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Motivational orientations in youth sport participation: Using Achievement Goal Theory and Reversal Theory

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Abstract

The purpose of this study was to examine motivational orientations of youth ($N = 1235$) towards sport participation by using Achievement Goal Theory (AGT; Nicholls, 1989) and Reversal Theory (RT; Apter, 1989). Both theories are useful for determining how individuals varying in motivational orientations differ in their participation motives in the sport context. AGT postulates that individuals have task and ego orientations whereas RT assumes that individuals have eight orientations (telic, paratelic, conformist, negativistic, autic, alloic, mastery, and sympathy). Confirmatory factor analysis demonstrated overall good fit of seven underlying sport motive structures derived from the 30-item Participation Motivation Inventory (Gill, Gross, & Huddleston, 1983). Subsequent canonical correlation analyses generally indicated a close relationship between motivational orientations and sport participation motives congruent with theoretical predictions in both AGT and RT. It was also found that task and ego orientations in AGT were linked with specific motivational orientations in RT. The results suggest that the two theories have similar motivational orientation constructs, more articulated in RT, which may be useful in examining what motivates youth to participate in physical activities and sport.

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Keywords: Motivational orientations; Motives; Sport and physical activity participation; Achievement Goal Theory; Reversal Theory; Hong Kong youth

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1. Introduction

Over the last two decades there has been a substantial increase in interest in children's or youth's participation behaviour in the sport context. Numerous researchers have examined the reasons for children or youth to participate in sport or physical activity (e.g., Buonamano, Cei, & Mussino, 1995; Gould, Feltz, & Weiss, 1985; Petlichkoff, 1992). In general youngsters are found to have a variety of motives such as fun, fitness, competence, and skill improvement. This line of research however is descriptive in nature and places emphasis on the competitive sport participant and on Caucasian children or youth (Lindner & Kerr, 2001). If we want to encourage youth's persistence in sport and physical activity participation, which is advantageous to the development of their physical and psychological well-being (Biddle, Fox, & Boutcher, 2000), the application of theoretical models to understanding their participation motivation is important.

The study of motivation has evolved from early mechanistic ideas to currently widely used cognitive approaches (Biddle & Mutrie, 2001). Contemporary sport psychologists and researchers have attempted to explore the underlying motives for participation in youth sport from a theoretical framework. Weiss and Chaumeton (1992), for example, proposed a motivational orientation framework to study participation motivation in youth sport. To them, motivation should be examined as an individual difference factor, in which individuals have different perceptions and behaviours due to their different motivational features. The Achievement Goal Theory (Nicholls, 1989) and Reversal Theory (Apter, 1989, 2001) have been useful motivational orientation frameworks in contemporary sport psychology for the study of human motivated behaviour. Both theories attempt to describe how individuals who vary in motivational orientations differ in their motivational patterns in sport. These two theories however have different approaches and predictions.

1.1. Achievement Goal Theory (AGT)

This theory posits that the basic motive of individuals is to demonstrate their competence or achievement. According to Nicholls (1989), individuals have two different goal orientations which influence how individuals construe their competence or define their subjective success in the achievement settings. Task orientation is concerned with mastery, self-learning, and personal improvement. The task-involved individual employs a perception of ability which is self-referenced. Ego orientation constitutes the comparison of own performance to that of others. An ego-involved individual adopts an other-referenced perception of ability. He/she experiences subjective success when he/she has a better performance than others in the social comparison process. These dispositional goal orientations play an important role by influencing the individuals' motivated behaviours and cognitions or beliefs in the achievement setting.

According to the goal orientation literature in the sport setting, previous research has shown a conceptual relationship between goal orientations and achievement behaviour patterns such as effort, task choice, performance, and persistence (e.g., Cury, Biddle, Sarrazin, & Famose, 1997; van Yperen & Duda, 1999). Task orientation is in general associated with desirable or adaptive achievement behaviours such as exerting high effort, choosing challenging tasks, and showing greater persistence. Ego orientation on the other hand may lead to maladaptive patterns such as exerting less effort and demonstrating a lack of persistence, particularly at low perceived com-

petence and in the face of adverse outcomes. Goal orientations have also been linked with one's beliefs or cognitions such as beliefs about sport success, purposes of sport, sportsperson-like behaviours, and intrinsic motivation (e.g., Rasche, Coulomb, & Pfister, 1998; White, Duda, & Keller, 1998; Whitehead, Lee, & Hatzigeorgiadis, 2003; Yoo & Kim, 2002). For example, task orientation is related to the belief that sport success results from high effort and co-operation, sportsperson-like behaviours, and intrinsic motivation. Ego orientation conversely corresponds to beliefs that success is dependent on superior ability or external factors, purpose of sport being concerned with fostering social status, unsportsperson-like conduct, and declining intrinsic motivation.

Participation motivation in sport has been one of the popular and important areas in children or youth sport research (Duda, 1996), but relatively few studies have been conducted to examine participation motives in youth sport from the achievement goal perspective. White and Duda (1994) found that participants at higher competitive levels demonstrated higher ego orientations than those at lower competitive levels. Among the seven sport motives (competition, team membership, recognition/status, fitness, skill development, energy release, and affiliation) generated from the Participation Motivation Inventory items (Gill et al., 1983), task orientation was found to correspond with intrinsic motives for sport involvement such as skill development and fitness. Ego-orientation, in contrast, was related to extrinsic sport participation motives such as social recognition. It was also found that task orientation was linked to social motives such as team or affiliation, which is in line with other studies in the sport domain (Duda, 1988; Duda & Nicholls, 1992). White and Duda's (1994) study therefore evidenced the notion that task-oriented youth are likely to learn or improve their sport skills in a self-referenced manner, whereas the ego-oriented participants focus on performance outcomes such as social status. Individuals therefore perceive different sport experiences or beliefs according to their goal orientations as postulated in AGT (Roberts, 2001).

1.2. Reversal Theory (RT)

This theory is primarily concerned with underlying motives that govern or direct human behaviour, and that are referred to as "metamotivational states" (Apter, 1989). There are four pairs of states and the states within each pair are mutually exclusive. They are telic (being serious, goal-directed, achievement) and paratelic (playful, unconcern, fun-seeking), conformist (compliant and co-operative) and negativistic (rebellious and defiant), autic (gain something for own sake, self-centred) and alloic (give something for others, other-centred), and mastery (being competent and gaining control or power) and sympathy (empathetic with others) (Apter, 1989, 2001). These four pairs of metamotivational states are important to understanding the human motivational process (Kerr, 1997, 2001) and they are associated with basic psychological needs and goals of individuals (Apter, 2001).

According to RT, individuals may stay in one state for a while, but change or reverse to the opposing state and also reverse back to the previous state at given times when "triggered" by environmental events (contingent reversals), frustration (not attaining satisfaction in a current state), and satiation (being in the same state for a period of time) (Apter, 1989, 2001). Individuals have tendencies to spend more time in one state of a dyad than the other, which in RT terms is referred to as "metamotivational dominance" (Apter, 1989). Lindner and Kerr (1999, 2000, 2001)

have recently introduced the concept of “metamotivational orientations” to indicate individuals’ inclinations towards specifically sport participation. Each metamotivational orientation is believed to be independent and eight orientations with the same names as the metamotivational states are quantified using the Motivational Style Profile (Apter, Mallows, & Williams, 1998) or its variations, with a stem pointing to the sport and physical activity situation.

In the past two decades, a number of researchers have attempted to apply RT to the sport context (Apter, 2001; Kerr, 1997, 1999). For example, when examining motivational differences in relation to sport participation, numerous studies have found that sport participants who are paratelic-dominant tend to choose and participate in risky and explosive sports, whereas telic-dominant prefer safe and endurance sports (Chirivella & Martinez, 1994; Kerr & Svebak, 1989). Other studies have shown that sport participants having a higher skill or competitive level are more telic than those of lower skill or competitive level (e.g., Kerr, 1987; Kerr & van Lienden, 1987). By using the concept of metamotivational orientations, Lindner and Kerr (1999, 2000, 2001) reported that youth sport participants were more telic- and mastery-oriented than non-participants; and high sport participation frequency was associated with telic, autic, and mastery orientations.

All these studies have provided evidence that individuals’ metamotivational dominances or orientations are linked with sport participation behaviours. Little research has been done to examine the link between sport participation motives and metamotivational orientations from the RT perspective, but such studies will be important to identify the underlying motives for sport participation in youth.

1.3. The present study

Both AGT and RT are important motivational orientation frameworks emphasising that individuals have different behaviours due to their varying motivational orientations. Under AGT individuals have two dispositional goal orientations (task and ego) that operate in achievement settings (Duda, 2001; Roberts, 2001). RT, on the other hand, assumes that individuals have eight orientations in general or towards more specific situations. While AGT postulates that the personal meaning of achievement energises investment and influences behaviours and cognitions (Roberts, 2001), RT contends that individuals have additional needs and personal values other than achievement-based ones (Apter, 2001).

The present study intended to examine the motivational orientations of youth towards their sport participation with both AGT and RT as theoretical frameworks. Previous studies have identified a variety of youth sport participation motives, such as fun, fitness, skill development, achievement or challenge, status, team affiliation, friendship, energy release, and situational factors such as parents, coaches, and facilities (e.g., Gill et al., 1983; Klint & Weiss, 1986; White & Duda, 1994). The present study will test the following hypotheses. In AGT, it is hypothesised that task orientation will be linked to the intrinsic sport motives such as fun, fitness, skill development, achievement and social one, whereas ego orientation to the extrinsic motive such as status. In RT, telic orientation will be associated with the achievement and skill motives, paratelic orientation with the fun and energy release motives, conformist and alloic orientations with the social motive, autic and mastery orientations with the fitness, skill, achievement, and status motives, and sympathy orientation with the social and situational factors.

2. Method

2.1. Participants

Hong Kong boys ($n = 742$) and girls ($n = 493$) of Grades 10–13 who indicated that they had been competitive or recreational sports participants were included in this study. Eight Hong Kong secondary schools were approached with the assistance of the Educational Research Section of the Hong Kong Education Department. These schools were selected with proportional and stratified representation of the various areas of territory, the different bands and school types. The participants' mean age was 16.5 years ($SD = 1.38$); 675 were competitive and 560 recreational participants.

2.2. Instruments

The Participation Motivation Inventory (PMI; Gill et al., 1983) was used to identify youth's motives for sport participation. Participants were asked to respond to a list of 30 reasons for participation in sport and physical activity and indicate their responses on a 3-point scale ranging from 1 (not at all important) to 3 (very important). It has been widely used with children or youth by many researchers (e.g., Daley & O'Gara, 1998; Ryckman & Hamel, 1993).

Individual differences in motivational orientations in AGT were measured by the Task and Ego Orientation in Sport Questionnaire (TEOSQ; Duda, 1992). Participants were asked to think of when they felt most successful in sport. This instrument contains a 7-item task orientation and a 6-item ego orientation. Responses were recorded on a 5-point Likert scale with "strongly disagree" scored as 1 and "strongly agree" scored as 5.

The Apter Motivational Style Profile (AMSP; Apter International, 1999; Apter et al., 1998), with the stem reworded to reflect orientations towards sport participation, was used to measure metamotivational orientations. The AMSP measures eight orientations towards sport participation, namely, telic, paratelic, conformist, negativistic, autic-mastery, autic-sympathy, alloic-mastery, and alloic-sympathy (or autic, alloic, mastery, and sympathy) through 40 items, each on a 6-point Likert scale ranging from 1 (never) to 6 (always). An example item from each orientation is: telic (plan ahead), paratelic (enjoy myself), conformist (attempt to fit in with others), negativistic (feel rebellious), autic-mastery (like to feel powerful), autic-sympathy (welcome attention from others), alloic-mastery (help other people succeed), and alloic-sympathy (care what happens to others). The instrument provides for the calculation of autic, alloic, mastery, and sympathy orientations. For example, for autic orientation, the scores of the autic-mastery and autic-sympathy subscales are averaged. In this study a mean score for each orientation subscale in TEOSQ (task and ego) and AMSP (telic, paratelic, conformist, negativistic, autic, alloic, mastery, and sympathy) was calculated.

The nature of the respondents' sport and physical activity participation was established through five questions. Two of these determined through yes/no alternatives whether the respondent had been active in competitive or recreational activities in the previous calendar year. The remaining questions pertained to the specific activity, its competitive level, frequency and history of participation.

These inventories were first translated into Chinese by the first author, and then checked for its suitability and appropriateness through back translation by another Chinese scholar. All information given by the participants was based on their current sport or physical activity participation which excluded compulsory physical education classes in the calendar year of 2000.

2.3. Procedure

The first author was responsible for administering the inventories in a class period to the secondary school students (Total $N = 2111$), with two classes in each senior grade level. Informed consent was also obtained from the participants. Only records of 1235 youths who indicated regular involvement in competitive or recreational sport or physical activity (at least twice per month) in the calendar year 2000 were retained for analysis.

2.4. Data analysis

The Statistical Package for the Social Science (SPSS) with version 10.0 (Norusis, 2000) was used as a tool for analysing data. Descriptive statistics such as mean and standard deviation were computed for all measures and were checked for normality and univariate and multivariate outliers. No transformations of variables in the data set were required.

Confirmatory factor analysis was used to determine if the observed variables would load on the expected number of factors (i.e., underlying latent constructs) on the basis of empirical research or theory (Hair, Anderson, Tatham, & Black, 1998). This analysis was conducted using the WINDOWS LISREL 8.30. Cronbach's alpha coefficients were also used to examine the internal consistency of each factor structure of PMI, and each orientation subscale of TEOSQ and AMSP. Canonical correlation analyses were employed to examine the multivariate relationship between motivational orientations (as criterion variables) and the sport participation motive factors (as predictor variables); and between motivational orientations in AGT (as criterion variables) and in RT (as predictor variables). Significance was set at 0.05 alpha level for all statistical analyses.

3. Results

3.1. Confirmatory factor analysis of the PMI

Pursuant to the past empirical studies utilising PMI, the researchers identified and tested seven factors or scales in the present study. Factor 1 "status" comprised five items ("gain status or recognition", "be popular", "like to win", "like the rewards", and "feel important"). Factor 2 "team/friend" contained five items ("being on a team", "like the team spirit", "like the teamwork", "meet new friends", and "be with my friends). Factor 3 "excitement/challenge" included six items ("like the excitement", "like the challenge", "like the action", "like to compete", "do something I'm good at", and "have fun"). Factor 4 "skill" encompassed three items ("learn new skills", "improve my skills", and "go for a high skill level"). Factor 5 "energy release" consisted of four items ("release tension", "to travel", "get out of the house", and "have something to do"). Factor 6 "fitness" comprised three items ("be physically fit", "get exercise", and "stay in shape").

Table 1

Confirmatory factor analysis, mean (standard deviation) and Cronbach's alpha of the Participation Motivation Inventory (PMI)

Participation motive item	Goodness of fit statistics				<i>M</i> (SD)	Cronbach's alpha
	RMSEA	GFI	AGFI	CFI		
Factor 1—Status	0.093	0.99	0.98	1.00	2.04 (0.59)	0.86
Factor 2—Team/friend	0.14	0.98	0.95	0.99	2.26 (0.49)	0.81
Factor 3—Excitement/ challenge	0.098	0.99	0.97	0.99	2.36 (0.43)	0.77
Factor 4—Skill	0.00	1.00	1.00	1.00	2.35 (0.56)	0.85
Factor 5—Energy release	0.086	0.99	0.98	0.99	2.09 (0.49)	0.71
Factor 6—Fitness	0.00	1.00	1.00	1.00	2.36 (0.43)	0.66
Factor 7—Situational	0.00	1.00	1.00	1.00	1.76 (0.54)	0.66

RMSEA = Root Mean Square Error of Approximation.

GFI = Goodness of Fit Index.

AGFI = Adjusted Goodness of Fit Index.

CFI = Comparative Fit Index.

Factor 7 “situational factors” had three items (“like the coaches”, “my parents or close friends want me to participate”, and “use the equipment or facilities”).

Different goodness-of-fit measures such as Root Mean Square Error of Approximation (RMSEA), Goodness-of-fit Index (GFI), Adjusted Goodness-of-fit Index (AGFI), and Comparative-fit Index (CFI) were employed to assess how well the data fit the model. Good fit is indicated by an RMSEA less than 0.05 (whereas moderate fit = between 0.05 and 0.10, and poor fit = greater than 0.10); and GFI, AGFI, and CFI greater than 0.95 (Hair et al., 1998). Results of this analysis revealed good fit of the hypothesised model, with exception of Factor 2 which had RMSEA greater than 0.10 (see Table 1). However, all indexes of GFI, AGFI, and CFI measures of all factors demonstrated good model fit.

Based on this confirmed factor structure, individual factor scores were calculated. The factors of excitement/challenge and fitness received the highest mean scores. The internal consistency of the PMI was determined by calculating Cronbach's alpha, with a resulting coefficient of 0.91 for the instrument as a whole. It was also found that the internal consistencies for the factors were in general moderate to high. The fitness and situational factors showed weaker but still acceptable internal reliabilities (see Table 1).

3.2. Reliability, means, and standard deviations of the TEOSQ and AMSP

TEOSQ mean scores of the task and ego orientation subscales were 3.54 (SD = 0.62) and 2.88 (SD = 0.78), respectively. The internal consistency reliability of the whole instrument was satisfactory at alpha = 0.86. The task and ego subscales also showed satisfactory internal reliabilities as their Cronbach alpha coefficients were 0.80 and 0.87, respectively.

In RT, participants' eight motivational orientation mean scores were obtained from the 40-item AMSP, and were in descending order: paratelic ($M = 3.74$, $SD = 0.70$), alloic ($M = 3.70$, $SD = 0.73$), telic ($M = 3.68$, $SD = 0.84$), sympathy ($M = 3.63$, $SD = 0.76$), mastery ($M = 3.60$,

SD = 0.71), conformist ($M = 3.57$, SD = 0.73), negativistic ($M = 2.53$, SD = 0.79), and autic ($M = 3.53$, SD = 0.79). The overall internal consistency coefficient for the instrument was good (0.93). The internal consistencies for the telic (0.79), negativistic (0.78), alloic (0.83), and mastery (0.74) orientation subscales were satisfactory. The paratelic (0.63), conformist and sympathy (0.61), and autic (0.69) subscales however showed the weaker but acceptable internal reliabilities.

3.3. *Multivariate relationship between orientations and participation motives*

Table 2 shows the canonical loadings of each pair of motivational orientations and the sport participation motives. A canonical loading of 0.30 and above is considered to be significant (Tabachnick & Fidell, 1996). The strength of the associations of the criteria and predictor variables is assessed by the redundancy index. A redundancy value of 10% is recommended as a significant and meaningful cutoff for interpretation (Pedhazur, 1982).

In AGT, the canonical correlation produced two significant canonical functions. For Function 1, an investigation of the canonical loadings revealed that high task orientation (and moderate ego orientation) corresponded to all seven motives. This function however demonstrated a stronger relationship to the skill, excitement/challenge, and fitness motives. As for Function 2, high ego orientation was positively associated with status. The total redundancy statistic for the two functions was 0.211. This implied that the total amount of variance explained by the task and ego orientations to the sport motives was 21.1%.

For the variables in RT two significant canonical functions were obtained in each pair of motivational orientations. In general pairs of high-high motivational orientations (in Function 1) corresponded to all seven motives, but to varying degrees according to the different sport motive factors. High paratelic combined with high telic orientation was to a greater extent linked with excitement/challenge, fit, status, and energy release. The high positive telic and low negative paratelic combination revealed a positive relationship to the situational and skill motives. The combination of moderate to high conformist and negativistic orientations was to a greater degree associated with the situational, excitement/challenge, status, and energy release motives. A moderate to high positive conformist and negative negativistic orientations demonstrated the positive and negative relationship to team/friend and fit, and status, respectively. High autic paired with moderate alloic orientation was particularly related to status, while the high alloic orientation was strongly linked with team/friend. Finally, high mastery-high sympathy orientation was correlated more strongly to status and excitement/challenge, whereas low to moderate positive sympathy and negative mastery orientation was positively linked to status and negatively with excitement/challenge and skill. All pairs met the minimum criterion of redundancy values.

3.4. *Multivariate relationship between motivational orientation in AGT and RT*

The canonical correlation to determine to what extent motivational orientations of RT (as predictor variables) could explain the task and ego orientations (as criterion variables) in AGT, resulted again in two significant canonical functions and satisfactory redundancy value. As shown in Table 3, there was a high loading for task orientation and a moderate to high loading for ego orientation. This Function corresponded to all motivational orientations in RT with exception of the negativistic orientation, and to a greater extent to the mastery, autic, paratelic, and telic

Table 2
 Canonical loadings: motivational orientations and sport participation motives

		Motivational orientation as criterion variable	Sport participation motive factor as predictor variable							
			Status	Team/ friend	Excitement/ challenge	Skill	Energy release	Fit	Situa- tional	
<i>Achievement Goal Theory</i>										
		Task	Ego							
a	Function 1	0.998	0.560	0.531	0.455	0.803	0.850	0.446	0.727	0.510
b	Function 2	-0.070	0.828	0.776	-0.237	0.130	-0.098	-0.036	0.011	0.091
<i>Reversal Theory</i>										
		Telic	Paratelic							
c	Function 1	0.719	0.944	0.717	0.483	0.889	0.565	0.659	0.721	0.565
d	Function 2	0.695	-0.329	-0.017	0.234	-0.186	0.398	-0.121	0.247	0.642
		Conformist	Negativistic							
e	Function 1	0.769	0.685	0.740	0.640	0.745	0.515	0.700	0.576	0.762
f	Function 2	0.639	-0.729	-0.458	0.534	0.088	0.186	-0.064	0.367	0.080
		Autic	Alloic							
g	Function 1	0.998	0.518	0.954	0.388	0.732	0.511	0.498	0.560	0.491
h	Function 2	0.065	0.856	-0.156	0.777	0.270	0.189	0.490	0.297	0.486
		Mastery	Sympathy							
i	Function 1	0.920	0.912	0.839	0.631	0.784	0.549	0.634	0.630	0.631
j	Function 2	-0.392	0.409	0.392	-0.160	-0.423	-0.349	0.151	-0.221	0.262

a: Wilks' $\Lambda = 0.66$, $F(14, 2452) = 40.10$, $p < 0.001$, $r_c = 0.51$; b: Wilks' $\Lambda = 0.89$, $F(6, 1227) = 25.39$, $p < 0.001$, $r_c = 0.33$; total redundancy statistic = 21.1%.

c: Wilks' $\Lambda = 0.75$, $F(14, 2452) = 27.16$, $p < 0.001$, $r_c = 0.49$; d: Wilks' $\Lambda = 0.98$, $F(6, 1227) = 3.56$, $p < 0.05$, $r_c = 0.13$; total redundancy statistic = 17.4%.

e: Wilks' $\Lambda = 0.82$, $F(14, 2452) = 17.78$, $p < 0.001$, $r_c = 0.39$; f: Wilks' $\Lambda = 0.97$, $F(6, 1227) = 5.43$, $p < 0.001$, $r_c = 0.19$; total redundancy statistic = 10.0%.

g: Wilks' $\Lambda = 0.55$, $F(14, 2452) = 58.47$, $p < 0.001$, $r_c = 0.60$; h: Wilks' $\Lambda = 0.86$, $F(6, 1227) = 26.63$, $p < 0.001$, $r_c = 0.38$; total redundancy statistic = 28.1%.

i: Wilks' $\Lambda = 0.65$, $F(14, 2452) = 42.48$, $p < 0.001$, $r_c = 0.55$; j: Wilks' $\Lambda = 0.94$, $F(6, 1227) = 13.87$, $p < 0.001$, $r_c = 0.24$; total redundancy statistic = 26.7%.

orientations. High ego orientation was positively associated with the autic and negativistic, and negatively related to the alloic orientations.

4. Discussion

Results of the confirmatory factor analysis in this study indicated a similar sport motives structure as reported in other research work (e.g., Gill et al., 1983; Gould et al., 1985; White & Duda, 1994). The mean scores of the seven motive factors supported the notion that youth not only subscribe to excitement and competence, but also to skill and social motives (e.g., Buonomano et al., 1995; Lindner & Sit, 1999). Findings from the canonical correlation demonstrated that youth with different motivational orientations varied in their motives for sport and physical activity participation are in strong support of AGT and RT predictions.

Table 3
 Canonical loadings: motivational orientations in AGT and RT

	Function 1 ^a	Function 2 ^b
<i>Motivational orientation in AGT</i>		
Task	0.974	-0.228
Ego	0.685	0.729
<i>Motivational orientation in RT</i>		
Telic	0.731	-0.181
Paratelic	0.752	-0.009
Conformist	0.472	-0.236
Negativistic	0.012	0.409
Autic	0.805	0.491
Alloic	0.629	-0.353
Mastery	0.850	-0.109
Sympathy	0.670	0.288

^a Wilks' $A = 0.69$, $F(16, 2450) = 31.62$, $p < 0.001$, $r_c = 0.49$.

^b Wilks' $A = 0.90$, $F(7, 1226) = 19.90$, $p < 0.001$, $r_c = 0.32$; total redundancy statistic = 19.6%.

In AGT, the present study indicated close links between two motivational orientations and sport participation motives consistent with a study by White and Duda (1994). High task orientation was found to be strongly linked to the intrinsic-typed sport motives such as skill, excitement/challenge, and fit. Presumably, youth high in task orientation who adopt a self-referenced perception of ability, desire to pursue mastery- and skill-related goals which allow their personal and mastery development in the sport setting. This confirms that task-oriented youth tend to participate in sport and physical activity for intrinsic values or reasons. High ego orientation, on the contrary, was found to be related to the status motive only. AGT scholars reason that, by employing an other-referenced perception of ability, high ego-oriented youth desire to outperform others in the comparison process so as to demonstrate their superior ability and attain social status or recognition. Their focal concern is superiority over others in a normative manner instead of personal mastery and self-progress in a self-referenced term (Nicholls, 1989). This shows that they are extrinsically motivated towards their sport and physical activity participation (White & Duda, 1994) and their personal success tends to be attributed to external factors (Duda, Fox, Biddle, & Armstrong, 1992).

In RT, canonical correlation analyses showed a significant and close association between each pair of motivational orientations and sport participation motives, which provided support for the RT-based hypotheses formulated in this study. For example, high paratelic orientation was strongly linked to excitement/challenge. According to Kerr (1997), individuals with a paratelic orientation are likely to pursue sensations and be hedonic (present-oriented). As predicted, high paratelic-oriented youth in this study participated in sport for the sake of seeking fun or excitement so as to derive immediate gratification. There was also a close linkage between high telic orientation (with low paratelic orientation) and the sport motives of skill and situational factors. This finding was quite supportive of the RT prediction, in that individuals who are serious-minded and goal-directed are likely to endorse more serious types of sport motives such as skill improvement (Lindner & Kerr, 2000, 2001) and try to get approval or consensus from significant others (Apter, 2001).

Participants high in conformist orientation showed a preference for the team/friend motive. This finding is consonant with RT prediction, in that conformist-oriented individuals are willing to fit in and comply with group norms (Apter, 2001). Autic orientation is concerned with personal outcomes and feelings (Apter, 2001). It was therefore not surprising to find that youth with high autic orientation tended to perceive gaining status, seeking challenge, and improving skill as important sport motives, which are primarily related to self. High alloic orientation was on the other hand related to team/friend. This orientation is associated with altruism, which concerns others or others' feelings (Kerr, 1997). Respondents with high alloic orientation would try to identify with others and place importance on personal relationships in a team or group. It is therefore not surprising to perceive that there was a positive relationship between this orientation and situational factors in which the alloic group is likely to identify with significant others such as parents and coaches.

While high mastery and sympathy orientations corresponded greater to status and excitement/challenge, unexpected results were noted in that sympathy orientation was associated with status. A possible explanation for the respondents with sympathy orientation rather than the mastery-oriented ones subscribing to status is that "status" could have been interpreted by these youths as a measure of popularity or attention-getting rather than a position of power or importance. A sympathy orientation is about need to receive care and support, to be sympathised with or to be on the receiving end of compassion. In that light the importance of standing within the peer group for the sympathy-oriented and the relative unimportance for the mastery-oriented sport participant make good sense. There is an interesting difference here between the interpretations based on AGT and RT. While AGT's ego orientation is seen as pointing to a need to be superior by outperforming others, RT's autic-negativistic-sympathy orientation combination's preference for status suggests that the need being pursued is a position in the group as attention-getter. Presumably, one attracts attention in a variety of ways, e.g., by being different or rebellious, by being particularly good or bad at what the group is trying to do, or by being interesting or liked as a fellow member. In the light of the RT findings, perhaps AGT's interpretation of the ego orientation-status link is too narrow.

Canonical correlation analysis examining the relationship between the motivational orientations in AGT and RT revealed some "conceptual compatibility" between the two theories (Kerr, 1999). Svebak (1999, p. 135) believed that both task and ego orientations contain elements of telic orientation because "they are consequence oriented rather than activity oriented." From the perspective of RT, task orientation which is concerned with mastery and challenge, can be considered as a facet of the mastery (competence), telic (achievement), and autic (self-centered) orientations. It was interesting to note that ego orientation was linked with autic and negativistic orientations, suggesting an ego-oriented individual who emphasises performance outcomes and recognition, tends to gain something for his/her own sake (autic orientation) at all cost (by being rebellious, disruptive or violating rules) so as to achieve desirable outcomes. This conjecture however, warrants future research attention.

5. Conclusions

This present study indicated that there was a strong linkage between motivational orientations and sport participation motives. Both the AGT and RT frameworks were shown to account for

such links as nearly all hypothesised differences and relationships were supported by the analyses. AGT predictions that task-oriented youth participate in sport for intrinsic and social reasons, and ego-oriented youth to pursue the status motive (Duda, 2001) were validated. However, it became apparent that with two types of motivational orientations, AGT does not take into consideration social need as another important type of motivational orientation. In fact, it omitted this from Maehr and Nicholls' (1980) earlier framework from which it was derived. By adopting eight motivational orientations in four opposing dyads, RT recognizes that individuals have a variety of salient motivational orientations, and acknowledges that individuals can have different combinations of goal orientations. It was also shown that the constructs of motivational orientations in RT are conceptually compatible with AGT. The present study concludes that RT appears to be a useful theory to studying participation motivation in youth sport. Biddle and Mutrie (2001) posit that there is a need to apply some "broader theories" which entail more motivational constructs to understanding participation motivation. RT application to youth sport motivation could therefore be regarded as a new research direction for contemporary researchers in sport psychology.

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