Exploring elite strength and conditioning coaches' motivational climates: A coach, athlete and observational perspective.

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Abstract

The purpose of this study was to explore the motivational climate created by elite strength and conditioning (S&C) coaches and whether there is congruence between their intention and reality. Also, to identify potential guidelines that can be used by other S&C coaches. A mixed-method design utilising Interpretative Phenomenological Analysis was adopted. Three S&C coaches who met the selection criteria participated in semi-structured interviews, were observed, and respective athletes were interviewed. The themes that emerged from the coach's interviews as their intended motivational climate were, 'Holistic Philosophical Approach', 'Context', 'Enjoyable Climate' and 'Hardworking Climate'. The observations identified that the coaches used predominantly empowering behaviours as opposed to disempowering. Furthermore, the athlete interviews identified 'Holistic Development of Relationship and Person', 'Athlete Specific Context' and 'Coaching Behaviours' as themes key to the environment the coaches created. The data points to a congruence between the coaches intended climate, the observed climate and the athlete's perception. From the results guidelines were developed. An S&C coach needs to have a robust philosophy which incorporates a holistic approach to S&C and this philosophy needs to be adaptable to any context they are working in. A good coach-athlete relationship is fundamental to achieve a positive motivational climate. Once this has been built, educating the athlete on the purpose of their programme is key. It can be suggested that the optimal motivational climate a S&C coach working in a high-performance context needs to have an element of enjoyment for the athlete and needs to support hard work to achieve the physical adaptations which the session is targeting.

Keywords

Environment, S&C coaching, achievement goal theory,

Introduction

An athlete's engagement and motivation are a vital component to any successful training plan [1], particularly in strength and conditioning (S&C), as these sessions are often outside of the usual sporting environment for that athlete. S&C coaches utilise several techniques to optimally engage an athlete during these sessions to create optimal adaptation. When eliciting these techniques, an S&C coach is impacting the motivations of an athlete and creating a motivational climate within their S&C session. Currently there are two prevailing social-psychological theories when examining motivational climate in sport; Achievement Goal Theory (AGT) [2] and Self-Determination Theory (SDT) [3]. These have been shown to place importance on the environment created by others, including coaches, in an individual's sporting experience in addition to considering situational, context specific factors [4].

AGT is a social-psychological theory which explains the motivations of an individual in an achievement context [3]. Nicholls [2] discusses AGT and its relevance to motivational climate, where motivational climate is the description of a social environment and how it influences an individual's motivations and motivational process [5]. Motivational climate has been strongly linked with an individual's goal orientation [6] which impacts their motivations in achievement settings. Nicholls [2] describes two orientations, a 'task involved' or mastery orientation and an 'ego involved' orientation [7, 8], these are also two different climates. A task involved climate is where a performance is judged in reference to that individual's past performances, while in an ego involved climate an individual's performance is judged in relation to others. In Nicholls' description, as well as subsequent evaluations [7, 9], a mastery motivational climate is deemed more beneficial to a learning environment than an ego involved motivational climate. This is due to the mastery climate fostering a task orientation, leading to greater personal development of the individual [10, 11]. In contrast an ego climate will focus on others,

therefore an individual may settle for a substandard result or level of effort if the outcome is already greater than that of their peers [7, 9]. Ideally a high mastery/low ego climate may provide optimal individual motivation [12]. In education and young populations a high master/low ego climate has been seen as the most beneficial according to the literature [13].

The other prevailing theory which looks at motivational climate is SDT [14, 15]. SDT suggests that the environment created by a coach can influence an individual's motivation through the satisfaction or prevention of psychological needs [3, 16]. These needs are autonomy, competence and relatedness. Autonomy is where an individual's behaviours are in support of their needs, interests and preferences, competence is an individual's effectiveness during social interactions and relatedness is how that individual feels connected to a social group [14, 15]. Fostering a mastery climate tends to promote autonomy, competence and relatedness, therefore satisfying these social-cognitive behaviours [7, 9, 11] and subsequently increasing an individual's motivation.

Duda [12] drew links between both theories suggesting a more empowering environment includes a coach who promotes high autonomy support, relatedness support and task involvement. These more supportive sporting and physical education environments are more likely to satisfy an athlete's psychological needs based on AGT and SDT. Alternatively, Duda [12] suggests that a disempowering environment with a coach who is controlling, relatedness compromising and ego involved will lead to an unmotivated athlete and reduce the chance for creating change [3]. However, in an elite sport performance environment, it has been suggested that a high ego/high task climate [16] would be beneficial as the nature of elite sport promotes competition and should be address in training situations.

The importance of context was highlighted by Van de Pol, Kavussanu and Ring [6] where their research suggested a greater ego orientation in competition settings than training while the mastery orientation remained consistent. Furthermore, Smith et al. [18] found increases in a coach created ego orientation during competition along with an intentional shift towards less mastery orientation, within a competition context this may be necessary to optimise performance. Additionally, Keegan et al. [19] identified athlete-coach interactions as important and can influence an athlete's motivation, along with athlete-athlete interactions. Therefore, the context of the coach and athlete needs to be taken into account as well.

Motivation climate is a relatively well researched area in sport science literature. A vast amount of research has been conducted in the youth sport and physical education [13, 20, 21], additionally, the coach created motivational climate has also been researched. It is suggested by Smith et al. [4] and Hodges, Henry and Smith [17], the role of the coach replace other key stake holders in athlete's development such as parents [22], however the role of support staff, in particular S&C coaches, has not been looked at. As S&C coaches are now fully embedded into many high-performance programmes so it would be naive to not identify them as being equally important in shaping a team or individual's motivational climate. The input a S&C coach has on the overall programme highlights the need for research in this area.

It could be argued that to create and shape motivational climate an individual would have to utilise several psychological interactions in order to create the desired climate [23]. In Radcliffe's [23] PhD thesis, it describes in detail the psychological interactions S&C coaches utilise to coach but also to create a motivational climate. Further research by Radcliffe, Comfort, and Fawcett [24] supports the use of psychological techniques by S&C coaches to create a mastery coordinated motivational climate, these techniques included confidence

building and arousal regulation. Radcliffe [23] also shows that more experienced S&C coaches will have more interactions underpinned by their psychological knowledge than their less experienced counterparts. However, it was stated that these S&C coaches have not gone through a large amount of formal psychological training or a bachelors or masters degrees in the subject field, but nevertheless are introducing psychological techniques [23]. It could be suggested that these techniques are developed through experience and learning from other professionals in their field as well as coaching intuition, it is important that coaches should be educated to do this effectively. Even so, coaches do recognise the importance of psychology in their roles [25]. This is supported by research conducted by Hodge, Henry and Smith [17] examining the culture of New Zealand rugby. In this instance, the coaching staff had formed a culture in their squad through specific interventions like empowering the athletes, creating a horizontal hierarchy, character building amongst others despite not completing any formative psychological education.

While literature exists for the sport coach, the literature in strength and conditioning motivational climate is minimal [26], which should be considered important as anecdotal evidence from coaches working in elite sport suggests that the role of a S&C coach with several sports and organisations has a very large impact. Additionally, as previously suggested, experienced S&C coaches use a variety of psychological techniques, which include creating a motivational climate, therefore a greater understanding of a consciously created climate is observable [23, 24]. Currently, the concept of an S&C coach led motivational climate put forward by the previously mentioned research are still theoretical and are not backed up by formative, structured research. Therefore, it is essential to examine them in the elite S&C coach setting to help apply real world data to theoretical models.

Additionally, the research is limited when looking at the subjective perceptions of the athletes during the collection of the coach's motivational climate data, as this is absent from some studies [17, 27, 28]. These studies look at the coach's perception rather than the athlete's where it could be argued that the athlete's perception is the most important because that will be the reality of the climate. The majority of studies who do analyse athlete's perceptions do so in questionnaire form as opposed to interview settings [3, 26]. This perspective is quite significant as the climate a coach is attempting to create could differ from what the athlete perceives to have been created. Therefore, any investigation in this area should also take into consideration the athlete perception of the motivational climate.

In summary, this area of study is important to understand the motivational climate created by elite S&C coaches. This area has had limited research and a significant portion of the motivational climate literature neglects the athlete's perspective. Furthermore, due to the importance of the S&C coach within a performance programme it is essential that they create a climate which is supporting development of the athletes, both physically and mentally.

The aim of this study is to firstly, establish the intended motivational climate that elite S&C coach's create. Secondly, it is to examine if the coaches intended climate is observable during sessions. Thirdly, to discover the athlete's perception of this climate to check its effectiveness. Finally, it will look to form a potential conceptual framework of practise of elite S&C coaches.

Methods

Participants

A strict definition of an elite coach in the literature does not exist, however there are some similarities [29, 30, 31]. Based upon some of these definitions elite S&C coach was identified and recruited using a criterion-based sampling approach of purposeful sampling [32, 33]. The following criteria were used; a coach who has worked either a minimum of 2 Olympic cycles (8 years) within an Olympic and/or Paralympic sport or worked in high performance professional team for a minimum of 8 years. Accredited by United Kingdom Strength and Conditioning Association (UKSCA). An additional inclusion criteria was that it was necessary for these S&C coaches to be currently working in high performance sport at the time of data collection, with either an Olympic, a Paralympic or top tier professional sport so that there is an athlete cohort to study. The experience level of the coaches selected will be important to attain adequate data and based on the previous research [24] an experienced S&C coach will use more psychological techniques, thus enriching the data collected. It is believed the selected coaches would fit the requirements of being truly elite [30, 31].

The three coaches selected had an average age of 39.3 years (± 3.1), an average S&C coaching experience of 15.3 years (±1.7), and had been S&C coaching in elite sport for 11.7 years (± 1.7). In addition, all three coaches have been in their current roles for several years (6.3 years ± 1.2) and therefore have a strong familiarity with the athletes they coach. Two coaches lead both male and female athletes on two UK sport world class performance programmes while the other worked within international female team sports.

Research design

Mixed methods research techniques were used to evaluate the three elite S&C coaches and to collect and analyse the data. This approach was chosen as it would be able to detail each individual S&C and address the complexity of coaching. The research design utilised an interpretative phenomenological analysis (IPA) [31] and a collective case study approach [32] to examine and understand the motivational climate elite S&C coaches develop and create. Furthermore, the use of quantitative statistical analysis will also be used on some of the data collected. An IPA research design was the most appropriate as it enables the researcher to understand and contextualise the participants, it also allows for content and thematic analysis across the whole of data collection [31]. The process needed to be thorough as a climate within a sport or S&C session can be constantly changing, therefore significant data needs to be evaluated [17]. IPA allows the researcher the freedom to use all the information collected as one single interaction may be as pertinent as interactions which are displayed consistently.

Research tools

Data collection was conducted in a three-stage approach for each coach. Interviews were conducted with the coaches and athletes as well as session observation, in addition to session observations of the coaches which were examined using a pre-existing tool.

Coach interviews

An initial semi-structured interview [32] of 11 questions (Appendix) was conducted with the S&C coach, questions were structured to explore the coach's philosophy, some of their coaching behaviours and their perception of the climate they create and the intentions underpinning this. The interviews were recorded with a voice recorder on a Samsung Galaxy S7 Edge, Seoul, South Korea.

Coaching observations

There were three observations of S&C sessions led by the coach which were used to identify what type of behaviours a S&C coach intentionally elicits during a session. The Multidimensional Motivational Climate Observation System (MMCOS) (Appendix) [3] was used during the observations, the validity and reliability [4] of the MMCOS has been shown [3] which is considered a good tool to analyse observed motivational climate. The procedure followed that of Smith et al. [3] for both collection and potency scoring of the MMCOS. The potency scoring used a 4-point potency scale ranging from 3 – strong potency to 0 – not at all and was based on instance, intensity and pervasiveness of the coach's behaviours. The sessions were observed and recorded in the usual training environment to maintain consistency and to reduce disruption to the session. Additionally, the observer and camera were strategically positioned in order to minimise interference in the session and to capture all of the coaching interactions. While the observations were video recorded with a Panasonic HC-V750 video camera combined with an Audio-Technica, a System 10 Digital, 2.4 GHz microphone which was fitted to the coach. Having the sessions documented [34, 35] allows the researcher to review the sessions to help identify some of the major themes that may have been overlooked during the observation process.

Athlete interviews

Interviews were held with two of the athletes that participated in the coached sessions. The interview was semi-structured with 11 questions (Appendix), it was designed to capture the relationship between the athlete and the coach. The interview discussed a broad overview of how the athlete views the motivational climate of that coach and as well as more focused discussions on individual behaviours established as part of the observations in stage two [26].

It was felt vital to gain a basic understanding of the relationship between the athlete and the coaches [35] as well as an understanding of the athletes perceived motivational climate [36]. This could have an impact on the athlete's perceptions and provide some rationale of certain choices delivered by the S&C coach during the session. These interviews were also recorded with a voice recorder on a Samsung Galaxy S7 Edge, Seoul, South Korea.

Procedure

Upon approval of this project by the ethics comity at St Mary's University, Twickenham, England an invitation was sent to 20 elite S&C coaches who matched the selection criteria, from the responses three coaches were selected to participate. The coaches were informed of the purpose and procedure of this project before the coach interview, the interviews were conducted in a closed environment without distractions. The second stage involved observations of S&C sessions by each individual coach and were recorded by the researcher, through video and MMCOS. At the end of the final observation contact was made with the two athletes of each coach who were to be interviewed. A separate day and time was organised for each of the athlete's interviews, which were also held in a closed environment.

Data analysis

Analysis of each stage was conducted before the next stage commenced and used the same process as Hodge, Henry and Smith [17] with the researcher immersing themselves in the data and adopting the "indwelling" qualitative research technique [37]. The literature suggests complex contextual interactions can shape an athlete's motivation therefore an emersion technique will help understand this complexity [19]. These major themes were identified from the S&C coaches' behaviour through thematic content analysis [39, 40]. Sub-ordinate themes were established from analysing the coach interviews, these themes were then clustered

together, based on similarities, into over-arching super-ordinate themes. Averages, standard deviations, percentages and rankings of frequency of behaviours and potency scores from the MMCOS were calculated. Additionally, the difference between empowering and disempowering behaviours have been statistically analysed with a paired samples T-test for both frequency and potency.

Researcher as a tool

It was important to recognise the role of the researcher of this project, as they have previous experience within S&C as well as an understanding of the motivational climate literature. To limit the impact of any biases a critical friend [41] was used throughout data collection. The critical friend has experience of qualitative research, motivational climate and the coaching literature. This individual was responsible for overseeing the analysis of the data collected and challenged the researcher to ensure the interpretation of the data is not tainted with prior expectations, in addition to advising the researcher on the reflective process.

To further limit any research bias, a pilot study was conducted with an experienced S&C coach working within Olympic and Paralympic sport who did not meet one of the criteria for selection. This was a full pilot study of the three stages of data collection. This also served to enhance the use of the researcher as a research tool, it also allowed the critical friend to evaluate and eliminate any unwanted biases which could display themselves during the data collection and analysis, which led to better data.

Results and discussion

This present study examines a previously unresearched area of motivational climate in S&C coaches, additionally the mixed-methods approach of examining the coach's perception, observational analysis and the athlete's perception is rarely seen [4]. The aims were to explore perceptions from both a coach and athlete perspective of the motivational climate an elite S&C coach creates, to objectively measure the climate and assess congruence between intended and created climates. Finally, to aid S&C coaches in the creation of effective motivational climates.

As the data collected was extensive and rich, the results and discussion are conjoined, as presenting this way is optimal for the reader to understand and interpret the findings of this investigation. Firstly, the coach's interview will be presented, secondly the session observations and then finally the athlete interviews.

Coach interviews

The S&C coach interviews lasted for an average duration of 1 hour 5 minutes and 23 seconds (± 00:03:39). Through IPA of the coach interviews, several sub-ordinate and subsequent super-ordinate themes were established. Four super-ordinate themes which established themselves are presented in Table 1.

Table 1. Coach Interview Themes.

Coach Interview	
Super-Ordinate	Sub Ordinate
Holistic Philosophical Approach	Philosophy Unconditional Regard Self-Reflection
Context	Individualised Coaching
Enjoyable Climate	Relationships Empowerment Positivity Trust
Hardworking Climate	Control Creating Intent Voice

The first theme 'Holistic Philosophical Approach' relates to the over-arching philosophy of the S&C coaches. This included their philosophy to S&C but also their overall philosophy to training. The coaches eloquently spoke about their philosophies and how they have developed over the course of their career. They also reflected on how their philosophies drive their practise and the climate they try to create, however it needs to be flexible depending on the athletes and on the situation in which they are working. The coaching philosophy has been seen as fundamental to a coach's practise [25], a coach's philosophy shapes their coaching behaviours and how they interact with their athletes. It is significant that each of the coaches had a strong philosophy that has developed through experience and education as it shows they value their practise and the impact it has on their athletes. In addition, all three coaches showed an understanding of where S&C fit within an athlete's training programme and recognised its importance, or lack of, in various scenarios. The coaches also spoke about 'Unconditional Regard' and the importance of putting the athlete first,

> *'Again, I would check in with them, "Are you okay?" Then following up from that is, "What do you need? What do you need to make this session beneficial? Do you need to go home? Do you need to take ten minutes, gather yourself?"'. Coach 2.*

The coaches suggested that the most important thing was the athlete, so if there was something that appeared wrong, the coaches would place the upmost importance on the athlete's wellbeing as opposed to the outcome of the session, which has been seen to reduce negative self-regard [42].

In addition to this, the coaches spoke at numerous points about the importance of 'Self-Reflection' *'my understanding of myself, and my awareness and understanding of the people that you're dealing with'*. The action and behaviours which they reflected on were not exclusive to improving themselves as S&C coaches but how best to enhance the performance of the athlete and enhance their wellbeing by empowering and encouraging autonomy which has been seen as beneficial for athlete motivation [43]. Additionally, participants in sport can exhibit both emotional and physical exhaustion [44]. Therefore, the importance that these S&C coaches promote high empowerment and unconditional regard should not be underestimated.

The second super-ordinate theme was context, specifically 'Individualisation' and 'Contextual Coaching'. The coaches stated throughout their interviews that the climate they create, their actions and behaviours and their S&C interventions were based on the individual they were interacting with at that given time. '*They're all individuals. They compete as individuals, so in that respect each of them has their own requirements'*. Zhanneta et al. [45] highlighted the importance of an individual approach in building athlete autonomy and coach-athlete relationships. The context of the athlete, the situation and the overall plan will dictate the coach's interaction at any time and this is a constantly changing landscape. *'Again, it could be*

psychological, social, or anything. It's just not black and white is probably what I've learned, and it's just not as easy'. Context is vital in these cases as the behaviour of the coach is influenced by a variety of factors in any given session. The coaches talked about how they reacted to the varying contexts and the necessity to be adaptable. This relates to motivational climate as it suggests that some of the coaches intended climate will be based upon the context of the athlete and sport they are working in. They may need to flex their style and behaviours in creating and managing this climate depending on the athletes they are coaching.

The motivational climate the coach tries to create is linked to the final two themes; 'Enjoyable Climate' and 'Hardworking Climate'. The three coaches had commonalities with the climates they were trying to create in that they wanted it to be enjoyable for the athlete but also hard working. The 'Enjoyable Climate' theme relates to the definition of enjoyment as summarised by Kimiecik and Harris [46, 47] 'In their work, enjoyment is defined as a positive affective response to the sport experience that reflects feelings and perceptions such as pleasure, liking, and experienced fun'. Within the Enjoyable aspect of the climate the coaches talked about 'Relationships', 'Empowerment', 'Positivity' and 'Trust'. They spoke about one of the fundamental factors of creating an impact, which was building a relationship with the athlete which will ultimately lead to the athlete deriving pleasure and motivation from the session itself.

'you almost can gain a little bit of leeway, so when you do need to get them to demonstrate intent, you've got such a strong relationship that then you can go, 'You need to do this and this is why.' They'll trust you enough, and back you enough, that what you're saying actually is true because, again, of the relationship you've built with them'.

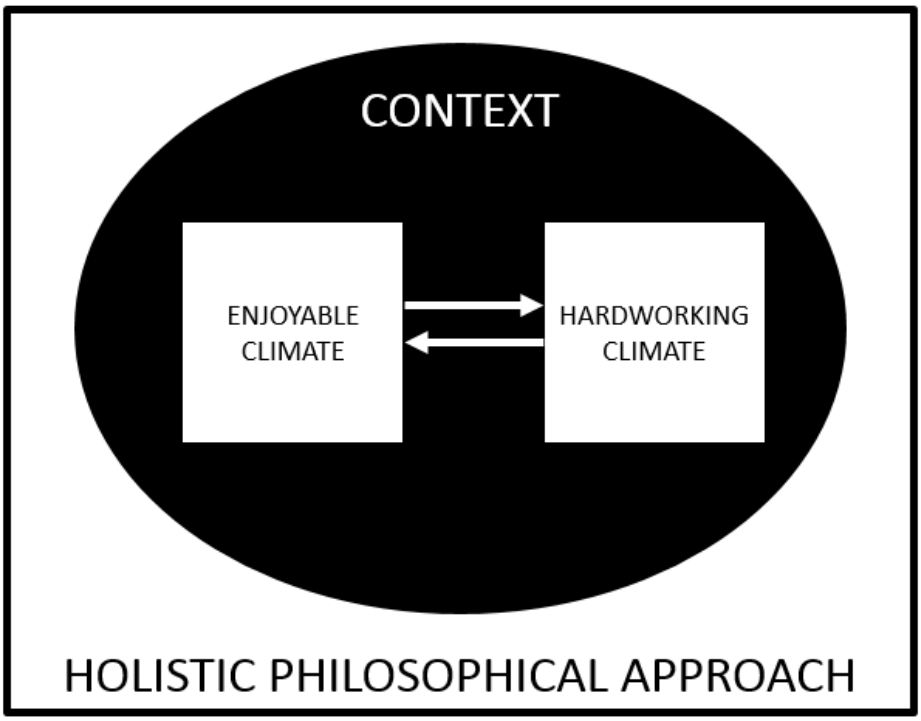
The importance of the athlete-coach relationships is often highlighted in the literature to have positive effects on athlete wellbeing [48], supporting a positive association with sport [49] and promoting athlete motivation [50]. Additionally, good coach-athlete relationships have been seen to increase group cohesion leading to improved performance [51].

The final theme of 'Hardworking Climate' interacts with the 'Enjoyable Climate' theme in order to create the desired climate. Without this aspect of the climate then S&C sessions may not achieve the desired outcome of that session or block. Reason being is that is the athlete is not in a climate with promotes them to work hard they may coast through the session without any input of effort. Hard work and success have been widely seen within mastery orientated climates as well as in the literature as a perceived predictor of success [52]. A specific technique that the coach's spoke about was the use of voice to mould their climate *"I think having the ability to the way you speak and the terminology you use, even the tone and things of your voice around"* and use it to go between the hardworking and enjoyable climate *"I think definitely the use of voice. I think I probably use that a lot, I try and be effective with my voice a lot, in terms of creating energy."*.

Emerging from the coach interviews was the fact all four of these super-ordinate themes interacted with each other. Figure 1 shows how the motivational climate is ultimately underpinned by the coach's 'Holistic Philosophical Approach', however, it is heavily influenced by the 'Context' in that moment. Within this the climates of 'Enjoyment' and 'Hardworking' interact, with the emphasis on either one constantly in flux. The coach will navigate the climate between the two throughout individual sessions and during multiple sessions.

'*You can have the fun and enjoyment in and around those potentially, but when it's working, it's work time and knowing. The key part to that environment is knowing who you can do that with and who you can't'*.

Figure 1. Coach Created Motivational Climate.



Observations and MMCOS

A total of three sessions were observed and recorded for each S&C coach with the average duration of 1 hour 3 minutes and 28 seconds (± 00:24:28). The coaching observations provided an opportunity to examine the actual motivational climate, which the coach was creating to examine the congruence; the use of the MMCOS also provided a framework and a subjective method for interpreting certain behaviours. Table 2 shows the frequency of behaviours displayed during the nine session observations and the average potency of these behaviours.

Table 2. Average Frequency (behaviours per session) and Potency of MMCOS including standard deviations.

Empowering/ Disempowering	Behaviours	Frequency Average	Potency Average
Empowering	Autonomy Supportive	(26 ± 8)	(1.80 ± 0.42)
	Task Involving	(31 ± 20)	(1.28 ± 0.40)
	Relatedness Supportive	(51 ± 16)	(1.87 ± 0.32)
	Structured	(94 ± 31)	(2.07 ± 0.52)
Disempowering	Controlling	(12 ± 7)	(0.48 ± 0.26)
	Ego Involving	(1 ± 1)	(0.15 ± 0.18)
	Relatedness Thwarting	(5 ± 5)	(0.38 ± 0.32)
Total	Empowering	(202 ± 62)	(1.75 ± 0.27)
	Disempowering	(17 ± 10)	(0.34 ± 0.18)

Throughout the observations, the tendency for the coaches to display empowering behaviours (1818) far outweighed the number of disempowering behaviours (154), in fact 92.2% of all behaviours were empowering. The difference was also statistically significant through a paired samples T-test ($p = 0.01$, $p < 0.05$). More importantly, the average potency for the behaviours was stronger for empowering behaviours (1.75 ± 0.30) than disempowering (0.37 ± 0.29), which was also statistically significant.

It is not overly surprising that the coaches elicited mostly empowering behaviours, given that they talked about creating an empowering climate in their interviews and the literature showing the benefits of a predominantly empowering climate [12]. This demonstrates congruence with the intended climate coaches said they were trying to create, this links in with the aims of this study as it appears the coaches intended climate matches the observed climate in these sessions. Additionally, it is pleasing to see a high-performance environment which is not win focused and, similar to Hodges [17] work, has an athlete first approach as this places a high importance on athlete welfare.

Interestingly, while the literature suggests that disempowering behaviours tend to promote a negative motivation climate [12], during the session observations, this was not the case. All disempowering behaviours elicited by the coach were met by outwardly positive reactions from the athletes. In addition, during the athlete interviews the athletes did not suggest these disempowering behaviours as being negative.

Of the 20 most observed behaviours (Appendix), only five were disempowering and only one empowering behaviour sat outside the top 20. The most observed behaviour was 'Provide Instruction and Organisation' which was 37.02% of all the behaviours, this could be expected as the environment is with a high-performance athlete. This behaviour was constant throughout all the observations as the coach organised and directed the session, which provided structure and allowed the coach to run the session the way they intended, it also provided direction to the athletes so they knew what they were doing, thus empowering the athlete with their own session. This was also the most potent behaviour as every demonstration lead to a positive response from the athlete. The second most demonstrated behaviour across the coaches was 'Emphasis/Recognises Effort and/or Improvement' which impacted the athletes by providing them with feedback on improvement during a task, this concurs with Chiviacowsky and Wulf's [52] research where learning is enhanced through feedback after positive trials.

The third and fourth most observed behaviours relates to relationships which is congruent to what the coaches spoke about in the interviews. 'Adopts a Warm Communication Style' was apparent throughout all the session observations and highlighted the personal relationship the athlete had with the coach. All of this was congruent with the coach's intended 'Holistic Approach and Relationship Development'. It was also highlighted by the number of non-instructional conversations that took place in the gym, these conversations covered a wide

variety of topics. Most of these conversations occurred within the first 15 minutes of the session and were strategic to gather information about how the athlete is that day and to set up the session.

Athlete interviews

The athlete interviews lasted an average of 36 minutes and 21 seconds (± 00:05:48). Throughout the athlete interviews, three super-ordinate themes identified themselves, which are presented in table 4. The first super-ordinate theme is 'Athlete Specific Context' which portrays that the athletes are aware the coach focuses on them as individuals and their motivations around being an elite athlete. The subordinate themes were 'Enjoyment', Hardworking' and 'Understanding'. From an S&C perspective, the athlete found it essential to enjoy the sessions, they spoke about how their love for the sport does not necessarily carry over to S&C, however if it is enjoyable they find it easier to work hard during sessions. They also stated, that from a motivational perspective they do not need specific motivational interventions as they tend to be self-motivated. While self-motivation seems prominent in the elite context [54] the literature points to a strong link between enjoyment and motivation in sport, therefore, it seems there is a requirement of enjoyment in S&C sessions to enhance motivation even in an elite environment [55]. The athletes also spoke about how an increased understanding of what they are doing, how it is specific to them individually and how it will improve their sport, also helps improve motivation. This resonates with the coach interviews where coaches spoke about the importance of empowering the athletes through education *"one thing that I try and do is I spend a lot of time educating, hopefully, the athletes to better make a number of decisions and have a little bit of autonomy in their training"*. Once this link has been created they understand the benefits of it and increased buy-in where motivation is a by-product of this, this

is supported in the literature in that athlete understanding promotes positive interactions with sport and increased confidence in ability [56].

Table 3. Athlete Interview Themes.

Athlete Interview	
Super-Ordinate	Sub Ordinate
Athlete Specific Context	Enjoyment Hardworking Understanding
Holistic Development of Relationship and Person	Athlete-Coach Relationship Respect Communication Empowerment Goal Orientation Development of Athlete
Coaching Behaviours	Verbal Non-Verbal Coaching Preferences

The second super-ordinate theme established in the athlete interviews was 'Holistic Development of Relationship and Person', this looks at the overall relationship between the athlete and coach and how that supports the personal development of the athlete. The athlete-coach relationship is fundamental to the coach's intended motivational climate as the athletes need to "like" their coach and place significant emphasis on this relationship [35].

> *'if I'm working with a coach and I don't really trust them or have a good working relationship with them, or I don't feel comfortable with them, I'm less likely to want to be there, so I'm not going to work as hard'.*

It seems that if there is not a good coach-athlete relationship then regardless of the intended motivational climate from the coach, the athlete will not be bought in thus engagement will

suffer [57]. Similarly, the athlete discussed ways in which the coach empowered them through giving them choice and input into their training. Again, this is congruent with the coaching interviews and the observed behaviours witnessed in the MMCOS. Additionally, they also spoke about how the coach promoted certain goal orientations, for example being process driven and focusing on personal development which has been shown to increase motivation [12]. Interestingly, the two most commonly observed disempowering behaviours were 'Uses Controlling Language' and 'Belittles Athlete'. `The use of controlling language was mainly used to organise the session and give instruction to the athletes. The athletes referred to these behaviours as positive, as it gave them clarity over what they needed to do. Additionally, the athletes whose coaches elicited belittling behaviours felt that they have the relationship with the coach so was not seen as a negative. In fact, the athlete's thought it was a necessary behaviour in their environment therefore the coach-athlete relationship can determine how empowering or disempowering behaviours are received.

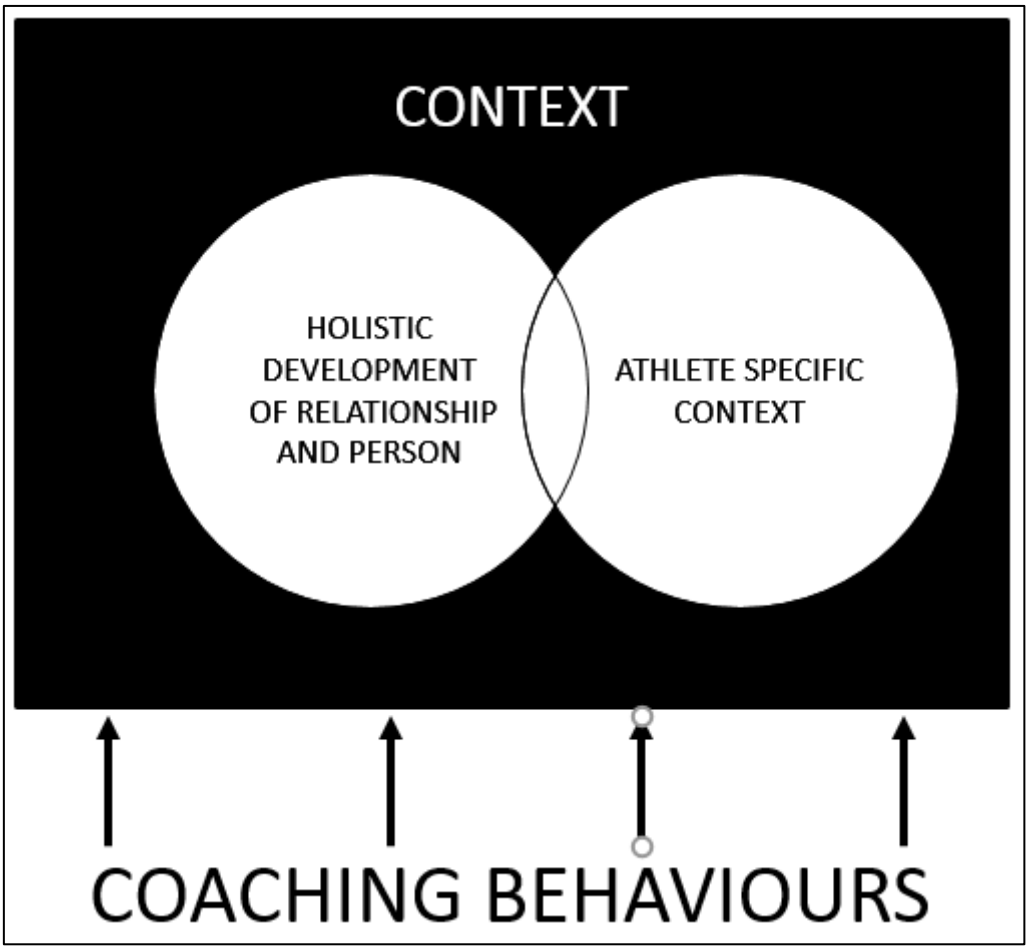
'Development of Athlete' was also one of the sub-ordinate themes of 'Holistic Development of Relationship and Person'. The athletes recognised how the coach was trying to develop them from a training point of view and, they said how they developed them psychologically through decision making and psychological techniques to promote motivation. Finally, the athletes understood and appreciated that the programme and coaching was specific to that individual athlete and the sport which they competed in. The benefits of individualisation from a coaching perspective has been seen in the literature [43, 58], additionally individualisation S&C programming is essential from maximal adaptations [59, 60].

The final super-ordinate theme was 'Coaching Behaviours'. This was the method by which the coaches achieved their desired climate. The athletes were aware, both consciously and

subliminally, of ‘Verbal and ‘Non-verbal’ behaviours that were common during the sessions. They also noted that behaviours were influenced by context as the coaches could behave differently in different environments with athletes. This supports the focus on individualisation by the coaches. In addition, the athletes recognised some of their ‘Coaching Preferences’ when they coach, the demeanour in which they coach.

Figure 2 represents the interaction between two of the themes and how it represents part of the context a coach will work with. It also suggests how the ‘Coaching Behaviours’ help support this context.

Figure 2. Athlete Context for Motivational Climate.



Guidelines

This study examined the motivational climate created by elite S&C coaches using a mixed-methods approach, with IPA methodology, with the purpose to identify what the intended climate was, what climate they actually created and then to look at potential guidelines that could be relevant to other S&C coaches. From the data collected it was apparent that the climate all three coaches intended to create fit into the model proposed in figure 1 which had a fundamental base of enjoyment and hard work even though there were individual and contextual differences. This was influenced overall by the philosophy of the S&C coach. It was also reinforced by the athlete interview where they were aware of this climate and found it beneficial, as it allowed the athlete to enjoy the session but also, get the most out of it and were motivated to work maximally when required.

Given these findings the following guidelines can be proposed. An S&C coach in the elite environment should have a robust philosophy which incorporates a holistic approach to S&C and this philosophy needs to be adaptable to any context they are working in. A good coach-athlete relationship is fundamental to achieve a positive motivational climate where the relationship itself can enhance the motivation of the athlete. Central to building a strong relationship with the athlete is trust, respect, communication and empowerment [50]. Once this has been built the coach needs to control their environment and educate the athlete on the purpose of their programme. It can be suggested that the optimal motivational climate an S&C coach working in a high-performance context creates needs to have an element of enjoyment for the athlete and needs to support hard work to achieve the physical adaptations which the session is targeting.

It is important, when looking at the guidelines for S&C coaches, to consider this study took place with elite athletes therefore the climates created by the three S&C coaches in this study were specific to the context in which they work, even though there were strong similarities throughout.

Limitations

The main limitation of this study is the novel idea of the research meant drawing from a wide literature base. Another limitation of this study was due to the limitations of the MMCOS. Fundamentally the behaviours within the MMCOS are open to interpretation which the tool does not allow. Additionally, single coaching behaviours could be sectioned into several different behaviours. Also, it does not allow for the reaction of the behaviour, as several disempowering behaviours in this study were met with positive reactions.

Conclusions

This literature adds to the research base as it examines the motivational climate created by elite S&C coaches. It demonstrates that an elite S&C coach can create the climate they intend to which is also the perception of the athlete. Potential future research could examine the motivational climate that less experienced S&C coaches create. This would be important to distinguish what climate they create and potential areas on which to focus development.

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Appendices

Appendix I: Copy of Ethics Approval

St Mary's University Twickenham London

St Mary's University

Ethics Sub-Committee

Application for Ethical Approval (Research)

This form must be completed by any undergraduate or postgraduate student, or member of staff at St Mary's University, who is undertaking research involving contact with, or observation of, human participants.

Undergraduate and postgraduate students should have the form signed by their supervisor, and forwarded to the School Ethics Sub-Committee representative. Staff applications should be forwarded directly to the School Ethics Sub-Committee representative. All supporting documents should be merged into one PDF (in order of the checklist) and clearly entitled with your Full Name, School, Supervisor.

Please note that for all undergraduate research projects the supervisor is considered to be the Principal Investigator for the study.

If the proposal has been submitted for approval to an external, properly constituted ethics committee (e.g. NHS Ethics), then please submit a copy of the application and approval letter to the Secretary of the Ethics Sub-Committee. Please note that you will also be required to complete the St Mary's Application for Ethical Approval.

Before completing this form:

- Please refer to the **University's** Ethical Guidelines. As the researcher/ supervisor, you are responsible for exercising appropriate professional judgment in this review.
- Please refer to the Ethical Application System (Three Tiers) information sheet.
- Please refer to the Frequently Asked Questions and Commonly Made Mistakes sheet.
- If you are conducting research with children or young people, please ensure that you read the Guidelines for Conducting Research with Children or Young People, and answer the below questions with reference to the guidelines.

Please note:

In line with University Academic Regulations the signed completed Ethics Form must be included as an appendix to the final research project.

If you have any queries when completing this document, please consult your supervisor (for students) or School Ethics Sub-Committee representative (for staff).

St Mary's University Twickenham London

St Mary's Ethics Application Checklist

The checklist below will help you to ensure that all the supporting documents are submitted with your ethics application form. The supporting documents are necessary for the Ethics Sub-Committee to be able to review and approve your application.

Please note, if the appropriate documents are not submitted with the application form then the application will be returned directly to the applicant and may need to be re-submitted at a later date.

	Enclosed? (delete as appropriate)		Version No
Document	Yes	Not applicable	
1. Application Form	Mandatory		
2. Risk Assessment Form		Not applicable	
3. Participant Invitation Letter	Yes		
4. Participant Information Sheet	Mandatory		
5. Participant Consent Form	Mandatory		
6. Parental Consent Form		Not applicable	
7. Participant Recruitment Material - e.g. copies of Posters, newspaper adverts, website, emails		Not applicable	
8. Letter from host organisation (granting permission to conduct the study on the premises)			
9. Research instrument, e.g. validated questionnaire, survey, interview schedule	Yes		
10. DBS (to be sent separately)		Not applicable	
11. Other Research Ethics Committee application (e.g. NHS REC form)		Not applicable	
12. Certificates of training (required if storing human tissue)		Not applicable	

I can confirm that all relevant documents are included in order of the list and in one PDF document (any DBS check to be sent separately) named in the following format: *Full Name, School, Supervisor.*

Signature of Applicant:

Signature of Supervisor:

St Mary's University Twickenham London

Ethics Application Form

1) Name of proposer(s)	Stephen Breisner
2) St Mary's email address	145650@stmarys.ac.uk
3) Name of supervisor	Katie Richards

4) Title of project Motivational Climate in Elite Strength and Conditioning Coaches

5) School or service	
6) Programme (whether undergraduate, postgraduate taught or postgraduate research)	Postgraduate taught
7) Type of activity/research (staff/undergraduate student/postgraduate student)	Postgraduate student

8) Confidentiality	
	YES

Will all information remain confidential in line with the Data Protection Act 1998?	

9) Consent	
Will written informed consent be obtained from all participants/participants' representatives?	YES

10) Pre-approved protocol	
Has the protocol been approved by the Ethics Sub-Committee under a generic application?	YES/NO/Not applicable Date of approval:

11) Approval from another Ethics Committee	
a) Will the research require approval by an ethics committee external to St Mary's University?	NO
b) Are you working with persons under 18 years of age or vulnerable adults?	NO

12) Identifiable risks	
a) Is there significant potential for physical or psychological discomfort, harm, stress or burden to participants?	NO
b) Are participants over 65 years of age?	NO
c) Do participants have limited ability to give voluntary consent? This could include cognitively impaired persons, prisoners, persons with a chronic physical or mental condition, or those who live in or are connected to an institutional environment.	NO

d) Are any invasive techniques involved? And/or the collection of body fluids or tissue?	NO
e) Is an extensive degree of exercise or physical exertion involved?	YES/NO
f) Is there manipulation of cognitive or affective human responses which could cause stress or anxiety?	NO
g) Are drugs or other substances (including liquid and food additives) to be administered?	NO
h) Will deception of participants be used in a way which might cause distress, or might reasonably affect their willingness to participate in the research? For example, misleading participants on the purpose of the research, by giving them false information.	NO
i) Will highly personal, intimate or other private and confidential information be sought? For example sexual preferences.	NO
j) Will payment be made to participants? This can include costs for expenses or time.	NO If yes, please provide details
k) Could the relationship between the researcher/ supervisor and the participant be such that a participant might feel pressurised to take part?	NO
l) Are you working under the remit of the Human Tissue Act 2004?	NO

13) Proposed start and completion date
Please indicate: • When the study is due to commence. • Timetable for data collection. • The expected date of completion.

Please ensure that your start date is at least 3 weeks after the submission deadline for the Ethics Sub-Committee meeting.
• Study is due to commence Tuesday 3rd January with participant recruitment from 03/01/17 – 28/01/17. • Data will be collected between Monday 30th January 2017 and Friday 31st March 2017. • Expected date of completion is Sunday 7th May 2017.

14)Sponsors/Collaborators
Please give names and details of sponsors or collaborators on the project. This does not include your supervisor(s) or St Mary's University. • Sponsor: An individual or organisation who provides financial resources or some other support for a project. • Collaborator: An individual or organisation who works on the project as a recognised contributor by providing advice, data or another form of support.
• English Institute of Sport – Sponsor of equipment and facilities, Collaborator of advice and support of the project.

15. Other Research Ethics Committee Approval
• Please indicate whether additional approval is required or has already been obtained (e.g. the NHS Research Ethics Committee). • Please also note which code of practice / professional body you have consulted for your project. • Whether approval has previously been given for any element of this research by the University Ethics Sub-Committee.
None

16. Purpose of the study
In lay language, please provide a brief introduction to the background and rationale for your study. • Be clear about the concepts / factors / performances you will measure / assess/ observe and (if applicable), the context within which this will be done.

- Please state if there are likely to be any direct benefits, e.g. to participants, other groups or organisations.

- The purpose of this study is to examine the motivational climate of elite strength and conditioning coaches through observations, interviews and MMCOS questionnaire. Literature examining the motivational climate of elite strength and conditioning coaches is non-existent and therefore will be a key area to study in order to better understand how elite strength and conditioning coaches work.
- There will likely be a benefit to the strength and conditioning coaches of the English Institute of Sport as the results of this study will be disseminated across this group.

17. Study Design/Methodology

In lay language, please provide details of:

a) The design of the study (qualitative/quantitative questionnaires etc.)
b) The proposed methods of data collection (what you will do, how you will do this and the nature of tests).
c) You should also include details regarding the requirement of the participant i.e. the extent of their commitment and the length of time they will be required to attend testing.
d) Please include details of where the testing will take place.
e) Please state whether the materials/procedures you are using are original, or the intellectual property of a third party. If the materials/procedures are original, please describe any pre-testing you have done or will do to ensure that they are effective.

a) The design of this study will have both qualitative and quantitative components.
b) Qualitatively it will consist of a single interview with each coach, observation and recording of 3 sessions then interview with one athlete participating in those sessions. During the observations the MMCOS will be used to code behaviours.
c) The coach participant will be required to be interviewed once as well has have three of their sessions observed. Additionally one athlete from this session will be selected randomly to be interviewed.
d) Testing will take place in the original gym environment of the strength and conditioning coaches selected as participants
e) MMCOS (Smith et al. 2015; please see attached)

18. Participants

Please mention:

a) The number of participants you are recruiting and why. For example, because of their specific age or sex.
b) How they will be recruited and chosen.
c) The inclusion/exclusion criteria.
d) For internet studies please clarify how you will verify the age of the participants.
e) If the research is taking place in a school or organisation then please include their written agreement for the research to be undertaken.

a) Three elite strength and conditioning coaches will be recruited.
b) Recruitment will consist of an email of interest to all English, Welsh, Scottish and Northern Ireland institute strength and conditioning coaches as well as selected others who meet the selection criteria. From the responses the most suitable 3 coaches will be selected.
c) Inclusion criteria
    - Minimum 8 years' experience in elite sport
    - Currently employed to work within Olympic, Paralympic or Professional sport
    - Accredited by UKSCA, NSCA or ASCA
d) All coaches will be over 18 years old
e)

19. Consent

If you have any exclusion criteria, please ensure that your Consent Form and Participant Information Sheet clearly makes participants aware that their data may or may not be used.

a) Are there any incentives/pressures which may make it difficult for participants to refuse to take part? If so, explain and clarify why this needs to be done

b) Will any of the participants be from any of the following groups?

- Children under 18
- Participants with learning disabilities
- Participants suffering from dementia
- Other vulnerable groups.

c) If any of the above apply, does the researcher/investigator hold a current DBS certificate? A copy of the DBS must be supplied separately from the application.

d) How will consent be obtained? This includes consent from all necessary persons i.e. participants and parents.

a) No
b) No
c) N/A
d) Consent form

20. Risks and benefits of research/ activity

a) Are there any potential risks or adverse effects (e.g. injury, pain, discomfort, distress, changes to lifestyle) associated with this study? If so please provide details, including information on how these will be minimised.

b) Please explain where the risks / effects may arise from (and why), so that it is clear why the risks / effects will be difficult to completely eliminate or minimise.

c) Does the study involve any invasive procedures? If so, please confirm that the researchers or collaborators have appropriate training and are competent to deliver these procedures. Please note that invasive procedures also include the use of deceptive procedures in order to obtain information.

d) Will individual/group interviews/questionnaires include anything that may be sensitive or upsetting? If so, please clarify why this information is necessary (and if applicable, any prior use of the questionnaire/interview).

e) Please describe how you would deal with any adverse reactions participants might experience. Discuss any adverse reaction that might occur and the actions that will be taken in response by you, your supervisor or some third party (explain why a third party is being used for this purpose).

f) Are there any benefits to the participant or for the organisation taking part in the research (e.g. gain knowledge of their fitness)?

a) No
b) No risks
c) No
d) No
e) Any adverse reaction will be discussed with the……
f) Gain of knowledge for strength and conditioning as a discipline.

21. Confidentiality, privacy and data protection

a) What steps will be taken to ensure participants' confidentiality?

- Please describe how data, particularly personal information, will be stored (all electronic data must be stored on St Mary's University servers).
- Consider how you will identify participants who request their data be withdrawn, such that you can still maintain the confidentiality of theirs and others' data.

b) Describe how you will manage data using a data a management plan.

- You should show how you plan to store the data securely and select the data that will be made publically available once the project has ended.
- You should also show how you will take account of the relevant legislation including that relating data protection, freedom of information and intellectual property.

c) Who will have access to the data? Please identify all persons who will have access to the data (normally yourself and your supervisor).

d) Will the data results include information which may identify people or places?

- Explain what information will be identifiable.
- Whether the persons or places (e.g. organisations) are aware of this.
- Consent forms should state what information will be identifiable and any likely outputs which will use the information e.g. dissertations, theses and any future publications/presentations.

a) Coaches and athletes will be coded on all paperwork with only the lead researcher and supervisor aware of coding.
b) All data will be stored on a secure computer or password prohibited external hard drives.
c) Only the lead researcher and supervisor will have access to the data.
d) Some data may indicate a participant however this will be controlled for by not publishing the sport, location and organization of the individual coaches.

22. Feedback to participants

Please give details of how feedback will be given to participants:

- As a minimum, it would normally be expected for feedback to be offered to participants in an acceptable to format, e.g. a summary of findings appropriately written.
- Please state whether you intend to provide feedback to any other individual(s) or organisation(s) and what form this would take.

- Feedback will be offered to the coaches and athletes at the conclusion of the data analysis.
- The coaches will have the opportunity to review the transcripts of their interviews as well as view their recorded coaching sessions.
- Feedback will be given to St Mary's University in the form of a poster presentation and a viva.

The proposer recognises their responsibility in carrying out the project in accordance with the University's Ethical Guidelines and will ensure that any person(s) assisting in the research/ teaching are also bound by these. The Ethics Sub-Committee must be notified of, and approve, any deviation from the information provided on this form.

Signature of Proposer(s)	Date:
Signature of Supervisor (for student research projects)	Date:

St Mary's University Twickenham London

Approval Sheet

Name of applicant: Stephen Breisner Name of supervisor: Katie Richards Programme of study: Title of project:

Supervisors, please complete section 1 or 2. If approved at level 1, please forward a copy of this Approval Sheet to the School Ethics Representative for their records.

SECTION 1 Approved at Level 1 Signature of supervisor (for student applications)..... Date.....
SECTION 2 Refer to School Ethics Representative for consideration at Level 2 or Level 3 Signature of supervisor..... Date.....
SECTION 3 To be completed by School Ethics Representative Approved at Level 2 Signature of School Ethics Representative..... Date.....

SECTION 4

To be completed by School Ethics Representative. Level 3 consideration required by the Ethics Sub-Committee (including all staff research involving human participants)

Signature of School Ethics Representative.....

Date.....

Level 3 approval – confirmation will be via correspondence from the Ethics Sub-Committee

Appendix II: Participant Information Form

Motivational Climate in Elite Strength and Conditioning Coaches

Stephen Breisner
English Institute of Sport
Loughborough
LE11 3TU
stephen.breisner@eis2win.co.uk
07714954936

Katie Richards
School of Sport, Health and Applied Science
St Mary's University
TW1 4SX
katie.richards@stmarys.ac.uk
02082404232

What is the purpose of this study?
The purpose of this research project is to examine the motivational climate that elite strength and conditioning (S&C) coaches create, simplistically what environment an S&C coach creates for their athletes in the gym. Motivational climate is a widely researched area in a number of physical activities particularly physical education in children however the literature within elite sport isn't as widely researched. Additionally the research with elite S&C is non-existent therefore it is vital to examine as it can contribute to overall training environment and culture of an elite sport.

Who is doing the research?
Stephen Breisner is responsible for leading the research as part of an MSc dissertation in Strength and Conditioning with Katie Richards acting as lead supervisor. The project will be supported by St Mary's University and English Institute of Sport.

Why have I been selected to take part?
You have been ask to consider taking part as you are an elite S&C coach and may potentially meet the inclusion criteria of the project. If you do not meet the criteria or do not wish to take part there is no requirement to do so.

What are the inclusion criteria?
- Minimum 8 years' experiences working in elite sport.
- Current employment in elite sport.
- Accreditation to a national body (UKSCA, NSCA, ASCA)
- Available for data collection in February and March 2017

Once I take part can I change my mind?
After you have read this information and asked any questions you may have we will ask you to complete an informed consent form, however if at any time, before, during or after the sessions you wish to withdraw from the study please just contact either investigator named at the top of this sheet. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing. If you do withdraw all data will be destroyed.

What is required of me as a coach to participate in this investigation?
Your involvement will require one video recorded interview lasting roughly 60-90 minutes. After the interview there will observations of three of your coaching sessions, the sessions

will take place in your own environment with your athletes. The observations will be video recorded and they will require you to wear a microphone.

What will happen with the interview data?
The interview will be transcribed and analysed with the use of the Multidimensional Motivational Climate Observation System (MMCOS) in order to establish themes.

What will happen with the session observation data?
With the MMCOS and themes established in the interviews, behaviours will be grouped together to understand the motivational climate of those sessions.

Will there be any additional requirements?
Yes, after your interview and coaching observations there will be an additional interview with one or more of the athletes who participated in the observed sessions. You will not be required to partake in this interview.

Is there anything I need to do before the first interview?
No, there isn't anything you need to prepare before the first interview.

How will the data be kept?
Each participant will be assigned a participant number to keep data confidential. The data will be stored in password protected computers. Once the research project has been completed all of the data will be deleted

What will happen with the results?
The results will be collated and written into a MSc dissertation with the potential of submission to an international per reviewed journal. Additionally some of the results may be used to inform a best practice framework for motivation climate in elite S&C coaches. You will receive the video files of the coaching observations as well as the analysis of the completed project.

Will my taking part in the study be kept confidential?
The results of the study will be used to formulate relevant conclusions. All data will be dealt with under the strictest of guidelines and according to the Data Protection Acts of 1984 and 1998. All data will remain anonymous other than to the researcher and supervisor. All data collected will be kept on a secure password protected computer system. All data will be handled in accordance with the St Mary's University guidelines for data protection. The data may be used by members of the research team only for purposes appropriate to the research question, including research conferences and publications, but at no point will personal information or data be revealed. Participants are able to access any data on themselves on request.

Who should I contact if I have any questions?
Stephen Breisner
English Institute of Sport
Loughborough
LE11 3TU
stephen.breisner@eis2win.co.uk
07714954936

Appendix III: Participant Consent Form

St Mary's University Twickenham London

Name of Participant: _____

Title of the project: Motivational Climate in Elite Strength and Conditioning Coaches

Main investigator and contact details: Stephen Breisner (stephen.breisner@eis2win.co.uk)

Members of the research team: Stephen Breisner, Katie Richards

1. I agree to take part in the above research. I have read the Participant Information Sheet which is attached to this form. I understand what my role will be in this research, and all my questions have been answered to my satisfaction.
2. I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.
3. I have been informed that the confidentiality of the information I provide will be safeguarded.
4. I am free to ask any questions at any time before and during the study.
5. I have been provided with a copy of this form and the Participant Information Sheet.

Data Protection: I agree to the University processing personal data which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me.

Name of participant (print)……..

Signed……..…… Date…….....

If you wish to withdraw from the research, please complete the form below and return to the main investigator named above.

Title of Project: _____

I WISH TO WITHDRAW FROM THIS STUDY

Name: _____

Signed: _____ Date: _____

Appendix IV: Coach Interview Questions

Name: …….
Date of Birth: …….
Education: …….
Accreditation: …….
Start Time: …….
Finish Time: …….

Introduction

- Examining the motivational climate created by elite S&C coaches
- The interview will be recorded
- I will also take notes so please keep talking as I do so
- You have the option of removing yourself from the study at any point
- Even though we know each other this interview will be untaken in a research context therefore all of your answer have no bearing on our relationship and will not be shared with any individuals.
- All data will be kept confidential and the project will be written in a way that will make it difficult to identify the participants.
- Do you have any questions?

Background

How did you get in to coaching?

What was your journey?
Years as S&C Coach
Years in Elite Sport
Years in Current Position

What is your coaching philosophy?

How long has it taken you to get to this?
Has anything changed drastically to your philosophy?
Do you think your experience in high performance has driven/changed your philosophy?
If so how?

Describe the way you coach

What tools do you use regularly in your sessions?
How much adaptable is there in your sessions?

Overview of S&C sessions

Describe the structure of your S&C sessions

Athlete numbers
Programming considerations – who writes the programme?

Describe the atmosphere that you try to create in your S&C sessions

Why do you try and create this atmosphere?
What strategies/methods do you use to create it?
What impacts the session so that it doesn't have this environment/atmosphere?
What do you do when this happens?
Do you ever intentionally change the atmosphere?
Do you want to change the current environment? How would you look at changing it?
How long did it take to develop it?
Have you felt like you've ever had to change the environment you create?

What three words would you used to describe the atmosphere you are trying to create?

Behaviours when coaching

How do you motivate an athlete to perform an exercise with maximal effort?

Do you use any particular techniques?
Is it the same for all of your athletes?
Do you change your coaching style depending on the outcome of a session?

Do you offer rewards or consequences to certain behaviours or actions?

Why/why not?
What behaviours elicit these responses?
Do they tend to be pre-planned?

What would you say/do if you felt like an athlete wasn't in the right frame of mind for the session?

Doesn't seem up for it that day
Lacking intent/motivation
Tired/ill/fatigued

Do you ever pair athletes together?

If so, why/why not?
Do you ever introduce a competitive element?

Conclusion

Do you mind if I summarise the discussion?

Background
Philosophy
Climate
Rational
Behaviours
Please feel free to add anything or change anything I have missed

Appendix V: Copy of MMCOS Recording Sheet

			1st	2nd	3rd	4th	Notes
Empowering	Autonomy Supportive	Acknowledges feelings and perspective					
		Provides meaningful choice					
		Encourages intrinsic interest					
		Provides rational for tasks/requests/constraints					
		Provides opportunity for player input					
		Encourages initiative taking					
	Task Involving	Emphasises task-focused competence feedback					
		Explains player role importance					
		Emphasises/recognises effort and/or improvement					
		Uses cooperative learning					
	Relatedness Supportive	Ensures athletes are included in drills/activities/exercises					
		Engages in noninstructional conversations with athletes					
		Adopts a warm communication style					
		Shows care and concern for athletes					
		Shows unconditional regard					
	Structured	Provides instructions and organisation					
		Offers expectations for learning					
		Provides guidance throughout drills/activities/exercises					
Disempowering	Controlling	Uses extrinsic rewards					
		Uses controlling language					
		Relies on intimidation					
		Demonstrates negative conditional regard					
		Uses overt personal/physical control					
		Devalues athletes perspective					
	Ego Involving	Punishes mistakes					
		Emphasises/recognises inferior/superior performance and ability					
		Encourages inter/intrateam rivalry					
	Relatedness Thwarting	Excludes athletes from certain drills/exercises					
		Restricts opportunities for interaction and conversation					
		Shows a lack of care and concern for the athletes					
		Belittles (makes an attempt to embarrass) athletes					
		Adopts a cold communication style					

Appendix VI: Athlete Interview Questions

Name: …….
Date of Birth: …….
Sport: …….
Years in Sport: …….
Years in S&C: …….
Start Time: …….
Finish Time: …….

Introduction

- Examining the motivational climate created by elite S&C coaches
- Want to get your perspective on the climate your coach creates
- The interview will be recorded
- I will also take notes so please keep talking as I do so
- You have the option of removing yourself from the study at any point
- All data will be kept confidential and none of your interview will be supplied to your coach, themes will be created from the interview.
- Do you have any questions?

Background

How did you get into the sport?

What was your journey?

How do you feel about training?

Do you enjoy it?

How hard do you find it?

How do you feel about your S&C sessions? What's different between S&C and sport training?

Overview of your coach & S&C sessions

Describe your coach's role within the session

Athlete numbers

How is the session set up?

Would you change anything to how the structure of the session runs?

If you can, describe the way your S&C coach coaches

What is your S&C coach aiming to do with you?

How do you know?

How do they do this?

How do they talk to you?

Describe how they communicate with you

What does your coach say/do if you felt like you weren't in the right frame of mind for the session?

Doesn't seem up for it that day
Lacking intent/motivation
Tired/ill/fatigued

Describe how they offer feedback?
More positive or more negative?

What is their body language like?

If you need your technique correcting how do they do it?
Do they talk to you/demonstrate/use cues?
What do they do after they have interacted with you?

How do they make you feel when they coach you?

When they coach do they seem in control? Why/why not?

Describe your perception about the sharing of responsibility
If yes, what sort of input?
If no, do you want to be?

Do you notice if your coach ever changes their behaviour?
When do they do this?
Does their coaching ever change?
What impact does the change have? Positive/negative?

What three words would you used to describe the atmosphere created by your S&C coach?

Behaviours when coaching

How do you think your coach motivates you to perform an exercise with maximal effort?
What would they say? If anything?
Is it the same for you as everyone else?
Does this change depending on the exercise?
What does your coach say/do if you felt like you weren't in the right frame of mind for the session?
Don't seem up for it that day
Lacking intent/motivation
Tired/ill/fatigued

Your coach offers …… but then also …….?
Reward/Punishment

What do you think of this? Good/bad?
Are the whole squad aware of these?

Observation Behaviours

When I was observation your session your coach used a lot of ……..
Do you aware of these?
Why do you think they use these?

What is the impact of these?
How did it make you feel?
Do you notice a change in this with:
- Individuals
- During different sessions
- During different exercises

Also during the observations your coach used a lot of ……

Are you aware of this?
Why do you think they use this?
What is the impact of this?
How did it make you feel?
Do you notice a change in this with:
- Individuals
- During different sessions
- During different exercises

Conclusion

Do you mind if I summarise the discussion?

Background
Your Coach
Your Sessions
Behaviours
Observed Behaviours
Please feel free to add anything or change anything I have missed

Appendix VII: Rank of Most Observed Behaviours

	Behaviour	Instance Rank	Instance (%)	Potency Rank
Structured	Provides instructions and organisation	1	37.02%	1
Task Involving	Emphasises/recognises effort and/or improvement	2	11.26%	3
Relatedness Supportive	Adopts a warm communication style	3	11.00%	5
Relatedness Supportive	Engages in noninstructional conversations with athletes	4	7.61%	3
Structured	Provides guidance throughout drills/activities/exercises	5	5.93%	2
Controlling	Uses controlling language	6	4.21%	14
Autonomy Supportive	Provides opportunity for player input	7	3.60%	5
Relatedness Supportive	Shows care and concern for athletes	8	3.40%	5
Autonomy Supportive	Provides rational for tasks/requests/constraints	9	3.09%	8
Task Involving	Emphasises task-focused competence feedback	10	2.43%	10
Autonomy Supportive	Acknowledges feelings and perspective	11	2.18%	9
Relatedness Thwarting	Belittles (makes an attempt to embarrass) athletes	12	1.27%	17
Autonomy Supportive	Encourages initiative taking	13	1.12%	12
Relatedness Supportive	Ensures athletes are included in drills/activities/exercises	13	1.12%	13
Autonomy Supportive	Encourages intrinsic interest	15	0.86%	15
Autonomy Supportive	Provides meaningful choice	16	0.81%	10
Relatedness Thwarting	Adopts a cold communication style	17	0.66%	19
Controlling	Devalues athletes perspective	18	0.61%	16
Task Involving	Uses cooperative learning	19	0.35%	17
Controlling	Demonstrates negative conditional regard	20	0.30%	23
Ego Involving	Emphasises inferior/superior performance and ability	21	0.20%	25
Relatedness Thwarting	Shows a lack of care and concern for the athletes	21	0.20%	22
Ego Involving	Encourages inter/intrateam rivalry	23	0.15%	25
Structured	Offers expectations for learning	23	0.15%	19
Relatedness Supportive	Shows unconditional regard	23	0.15%	19
Task Involving	Explains player role importance	26	0.10%	25
Controlling	Uses overt personal/physical control	26	0.10%	23
Relatedness Thwarting	Excludes athletes from certain drills/exercises	28	0.05%	29
Controlling	Uses extrinsic rewards	28	0.05%	25
Controlling	Relies on intimidation	30	0.00%	30
Ego Involving	Punishes mistakes	30	0.00%	30
Relatedness Thwarting	Restricts opportunities for interaction and conversation	30	0.00%	30