	17.4	5.9

Response Frequencies of Achievement Scores
(Based on Scores from 426 Subjects)

VARIABLE LISTING	MEAN	STANDARD DEVIATION	CATEGORY PERCENTAGES (NEVER) 1	(OCCASIONALLY) 2	(AN AVERAGE AMOUNT) 3	(OFTEN) 4	(ALWAYS) 5
ACH 1	2.65	1.11	13.6	36.9	26.5	16.4	6.6
ACH 2	4.12	0.91	.7	5.6	14.6	39.2	39.9
ACH 3	2.43	1.13	21.4	39.0	21.4	12.2	6.1
ACH 4	2.51	1.17	24.4	26.8	27.5	16.4	4.9
ACH 5	1.94	0.91	34.0	46.5	13.4	4.0	2.1
ACH 6	2.52	1.00	16.4	33.6	33.8	14.1	2.1
ACH 7	4.12	0.91	0.0	6.3	17.1	34.3	42.3
ACH 8	3.37	0.95	3.8	12.4	35.7	39.0	9.2
ACH 9	1.83	0.99	47.4	31.5	14.3	4.5	2.4
ACH 10	4.45	0.83	.9	2.4	8.9	26.3	61.5
ACH 11	3.19	1.10	4.9	24.2	31.7	25.6	13.6
ACH 12	2.71	1.25	13.9	42.3	16.2	14.8	12.9
ACH 13	2.83	1.62	33.8	15.3	10.1	16.0	24.9
ACH 14	3.34	1.16	7.5	19.5	25.8	32.0	15.5
ACH 15	3.34	1.14	9.2	12.4	26.8	38.3	13.4
ACH 16	2.04	1.01	34.7	37.8	18.3	6.8	2.4
ACH 17	3.76	1.02	3.3	8.0	23.2	40.9	24.7
ACH 18	4.06	0.97	0.7	7.8	16.7	34.7	40.1
ACH 19	2.58	0.95	9.6	43.2	29.3	15.0	2.8
ACH 20	2.62	1.26	20.7	32.4	21.8	14.1	11.0
ACH 21	3.19	1.18	8.7	21.6	25.8	29.6	14.3
ACH 22	3.10	1.06	8.5	17.1	39.9	25.4	9.2
ACH 23	3.71	1.06	1.4	12.7	27.9	29.6	28.4
ACH 24	2.74	1.05	13.1	27.2	35.7	20.0	4.0
ACH 25	3.79	0.91	1.4	6.8	25.6	43.9	22.3
ACH 26	3.52	1.16	4.5	15.3	30.3	24.2	25.8
ACH 27	3.15	0.99	4.2	21.8	36.9	29.1	8.0
ACH 28	2.20	0.95	21.4	49.8	18.5	7.8	2.6
ACH 29	3.10	1.25	12.7	20.2	27.0	24.7	15.5

APPENDIX D
Unrevised and Revised HSBAS Listings

POS. - Normal Scoring
NEG. - Reverse Scoring

	Variable Listing			
	Unrevised HSBAS		Revised HSBAS-R	
Item Number	Achievement	Affiliation	Achievement	Affiliation
1. I accept defeat in games without being distressed.	#1 NEG	#1 POS	RETAINED	
2. I give of my best in sport.	#2 POS		RETAINED	
3. I make friends easily with others in my sport.		#2 POS		RETAINED
4. I gain pleasure from the success of others in my sport.		#3 POS		RETAINED
5. I am single-minded in my approach to winning.	#3 POS	#4 NEG	RETAINED	
6. I accept easily not being the best in my sport.	#4 NEG	#5 POS	RETAINED	
7. I find it difficult to accept advice from other athletes.	#5 POS	#6 NEG		RETAINED
8. I consider the feelings of other athletes as much as my own.	#6 NEG	#7 POS		
9. I am willing to work hard to correct my weaknesses.	#7 POS		RETAINED	
10. I am a fair competitor.		#8 POS		RETAINED
11. I believe I owe more to others than to my own efforts.	#8 NEG	#9 POS		RETAINED

12. I believe friendships in sport detract from my performance.	#9 POS	#10 NEG		RETAINED
13. I believe officials are a major reason for my poor performances.	#10 NEG			
14. I am prepared to sacrifice a great deal to achieve my goals.	#11 POS	#11 NEG	RETAINED	
15. I hate to lose.	#12 POS	#12 NEG	RETAINED	
16. I am prepared to break the laws to win a game.	#13 POS	#13 NEG		RETAINED
17. I share my knowledge with my rivals.	#14 NEG	#14 POS		RETAINED
18. I am not worried by poor performances.	#15 NEG			
19. I am selfish in my desire to succeed.	#16 POS	#15 NEG	RETAINED	
20. I believe luck is important in achieving success.	#17 NEG			
21. I enjoy participating against new opponents.	#18 POS	#16 POS		RETAINED
22. I believe that I show more potential than my opponents.	#19 POS		RETAINED	
23. I consider friendships made through sport are a major reason for my participation.		#17 POS		RETAINED
24. I enjoy unsettling my opponents through "psyching" them.	#20 POS			
25. I enjoy being a leader in my sport.	#21 POS	#19 POS		RETAINED
26. I am one of the hardest workers in my sport.	#22 POS		RETAINED	

27. I enjoy the recognition from other athletes.	#23 POS		RETAINED	
28. I accept criticism easily.	#24 NEG	#20 POS		RETAINED
29. I am loyal to my team members.		#21 POS		RETAINED
30. I believe that new situations will affect my performance negatively.	#25 NEG		RETAINED	
31. I love the praise of my coach.	#26 POS		RETAINED	
32. I have the respect of my opponents for my skill.	#27 POS		RETAINED	
33. I argue with officials.	#28 POS	#22 NEG		RETAINED
34. I recognize my lack of skill will always prevent me from being the best.	#29 NEG		RETAINED	
35. I am upset when my friends do not succeed.		#23 POS		RETAINED

APPENDIX E

Howe Sport Behaviour Assessment Scale

HOWE SPORT BEHAVIOUR ASSESSMENT SCALE

Instructions: The scale is a self-rating instrument. You should check each item with reference to your likely behaviour as a sport participant. When rating yourself consider the middle category as representing an average of those who compete in your sport.

		Never	Occasionally	An Average Amount	Often	Always
1.	I am willing to work hard to correct my weaknesses.					
2.	I am single-minded in my approach to winning.					
3.	I have the respect of my opponents for my skill.					
4.	I accept criticism easily from my sporting peers.					
5.	I am a fair competitor.					
6.	I am selfish in my desire to succeed.					
7.	I share my knowledge with my rivals.					
8.	I am loyal to my team members.					
9.	I accept easily not being the best in my sport.					
10.	I am one of the hardest workers in my sport.					
11.	I am prepared to sacrifice a great deal to achieve my goals.					
12.	I consider friendships made through sport are a major reason for my participation.					
13.	I hate to lose.					
14.	I make friends easily with others in my sport.					
15.	I gain pleasure from the success of others in my sport.					
16.	I believe that new situations will affect my performance negatively.					
17.	I accept defeat in games without being distressed.					
18.	I enjoy the recognition from other athletes.					
19.	I argue with officials.					
20.	I enjoy being a leader in my sport.					
21.	I find it difficult to accept advice from other athletes.					
22.	I believe I owe more to others than to my own efforts.					
23.	I love the praise of my coach.					
24.	I give of my best in sport.					
25.	I recognize my lack of skill will always prevent me from being the best.					
26.	I enjoy participating against new opponents.					
27.	I believe friendships in sport detract from my performance.					
28.	I am prepared to break the laws to win a game.					
29.	I believe that I show more potential than my opponents.					
30.	I am upset when my friends do not succeed.					

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A REVISION AND VALIDATION STUDY
OF THE HOWE SPORT BEHAVIOUR
ASSESSMENT SCALE

Autho[redacted]

Peter George Zachary

APRIL 26/87

April 26, 1987