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**A Qualitative Study of Momentum in Basketball:
Practical lessons, possible strategies. (Case Study)**

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Abstract

Momentum has intrigued coaches and players, sport participants and researchers for years due to its ephemeral nature, association with success, and complexity as a subject of investigation. It is one of the most desirable, yet least understood performance experiences in social sport psychology. This study explored the experiential phenomenon of momentum, defined as an emotionally infused appraisal of current performance, using qualitative procedures involving 11 basketball players and coaches as informants. A case study helped highlight important features of what happens during instances of momentum. It was found that momentum is a hard to create but a valuable phenomenon for athletes and coaches, alike. Additionally, momentum seemed to elicit significant emotional, behavioral, and cognitive effects which constituted patterns of response to events in competition. These effects, manifested differently for players and coaches, occurred as performance appraisals and likely had considerable performance consequences for those experiencing it. This article will conclude with suggestions for practical application for both coaches and players and even fans who thrive on the ebb and flow of competitively spirited contests.

Introduction

Think back to an experience you may have had which you would characterize as momentum. It could have been as an athlete, or maybe during exercise, perhaps at work or even as a student taking good notes in class and contributing to a stimulating discussion. What was the experience like? How did it develop or begin? How long did it last and was it easy to generate or did it just happen? In sports, coaches invoke momentum frequently, usually in an effort to motivate their players or as some kind of cue to focus. Some coaches actually plan and practice for momentum. They must know something the rest of us do not because it seems to be a well-kept secret and based on a review of literature an especially intangible element of quality performance.

Researchers in the field of sport psychology have been studying momentum for nearly four decades, but with little headway towards identifying factors that create momentum and reliably improve performance. Many of these early studies employed various forms of experimental design to create momentum and to control for various factors thought to be associated with it. In aggregate findings were mostly equivocal. As a topic of inquiry studies of momentum that had been published to date were provocative and in some cases very innovative but generally still at an early theoretical stage (Schoen, 2007). Traditional experimental approaches diluted any powerful and natural occurrence of momentum as a psychosocial phenomenon and that collectively researchers had yet to satisfactorily describe momentum. There had not been any qualitative work published on what momentum was and what it meant for the participants; the athletes and coaches and even spectators who actually play a part in many episodes of momentum. Consequently, in this investigation the approach was to provide some depth or substance to the developing theoretical framework that had become commonplace in the more recent studies. Accordingly, what follows will be a brief summarization of some of the more established literature to illustrate the basic framework, and then a description of the qualitative method used here. A case study of a particular episode of momentum that served as a showcase example of how momentum can completely turn a competitive contest around and lead to success will be included. Conclusions and lessons learned that may have some practical benefit for performers and coaches will complete this manuscript.

Early Articulations and Distinctions

One of the earliest studies of momentum in sport, Iso-Ahola and Mobily's examination of wins and losses in racquetball tournaments, defined momentum as the "added or gained psychological power which changes a person's view of himself or others' view of him and themselves" (1980, p. 392). This definition was often used in many subsequent studies of momentum, but was originally operationalized as psychological momentum (PM). However, both terms still appear together in published studies, sometimes interchangeably, with little

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clarification given to their distinctiveness. The view taken here is that momentum and PM should be regarded separately. The difference involves a matter of perspective and context. Momentum may be best understood at this point as a *shared* perception of improved or improving performance conditions that generates excitement and rising confidence in a group of people. Stanimirovic and Hanrahan (2004) have used the term *collective-efficacy* in reference to this social condition. Alternatively, PM refers to an individual experience of one's own performance fluctuations. The performer's thinking and emotional condition may change in a specified time frame having a favorable, more skillful impact on performance behavior at times and likely just as often a detrimental impact when things take a turn for the worse. Momentum represents a cognitive act, an appraisal of social events and performances in competitive situations. In contrast, PM involves personal psychobehavioral changes taking place during any meaningful activity, and typically only appears as a construct in sport psychology or motor learning and behavior research.

Assorted methods to study momentum have included; quantitative procedures such as observations of performance outcomes (Iso-Ahola & Mobily, 1980, Adams, 1995), statistical analysis of winning streaks (Vergin, 2000), surveys and questionnaires (i.e. who is likely to win given recent scoring in a competition, see Burke, Edwards, Weigand & Weinberg, 1997), or actual experimental designs (i.e. Perrault, Vallerand, Montgomery, Provenchar, 1998). During this timeframe theoretical structures began to emerge.

The Conceptual Structure of Momentum and PM

Two landmark papers have provided structure to the concepts of PM and momentum, respectively. Vallerand, Colavecchio, and Pelletier (1988) developed the antecedents-consequences model of PM that emphasized an individual's experiential aspect of various events in the midst of a performance and postulated what this perception does to one's feelings of confidence and control. Taylor and Demick (1994) later devised a "4-component" model detailing emotional, physiological, and behavioral aspects associated with perceiving momentum in social settings, along with cognitive and motivational considerations that are in agreement with the research of Vallerand et al. (1988). Their multidimensional model of momentum (MMM) emphasized the interactive nature of these individual components in relation to performance but stressed that ultimately performances are affected by how individuals interpret various events occurring in the competitive environment. An essential point of note regarding the MMM concerns the authors' insistence that the model, at its core, reflects *individual* psychophysiological and behavioral changes occurring during instances of *social* momentum. The antecedents-consequences model, however, focused more on factors contributing to individual perceptions of PM and on the following

consequences; an emphasis decidedly focused on cognitive considerations rather than a more holistic, psychobehavioral perspective illustrated in the MMM.

A Call for Qualitative Procedures

From 1980 to about 2005 no discernible comprehensive qualitative inquiry had been done on momentum. Several researchers (Adams, 1995; Burke, et al., 1997; Crust & Nesti, 2006) noted this represented a significant gap in researchers' understanding of the phenomenon, especially with regards to how individual and team performances are influenced by it. Burke, et al. however, did use a form of qualitative inquiry (responses to an open-ended survey question) with 20 tennis players to develop an operational definition of momentum - "a positive change or continuation of good performance, and to a lesser degree an increase in emotion" (p. 84). The degree of emotional impact depends on the "importance" of the situational context and is a critical feature in theories about momentum (Vallerand, et al., 1988). Context, it has been stressed, must be considered elemental in psychological studies acknowledging a holistic systems orientation (Lazarus, 1999). Accordingly, to fully appreciate an experience of momentum it is imperative to acknowledge the cognitive-affective-behavioral interaction of the individual operating within the overall social psychological atmosphere where that instance of momentum takes place (Taylor & Demick, 1994).

To best access momentum from the performers' perspective a qualitative method of phenomenological inquiry was chosen. An interview guide that examined Taylor and Demick's constituents of momentum was designed. In accordance with phenomenological studies, it was necessary to also investigate the meaning of momentum for these players and coaches. Just as we all understand a conversation or written communication when we understand the meaning of the words used, so to we must understand the meaning of experiencing momentum from the perspective of the performers. Furthermore, in order to capture momentum as it occurred naturally it was decided to focus as much as possible on the context in which momentum took place. This becomes one of the defining features of a case study.

Case study

The case study method has strong roots in research of the psychotherapeutic practice and the effectiveness of various techniques on individual patients. The nursing and education fields also use case studies, to evaluate procedures and programs, respectively. In sport psychology, cogent and compelling arguments for using case studies date back to the mid1980s as Martens (1987) and Smith (1988) recognized the limits of more traditional empirical studies, especially as investigations into the psychosocial aspects of sport increased dramatically within academic circles. From a philosophical standpoint case studies adhere to what is called the constructivist paradigm (Baxter & Jack, 2008). This approach assumes that truth is relative to the

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individual and emerges from the subjective experience. As such, the method is differentiated from experimental designs which utilize an objectivist and reductionist school of thought, that phenomena can be reduced to constituent elements, measured and controlled within the experimental design.

Several factors are considered in choosing a case study. These would include when to use a case study, what type of case study to use, and determining the unit of analysis. Yin (2003) discussed three conditions for deciding upon a case study method; the type of research question that will be asked, how much control the researcher has over the actual events taking place in the study, and the focus on the present rather than on historical phenomena. In this investigation, the essential questions were; what is momentum?, how does it occur? and is it related to improved performance? The objective was not to control the events involving experiences of momentum, but to accurately document them. The instances of momentum explored all happened recently enough where the research respondents could recall with some detail about what it felt like and how it influenced their play.

In this investigation the type of case study was descriptive which is used for describing a phenomenon in its natural context. Other main types of case studies include explanatory, which looks at causal links with interventions, and exploratory where an intervention that is being used has no clear cut outcome (Baxter & Jack, 2008, Yin, 2003). Here the unit of analysis is momentum itself, which also captures a fourth type of case study, multiple cases which look for similarities with the phenomenon in question. What follows is an actual case of momentum that took place while the comprehensive examination of momentum was underway. This example stood apart from the dozens of other instances of momentum which were documented for this study due to its power and influence. In the results section references to the specific event are included along with excerpts from the interviews conducted and analyzed.

The Case of Big School and Small Town

This case involved one of the schools which was closely observed for a period of two years while this project was underway. In that period of time a particular focus on coaches was included in the study protocol. The coaches' behavior was catalogued, physiology variables heart rate and heart rate variability (HRV) were gathered during games and interviews after games where momentum was acknowledged to have occurred. Videotapes of the games were collected in order to recall consequential episodes. The event recounted below occurred during the 2005 playoff game during the state basketball tournament where the study took place.

The team, identified here as 4A Big School, found themselves struggling through the first round game of the playoffs, for the third straight year. They had been a perennial power for some time, blessed with solid, experienced coaching

and top talent from across the city. With similarly strong teams in the last two years this squad had been defeated in the first round game each time. A heavy favorite going in to this game, they were matched against a smaller school from up state. This school, Small Town, had managed to build a 4 point lead at the half. They proceeded to come out very strong in the third quarter, outscoring Big School by 11 points. Now at the start of the last quarter of this opening round game Big School was down by 15 points with 8 minutes to play. Small Town clearly had control of the game and it looked like the tournament's top seed was going to lose in the first round for the third year in a row. Small Town continued to play tough by stopping yet another scoring attempt from the top player in the league, forcing another turnover and scoring an easy basket to start the fourth quarter. The underdog clearly had momentum, which was palpable throughout the entire arena. To make matters worse, Big School's normally unflappable coach received a technical foul for arguing a hard foul against his team's best player. This meant that he was confined to the bench and was not allowed to move. He had to remain seated for the rest of the game or be ejected. He gathered his team for one last meeting. At this point he likely instructed his team to remain calm and patient and to keep playing tough defense. He was famous for teaching his players that two minutes is a long time in basketball, anything could happen. Now with 7 and a 1/2 minutes left in the game he was letting his players know that they still had time to fight back from 15 points down. Just keep playing to their strength and to methodically work their way back.

And then it happened. You could feel it, you could see it, and you could gauge the sudden change in energy within the arena. About 30 seconds after the coach's technical foul Big School's top player made a mid-range jump shot and got fouled in the process. This was the catalyst signaling a sudden shift in momentum. The entire team's confidence immediately leapt off the chart. This was the break they needed and what they had been working towards the entire game, indeed the entire season. The player made the free throw to cut Small Town's lead to 12 and the amount of energy exuded by Big School could be felt all throughout the arena. They had trained for just such a moment. They had been told how to be patient, how to stay in control of their emotions, how to fight back from deficits and stay focused on their plays. With just over 6 minutes left Big School started their tremendous comeback and there was no stopping them. Every player expressed extreme confidence by how they executed every move, on offense and defense. Every player contributed. Small Town's team exhibited classic choking symptoms. They started pressing and rushing and playing conservative. They tried to slow the game down and became tentative. They almost instantly and visibly lost all confidence. In the ensuing 5 minutes their 12 point lead vanished. Big School's best player took over and scored 22 points while the rest of the team contributed their own offensive skills. In the end Big

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School scored 41 points in the last 8 minutes, a total that many teams in that league often need an entire 32 minute game to score. They won going away by 17 points. The Desert News (Utah) called it one of the best scoring performances in the tournament's history. It served as the most poignant, powerful and instantaneous example of a momentum swing witnessed throughout this study of the phenomenon of momentum.

Methods

Participants

The informants for this study were 11 basketball players and coaches, including a coach and player from the case study featured above. Six females and 5 males were interviewed qualitatively. Four of the informants either were playing or coaching at the high school level (2 of each), 4 participated in the college ranks (1 player, 1 transitioning from player into assistant coaching, 2 coaching), and 3 worked at the professional level (2 athletes and one coach). A total of 8 interviews were conducted; the first 5 being done with a single interviewee, and the last three interviews conducted in a focus group format with a coach and one of his players (2 such interviews) or with two coaches present (head and assistant)

Procedures

The study was conducted within a traditional qualitative design. The data collected consisted of transcribed interviews with the informants, extensive notes taken in the field, and process notes extracted from informal discussions with dozens of coaches, athletes, and sport psychology professionals, along with the viewing of many athletic events. Heuristic procedures outlined by Patton (1990, 2002) guided this process as well the analysis and report of findings

Interview protocol. Each interviewee was contacted initially by phone, except the professional players and coach who were contacted through the team's media official. After agreeing upon a time and place (usually at a coach's office or where the players practiced and could take time from practice) the interviewees were met and given a copy of an official consent form outlining the study. Even though all informants had been briefed on the phone about the study's intent, the form had to be read and then signed. Upon completion of these steps all the interviews began with my asking them to define for me what they felt momentum was. A semi-structured interview format proceeded from there. Subsequent questions followed the lead of the informant according to where s/he went with the first question, but kept close to the interview guide that had been constructed prior to the first interview. Patton's (1990) interview guide approach has been described by many (Munroe, Giacobbi, Hall, & Weinberg, 2000; Newman, 1992; Poczwadowski & Conroy, 2002, to name just a few) and found to be very useful here. The development of this interview guide was based mostly upon Taylor and Demick's theoretical framework of momentum and a personal heuristic

conception of momentum as a fan of sports and from extensive review of the momentum literature.

Cote, Salmela, Trudel, Baria, and Russell elaborated on heuristic paradigms for qualitative studies. That is, the “whole, subjective experience of individuals [may be understood] by examining the way people perceive, create, and interpret their world” (1995, p. 127). Vallerand et al’s (1988) theoretical viewpoint that perception underscores an experience of momentum was the assumptive approach taken in pursuing this line of inquiry. Personal experiences of watching basketball games and feeling momentum as a spectator helped in the probing of issues which seemed to represent this perception in the study informants. Patton’s process evaluation approach (2002) helped to structure the line of inquiry taken regarding the numerous ways that people experience momentum and how they respond to this perception. Dunn and Holt (2004) used a process evaluation approach to study the team-building activities and process of ice hockey teams. An assumption for this study, consistent with the MMM (Taylor & Demick, 1994), was that momentum occurs as a kind of process. The data was analyzed accordingly.

After the initial question of “what is momentum?” the rest of the interview questions examined 4 main areas; what kind of emotions are associated w/ momentum, what momentum feels like, how it influences behavior, and what momentum means when it is experienced. For this study, emotions were considered to be psychophysiological reactions to the ongoing social environment where adaptation is a requisite function (Lazarus, 2000) for performing well. Feelings were open to the interpretation of the respondents but were meant to refer to affect, or the second-order experience of emotions (Charland, 2005). This means that when emotions enter into the awareness of the individual some sort of quality is given to the emotion, such as positive or negative valence. Behaviors were thought to include any visible activity, be it their own, or other’s actions that could, in turn, influence their own. Marshall and Rossman (1999) categorized the meaning element as an essential feature of phenomenological interviewing. Just like when we understand the meaning of words we can form higher levels of understand when used in the context of various sentences. By asking what meaning momentum had for the informants, it was also anticipated that a better sense of the social psychological context could be developed, essentially assisting in data analysis.

Data analysis. After each interview, which lasted on average about one hour and twenty minutes, the recorded conversation was transcribed verbatim (important to remember as the excerpted quotes to follow are the speaker’s actual words and should be read closely). Each interview transcript was then read an initial time, while listening to the recorded interview, in order to become familiar with the general tenor and quality of the questioning and to get a general sense of

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the respondent's style of expression. This step allowed for determining how well the interview was conducted and to make decisions regarding how to conduct the next scheduled interview. The basic interview guide remained throughout the entire data gathering process, but notes were taken on what kinds of improvements may be useful for greater depth and clarity of the explored concepts. After all of the interviews were conducted the main analysis began.

Tesch (1990) discussed two main analytical procedures that qualitative researchers may use; structural analysis or interpretational analysis. Structural analysis corresponds to traditional theory building. Interpretational analysis is often applied when a theoretical structure already exists and the study is focused on describing the propositions of the model qualitatively. Furthermore, Tesch outlined de-contextual and re-contextual data management and analysis procedures, which were used in this study. De-contextualized data refers to quotes or segments corresponding to specific elements in the theoretical framework that have been removed from the body of the interview and grouped together. So then each interview response concerning behaviors during momentum was separated out and then grouped together with interview segments from other informants that discussed behavior. In this manner the interview segments are re-contextualized and meanings developed from the compilation. In the second round of reading interviews the de-contextualization process occurred. During re-contextualization field notes were made and prior notes read. All of these notes, as mentioned, became part of the data and the analysis proceeded accordingly. The data was analyzed with a focus on the components of thinking, feeling, and behaviors, as mentioned above. Finally, a focus on meaning allowed for a description of the phenomenon that may be used to compare against other situations where momentum may occur, even PM.

Reliability and validity. Elements that serve to establish reliability and validity in qualitative studies are constantly being refined as naturalistic inquiries continue to gain wider acceptance. The convention proposed by Krane, Andersen, and Streat (1997) to replace lengthy discussions of data management and reduction procedures with references to authors who have established methods in print will be observed here. For example, in this study Morrow and Smith's (2000) methods of rigor were adopted. These included taking steps to ensure quality of the data by; immersion into the field, managing bias, documenting the "story" of the research process, and using participant checks and/or peer debriefers. However, it is the actual writing of the researcher which is the final test of rigor and credibility (Morrow & Smith, 2000). This means simply that while the data and analysis is not mathematically derived from computer manipulations and abstract in the tradition of hard science (Lazarus, 1991; Pinker, 1997) it should stand alone as credible and useful to the reader, no matter their background or area of interest. Actual quotes are used to establish various points,

and the reader is encouraged to interpret them based on their own experiences with momentum. Naturalistic generalization will have been achieved when sense made of the account by the reader [through] the adequacy and vividness of the portrayal and the persuasiveness of the interpretation, the reader makes associations and implicit comparisons between the situation described by the research and some other case in the reader's experience (Morrow & Smith, 2000, p. 221).

If the data appeals to the reader on an intuitive level based on its presentation in the study, than this study will have merit.

Results

To reiterate, five broad categories were examined in each interview; identifying momentum (what is it?), what kind of thinking happens during momentum, the feel of momentum, one's behavior during momentum, and its overall meaning. The results concerning the first four are presented as a description of what was found after analyzing the interviews with coaches and players. Overall meaning, although largely informed by the participants, contains some of the researcher's own interpretations combined with literature from various allied fields (motor learning, exercise physiology, etc). It is hoped that the findings and subsequent interpretations contribute practical implications and applications of momentum as a performance component that may serve coaches and athletes alike.

What is momentum?

Momentum was rarely defined outright by players or coaches. Respondents to the opening question of my structured interview often searched deliberately for the right words to use to describe it, if they could. One player struggled with the question for five to six minutes, repeatedly complaining that it was too early in the morning or not sure that she really understood the question. The difficulty with verbalizing momentum, despite the fact that respondents had heard and even used the word numerous times before, probably indicates that the players at least had not put too much thought into what it really means personally, or actually trained for ways to produce it. They knew what it felt like but could not easily articulate what creates it or where it comes from. In this manner momentum seemed to resemble the autonomous understanding idea from the Fitts and Posner's (1967) model of skill development. The autonomous stage of learning signifies a high level of developed skill but a long-lost vocabulary to explain how that skill is performed. Hatfield and Hillman (2001) talked about neural efficiency where effective performance is characterized not by analytical processing during the activity, but rather rapid temporal-spatial processing.

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Perhaps during momentum the athlete is on autopilot and performing quite well, as they have trained for many hours to do. A high school athlete characterized it like this, “everything just comes natural. I’m not thinking about things, the crowd’s not involved, it’s just me and my teammates, and the coach, and the game”.

Coaches talked about momentum as a series of executions. Often their focus is on stopping the opponent with specific defensive plays and following that with execution of plays on the offensive side. When these plays are strung together during the game coaches often think that preparation and game planning are working as intended. In this sense coaches often think of momentum as an expression of team execution; that players are working together to implement a system or have learned what their specific responsibilities are and are supporting each other by executing their roles. One coach talked about a combination of “collective forces” that result in a “will to win”. She suggested that players sometimes have to be taught how to win and it begins in practice with players learning about their teammates and coaches teaching them how to play within a format or system. A player turned coach expressed it like this:

When I’m a coach I’ll look at it [momentum] from a different perspective. As a coach, well we won by 6, but should have beat these guys by 20. You know we’re not executin’ very good, we’re not, we got some work to do. I think of different plays, different ways. But as a player to win, there’s nothin’ like winnin’. You just, the highs and the, the emotion of winning is so great compared to losing.

Another feature expressed often concerns the notion of momentum as something to gain or take possession of. One player offered this perspective:

It’s what you want to have. As soon as you step on the court you want to have the momentum, and you want to keep the momentum. You don’t want it to sway from team to team, ‘cause then you don’t know exactly how it’s gonna end. You know, who’s, who’s gonna have the momentum at the end, to win. You wanna keep it throughout the whole, the whole time.

What “it” is seems to be different for everyone but confidence and energy are expressed most often. Players and coaches alike will talk about the energy that comes from a big play or from the crowd, especially during big games. Energy may also be present in the form of big rivalries where there tends to be more fans in the gym and the energy level on the court is higher. In such games

momentum is more likely to occur. In the case provided the energy was profound. Tension and frustration could be felt viscerally when Big School struggled in the first three quarters, but when the momentum suddenly shifted, the entire gymnasium, and all the fans watching the game, could feel the surge of energy emanate from the floor.

One interesting area of difference between coaches and players may be in the time frame each thinks about having momentum. For players momentum usually occurs in games. Coaches, on the other hand, often tend to think of momentum happening over longer periods of time, such as over days or weeks. One coach explained this point by saying that players are often focused on playing time and performing minute to minute and game to game in order to keep their starting position.

Momentum and cognition

Cognition was particular focus of the interviews since it was hypothesized that momentum would be a product of an appraisal of certain situations. Appraisals form the basis for emotional responses and arguably initiates an experience of momentum. As such, two items immediately become evident when cognitive processes are grouped together from the interviews. One is the notion that less thinking occurs when a team has momentum. The other occurrence is that one's focus tends to change from more of an external or task focus perspective during positive momentum to an introspective, admonishing type of self-talk during negative momentum. One post-up (inside) player put it this way:

You don't think about all the things you're doing wrong. When someone else is having a good game you just think, oh wow, they're doing really well. You start thinking about how well they're doing, in a way, and it just comes, you start forgetting about your bad, like your mistakes and errors. I don't know, for me, if I stop thinking about my bad shooting it just kind of comes back.

This reflects the task relevant focus that corresponds to effective play and may reflect the self-consciousness concept (Jackson, Thomas, Marsh, & Smethurst, 2001) of letting go of worry that seems to occur more often when things go badly for the player and the team collectively. During negative momentum thoughts become more negative and concerned with matters not tied to the present game situation, as this professional player explained:

When things are going bad you sit there and constantly think about, ok, well what did I do wrong and then why did I do that

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wrong, you know? Um, a healthy way to do it is, how can I change it? But sometimes you just think about, why is this going wrong and you tend to focus on the things that you did and the things that you could have done better. Which is part of what makes a person, you know? It can make you better but I think if you concentrate too much on looking back at what you've done wrong, you're just gonna lose the momentum. You're just gonna lose your, your ah, your confidence in yourself and that's gonna make you play worse.

The player-turning-coach described it like this:

I think it's different for everyone. Some people might have to concentrate and totally put everything that they have into trying to keep that, or, you know, try and remember what, what it is, how we got here, you know, what it is that took us here, and how to keep it, and, you know, really need to concentrate on that. How can we get it back again? And some just people, I mean, and I think those are the natural leaders that just like know what it takes and, you know, don't really have to think about it a lot.

On the other hand, coaches have to be thinking all the time; on the score, time of the game, how his or her players are matching up against the opponent, and various strategies. When it comes to momentum situations coaches talked about recognizing situations well, anticipating what would happen next, and properly implementing various types of strategies such as timeouts, substitutions, or even clock management. This last item, one coach confessed, sometimes causes his team to lose momentum if he gets his team to think more about killing time and over-emphasizing safe passes to minimize errors, especially late in the game.

Task present focus may be an important element to equate with the creation of momentum and keeping it. From a cognitive aspect putting effort into focusing on the task at hand seems to be more effective than thinking about what just happened or focusing too much on parameters peripheral to the current action. These become distractions if a player or coach dwells on them. Hatfield and others (Hatfield & Hillman, 2001; Kerick, Iso-Ahola, & Hatfield, 2000) have observed differentiated neurological manifestations of this sort where self-talk and analytical cognitive processes can inhibit visual-spatial and kinesthetic awareness. This could be the type of cognitive change suggested by Taylor and Demick's (1994) hypothesis.

Momentum-affect

A factor that seems most critical in keeping momentum or losing it can be who manages their emotions best. For players this often comes down to a leader making a key play or, in some cases, an emotional leader who “can get us pumped up”, according to one college player¹. For the high school players interviewed coaches were often cited as the emotional leaders. This seemed evident from watching many of their games. During games when excitement reaches a peak or situations become most critical usually the coaches at the high school level were models of composure and if their players could pick up on that emotional control it seemed to be reflected in better play. One player stated:

But an older coach you kind of have, what, doesn't have to be older just someone who's had the experience who's had, who you, who you feel like has been in a lot of situations, who you feel the trust in. You kind of, he's kind of a relaxing influence, he's kind of, you don't pick up these emotions you pick up kind of the, the confidence. Not just the, the blind, you know like, c'mon guys, let's work harder, but, okay, where everything's gonna be fine or, you know, we know we can win this.

This quote perfectly captured the steady influence of Big School's coach, even as he had received a technical foul for challenging the bad call. A close observer could see he had kept his composure with the players and coming out of the last huddle they looked calm and still under control. This emotional conveyance is known as embodiment, which Niedenthal, Barsalou, Ric, and Krauth-Gruber (2005) described as the manner through which emotion is expressed in facial and somatic behavior and then perceived by others. A common sentiment in the interviews reflects this as feelings associated with momentum were described as being contagious.

Emotional contagion is a form collective mood transferred between members of a group. Smith & Mackie (2008) articulated this in their theory of interpersonal emotions (IET) and indicate the emotional transference occurs through appraisal processes in response to events that the group experiences together. Contagion with several players took form when linked with several emotionally-laden words such as fun, excitement, energy and the feeling of flow. Fun proved to be a common expression of the feel of momentum, as did the feeling of easy effort. Although excitement and ease of effort may not be

¹ Baseball fans in New England may recall, as a great example of this, Kevin Millar's emotional leadership in 2004 when, on the verge of elimination in the division series against the New York Yankees Millar kept everyone loose and positive with his infectious positive energy.

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considered emotions by certain standards of primary affect (Barrett, Niedenthal & Winkielman 2005), when fun and energy are lumped together they correspond to the basic emotion of happiness. Botterill and Brown (2002) suggested that the function of happiness is to increase available energy and enthusiasm in the pursuit of a goal. One player stated it this way, “the team gets more energy, your game picks up, um...it’s funner, like, it’s funner to be out on the court and play”. The above quote, and many others offered by players in this study, seemed to resemble self, outcome, and social comparison processes described by Vallerand’s (1987) intuitive-reflective appraisal model. These appraisals are more deliberate cognitive functions compared to intuitive or subconscious appraisals (Lazarus, 2000) and seem to be the basis for emotional behavior that can be recognized by other players and fans alike, and where the notion of contagious energy may originate. A high school player and his coach offered this example in one interview. The player stated:

I think you can sense when your teammate is feeling good, or when their teammate is feeling bad, um, just little things that we talked about, how the shoulders, you know, if they’re looking you in the eye or not, how they’re feeling. And I think when your guys start getting it, yeah, definitely it’s contagious. You start, you start kind of emulating, you start kind of feeling the way they are. You start kinda doing the things they do, you know?

...followed by the coach;

My kids believed in, in my philosophy and the, my things they bought into it and when one guy buys in the other guy buys in and everyone starts buying in and I think, you know and it’s very contagious. On the board, somebody hits a shot that’s contagious, my confidence starts growin’.

From a spectator’s vantage point it is not uncommon to feel a change in the energy of a game, and on more than one occasion during this study experiences of excitement and emotionality from games where data was being gathered occurred. A 41 point 4th quarter stood as the most prominent example of the visceral power of momentum.

From the negative emotion standpoint the same kinds of contagious effects also seem to happen. Here, players discussed frustration, negativity toward fellow players, and from the coach anger and disgust. In another of the most extreme cases experienced during this study a different high school coach talked about the

locker room at halftime as “being like a morgue” because of the stunning nature in which the opposition, also an underdog team in a playoff game, had completely taken control of the game. He confessed that he had no answers for the players and this affect was so debilitating that his team could never recover losing their game. Undoubtedly, this also was the experience for Small Town as they saw their 15 point lead evaporate in the span of 4 minutes.

Momentum-behavior

In negative momentum situations focus tends to be on various types of distractions. The coaches who recognize this will often remind their players to get back to basic fundamentals. This meant, for the coaches in this study, getting the players to get back on defense and stop the other team from scoring. Whether they were high school, college, or professional coaches the physical behaviors they looked for in stopping the other team’s momentum, or turning around their own negative momentum, was sound defensive play. Getting the players to focus on the simple fundamentals that they had been physically practicing seemed to act as a behavioral cue which these coaches found to be effective. Additionally, the coach’s own behaviors were to interact more with the players by talking to or instructing them on specific points. As the professional coach put it:

I’d say it’s, no, it’s more important when things are negative. To be more hands on and, and coach them, and try to get ‘em out of it. That’s where, when momentum’s going poorly I think it’s more important for a coach to step in. But when things are going well, players almost don’t need a coach.

This theme has also been expressed in coaching behavior research (Bloom, Compton, & Anderson, 1999; Gallimore & Tharpe, 2004) albeit from pedagogically oriented studies conducted mostly in practice settings rather than in games.

From the player’s perspective behaviors during momentum were expressed often from an energetic or a kinesthetic viewpoint. This professional player stated:

I think of momentum as something that propels, like feels like, carries you, something underneath, you know I don’t mean it literally, but I’m saying like some underlying thing that helps you...something that kind of builds on each other until it kind of starts running on it’s own. And so it, you kind of don’t really have to work on anything anymore. It’s more of just kind of, I don’t

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know, pushing along and not really knowing that something is behind you, and something is kind of helping you a little bit.

A college player talked about how the team played during momentum, “It’s not looking sloppy anymore. It’s, it’s all clicking, like you said. It’s comin’ together, everything’s coming together”, and about the energy involved with momentum, “everyone gets excited, it just kind of flows through each person, and like energy just picks up in everyone”. Another college player talked about behaviors from people not on the team. Specifically she mentioned the media and their ability to help create momentum by being supportive in the press, and parents of team members who showed support for the team by coming to games, cheering, and handling various team management functions. Park (2004), in a study exploring factors influencing coaching confidence, found that support from administrative and institutional sources were often cited.

One other apparent behavioral element, mentioned by coaches and players alike, concerns the notion of “building” momentum. This was often expressed by coaches when they talk about getting their players to learn specific roles that fit into a broader system. Once the players assume role responsibilities, and “buy in”, then momentum can more easily happen. However, depending on the team, this can take some time. A college coach described it this way:

People say we’re building momentum, we’re building momentum. You can see it happening. It might not be one moment that gives you momentum. But the team really works together, even in an individual sport that, like you said, developing strategies or using the mental aspects of the game to get an edge over someone that is far more athletic. You, you build momentum by doing that.

In making this same point a player talked about how coaches want “this dance kind of thing...when you’re all just dancing together and, I think they want that, you know, to occur more often”.

The meaning of momentum

The meaning of momentum seemed to be the hardest concept to grasp overall. Momentum meant something different for everyone but a trend of sorts became evident as the interviews took place. Coaches talked about meaning with more clarity than the players. Patton (2002) equated meaning with the values a person has regarding experiences of cultural relevance. In a purely speculative sense perhaps athletes have not had the exercise of reflecting on these types of issues as much as coaches who in many cases see themselves as teachers. Or

maybe athletes are more familiar with having a set of values prescribed for them by their coaches and have not yet been able to define their own value system.

On the other hand some players have thought a lot about it. In describing what momentum meant for her during her best college season a college player put it this way:

I just think that deep down inside, you know, you just have this...I wouldn't say your heart or, it's just you, like the inner you and, and what you're all about and what you bring, you just feel that inside of you and, and I would describe that as your soul. I think that if you are a really close team, I mean our team did stuff outside of basketball and I think that I knew everyone pretty well. I knew their, their soul.

One professional player, however, was succinct. For her momentum simply meant winning. A high school coach had a slightly different perspective saying:

I think players would probably have a little bit different aspect of it. I think from a coaching standpoint we look at the performance of the team and, and in accordance with the game plan, yes, we have to change game plans once in a while but, you know, are we, are we staying with what we think is necessary to be successful against our opponent.

A college coach related that momentum was more relevant for him in practice rather than games. He insisted that practice time was his most important time with the team since this was where he, along with his staff, was able to "establish the type of team he wanted to put out on the floor". By this he meant that his players had a responsibility to play with a certain type of emotion or passion, and that in practice it was up to him and his staff to model that approach. A high school coach had the same sentiment where he stated that, "some players, and even their parents, are more concerned about who scores the points, rather than if the points are scored".

It was this response in particular that the concept of process gained much more traction as a broad theme in the building of momentum. Noted sport psychology consultant Ken Ravizza talks frequently about process (2002) and awareness (2001). Process refers to doing the daily things, putting "the hay in the barn", being in the present moment as often as possible, while awareness means being able to recognize right away one's own affect and how it contributes to

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current performance or where a player is placing his or her focus. The coaches in this study seemed to be consistently process minded. Having a longer time frame in mind they recognize that momentum takes time to create. This was evident from the college coach who remarked that practice was more important than the games, and the professional coach who talked about starting to build momentum early in the preseason. The frequent references, by both coaches and players, to effort and building one step at a time further signify the process theme. When understood in this way momentum becomes a function of the amount of energy that goes into the system. And the more energy into the system - deliberate, focused, on-task practice, for instance, often results in more sustained episodes of momentum. In social situations it is this idea of system that seems to determine the quality of momentum situations and also how long the momentum will last.

Discussion

Vallerand, et al. (1988) mentioned the concept of synchronism in their model of psychological momentum (PM) but did not define it. Taylor & Demick talked about the cognitive, affective, physiological unity of components which effect behavior and finally performance but did not give it an operational term. Covey (1990) might have called these concepts synergy, but he used it in the context of interactive dynamics between people who work together to create something greater than the sum of themselves. On an individual level it may be appropriate to think of creating PM by attuning to; specific behaviors needed for the task, energizing self-talk and context appropriate focus, the physiological state conducive to functional productivity, and finally the right kind and amount of emotion which seems to bring all of these components together. Getting these components to work in unison requires patience, time, and effort emblematic of a process and the awareness of how one is doing in trying to capture these elements of improving performance. Recognizing that each situation is different and the environment is always changing means that the player, coach or performer has to be able to recognize and adjust to situational demands in order to keep PM.

Momentum may also be thought of as a product made up of core components such as energy, velocity, respect, and mass. **Energy** may be the amount of preparation and work that goes into practice or getting ready for a game or assessing the progress that is being made. Another source of energy can come from fans and support networks. Momentum becomes most evident in big games, perhaps because the ultimate goal is close and in sight or the social relevance is more broadly felt. **Velocity** may be thought of as the direction a team is headed. Velocity denotes the direction of a traveling object and if a team is made up of individuals with a variety of agendas it becomes harder to work together. On the other hand if a coach has built a system and gotten players to adhere to that system than the team has a lot of the same goal focus. A team with

the same purpose should have velocity because they are working together while pointed toward the same direction. This is more likely to happen if **respect** exists. How well the coaches have taught their lessons of team, and how well players trust and look out for one another in a supportive way should determine how much respect exists among everyone. Respect also refers to role responsibility and learning to fulfill that role even if it requires a shift away from personal goals. Finally, **mass** would be all of the factors combining in a favorable manner for the team or event. If the school has tradition, good resources, lots of enthusiastic fans, talent on the team, good emotional leaders and strong physical players, good all-around athletes, smart people on the court and coaches who can be adaptable and creative than momentum is likely to happen and last for a while. A high school coach said it simply, “to the extent that I have more people on the court operating under the same emotional wavelength than the other side, then momentum will happen for us”.

For coaches looking to create momentum several implications may be of value. Momentum perhaps should be thought of as a growing sense of confidence by the players and coaching staff. Totterdill (2000) has found evidence that affect can move among individuals within a team. Understanding that affect and emotion are distinct from one another in the psychology literature (Lazarus, 1991) it seems plausible to regard momentum as a form of sport emotion. Thusly, emotion is the product of an appraisal of changing conditions favoring the group that has close emotional and instrumental ties (Smith & Mackie, 2008).

Momentum is more likely to occur when;

- players are working collaboratively and sacrificing individual goals,
- coaches have successfully articulated their system and long range goals,
- a relative lack of errors and worrying about errors takes precedent,
- in sports like basketball matchup advantages are identified and practiced for,
- rapid adjustment capabilities exist,
- player role responsibilities are well understood and executed as it relates to strategy and the system the coaching staff as instituted (Schoen, 2009).

To sum this all up into one idea, it would be that to train for momentum is to train for developing long lasting confidence. Athletes know that things do not always go as planned and that being successful is hard. But coaches must teach them that what matters most are being in the present moment and to remain focused on the process. When athletes learn this they can learn to trust themselves and their teammates. The confidence flows from this knowledge and is a key, if not the key ingredient of momentum.

Coaches face many obstacles when trying to create momentum. One is that it takes time. Contemporary society places much emphasis on instant results. Building momentum is not conducive to urgent agendas. Second, successfully

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establishing the team concept seems increasingly difficult in a sporting society that promotes individual greatness. Coaches often lament that it is so difficult these days to get players to trust one another and to overcome egocentric comparisons to their peer group. A third, related factor concerns the apparently declining ability for younger players to listen to and understand what coaches tell them, especially in the heat of battle when emotions are high. Consequently, one of the key elements that has to be in place for momentum to occur is the presence of emotionally adept and mindful floor leaders. If momentum is a kind of sport emotion, those that can develop emotional awareness and regulate their emotion may be more successful in creating momentum and sustaining for longer periods of time. This is where further studies should continue to make progress.

Conclusions

We still know little about how momentum occurs. Just as there have been more than thirty studies done experimentally on momentum and PM, there should be at least as many done phenomenologically. Any justifiable approach will help illuminate the topic further. For example, this study was descriptive of what the reader should consider to be a process of performance. A process evaluation, showing how elements or components of a system are related to one another (Patton, 2002), could focus specifically on verifying the theoretical relationships in Taylor and Demick's (1994) model of momentum. In a more traditional manner, absent the heuristic focus, a phenomenological exploration of momentum should be conducted which unveils the "schema" element mentioned in both Vallerand, et al.'s (1988) and Taylor and Demick's studies. This schema forms the basis for a perception of momentum and has yet to be explored in any depth.

An investigation of momentum in cooperative settings rather than competitive situations will give us yet another view. In competitive settings the other side is always trying to find weaknesses and exploit deficiencies. Being successful includes learning how to make adjustments when necessary. However, this is also the case in cooperative group situations where the interpersonal dynamics are always shifting. Making adjustments here is also important but the principles of momentum creation and maintenance may be different than in competitive situations.

The more perspectives the better when it comes to understanding momentum. Hanin and Stambulova called for a sharper focus on "performance-related experiences [and] person-relevant, task-specific assessments" (2002, p.396-397). How momentum is created, what disrupts it, how to maintain it, all seem to be important aspects to examine in this area. As our knowledge grows about this experiential concept it can become more applied as the focus reverts back to learning how it influences performance. The Projected Performance Model (Cornelius, Silva, Conroy, and Petersen, 1997) seems especially well

developed for this purpose. The PPM relies on a clearly objective definition of performance. By learning about the psychobehavioral components that are required in creating those performance measures, by focusing on the process, PM and momentum may become more useful to coaches, players and performers in the broader sense.

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