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A Novel Approach to Assessing the Quality of Coach-athlete Relationships: Can the Coach-athlete Relationship be Evaluated for Motivational Support by Analysis of Published Coach Interviews?

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A novel approach to assessing the quality of coach-athlete relationships: Can the coach-athlete relationship be evaluated for motivational support by analysis of published coach interviews?

by

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An undergraduate honors thesis submitted in partial fulfillment of the

requirements for the degree of

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in

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Thesis Adviser

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Abstract

The aim of this paper is to present a novel methodology to be used in evaluating the quality of the coach-athlete relationship in line self-determination theory (Deci and Ryan, 1980, 1985) and based on the motivational model of the coach-athlete relationship proposed by Mageau and Vallerand (2003). This paper consists of a review of the extant literature surrounding self-determination theory as applied to sports, followed by a pilot study testing the proposed new methodology. The methodology utilizes existing coach interviews conducted by institution media to evaluate the language used by NCAA D1 soccer coaches in reference to their teams. The findings of the study serve to aid the development of the new methodology and provide direction for future use in answering the following question: Does the quality of the coach-athlete relationship predict team success within NCAA D1 women's soccer?

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Introduction

What makes a team successful? It is a question considered by all coaches and explored at length by many in the field of applied sports psychology. While innumerable elements contribute to team success, three categories encompass the majority of these factors: (1) effectiveness of the coach, (2) effectiveness of individual players, and (3) the resulting group dynamics dependent on interpersonal relationships between players and between players and coach. Nowhere are the stakes of team success more comprehensively and directly apperceived than in the arenas of collegiate and professional sports due to the contractual nature of coach employment (continued employment is based on team performance) and the benefits received by athletes (e.g. monetary gain, access to education, status, etc.). While the subset of players rostered is determined by the coaching staff and the make-up of the coaching staff by the represented institution, it becomes vital for institutions, whether collegiate or franchise, to employ coaches that will recruit the right players and build the necessary team dynamics through the development of those players to foster the success from which institutions seek to gain benefit.

As the ability of a coach to recruit top players is dependent on a variety of factors – particularly on past successes – and coach qualifications are presumably prerequisite for position consideration, the ability to foster “winning” team dynamics should therefore be considered by institutions to be a principal differential factor determining the capacity of a coach to achieve team success.

This thesis investigates the elements associated with high athletic performance among elite athletes (athletes at the professional and high collegiate levels), particularly the characteristics of the coach-athlete relationship mediated by the fundamental psychological needs outlined by Deci and Ryan (1985, 2000, 2008) in line with self-determination theory. The

following text will also outline a new approach to measuring the quality of the coach-athlete relationship. This work consists of both a literature review of motivation theory as well as a study of evidence provided by existing coach interviews obtained from institution websites. The study portion will be particularly focused on NCAA D1 women's soccer teams and look preliminarily for association between success and the quality of coach-athlete relationships as determined by evaluation of the language used by coaches in existing interviews conducted by institution media of the top and bottom teams of the Pac-12 Conference. The research presented in this thesis serves as a pilot study to ascertain whether the motivational support, or lack thereof, provided by a coach can be revealed by the language used in interviews published by their own institutions. This new methodology, if applied across all conferences, has the potential to answer the following research question: Does the quality of the coach-athlete relationship predict team success within NCAA D1 women's soccer?

On motivation theory

Prolific scientific work has been conducted within the last twenty-five years on human motivation (Ryan, 2012) including a large body of research on the fundamental role of motivation in explaining human functioning within the scope of athletics. Many studies have illustrated the significant influence that athletes' motivation has on their attitudes and behaviors including vitality (see, Gagné, Ryan and Bargmann, 2003; Reinboth and Duda, 2006), emotions (see, Blanchard, Amiot, Perreault, Vallerand and Provencher, 2009; Mack et al., 2011), and performance (see, Gillet, Berjot and Gobancé, 2009; Van de Pol, Kavussanu and Ring, 2012).

Deci and Ryan developed the wide-ranging theory of motivation in 1985. The theory encompasses both intrinsic and extrinsic motivation, and differentiates between these two forms of motivation based on the nature of an individual's commitment to the given activity. Intrinsic

motivation refers to an individual's commitment to an activity maintained in whole by the satisfaction received when practicing it (Deci, 1975). Extrinsic motivation, on the other hand, is characterized by investment in an activity due to external factors. The degree to which these external factors are internalized determines the type of extrinsic motivation as outlined by self-determination theory (Deci and Ryan, 1985, 2000, 2008). Over the last thirty years, the theory of self-determination has come to represent a major theoretical paradigm within the field of motivation and demonstrated by many studies to be particularly useful in analyzing the motivation of individuals in work, education, and sport (Deci and Ryan, 2008; Standage, 2012; Vallerand, 2007). The theory is not only a multidimensional construct, has been employed with various research protocols (e.g., experimental, longitudinal, correlational) and multiple standard statistical analyses (Gillet and Vallerand, 2016). Overall, the theory of self-determination is regarded as a theory of motivation with exceptional internal, external, and ecological validity (Vallerand, Pelletier and Koestner, 2008).

Deci and Ryan (1985) proposed and demonstrated that individual attitudes and behaviors could be better understood if researchers relied on the characterization of a few qualitative forms of motivation rather than solely on the intensity of the motivation. Since then, numerous studies conducted on athletes have illustrated the strong explanatory power of the types of motivation outlined by self-determination theory in the prediction of persistence in an activity (see Pelletier, Fortier, Vallerand and Brière, 2001; Vallerand and Rosseau, 2001) as well as performance (see Chantal, Guay, Dobрева-Martina and Vallerand, 1996; Gillet, Vallerand and Rosnet, 2009).

Types of motivation and athletic performance

While motivation can prima facie be categorized as intrinsic or extrinsic in nature, extrinsic motivation can be classified per self-determination theory as *self-determined* or *non-*

self-determined (Deci and Ryan 1985, 2008). Self-determined motivation refers to behaviors that are coherent with a person's own values while non-self-determined motivation is the result of extrinsic motives that are imposed or coercive. The distinction between self-determined and non-self-determined types of motivation therefore remains the degree of internalization (Kelman, 1961).

Four types of extrinsic motivation are proposed by Deci and Ryan (1985, 2000, 2008). Two of these are self-determined in nature whereby the extrinsic reasons for performing a behavior are accepted and internalized by the person, and two are, conversely, non-self-determined and characterized by feelings of obligation and pressure to engage in an activity by internal (e.g. personal feelings of guilt) or external forces (e.g. one's coach). *External regulation* is a type of non-self-determined motivation that refers to behaviors that are not internalized but initiated and guided by external constraints and contingencies. For example, a player who attends weight-training sessions solely to avoid argument with her coach. The second type of extrinsic motivation, *introjected regulation*, denotes behavior that is partly-internalized but where motivation remains non-self-determined because the individual accepts the contingencies provided by an external source without fully adhering to the application or requirement. The behavior is not endorsed but considered a means by which to be accepted, understood, or valued by one's self or others. Motivation is considered controlled by extrinsic elements including guilt, anxiety, or the desire to maintain a positive self-image. For example, the player who engages in weight-training because she wants approval from her coach and teammates. The third type of extrinsic motivation, *identified regulation*, is where the individual chooses to regulate behavior because they have understood the positive external consequences associated with it. Motivation is self-determined as the person has fully endorsed the activity and behaviors are performed by

choice because the underlying values have been autonomously deemed important. In the weight-training example, the player participates without necessarily feeling pleasure in the activity but because she considers the work to be imperative for progression within her sport. Finally, *integrated motivation* refers to highly self-determined motivation that has been autonomously integrated into the person's value system and self.

Research illustrates that both intrinsic motivation as well as self-determined types of extrinsic motivation are necessary components for athletes' optimal functioning (for a review see Vallerand and Rosseau, 2001). In line with this, the theory of self-determination (Deci and Ryan, 2000) now relies on the distinction between *autonomous motivation* and *controlled motivation* without differentiation between intrinsic and extrinsic motivation as individuals may be extrinsically motivated and still feel autonomous (Deci and Ryan, 2008). Intrinsic motivation, integrated motivation, and identified regulation are forms of autonomous motivation, whereas introjected regulation is a reflection of controlled motivation. In addition to these two more encompassing classifications, an amotivated individual is one that employs external regulation. In a review of recent research utilizing elite-athletes, Gillet and Vallerand (2016) illuminate the effects of autonomous motivation, controlled motivation, and amotivation on athletic performance based on the paradigm of self-determination theory.

In their review, Gillet and Vallerand (2016) examine research including some of their own previous work that analyzes different motivational profiles (i.e. combination of different forms of motivation in the same individual). Their research indicates that certain motivational profiles (e.g. high levels of autonomous and controlled motivation, and low level of amotivation) are associated with various performance outcomes. In line with this, Gillet, Vallerand, and Rosnet (2009) illustrated through longitudinal research that by identification of athletes'

motivational profiles, it is even possible to predict their performance throughout one and two sports seasons. Below are the findings determined by Gillet and Vallerand (2016) to be universal through their examination of extant studies analyzing different motivational profiles and utilizing both an inter-individual approach (i.e. analysis of motivation between individuals) and intra-individual approach (i.e. analysis of motivation within the same individual).

Table 1: Motivational profiles and performance (for review see Gillet and Vallerand, 2016)

Individuals with “high-high” motivational profiles (i.e. high levels of autonomous and controlled motivation, and low level of amotivation) were the best performers.

Individuals with “high-low” motivational profile (i.e. high level of autonomous motivation, and low levels of controlled and amotivation) performed better than those with “moderate-high” motivational profiles (i.e. moderate level of autonomous motivation, high level of controlled motivation, low level of amotivation).

In some studies, individuals with “high-moderate” or “high-low” motivational profiles (i.e. high level of autonomous motivation, moderate or low level of controlled motivation, and low level of amotivation) performed as well as those with “high-high” motivational profiles.

Individuals with “high-high” motivational profiles had the highest scores of physical and emotional exhaustion.

Participating athletes in the studies reviewed by Gillet and Vallerand (2016) include all tennis players of the French Tennis Federation and all fencers of the French Fencing Federation during the associated years that the respective studies were conducted, and all fifty-three ultra-marathoners participating in the 24th Marathon des Sables (a six-day endurance race over 251 km in the Sahara desert).

While some studies found a negative correlation between a high level of controlled motivation and performance (e.g. Benware and Deci, 1984; Gillet, Vallerand, Lafrenière, and Bureau, 2013), it is apparent that a high level of autonomous motivation is the most important type of motivation when predicting performance of athletes (Gillet and Vallerand, 2016). Controlled motivation was, however, associated with exhaustion across all reviewed studies. Overall, the athletes with the least self-determining motivational profiles were the least performing. In summary, the findings of Gillet and Vallerand (2016) support the theory of self-determination as it posits that self-determining (i.e. autonomous) motivation is associated with more positive consequences than controlled motivation (e.g. better performance and higher level

of well-being). These results are in agreement with those of recent research conducted in the educational context (for review see Ratelle, Ratelle, and Chanal, 2008). Further, research in the educational purview demonstrated that “autonomous motivation flourishes under autonomy supportive conditions, leading to positive academic outcomes” (Ratelle, Ratelle, and Chanal, 2008).

While a high level of autonomous motivation within an athlete’s motivational profile is vital to achieving high levels of performance, to this end it is particularly important to specify that coaches can have a major impact on the development of motivation in athletes (Mageau and Vallerand, 2003). First, coaches must work to reinforce intrinsic motivation because the athletes who are intrinsically motivated are not only likely to find greater enjoyment and satisfaction while participating in their sporting activities (Gillet, Berjot, Vallerand, and Amoura, 2012), but they are also more likely to work hard in the absence of extrinsic rewards and reinforcements, exhibit greater skill learning, and experience less performance-related anxiety relative to those with a more extrinsic orientation of motivation (see Vallerand 1997; Vallerand and Losier, 1999). Second, coaches have a vested interest in encouraging the internalization of extrinsic motivation so that it becomes autonomous because autonomous extrinsic motivation is associated with positive consequences (see McLachlan, Spray, and Hagger, 2011; Standage, Duda, and Ntoumanis, 2005). In order to do this, it is imperative that coaches work to adopt an interpersonal style that supports athlete autonomy (Deci and Ryan, 1987).

Supporting athlete autonomy

For a coach to support the autonomy of his or her athletes, an effort must be made to recognize and take into account perspectives of the athletes while encouraging them to take initiative and make their own choices while minimizing pressure, criticism, and control (Mageau

and Vallerand, 2003). Several studies have illustrated that the perception of an environment that supports autonomy is positively associated with autonomous motivation and negatively related to controlled motivation and amotivation (see Pelletier, 2001). As is illustrated by Mageau and Vallerand (2003) coaches that support athlete autonomy also promote athletes' needs for competency and relatedness. These psychological needs will be addressed in greater depth shortly.

Coaches' leadership style and motivational climate also impact the development of autonomous motivation within athletes. Amorose and Horn (2000) illustrated that while an autocratic leadership style (e.g. where the coach holds all control and players are expected to do what they are told) was negatively associated to the intrinsic motivation of college athletes, democratic behaviors among coaches (e.g. guiding athletes in a process of shared decision-making) was tied to an increase in it. Motivational climate, as first described by Ames (1992) in the classroom setting can be categorized as either a *climate of mastery* (task-oriented) or a *climate of performance* (ego-based). As applied to sport and physical activity by several studies (e.g. Papaioannou, Milosis, Kosmidou, and Tsigilis, 2007), motivational climate has a clear impact on autonomous motivation. In a climate of mastery, where emphasis is placed on effort, cooperation, learning, and personal progress, the individual is motivated by intrinsic factors and therefore autonomous motivation is supported. On the other hand, when the climate is characterized by the promotion of rivalry and interpersonal competition, as is the case in a climate of performance, forms of controlled motivation and amotivation are favored. The perception of a climate of mastery, as illustrated by Sarrazin, Guillet, and Curry (2001), is positively associated with meeting the psychological needs of athletes for autonomy, competence, and relatedness.

The three basic psychological needs

The framework of self-determination theory (Deci and Ryan, 1985, 2000, 2008) specifies that humans have a set of three universal psychological needs that must be met for optimal psychological functioning: *autonomy*, *competence*, and *relatedness*. Individuals must feel autonomous in their actions (that their thoughts and behaviors are freely chosen), competent in their chosen undertakings, and that they are connected to those around them (relatedness). Not only can coaches influence an athlete's motivation through their impact on the athlete's perceptions of autonomy, competence, and relatedness (Vallerand, 1997, 2000), but Mageau and Vallerand (2003) propose that perceived satisfaction of the three fundamental psychological needs are "mediators of the impact of autonomy-supportive behaviors on intrinsic and self-determined extrinsic motivation." Similarly, Blanchard and Vallerand (1996) demonstrate that the impacts of team cohesion and coaching style on levels of autonomous types of motivation are facilitated by the perceptions of the three basic needs. In their study of basketball players, results indicated that the "more athletes perceived their coach to be autonomy supportive and their team cohesive, the more they felt competent, autonomous and connected with their teammates, and in turn, the more they played basketball out of intrinsic and self-determined extrinsic motivation."

While the impact of the coach's autonomy-supportive behaviors on the athletes' intrinsic and self-determined extrinsic motivation is described by Mageau and Vallerand to be intuitive, additional behaviors including structure and involvement are also associated with providing autonomy support. Structure instills in athletes a sense of the coach's trust in their abilities, thereby influencing their perception of competence, and the communication of involvement and respect for the athletes influences their perceptions of connection and relatedness (2003). To explain the interconnected nature of these implications, Mageau and Vallerand (2003) propose a

motivational model of the coach-athlete relationship (see Figure 1) that is in line with both Vallerand’s hierarchical model of intrinsic and extrinsic motivation (1997, 2000, 2001) and cognitive evaluation theory (Deci and Ryan, 1980, 1985).

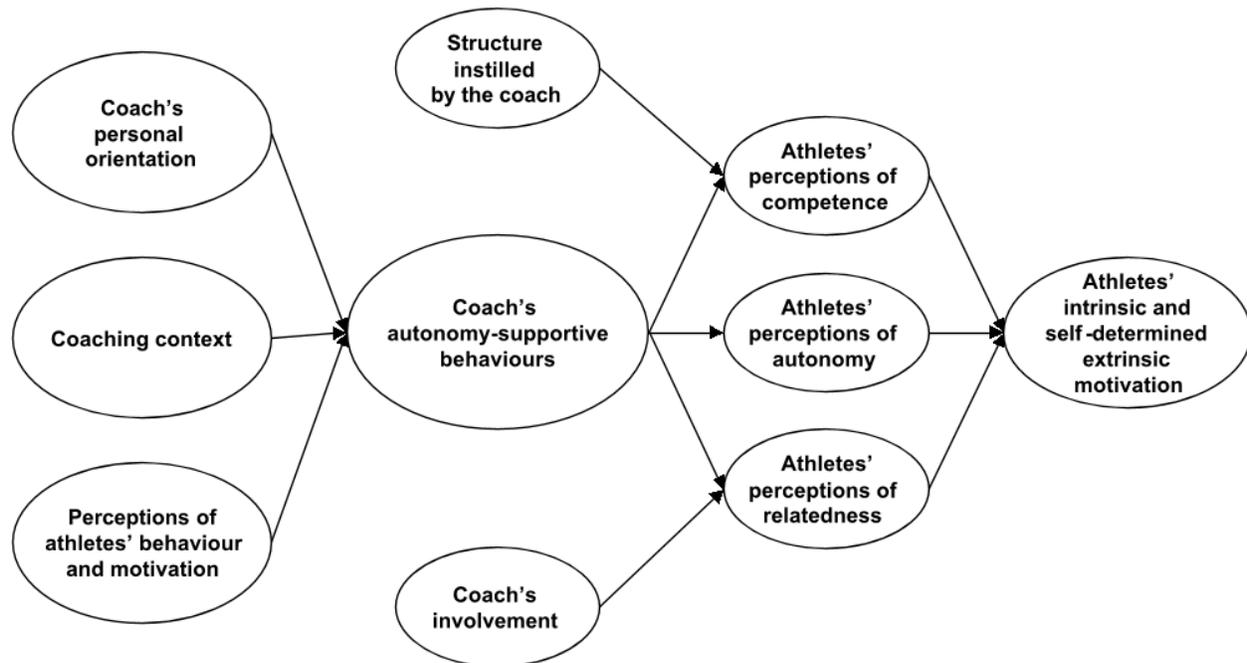


Figure 1. Mageau and Vallerand’s (2003) motivational model of the coach-athlete relationship

According to Mageau and Vallerand (2003), “although many factors may impact athletes’ intrinsic and self-determined extrinsic motivation, the coach-athlete relationship is one of the most important influences on athletes’ motivation and subsequent performance.”

The coach-athlete relationship

Mageau and Vallerand (2003) indicate that coach behaviors including the provision of autonomy support and associated structure and involvement have a direct influence on the three basic psychological needs. These authors go on to outline specific characteristics that are autonomy supportive:

“Briefly, autonomy-supportive individuals: (1) provide as much choice as possible within specific limits and rules; (2) provide a rationale for tasks, limits and rules; (3) inquire about and acknowledge others’ feelings; (4) allow opportunities to take initiatives and do independent work; (5) provide non-controlling

competence feedback; (6) avoid overt control, guilt-inducing criticisms, controlling statements and tangible rewards; and (7) prevent ego-involvement from taking place. These behaviours together represent the autonomy-supportive interpersonal style.”

- The coach-athlete relationship: a motivational model, pg 886

The behaviors included above comprising the autonomy-supportive interpersonal style are supported by a large volume of empirical evidence in a variety of individual sport and team settings (for review see Mageau and Vallerand, 2003). At this time, decades of research support the claims of Deci and Ryan (1980, 1985), indicating that autonomy-supportive behaviors, as opposed to controlling behaviors, enhance intrinsic motivation and self-determined extrinsic motivation, and that coaches’ autonomy-supportive behaviors are positively associated with higher performance among athletes (see Gillet and Vallerand, 2016 for review). Therefore, it can be inferred that characteristic coach behaviors of the “autonomy-supportive interpersonal style” presented by Mageau and Vallerand (2003) are distinguishing elements of a high-quality coach-athlete relationship that promotes elevated levels of performance via self-determined motivation.

Coupled with autonomy-supportive behaviors, coaching behaviors that show involvement and provide structure further support intrinsic and self-determined motivation as well as performance (for review see Mageau and Vallerand, 2003). Through instruction and structure, coaches provide athletes with the necessary experiences and information needed to progress within their sport and gain a sense of competence. Coaches that show involvement are perceived as more caring and supportive by their athletes and thereby can bring about greater levels of autonomous motivation within their athletes. This is supported in the educational domain by experimental studies that demonstrate that maintaining guidelines and limits imparts children with more competence when interacting with their environments (Grolnick and Ryan, 1989) and that an adult’s lack of involvement is worse as related to children’s intrinsic motivation than controlling behaviors (Anderson et al., 1976). Further, Iyengar and Lepper (2000) illustrated that

autonomy-supportive behaviors like providing choice have more beneficial consequences when individuals have the necessary competence to sufficiently make their own decisions. Together, structure and involvement along with autonomy-supportive behaviors not only meet the three psychological needs of athletes but also mediate greater levels of autonomous motivation (Mageau and Vallerand, 2003) and therefore lead to more beneficial consequences outlined by Gillet and Vallerand (2016) to specifically result in higher levels of athletic performance.

While extensive research has been conducted on the athletic performance of elite athletes in association with coaches' autonomy-supportive behaviors within the framework of self-determination theory, little research has been conducted with a focus on team performance. Extant research exploring various facets of the coach-athlete relationship utilizes observational, in-depth observer interview, and/or questionnaire-based methodology. While observational and in-depth observer interview methodology provides qualitative reflection of coaching behaviors and the perception of these behaviors by athletes, reviewed studies within the purview of motivation theory are often limited in scope to a single team and/or a small subset of coaches (e.g. Readdy and Raabe, 2016). Studies involving large samples of athletes employed questionnaires like the Coach-Athlete Relationship Maintenance Questionnaire (CARM-Q) developed by Rhind and Jowett (2012) and the Sport Motivation Scale (Pelletier et al. 1995). No reviewed studies directly addressed coaches' autonomy-supportive behaviors and team performance on a large scale.

The following study outlines a new methodology for assessing the quality of the coach-athlete relationship utilizing existing coach interviews conducted by institution media. This paper will use Mageau and Vallerand's (2003) proposed autonomy-supportive behaviors in an attempt to qualitatively define the quality of coach-athlete relationships within NCAA DI women's

soccer and subsequently determine whether an association exists between the quality of the coach-athlete relationship as assessed by the novel methodology and team performance. Additionally, the motivational climates created by coaches based on the characteristics as outlined by Ames (1992) will be evaluated in this paper. Because this is an undergraduate honors thesis and the scope of resources including the constraints of time is respectively limited, it was not possible to use multiple observers or obtain a sample size large enough for regression and correlation analyses. Instead, this work will serve as a pilot study to provide further direction for future use of the proposed methodology and seeks to determine whether the quality of the coach-athlete relationship can be extrapolated from the language of coach interviews from teams that finished at the top and bottom of the Pac-12 Conference. The following research will therefore seek to answer the question:

Can the coach-athlete relationship be evaluated for motivational support by analysis of published coach interviews?

Methods

Sample

In this study, I examined existing coach interviews conducted by institution media from two NCAA D1 women's soccer teams in the Pac-12 Conference leading up to and during the 2016 fall season. The two teams chosen include Arizona State University (ASU) who placed last in the conference standings (finishing with 4 points after a season record of 6-11-2 and a conference record of 1-9-1) and the University of Southern California (USC) who placed second in the conference standings (finishing with 25 points after a season record of 20-4-1 and a conference record of 8-2-1). USC was chosen for this study over the conference winner, Stanford (finishing with 30 points after a season record of 19-2-1 and a conference record of 10-1-0), because USC went on to win the national championship after a few early losses in season and conference play. This selection provided the study with a greater amount of interview material due to the USC's prolonged season as well as coach interviews after four losses compared to Stanford's two. While USC interviews included both written articles as well as video segments titled "Kickin' it with Keidane," in reference to head coach Keidane McAlpine, ASU interviews featuring quotes from head coach Kevin Boyd consisted exclusively of written news articles. Interviews utilized in this study were published between 5 July 2016 and 2 December 2016, and obtained from institution websites for analysis on 14 March 2017. Most interviews were conducted post-game and were focused primarily on game results, but some (most notably USC's video segments) were obtained mid-week. In all, this study analyzed the existing 38 and 21 interviews published by USC and ASU respectively for the 2016 championship season.

Procedure

Due to the limited scope of the undergraduate honors thesis, I was the primary observer

of this study coding all interviews. In order to eliminate experimenter bias, all team identifying factors were eliminated from the interviews prior to coding and interviews were identified only by numbers assigned based on the date and time published. Short video segments were transcribed and included as above. Interviews were then coded to quantitatively determine the number of characteristic focuses of Ames' (1992) Motivational Climates and elements of Mageau and Vallerand's motivational model of the coach-athlete relationship (2003) observed in each interview. The total number of interviews containing each observed factor was also recorded (see Tables 2 and 3).

See below excerpts of coach interviews and respective qualitative analysis provided to illustrate coding:

Interview #41:

“Today I thought our first half was pretty good. In the second half, even though we scored, I thought we were not as deliberate with our final pass as we would like,” said head coach XXX. “The key today was we won a tight one against a Washington side that did a great job with their organization and tactics. It was a game that is good for us as we move through the season because these are the tight games that you get late in the year and you need to find a way to get a result.”

This interview contains two instances of non-controlling competence feedback when the coach is relaying his interpretation of the game and demonstrates an example of ego-involvement provided by the statement: “you need to find a way to get a result.” This excerpt of coach language demonstrates task orientation as evinced by a focus on the final pass not being “deliberate” enough. While the team won “a tight one” the coach indicates this area for improvement rather than stating that they should have scored more goals. The coach also attributes the challenge posed by the other team to the opposing team's “organization and

tactics.” This implies a focus on cooperation and structure (although not a category that was coded for, structure is an key component of Mageau and Vallerand’s (2003) motivational model). The coach goes on to denote that the value of this game lies in the opportunity for his team to experience “the tight games that you get late in the year.” Stating that it was “a game that is good for us,” the coach illustrates an emphasis on learning and development.

Interview #20:

“It's a bit of a frustrated team because we are the aggressors, we are outplaying teams and getting more shots and we are not winning,” XXX head coach XXX said. “We have to take care of some details and have a calmer head in order to start getting the results that we should be getting.”

“We score a goal early and we almost sit back and let them in the game,” explained XXX. “I want us to be significantly more fierce with our attack in that moment (after taking the lead) and get all over them and get the second goal and the third goal. Instead we are sitting back and that's not what we are trying to teach.”

“My message to the team is we are showing our inexperience and we need to grow up quicker,” XXX said. “Part of the thing we lost last year with six starters and two significant players coming off the bench was people that were calm amongst chaos and they could connect passes and technically handle the ball and put their shots on frame and we are not. We are making too many errors and that is causing us problems right now.”

Initially demonstrating an interest in the athletes’ feelings and involvement (although not a category that was coded for, involvement is an key component of Mageau and Vallerand’s (2003) motivational model), the coach follows by providing non-controlling competence feedback on the game results: “we are outplaying teams and getting more shots and we are not winning.” The coach also illustrates task orientation by indicating that his team needs to “take care of some details and have a calmer head in order to start getting the results that we should be getting.” However, this statement also reveals controlling behavior including guilt-inducing criticism by implying that there are results that the team “should be getting” but have been failing so far to achieve.

The coach continues with more guilt-inducing criticism wherein the team's performance is likened to a deliberate decision made to "sit back and let them in the game." This is followed by non-specific expectations to "get all over them and get the second goal and the third goal" and stating that the team's performance was "not what we are trying to teach," which expresses controlling behavior in this context. The coach demonstrates further guilt-inducing criticisms and controlling behavior by stating that his message to the team is that "we are showing our inexperience and we need to grow up quicker." Implying that the problem (losing) is due to composition of existing team personnel, the coach by insinuation asserts that his players are not "people that [are] calm amongst chaos," that they are not "people" that can "connect passes and technically handle the ball and put their shots on frame." The coach makes no mention of developing experience or the learning process and instead attributes the "problems" to the purported inherent qualities of his players themselves. "We are making too many errors and that is causing us problems right now." Further, the team is failing to perform the way that the coach has apparently instructed them to play indicating attempts at overt control and guilt-inducing criticism.

Data analysis

Because the sample size of institutions for this study was small (N=2), correlation and regression analyses were not performed. Instead, I determined the percent of each coded observation respectively as a proportion of all characteristic focuses of Ames' (1992) Motivational Climates or elements of Mageau and Vallerand's (2003) motivational model of the coach-athlete relationship (see Table 4). The total percent of observed factors representing a climate of performance and separately the total percent of non-autonomy-supportive behaviors were also determined.

Results

Table 2: Characteristic focuses of Ames’ (1992) Motivational Climates

Characteristic focuses of motivational climates:		Total observed in coach interviews:		Total interviews containing each:	
		USC	ASU	USC	ASU
Climate of mastery	Task-orientation	72	19	29	13
	Effort	60	28	24	15
	Cooperation	43	7	20	4
	Learning	18	12	15	10
	Personal progress/development	29	6	17	6
Climate of performance	Ego-based	8	28	7	14
	Rivalry	0	0	0	0
	Interpersonal competition	2	0	1	0

Note – A total of 59 total interviews includes 38 for the University of Southern California (USC) and 21 for Arizona State University (ASU).

Table 3: Identified elements of the coach-athlete relationship as part of Mageau and Vallerand’s (2003) motivational model of the coach-athlete relationship

Elements of the coach-athlete relationship based on the motivational model:		Total occasions observed in coach interviews:		Total interviews containing each element:	
		USC	ASU	USC	ASU
Autonomy-supportive behaviors	Providing choice within specific rules and limits	0	0	0	0
	Providing a rationale for tasks, rules, and limits	0	0	0	0
	Demonstrating an interest in and acknowledging athletes’ feelings and perspectives	9	7	9	7
	Providing athletes with opportunities to take initiative and do independent work	0	0	0	0
	Providing non-controlling competence feedback	138	124	38	21
Non-autonomy-supportive behaviors	Controlling behaviors including overt control, guilt-inducing criticisms, controlling statements, and tangible rewards	1	35	1	11
	Ego-involvement in athletics	6	28	6	14

Note – A total of 59 total interviews includes 38 for the University of Southern California (USC) and 21 for Arizona State University (ASU).

Tables 2 and 3 show coded observations present in interviews identifying characteristic focuses of Ames’ (1992) Motivational Climates and elements of Mageau and Vallerand’s motivational model of the coach-athlete relationship (2003). Within motivational climates, no interviews contained evidence for a focus on rivalry. For USC, the most frequently coded focuses, in order of decreasing prevalence, include task-orientation, effort, and cooperation. For

ASU, on the other hand, ego-based focus and effort were equally prevalent followed by task-orientation. No focus on interpersonal competition was present in interviews of the ASU coach, while this was observed twice within the language used by the USC coach. Within the motivational model of the coach-athlete relationship, no interviews contained evidence for providing choice within specific rules and limits, providing a rationale for tasks, rules, and limits, or for providing athletes with opportunities to take initiative and do independent work. All interviews for both teams included non-controlling competence feedback. While this was the most prevalent behavior observed in interviews across the board this is followed by ten USC interviews that were coded for demonstrating an interest in and acknowledging athletes' feelings and perspectives and 11 ASU interviews containing controlling behaviors including overt control, guilt-inducing criticisms, controlling statements, and tangible rewards.

Table 4: Percent of each coded observation as a proportion of characteristic focuses of Ames' (1992) Motivational Climates or elements of Mageau and Vallerand's (2003) motivational model of the coach-athlete relationship respectively

Coded observations:		Percent of all observations:	
		USC	ASU
Climate of mastery	Task-orientation	31.0	19.0
	Effort	25.9	28.0
	Cooperation	18.5	7.0
	Learning	7.8	12.0
	Personal progress/development	12.5	6.0
Climate of performance	Ego-based	3.4	28.0
	Interpersonal competition	0.8	0
Total representing a climate of performance		4.3	28.0
Autonomy-supportive behaviors	Demonstrating an interest in and acknowledging athletes' feelings and perspectives	5.8	3.6
	Providing non-controlling competence feedback	89.6	63.9
Non-autonomy-supportive behaviors	Controlling behaviors	0.6	18.0
	Ego-involvement in athletics	3.9	14.4
Total non-autonomy-supportive behaviors		4.5	32.4

Note – Some percentages do not add up to 100 due to rounding error. Categories with zero coded observations were omitted here.

Table 4 shows descriptive statistics including the percent of each coded observation as a

proportion of all coded observations in the respective category (motivational climates or motivational model of the coach-athlete relationship). The largest percent for a coded observation within motivational climates was 31.0 for task orientation and the lowest non-zero percent was 0.8 for interpersonal competition, both present in the language used by the USC coach. Within the motivational model of the coach-athlete relationship the largest percent was 89.6 for providing non-controlling competence feedback and the lowest non-zero percent was 0.6 for controlling behaviors, both again by the USC coach. In all, 4.3 and 4.5 percent of coded observations represented a climate of performance (ego-based) and were non-autonomy-supportive respectively for the USC coach, while, 28.0 and 32.4 percent of coded observations represented a climate of performance and were non-autonomy-supportive respectively for the ASU coach.

Discussion

Not only have autonomy-supportive coaching behaviors demonstrated to be associated with higher levels of individual sport performance (for review see Gillet and Vallerand, 2016), but also to enhance the psychological well-being of athletes (for review see Roxas and Ridinger, 2016). Vealey et al. (1998) indicated that coaches that were perceived as less empathetic, more emphasizing of winning over development and dispraise over praise, and more autocratic predicted higher rates of athlete burnout measures including emotional/physical exhaustion, feelings of devaluation, negative self-concept, and psychological withdrawal. Baker, Côté, and Hawes (2000) found that a low quality coach-athlete relationship was related to higher rates of sports anxiety including total anxiety, worry, and concentration disruption.

While the results of the present study indicate that the coach of the more successful team (USC) did indeed exhibit a higher percent of autonomy-supportive behaviors in the language used in interviews obtained from institution websites than the coach of the less successful team (ASU), these results do not answer whether the quality of the coach-athlete relationship predicts team success within NCAA D1 women's soccer. This study does, however, provide a starting point from which to utilize a new method of study within the field of applied sports psychology. We can begin to form guidelines for the number of interviews needed to reveal certain behaviors. For example, only one occasion of controlling behavior was observed in the language of the USC coach in 38 interviews, while non-controlling competence feedback was observed in every interview for both teams. Controlling behaviors, serving to thwart autonomous motivation among athletes, were observed in 11 out of 21 ASU coach interviews and made up 18.0 percent of the observed language used by the ASU coach. Moreover, it becomes imperative when examining autonomy-supportive behavior and characteristic focuses of motivational climates to

have a sample of interviews large enough to reveal these elements of the coach-athlete relationship. For example, if only ten interviews were available for each coach, it would be much more likely to observe controlling behaviors within the language of the ASU coach than the USC coach. A lack of evidence does not demonstrate that a behavior does not exist, therefore it becomes important for this methodology to have as many interviews available as possible. More interviews may have revealed behaviors that were not observed within the available evidence including providing choice within specific rules and limits, providing a rationale for tasks, rules, and limits, and providing athletes with opportunities to take initiative and do independent work. However, the amount of interviews used in this study was able to reveal the following behaviors: demonstrating an interest in and acknowledging athletes' feelings and perspectives; providing non-controlling competence feedback; controlling behaviors including overt control, guilt-inducing criticisms, controlling statements, and tangible rewards; and ego-involvement in athletics. This demonstrates that the motivational support provided by a coach can in part be revealed by the words they use and therefore the quality of the coach-athlete relationship can be evaluated by analysis of existing coach interviews conducted by institution media within the parameters of Mageau and Vallerand's (2003) motivational model of the coach-athlete relationship.

In the coding of interviews, I observed frequent use of language by both coaches that could not be assigned a category within parameters used by this study. Most notably, the ASU coach consistently demonstrated a disregard for athletes' feelings and perspectives and a lack of respect for athletes. There are other elements of an effective coach-athlete relationship that were not evaluated for in this study even within motivation theory (e.g. structure and involvement). The novel methodology utilized here, however, provides a new subset of evidence from which to

gain insight into the behaviors of coaches within the NCAA from a sampling of the language they use regarding their teams.

There are several benefits to utilizing this methodology based on existing coach interviews conducted by institution media. Many studies rely on questionnaires completed by athletes, but athletes' perception of coach leadership behavior has been shown to differ by player ability and team success (Gordon, 1986). Other studies have employed in-depth interviews of coaches or field observation of their leadership in action, and must accordingly take into account the modulation of coaches' behaviors due to observation. The novel methodology presented by this study has particularly high ecological validity due to the natural setting wherein the evidence was obtained; while coaches may be modulating responses for their institution's benefit, they have no knowledge that their published language will later be analyzed or what it will be evaluated for. Experimenter effect, whereby the expectations of the interviewer accidentally influence participant behavior, is a non-issue. There are no demand characteristics that may "give away" the purpose of study because the coach is not given a questionnaire, and therefore has no chance to regulate behavior accordingly.

The trends revealed in this study regarding the predictive ability of the quality of the coach-athlete relationship to determine team success are subject to multiple limitations due to the scope of the undergraduate honors thesis. However, in a follow up study where sample size is increased to the top and bottom teams in every NCAA D1 women's soccer conference (there are currently 32 conferences) or to every NCAA D1 women's soccer team (334 as of the 2016 season), the methodology could be controlled for variance in interview content after wins vs. losses, during pre-season vs. post-season, and midweek vs. post game. An inherent limitation of

the proposed methodology regardless of sample size is that there is no built-in possibility for follow-up or clarification of language used by coaches.

By applying this methodology on a broader scale and expanding research to other sports and additional divisions within the NCAA it becomes possible to answer the question: Does the quality of the coach-athlete relationship predict team success? And more specifically, what particular characteristics are most associated with team performance in different sports. If autonomy-supportive coaching behaviors and the creation of a climate of mastery affect team success as they do individual performance, as demonstrated by the literature review portion of this study, then institutions will be further incentivized to employ coaches that support the autonomy of athletes and as a by-product enhance the welfare of athletes.

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