

The Coach-Athlete Relationship and Expectations

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Abstract

This study explores coaches' and athletes' subjective views about what they think are expected from coaches in sport. A Q-sample of 36 different opinions about different expectations about coaches' behaviors, and how these expectations affect their athletes' motivation, performance, focus and emotions, was presented to 23 coaches and 59 athletes at a Norwegian high school specialized for sports. The coaches and athletes came from different sports such as cross country skiing, biathlon, track and field, football, volleyball, and handball, and they were asked to consider and rank-order the statements (Q-sample) through a Q-sorting procedure. The findings from the Q-factor analysis showed three different factors: (A) A democratic coach, (B) An autocratic coach and (C) A personal coach. Furthermore, the authors will discuss their analysis and how the coaches and athletes believe the different coach behaviors affects motivation, focus, emotions and performance.

Keywords: Coaching styles, coaching behaviour, athletes, sport

Introduction

Functional relationships between coaches and athletes are found to be crucial in order to cultivate and grow an athlete's potential in sport (Jones, 2006; Jowett, 2007; Jowett & Ntoumanis, 2004; Lyle & Cushion, 2010). An important aspect of the coach-athlete relationship is to produce enhanced performances and success in competitions. Thus, the question about what coach behaviour that is favourable in order to develop an athlete has occupied researchers and practitioners in sport for several decades (Abraham, Collins & Martindale, 2006; Blom, Watson II, & Spadaro, 2010; Chelladurai, 2007; Côté & Gilbert, 2009; Jowett & Cockerill, 2003; Myers, Chase, Beauchamp & Jackson, 2010).

Coaching is defined as "a set of strategies designed to increase a coach's ability to influence the behaviour of team members and athletes more effectively" (Smith, 2010, p.43). Therefore, coaches need to reflect upon their own behaviour and understand the motivation behind the behaviour of others. A good coach must be able to see each athlete as a unique individual and adapt his/her performance enhancement system to each athlete's particular needs (Kristiansen, Tomten, Hanstad & Roberts, 2012). Interestingly, the relationship between coach behaviour and an athlete's performance is found difficult to investigate because of the immense difficulties in quantifying "performance" (Courneya & Chelladurai, 1991; Riemer & Toon, 2001). To meet the discourse about individual adaption in coaching and how coach behaviour affects an athlete's performances, this study aims to explore the subjectivity among coaches and athletes about coaches' behavior, and how this behavior affects variables that have an influence on an athlete's performances in sport. Thus, the problem to be addressed in this study is: *What are the subjective viewpoints among coaches and athletes about what they believe is expected coach behaviour, and how do this coach behaviour relate to an athlete's motivation, focus, emotions and performance in sport?*

Theoretical Background

Along with the question addressed in this study we will outline the variables that are found to have an impact on an athlete's performance and discuss possible coach behaviors through a leadership perspective.

Variables that Impact an Athlete's Performance

Several variables are found to be important for athletes to accomplish the tasks they encounter in order to develop their performances in sport (Ericsson, Charness, Feltovich & Hoffman, 2006).

The extensive evidence from research that study expert performers both in sport and in the field of expertise in general, claims that the conclusion can be put very simply: deliberate practice makes all the difference between expert performers and normal performers (Ericsson, Krampe & Clemens Tesch-Römer, 1993).

Motivation

First of all, an athlete's motivation must be high to offer the amount of time spent on deliberate practice to develop a high level of performance (Ericsson, 2009). This reflects a life-long period of deliberate effort to improve performances in specific domains (the ten-year rule). An athlete's motivation must be high in order to carry out the extensive amount of time that needs to be completed to develop own performances for such a long period (the ten year rule). Thus, motivation is one important variable in the process of developing an athlete's performances in sport (Deci & Ryan, 2002).

Focus

A second important feature in deliberate practice is the importance of concentrated attention towards a well-defined task with an adequate difficulty level (Ericsson, 1996). Focused attention during the execution of tasks that are aimed at increasing own levels of performance is an important difference between expert performers and normal performers in sport (e.g. Ericsson, 2006).

Emotions

A third important variable that is found to influence the development of expertise is emotions (Ericsson, et al., 1993; Ross, 2006). The amount of exercise needed for improving own levels of performance is not purely a playful enjoyment (Ericsson, et al., 1993; Ross, 2006). To the contrary, developing own performance is an effortful endeavor that takes attentional focus from an athlete. According to Ericson et al. (1993), there is nothing inherently enjoyable in the practice of developing own performance to continually higher levels. It is rather emotions such as engagement and inspiration that seems to stimulate the development of own levels of performance. Emotions such as engagement, curiosity and inspiration are therefore a third important variable in order to achieve successful achievements in sport.

Coach Behavior

The multidimensional model of leadership in sport is one of the most used models to investigate coach behaviour and the Leadership Scale for Sports (LSS) is measuring a coach's decision making style, motivational tendencies and instructional behaviour (Chelladurai, 1984, 1990). The multidimensional model of leadership in sport claims that coaches' leadership effectiveness is a function of three interacting aspects of coach behaviour: actual, preferred, and required behaviour (Chelladurai, 1990, 1993). Thus, the context constantly shapes the interaction between coaches and athletes and coaching is a complex endeavour that requires both interpersonal and intrapersonal knowledge from the coach (Côté & Gilbert, 2009; Jowett & Cockerill, 2003; Mallett, 2007). When these three aspects are congruent, desirable performance outcomes and athlete satisfaction are supposed to be the result.

The LSS was developed to measure these aspects of coaching behaviour in the context of sports coaching (Chelladurai & Saleh, 1980). The LSS instrument consists of five subscales measuring the coach's decision making style (Democratic and Autocratic Style), the coach's motivational tendencies (Social Support and Positive Feedback), and the coach's instructional behavior (Training and Instruction). Possible relationships between athletes' satisfaction and their coaches' behaviour have in general had the most focus in research conducted with the LSS (Chelladurai, 1984; Chelladurai, Imamura, Yamaguchi, Oinuma, & Miyauchi, 1988; Horne & Carron, 1985; Riemer & Chelladurai, 1995). Since its creation, the LSS has become one of the most commonly utilized scales for quantifying coach behavior in sports (Horn, 2002). Research with the LSS has investigated the relationship between motivation and 'preferred' coach behaviour in athletes (Høigaard, Jones & Peters 2008; Serpa, Pataco, & Santos, 1991; Turman, 2001); the impact of a coach's behavior on motivational climate (Høigaard, 2006; Høigaard & Peters, 2007); and the relationship between coach behaviour and athlete performance (Courneya & Chelladurai, 1991; Riemer & Toon, 2001). Research show that the coach behaviour associated with training and instruction, positive feedback, and social support are most highly correlated with athletes' satisfaction with their coaches behaviour (Horn, 2002) and athletes' intrinsic motivation (Amorose & Horn, 2000; 2001).

The importance of involvement in the relationship between a coach and an athlete is in accordance with earlier research within motivation (Deci & Ryan, 2002). Moreover, this interpersonal relationship has been investigated through Jowett's 3+1 C's constructs: Closeness, Commitment, Complementary, and Co-orientation (Jowett, 2007). Closeness is to which degree the coach and the athlete are connected or the depth of their emotional attachment (Jowett & Cockerill, 2002). Commitment reflects coaches' and athletes' intention or desire to maintain their athletic partnership over time. Complementary defines if the interaction between the coach and the athlete is perceived as cooperative and effective, and co-orientation defines the degree of similarity and emphatic understanding (Jowett, 2007). A recent study shows that junior athletes expect that coaches are aware of their motivational tendencies in order to affect their motivation, focus and performance (Moen & Sandstad, 2013). According to the majority of the athletes in this study, feedback, both positive and critical, and social support are expected to be the foundation upon which their coaches is expected to build their coach behaviour. However, it is interesting to explore both coaches' and athletes' subjective viewpoints about what they believe are expected coach behaviour with regards to the LSS, and explore if their expectations are congruent with the above research.

The Current Study

The coaching process itself is a complex process that is constantly influenced by the context and an athlete's individual particular needs (Jones, 2006). The research within this field is either based on qualitative or quantitative studies. Therefore, the current study aims to represent a methodological alternative by using Q-methodology as a research design. The aim of the current study is to investigate subjective viewpoints among both coaches and athletes about what they believe are expected coach behaviour, and how coach behaviour affects an athlete's motivation, focus, emotions and performance. Therefore, the question to be addressed in this study is: *What are the subjective viewpoints among coaches and athletes about what they believe is expected coach behaviour, and how do this coach behaviour relate to an athlete's motivation, focus, emotions and performance in sport?*

Research Methods and Design

The research question in this study invites to an exploration of the subjectivity among coaches and athletes in sport regarding their expectations about coach behaviour.

The methodological process in the study was completed through a series of five steps: 1) Defining the concourse, 2) Developing the Q sample, 3) Selecting the P sample, 4) Q sorting, and 5) Analyzing and interpreting (Brown, 1996; Watts & Stenner, 2012).

Definition of the Concourse

The concourse (Stephenson, 1986) in this study was established through an analysis of relevant literature within the field (Chelladurai, 1990, 1993; Côté & Gilbert, 2009; Ericsson, 2009; Jowett & Cockerill, 2003; Mallett, 2007). We compiled a list of about 80 statements, which covered different possible viewpoints about the research issue. The statements were written from an athlete's point of view. Then the statements from this process were systematically organized, analysed and presented as the concourse, i.e. within the segment of the actual communication universe (Brown, 2002; Kvalsund, 1998). We then sat about to reduce the concourse into a meaningful Q sample in order to create a balanced sample for stimulating the Q-sorters to use the subjective statements (sample) to rank-order them self-referentially and draw a picture of their own self-conceived view on the topic (McKeown & Thomas, 1988).

Development of Q Sample

In the present study, two main themes (what Stephenson, 1950, calls effects) emerged in the concourse; *coach behaviour* and *effect*. Within the theme "coach behaviour" three sub-themes (what Stephenson calls levels (1950)) seemed to be relevant; the coach's decision making style, the coach's motivational tendencies, and the coach's instructional behavior. Within the theme "effect" four other subthemes or effects seemed to be relevant; the athlete's motivations, the athlete's focus, the athlete's emotions and the athlete's performance. In this study, it is important to investigate what type of coach behaviour the coaches and athletes believe are expected from coaches, and to investigate what they believe is the effect from this coach behaviour on their athletes' motivation, focus, emotions and performance. As a result, the design for the statements was created as shown in Table 1.

Table 1: The Design of the Statements Based on Coaching Style and Benefit

Effects	Levels			
Coach behaviour	a. coach’s decision making style	b. coach’s motivational tendencies	c. coach’s instructional behavior	
Effect	d. athlete’s motivation	e. athlete’s performance	f. athlete’s focus	g. athlete’s emotions

Each combination of independent effects and levels becomes a categorical cell. Based on this, we must look to the levels to see all possible combinations of cells, since they are the multiplication of levels by all four effects. Using the design in Table 1, twelve combinations of statements are obtained, as shown in Table 2.

Table 2: The Combination of Levels in the Design

	Combination of levels											
Coach behaviour	a	a	a	a	b	b	b	b	c	c	c	c
Effect	d	e	f	g	d	e	f	g	d	e	f	g
Statement No	1, 13, 25	2, 14, 26	3, 15, 27	4, 16, 28	5, 17, 29	6, 18, 30	7, 19, 31	8, 20, 32	9, 21, 33	10, 22, 34	11, 23, 35	12, 24, 36

In principle, there are 3x4 cells. Each cell consists of statements that are interrelated but are somewhat different. After studying the statements in the concourse and the different levels that emerged, the authors decided to use three statements from the concourse to represent each of the 12 cells. The statements that most clearly represented the viewpoint in the different cells were picked for the Q sample. The Q sample resulted in 36 statements (see Appendix). To make it difficult for the sorter to see the structure in the sample, the first statements in each cell were allocated a serial numbering from 1 to 12, then the second statements were given the numbers from 13 to 24, and finally the third statements were given the numbers from 25 to 36.

The Selection of P Sample

The researchers collected data from 23 coaches and 59 athletes from a high school that is specialized for different sports in Norway. This high school focuses on developing future elite athletes within different sports such as cross country skiing, biathlon, track and field, football, volleyball, and handball. The coaches in this study were working with athletes who were from 1th, 2nd, 3th, and 4th grade classes at the high school. This Norwegian high school has extended the normal length at this high school from 3 to 4 years, so that athletes/ students have more time to focus on both school subjects and their sports. The average age among the coaches was 46 years old (youngest 26 and oldest 65) and 17 of them were males and 6 were females. Their average education was 4 years at the University and they had served for 19 years as coaches in average. The average age among the athletes was 18 ½ years old (youngest 16 and oldest 20) and 34 of them were males and 25 were females. Additionally, their performance level varied from national top level to national medium level in their sports.

The Q Sorting

The coaches and athletes were given a specific condition for their sorting at the data collection. The coaches and athletes were asked to take their time to read through all the statements in the Q sample considering an instructed specific condition. Both the coaches and the athletes were asked to consider what they believed were expected coach behavior. They were asked to rank order the statements in a scoreboard ranging from a score of +5 for “most strongly agree” to -5 for “most strongly disagree” under the so-called forced quasi-normal distribution of the statements, as shown Figure 1 below (Brown, 1980, p. 197-198).

most strongly disagree	very strongly disagree	strongly disagree	disagree	disagree	neutral	agree	agree	strongly agree	very strongly agree	most strongly agree
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5

Figure 1: The Scoreboard

The coaches and the athletes are free to place an item anywhere within the distribution, but forced to keep to the distribution form in order to make all the necessary nuanced evaluations of the statements (Kvalsund 1998).

Analysis and Interpretations

After all of the data was collected, the researchers entered each Q sort into the computer program PQMethod (Schmolck, 2002), which is a statistical program tailored for Q studies (Allgood & Svennungsen, 2008; Rhoads, 2007). For any *n* Q sorts, the correlations from the Centroid factor analysis produce a matrix of size *n* x *n*, or in this case 82x 82 cells in the overall matrix. If the correlation coefficient is high, this indicates that two coaches sorted the Q sample statements in a similar manner. The 82x 82 correlation matrix was then subjected to a Varimax factor analysis, where different numbers of factors were tested to be extracted. The Centroid factor analysis showed that one of the factors had an Eigen value of 36,7 counting for 45% of the variance, whereas two other extracted factor had an Eigen value higher than 1, respectively 4.1 and 3.2, counting for 5 % and 4 % of the variance. The factor(s) with the highest Eigen value is defined as the stronger factor(s). The Eigen value is used in deciding how many factors to extract in the overall factor analysis and all factors with an Eigen value above 1 are defined as significant factors (Brown, 1980; Kvalsund, 1998).

Results

After experimenting with various alternatives by Varimax rotation of factors, the authors decided to consider a hand rotation of factors based upon an unrotated three-factor solution from the Centroid factor analysis. The main argument by using this strategy was that the analysis revealed a high correlation between the factors from the Varimax rotation. Factors that are highly correlated indicate that there is probably only one main factor with which virtually everyone is associated. After studying the statements that represented the different factors and the Eigenvalues from the unrotated factor matrix, the authors chose a three-factor solution. By using the unrotated factors as the final solution the overarching consensus of the factors reveals, since the Varimax rotation is spreading the consensus across the rotated factors, which is causing them to be highly correlated.

The coaches and athletes who sorted the statements approximately similarly, produced this factor solution (McKeown & Thomas, 1988). Thus, the factor represents natural categories of subjectivity that can be discovered by the researcher (Brown, 2002). It is important to decide how high a factor loading should be if that sort is to be regarded as an important contributor to a factor (Pett, Lackey, & Sullivan, 2003, p. 208). In Q methodology an estimate is used to decide if a sort is contributing to a factor or not (Brown, 1980; Kvalsund, 1998). The minimum factor loading that is used for defining Q sorts (Q sorts marked by an x in the factor matrix) is the standard deviation of the forced distribution (2.45) multiplied with the result of 1 divided on the square root of the number of statements in the q-sample (36). In this study .41 was estimated to be the minimum contributor to a factor. Those Q sorts that define the factor have influence on the content of the factor that emerges.

As shown in the factor matrix in Table 3, factor A has 66pure cases (sorts that load only on one factor) and 75loadings when mixed cased are included. Factor B has 1pure case and 9cases when mixed cases are included, while factor C has 2 pure cases and 5 cases when mixed sorts are included.

Table 3: The Matrix of Rotated Factors and their Loadings

Factors				Factors				Factors			
Qsort	A	B	C	Qsort	A	B	C	Qsort	A	B	C
1	0.62x	-0.23	-0.12	30	0.67x	-0.24	-0.07	59	0.67x	-0.34	0.24
2	0.67x	-0.02	0.05	31	<i>0.60x</i>	<i>-0.49x</i>	0.06	60	0.53x	-0.39	0.34
3	0.72x	-0.11	0.15	32	0.67x	0.11	0.02	61	0.39	-0.00	0.11
4	0.67x	-0.14	-0.08	33	0.57x	-0.08	0.15	62	0.68x	-0.09	0.29
5	0.60x	-0.28	-0.01	34	<i>0.64x</i>	<i>-0.52x</i>	-0.05	63	<i>0.66x</i>	-0.30	<i>0.46x</i>
6	0.73x	-0.15	0.20	35	0.80x	-0.12	-0.39	64	0.17	-0.34	0.28
7	0.61x	-0.34	-0.17	36	0.68x	-0.02	0.11	65	0.77x	0.00	0.16
8	0.41x	-0.37	0.12	37	0.76x	-0.30	0.11	66	0.61x	-0.11	-0.07
9	0.76x	0.12	-0.23	38	<i>0.61x</i>	-0.36	<i>-0.49x</i>	67	0.57x	-0.00	0.23
10	0.81x	-0.04	-0.23	39	<i>0.61x</i>	<i>-0.47x</i>	0.08	68	0.70x	-0.07	0.39
11	0.66x	-0.15	-0.16	40	0.81x	-0.04	-0.14	69	0.35	-0.08	0.01
12	0.21	<i>-0.45x</i>	<i>-0.48x</i>	41	0.67x	-0.31	-0.35	70	0.74x	0.10	0.11
13	0.54x	-0.21	-0.22	42	0.80x	-0.19	0.04	71	0.45x	-0.06	-0.27
14	0.60x	-0.14	-0.05	43	0.55x	-0.30	-0.08	72	0.59x	0.07	0.04
15	0.67x	0.10	-0.24	44	0.72x	-0.00	-0.09	73	0.83x	-0.20	-0.05
16	0.44x	-0.05	-0.28	45	0.82x	-0.21	-0.10	74	0.83x	-0.20	-0.05
17	0.57x	-0.22	-0.18	46	0.36	-0.03	0.56x	75	0.82x	-0.09	0.13
18	0.74x	0.01	0.09	47	0.78x	-0.15	0.28	76	0.69x	-0.02	0.00
19	0.40	-0.24	-0.46x	48	0.66x	0.03	-0.34	77	0.26	-0.61x	0.34
20	<i>0.57x</i>	<i>-0.50x</i>	0.12	49	<i>0.57x</i>	<i>-0.41x</i>	-0.08	78	0.75x	-0.06	-0.18
21	0.66x	-0.31	0.26	50	<i>0.58x</i>	<i>-0.44x</i>	0.22	79	0.60x	0.03	-0.25
22	0.68x	-0.11	-0.18	51	0.76x	0.10	-0.04	80	0.74x	-0.22	-0.18
23	0.84x	-0.06	0.24	52	0.67x	-0.25	-0.17	81	0.55x	-0.06	0.09
24	0.68x	-0.39	0.04	53	0.68x	-0.40	-0.14	82	0.46x	0.24	0.35
25	0.66x	-0.02	0.02	54	0.49x	-0.07	-0.36				
26	0.69x	-0.28	0.31	55	0.74x	-0.06	-0.06				
27	0.69x	-0.40	0.15	56	0.71x	-0.16	-0.32	Pure Case	66	1	2
28	0.77x	-0.05	0.14	57	<i>0.48x</i>	<i>-0.46x</i>	-0.33	Mixed	9	8	3
29	0.73x	-0.18	0.33	58	0.77x	-0.18	0.09	% expl	42	6	5

Note. Factor loadings with bold faces with x are pure cases loading on one factor, and loadings with italic faces with x are mixed cases loading on more than one factor.

The correlation among these three factors was found to be small/ medium as shown in Table 4.

Table 4: Correlations between Factors

Factors	A	B	C
A	1.00	-0.37	0.36
B	-0.37	1.00	-0.27
C	0.36	-0.27	1.00

The correlation between factor A and factor B had the correlation coefficient of - 0.37, whereas the correlation between factor A and C had a correlation coefficient of 0.36. The correlation between factor B and factor C had the correlation coefficient of - 0.27. The remainder of this paper focused on analysis of these three factors. The statements on the extreme side with rank scores of +5, +4, -4 and -5 reflect the intense feelings and attitudes of each respondent and characterize the factor, so analysis was mainly focused on the interpretation of those statements (Brown 1980, 23-24).

Factor A: Democratic Coach Behaviour

The most extreme statements loading on factor A on the positive side (+5 and +4) emphasize the importance of feedback, both positive and critical, to affect the athletes' motivation and performance (statement number 17 and 30). The positive side of factor A also emphasizes the importance of a democratic decision making style in order to affect an athlete's motivation (statement number 1). The most extreme statements on the negative side (-5 and -4) also emphasize the importance of a democratic decision making style to affect an athlete's motivation and focus (statement number 16 and 27). The importance of feedback and social support are also emphasized to affect performance (statement number 18). In sum, this factor seems to reflect that coaches are expected to have a democratic decision making style in order to affect an athlete's motivation and performance, as well as feedback, both positive and critical. Thus, democratic behaviour and feedback are emphasized in factor A.

Table 5: Distinguished Statements Loading on Factor A

Number	Statement	Strength
17	My motivation increases when I receive positive feedback.	+5
1	My motivation for training increases when my coach involves me.	+4
30	In order to develop my performances I also need critical feedback from my coach.	+4
27	<i>I become stressful if my coach involves me in important matters regarding my training.</i>	-4
16	<i>I become uncommitted if my coach includes me in decisions regarding my sport.</i>	-4
18	<i>Neither feedback nor social support are crucial for my performances in sport.</i>	-5

Note: Included mixed cases, 32 cases loaded on factor A.

Factor B: Autocratic Coach Behaviour

The most extreme statements loading on factor B on the positive side emphasize the importance of being met by instructive behaviour from the coach (statement number 9 and 15). The coaches and athletes who are loading on factor B believe that clear instructions seem to affect motivation and focus positively. Further, involvement is not a coaching behaviour that is wanted (statement number 27), as the coaches and athletes that load on factor B believe that it affects focus negatively. The most extreme statements on the negative side further emphasize that there is no need for critical feedback to develop an athlete's performance (statement number 30). The two other psychological statements representing factor B on the negative side emphasize that an athlete doesn't need to clarify own tasks for training and that there is no need for a coach to be in dialogue with an athlete (statement number 22 and 14). The consensus of the statements that are representing factor B indicates that autocratic coach behaviour is expected, and that involvement is not really wanted. The statements that represent factor B on +3 and -3 (Appendix) strengthen this view.

Table 6: Distinguished Statements Loading on Factor B

Number	Statement	Strength
9	My motivation increases when I'm told exactly what to do.	+5
15	My coach needs to consult me if I'm supposed to have an effective focus.	+4
27	I become stressful if my coach involves me in important matters regarding my training.	+4
22	<i>I perform at my best when I have to clarify my own task for training.</i>	-4
14	<i>My performances are not good when my coach denies complying with my opinions.</i>	-4
30	<i>In order to develop my performances I also need critical feedback from my coach.</i>	-5

Note. Included mixed cases, 20 cases loaded on factor B.

Factor C: A Personal Coach

The most extreme statements that represent factor C on the positive side emphasize the importance of a personal and close relationship with a coach to affect an athlete's motivation (statement number 7, 5 and 8). Factor C also emphasizes the importance of paying attention to an athlete's personal welfare to affect motivation (statement number 5). The most extreme statements on the negative side further emphasize that clear instructions is not needed to affect motivation and focus (statement number 9, 13 and 23). When studying the statements that represent factor C on +3 and -3 (Appendix) they strengthen the view that this factor emphasizes a personal relationship based on democratic values. The main effect is on an athlete's motivation.

Table 7: Distinguished Statements Loading on Factor C

Number	Statement	Strength
7	My situation becomes less stressful when my coach contributes in personal affairs.	+5
5	My motivation increases when my coach is concerned about my personal well-being.	+4
8	A personal and close relationship with my coach makes me enthusiastic concerning my training.	+4
9	<i>My motivation increases when I'm told exactly what to do.</i>	-4
23	<i>I become insecure if a coach does not tell me exactly what to do.</i>	-4
13	<i>My motivation increases when my coach takes decisions that concern me.</i>	-5

Note. Included mixed cases, 20 cases loaded on factor B.

Discussion

By using Q-methodology this study aims to reveal and explicate some of the main viewpoints that are favored by coaches and athletes in sport regarding what coach behaviour they believe are expected from coaches. The coaches and athletes in this investigation were instructed to sort 36 statements with different views about possible coach behaviors, and rank the statements on a scoreboard ranging from most strongly disagree (-5) to most strongly agree (+5). The results in this study show that there is one stronger factor (Factor A) that 75 out of the 82 coaches and athletes significantly load on, when mixed sorts are included (Table 3). Thus, a large group of the coaches and athletes share common viewpoints about what coach behaviour that is expected. Factor A counts for 42 % of the variance. This study also focuses on factor B and C, that respectively 9 and 5 coaches and athletes load on, when mixed sorts are included (Table 3). Interestingly, none of the three factors represent the viewpoints from either the coaches or athletes as a group, on the contrary, coaches and athletes are distributed evenly on the three different factors. Thus, it is not possible to find that either coaches or athletes favor common viewpoints that are distinct from each other as a group.

After analyzing the three different factors it is clear that the factors represent individual viewpoints that clearly separate them from each other. The small/medium and negative correlations between the factors confirm this (Table 4) as well as the scores on each statement representing the three different factors (Appendix). In the discussions below these three factors will therefore be treated based on their typical individual viewpoints.

A Coach's Decision Making Style

Both factor A and B share the viewpoint that a coach's decision-making style seems to be central in the discourse about what coach behaviour coaches and athletes believe are expected. This is really interesting based on the fact that there is an expectation that a coach must see each athlete as a unique individual and adapt his/her behaviour to each athlete's particular needs (Côté & Gilbert, 2009). Thus, a coach's decision-making style in the relationship with an athlete will clearly affect the adaptation of his or her behaviour towards this particular athlete. It is reason to believe that democratic coach behaviour invites an athlete into the relationship with the coach and gives him or her the opportunity to express own needs for help from the coach. Autocratic behaviour on the other hand does not give an athlete this opportunity. While the most significant viewpoints that are representing factor A are embedded in a democratic decision making style, the most significant viewpoints that are representing factor B are embedded in an autocratic decision making style. The most significant viewpoints that are representing Factor C are embedded in a coach's motivational tendency style, which is expected to be based on social support.

Democratic Coach Behaviour

The most psychologically significant statements that are representing factor A favor the view that coaches need to conduct behaviors that involve athletes in the coaching process. Involvement is supposed to affect an athlete's motivation and performance. This viewpoint is in accordance with research on motivation which claims that democratic behaviors are crucial determinants for an individual's intrinsic motivation (Deci & Ryan, 2002; Moen, 2009). This is a bit surprising, since earlier research has not documented that athletes mainly prefer democratic coach behaviour (Amorose & Horn, 2000, 2001; Horn, 2002). Accordingly, factor A also favors the importance of both positive and critical feedback. Feedback is expected to affect an athlete's motivation and performance according to the viewpoints that are representing factor A.

Earlier research has found that athletes are satisfied with coaches who give positive feedback (Amorose & Horn, 2000, 2001). However, the findings in this current study show that it is important to conduct critical feedback as well. This finding is in accordance with a recent Q-study where only athletes were asked to rank statements regarding coach behaviour (Moen & Sandstad, 2013). Statements on both the positive and negative extreme side of the scoreboard confirm this view. Thus, the coaches and athletes who are loading on factor A are especially concerned about the coach's decision making style and motivational tendencies. An interesting and important feature with factor A is the expectation that coaches also need to conduct behaviors that are social supportive as in accordance with earlier research (Amorose & Horn, 2000, 2001). Interestingly, involvement, feedback and social support require that coaches conduct behaviors in agreement with Jowett's 3+1 C's constructs (Jowett, 2007). The results in this study are also in agreement with a recent study among coaches about their communication with athletes, which shows that the communication process in elite sport is a dynamic process where coaches need to consider different situations continuously and decide what communication that is appropriate (Moen & Kvalsund, 2014). The results from this study show that the general viewpoints are that communication should be intended to control the athlete during action, but in a way that ensure common understanding, so that athletes can focus non-judgmentally during performance. The results also show that their intentions should be for the purpose of understanding their athletes during performance appraisals, and establish common understandings about their athletes' perspectives (Moen & Kvalsund, 2014). Communication skills are central for coaches to cope with these shifting situational demands. Interestingly, elite coaches mainly gave their priorities to training needs within communication in a recent study (Moen & Fikse, 2011).

Interestingly, the most psychologically statements that are representing factor B favor a view that is based on autocratic coach behaviour. However, all nine significant loadings are negative, which means that the coaches and athletes in this study really don't agree with this view, on the contrary. Thus, factor B is in reality building up under the importance of conducting democratic coach behaviour as in accordance with factor A.

A Personal Coach

The most psychologically significant statements that are representing factor C favor the view that coaches need to conduct behaviors that emphasize the development of a close and personal relationship with a coach. This is in agreement with Jowett's 3+1 C's construct and earlier research (Amorose & Horn, 2000, 2001; Jowett, 2007). However, it is surprisingly that the viewpoints representing this factor purely are conducted on personal values. The coach behaviour is supposed to affect an athlete's motivation. Interestingly, three out of the five participants that significantly load on factor C are negative. Thus, the viewpoints regarding this factor are divided among the coaches and athletes who load on factor C.

Conclusion

These results indicate that the coaches and athletes in this study in general believe that coaches need to be aware of their decision making style to affect an athlete's motivation and performances. Thus, democratic coach behaviour is the most expected coach behaviour; the dominant view is that involvement is expected among the coaches and athletes. One explanation of why the coaches and athletes in this study share common viewpoints about what coaching behaviour they believe are expected is that the coaching context constantly shapes the interaction between coaches and athletes (Jowett & Cockerill, 2003). Accordingly, a coach is expected to see and adapt behaviors and strategies to each individual athlete (Côté & Gilbert, 2009). Thus, any single coach-athlete relationship is really a specific context because of the different dynamics that exists. If a coach is supposed to adapt his or her behaviour to each athlete's needs, he or she first of all must be able understand each athlete's needs.

If a coach do not understand the individuality to each athlete it is difficult to adapt his or her behaviors to the athlete's needs. Thus, democratic behaviour seems to be a necessity, and coaches' communication skills are central in order to fulfill the expectations in their role. Coach education programs should take this in consideration.

The data from this study cannot draw conclusions regarding causal predominance between a coach's behaviors in sport and effects on motivation, performance, focus and emotions. However, the qualitative data in this study and the interpretation of the results should be further investigated and explored in future research, both qualitative and quantitative.

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Appendix. Q Sample

Statements	Factors		
	A	B	C
1. My motivation for training increases when my coach involves me.	4	-2	2
2. If I'm involved in the process concerning my training I perform better.	3	-2	3
3. My coach does not have to be open for questions.	-1	-1	-3
4. I become curious and interested if my coach involves me in matters concerning my training.	3	-2	1
5. My motivation increases when my coach is concerned about my personal well-being.	2	2	4
6. If I'm supposed to achieve good performances my coach needs to focus on my personal welfare.	-2	1	-2
7. My situation becomes less stressful when my coach contributes in personal affairs.	0	0	5
8. A personal and close relationship with my coach makes me enthusiastic concerning my training.	2	0	4
9. My motivation increases when I'm told exactly what to do.	1	5	-4
10. Clear instructions regarding what I am supposed to do develop my performances	3	-1	-2
11. I keep my focus if the coach intervenes in training and explain what is right and wrong.	1	3	2
12. I become curious if my coach gives me clear instructions about what I need to do.	2	1	1
13. My motivation increases when my coach takes decisions that concern me.	0	3	-5
14. My performances are not good when my coach denies complying with my opinions.	1	-4	-1
15. My coach needs to consult me if I'm supposed to have an effective focus.	0	4	1
16. I become uncommitted if my coach includes me in decisions regarding my sport.	-4	3	-3
17. My motivation increases when I receive positive feedback.	5	-3	2
18. Neither feedback nor social support is crucial for my performances in sport.	-5	0	-2
19. A close and personal relationship with my coach makes me stressful.	-3	2	-1
20. My curiosity is best stimulated when the relationship with my coach is not too close and personal.	-1	0	-2
21. I lose my engagement when I'm observed by my coach and receive no feedback.	1	2	0
22. I perform at my best when I have to clarify my own task for training.	-1	-4	3
23. I become insecure if a coach does not tell me exactly what to do.	2	2	-4
24. I am losing my curiosity when my coach gives me clear instructions.	-3	1	1
25. My motivation decreases when my coach needs my approval in important matters concerning my training.	-2	-3	0
26. I'm not able to perform if my coach often asks me for approvals in important matters.	-2	-3	-1
27. I become stressful if my coach involves me in important matters regarding my training.	-4	4	0
28. I'm curious regardless of involvement or not from my coach.	0	-1	3
29. My motivation increases when my coach does not have focus on personal issues.	-1	1	-3
30. In order to develop my performances I also need critical feedback from my coach.	4	-5	0
31. I'm calm and steady regardless of a close relationship with my coach or not.	0	0	2
32. Whether my coach is concerned about personal issues or not do not affect my curiosity.	-1	1	0
33. If I'm told exactly what to do I lose my motivation.	-3	0	1
34. I perform at my best when my coach just observes what I do during training.	0	-2	-1
35. I lose my focus when it is too much instructions.	1	-1	0
36. It is easier to be curious when the coach is more in the background.	-2	-1	-1

* Translated from Norwegian to English by the authors.