

Perceptions and Strategies of Psychological Momentum among Competing Tennis Players

Media Version

by

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Abstract

The purpose of this investigation was to identify and analyze perceptions of psychological momentum from the perspective of competing tennis players. It specifically sought to identify the strategies players use to develop and maintain positive psychological momentum, and strategies that players use to overcome negative psychological momentum. It is intended that the knowledge gained will assist future players, coaches and sport psychology consultants to better understand psychological momentum and how players can perform optimally when they perceive they have positive momentum during a match or when players perceive they have negative momentum. Participants were 14 competing tennis players – past and present – from the ATP and WTA Tours, Satellite and Futures Tour, and NCAA players. Transcribed interviews were subject to an inductive content analysis. The results of the analysis revealed three High-Order strategies to managing psychological momentum: (a) physical execution strategies (b) psychological techniques; including maintaining focus, motivation and confidence, and (c) doubles-specific strategies. In addition, neutral momentum emerged as a new form of perceived momentum, i.e., when the match is even. Participants shared strategies that players can use to perform optimally within this dynamic, including executing their game plan and pre-point routines. In conclusion, perceived momentum appears to play an important part in matches: it can impact a player's confidence and the strategies they use during a match. Future research should be conducted with even more specific tennis populations such as with WTA Tour players only or specifically with doubles-players. Research on momentum could also be applied to different sports settings.

Literature Review Excerpt

Subject Matter Experts

Joel Drucker, Tennis Analyst for ESPN and The Tennis Channel, also believes that there is a strong link between momentum and confidence. He believes that momentum is a ‘sibling’ or another definition of perceived confidence. According to Drucker, “people get tight and things happen and a 15 % swing one way or another, the situation of the score; all those things affect the way momentum plays out and momentum is a sibling, if not a synonym of confidence, of the perception of control, of on the path to success, of doing good things” (J. Drucker, personal communication, September 29, 2008). Drucker believes that “there was never a better ‘momentum-smeller’ than Jimmy Connors: now that he found the little decay in your tooth, he could go at you like a dentist and just keep on drilling and drilling and have the confidence to keep on drilling” (J. Drucker, personal communication, September 29, 2008). Drucker cites the 1983 U.S. Open final between Jimmy Connors and Ivan Lendl: “they’d split the first two sets; Lendl was serving at 5-4 set point in the third and he double-faulted. And the air went out of Lendl’s balloon just enough and it was deuce and then Connors was like the match was like the last piece of cheese on a table and he just grabbed it. He could see, he could smell that this guy’s kind of weebing right now. “It’s mine, it’s mine for the taking. I’m not just going to wait for him to miss; I’m going to take it to him”. He (Connors) ended up winning ten straight games and won the tournament. He saw his opponent teetering and his own confidence growing, and that switch really kind of opened the door” (J. Drucker, personal communication, September 29, 2008). Drucker concludes that “the question is: how do we manage it (momentum) on our behalf instead of it managing us?” (J. Drucker, personal communication, September 29, 2008).

Mary Joe Fernandez, now Tennis Analyst for ESPN and 2008-2009 U.S. Fed Cup Captain, also expresses her thoughts on the lack of understanding of momentum on the

professional tour: “I’m not so sure players understand momentum... It’s a combination of a player having it and the other player losing it. And those two forces together create a snowball effect that really changes matches. But it’s amazing how many times it can go back and forth” (M.J. Fernandez, personal communication, October 12, 2008). Fernandez, a former world number 4 on the WTA Tour, shares her first-hand experience of momentum: “when you have it, it feels great, everything seems dandy and the ball looks bigger to you, it feels bigger and again, it’s the belief, the confidence all coming together in your favor” ((M.J. Fernandez, personal communication, October 12, 2008). This reinforces the viewpoint that momentum and confidence are closely linked. Fernandez also believes that momentum comes into play in doubles matches. She recalls her first Olympics doubles final in Barcelona in 1992 where she played with Gigi Fernández against Conchita Martínez and Arantxa Sánchez-Vicario: “we were up a set and I believe 2-1; the king and queen came... the match stopped, everybody said ‘ah’, you know, greeted them. It broke our momentum. It totally shifted the match.... It was the same example of everything going well, something happened – in this case the king and queen showed up to break it – gave them more confidence, more belief. They (the king and queen) were there, they wanted to play better for them, it spurred them on...” (M.J. Fernandez, personal communication, October 12, 2008). This again also highlights the possible link between momentum and confidence.

Results

The purpose of this investigation was to identify and analyze perceptions of psychological momentum from the perspective of competing tennis players. Specifically, it sought to identify the strategies players use to develop and maintain positive psychological momentum, and strategies that players use to overcome negative psychological momentum. Through analysis of the data there emerged nine general dimensions. These were: initial perceptions of psychological momentum, experiences of positive psychological momentum, experiences of negative psychological momentum, experiences of neutral psychological momentum, strategies for developing positive psychological momentum, strategies for maintaining positive psychological momentum, strategies for overcoming negative psychological momentum, strategies under neutral psychological momentum, and advanced perceptions of psychological momentum. With the exception of “Initial Perceptions of Psychological Momentum” and “Advanced Perceptions of Psychological Momentum”, all other general dimensions shared three higher order themes: experiences or strategies relating to “Physical execution”, experiences or strategies regarding “Psychological” components, and “Doubles-specific” experiences or strategies.

The organization of the raw data themes into higher order themes within each general dimension will be illustrated in table form. Quotes from the participants will be used to exemplify each higher order theme and/or general dimension. Above all, the quotes serve to provide the reader with a richer exploration of and connection to the participants’ perceptions of psychological momentum.

Table 1

Initial Perceptions of Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Not familiar with term Psychological Momentum (10) Familiar with term Psychological Momentum (4) Momentum Swing/Switch/Shift (27) Build/develop Momentum (3) Maintain Momentum (3) Ride the Momentum (2) The match flip-flopped (1) "Mr Momentum has changed his address!" (Jim Courier) (1)	Phraseology of Momentum (51)	Initial Perceptions of Psychological Momentum (116)	"... I've heard of momentum. I hear a lot about it in different sports. You hear about it in tennis. I've never heard it with the word "psychological," because to me, it's just--it's obvious. Momentum is all about psychology" (P6, Lines 80-82)
Time factor (All of a sudden) (36) Momentum would describe the effects of the length, wave of things going right for you (1)	Momentum and Time (37)		"... all of a sudden, he's playing better, and momentum...it switched..." (P9, 104-110)
Momentum plays a role in every single match (10) Constant Shift/Struggle (18)	Momentum as a living organism (65)		"... I almost see it like this thing that moves..." (P1, Line 626)

Table 1 shows three higher order themes that emerged to create the general dimension of "Initial Perceptions of Psychological Momentum". Firstly, in "Phraseology of Momentum", it soon became clear that the majority of participants were not familiar with the term "Psychological Momentum", but they were nevertheless aware of the significance of psychology when discussing momentum. For example, one participant said, "... I've heard of momentum. I hear a lot about it in different sports. You hear about it in tennis. I've never heard it with the word "psychological," because to me, it's just--it's obvious. Momentum is all about psychology." (Participant 6, Lines 80-82, Appendix K). There also appeared to be a variety terms and phrases that participants used when talking about momentum. For example, "...I'd continued to have the momentum there and just kinda *rode it* through the third set..." (Participant 14, Lines 151-152, Appendix S). One participant noted, "... I think Jim Courier

likes to use that phrase... things like "Mr Momentum has changed his address!" or something like that" (Participant 14, Lines 93-95, Appendix S).

The second higher order theme "Momentum and Time" emerged with the frequent notation of time being expressed by participants when discussing their experiences of psychological momentum. For example, "... there have been some matches I've played where I have the advantage, and then I felt like the other guy, *all of a sudden*, he's playing better, and momentum....it switched..." (Participant 9, Lines 104-110, Appendix N).

The third higher order theme "Momentum as a living organism" reflects participants perspectives that momentum plays a role in every match and that there appears to be a constant shift or struggle of momentum during a match. For example, "... you could make the argument that every point in the match is--there's some momentum going on" (Participant 5, Lines 255-256, Appendix J). Another participant said:

... I think it's like a constant shift, even though that you feel like that you're in complete control of the match, it doesn't necessarily mean that you're winning or like you have the momentum going, because your opponent, if she's good, she's going to like try to fight back, and you know, like, gain her momentum back. So it's like a constant struggle. (Participant 8, Lines 68-72, Appendix M).

Another participant noted, "... I almost see it like this thing that moves, because there-- because there is a match, and whereas I can affect the momentum, and maybe benefit from the momentum, uh it--the momentum's going to happen no matter what..." (Participant 1, Lines 626-628, Appendix F).

Table 2

Experiences of Positive Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Your opponent's level of play has dropped (51) Feel in control and the dominant player (29) You're playing better (25) Everything's going your way (24) Winning the points/games/set/match (24) On a roll/in the zone (20) Patient (6) Good luck (6) Feel Physically Fit (3) Strong awareness that you have the momentum (1) Can play more aggressively (1)	Physical Execution (190)		"... it was like a hot knife going through butter" (P9, Line 160)
Feel Confident (65) Relaxed/Loose (31) Positive Body language (25) Feeling good/happy/having fun (22) Engage in Positive self-talk (21) The crowd was on my side (14) Focused (12) Calm (11) Family & friends are there supporting you (11) Feel motivated/working hard (9) Feel Mentally stronger (4) You start to think ahead/rush (4) Staying with Pre-Point Routine (2)	Psychological (231)	Experiences of Positive Psychological Momentum (490)	"... you feel like you're seeing the ball like a water melon and you can just, you're connecting and you feel like you're somewhat in a zone" (P14, Lines 497-499)
Your relationship with your partner is good (46) You're just clicking/both playing/moving well (9) You're strategizing a lot (6) You and your partner's confidence increases (6) You're both moving better (1) You're both bopping around more (1)	Doubles-specific (69)		"... you're on the same page... you play well... and you talk to each other, it just makes it so much easier to win." (P3, Lines 493-496)

Table 2 shows the emergence of the three higher order themes, “Physical Execution”, “Psychological” and “Doubles-specific” within the general dimension of “Experiences of Positive Psychological Momentum”. When sharing their experiences participants compared positive psychological momentum to that of a peak performance. For example, one participant said, "... it was like a hot knife going through butter" (Participant 9, Line 160, Appendix N).

Another participant stated, "... you feel like you're seeing the ball like a water melon and you can just, you're connecting and you feel like you're somewhat in a zone" (Participant 14, Lines 497-499, Appendix S).

Another feature of participant's experience of positive psychological momentum was having good luck during a match. For example, one of the participants shared:

I was playing [ex-WTA tennis player] in the finals of a tournament, and she was ahead 4-1 in the third set...she came in the net, and I hit a lob. It was going out. She ran back for it, tripped, kind of out--past the baseline. It hit her in the head. It landed on her head. She could not get out of the way. I won the match. That one wacky thing changed the momentum. It was just one point, one crazy point. (Participant 2, Lines 314-321, Appendix G).

Positive psychological momentum was also described as having a motivating quality. For example, one participant stated:

...momentum helps keep pushing you for more...say they [her NCAA tennis team] do win a championship, and then the momentum carries you to, "Why not win two? Why not win three? ...It keeps perpetuating itself. I don't think there's a limit, ever. It's like Michael Phelps in the Olympics. (Participant 12, Lines 623-627, Appendix Q).

Within the "Doubles-specific" higher order theme, participants identified that where there was a positive psychological momentum during a match the relationship with their partner was good, that both are moving and playing well and they're strategizing and communicating a lot. Confidence for both partners also increased. For example:

... it actually is a confidence boost, and you play more aggressively, because you're on the same page, I guess you could say, and as long as we're both, you know, feeling good about each other, you play well, and you talk to each other, it just makes it so much easier to win. (Participant 3, Line 493-496, Appendix H).

Another participant said, "It's fun, fun teamwork, you know. You're on the same wavelength.

Everything is just in sync." (Participant 2, Lines 504-505, Appendix G).

Table 3

Experiences of Negative Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Opponent dictating the match (76) You're not playing smart tennis (29) Your not executing (27) You're rushing (25) You're losing the big points/games/sets (22) Opponents play improving (21) Opponent engages in gamesmanship (16) Bad luck (14) Your serve is broken (12) Official makes a bad call (4)	Physical Execution (246)		"... you feel like you have to just claw your way into winning points and the match and, err, you can't get any momentum" (P14, Lines 499-500)
You lost your focus (165) Engage in Negative self-talk (73) You're frustrated (67) Motivation dip in match (63) A lack of self-confidence (53) You're feeling the pressure (52) Retrospection as a learning experience (19) You're over think things (18) Pressure from Coach (10) Ineffective Pre-Point Routine (8) Get off track with goals and objectives for the match (1)	Psychological (529)	Experiences of Negative Psychological Momentum (827)	"... I can tell that my mind is everywhere on the court. Like I'm thinking about a million different things..." (P11, Lines 236-237)
Not working together anymore (13) One or both of you are frustrated (12) Not communicating (8) You feel a loss of control (4) A loss of confidence in your partner (4) You/your partner panics (3) Difficulty strategizing (2) Your serve is broken (2) Relationship can still be okay (2) Not encouraging each other anymore (1)	Doubles-specific (52)		"... No eye contact, and you're like two ships passing in the night. Sometimes you'll go without talking and you don't even realize it..." (P12, Lines 556-557)

Table 3 shows that, when discussing their experiences of negative psychological momentum, participants mentioned several ways in which they were struggling with their “Physical Execution”. Participants cited that during periods of negative psychological momentum their opponent was dictating the match, they are not playing smart tennis, not executing and they are rushing and losing the big points/games/sets. "... You feel like you

have to just claw your way into winning points and the match and, err, you can't get any momentum." (Participant 14, Lines 499-500, Appendix S).

The "Psychological" component of participant's experiences of negative psychological momentum consisted primarily of participants feeling that during periods of negative psychological momentum they had lost their focus. "... I can tell that my mind is everywhere on the court. Like I'm thinking about a million different things..." (Participant 11, Lines 236-237, Appendix P). Others described their experiences of negative psychological momentum as a time where they were engaging in negative self-talk, were frustrated and felt a motivational dip in the match.

Within the higher order theme of "Doubles-specific" experiences of negative psychological momentum, participants explained that they were not working together anymore with their doubles partner, that one or both of them were frustrated and they were not communicating. For example, one participant said: "... No eye contact; and you're like two ships passing in the night. Sometimes you'll go without talking and you don't even realize it. There's no contact; there's no coming to the middle, very little planning, uh negative body language" (Participant 12, Lines 556-558, Appendix Q).

Table 4

Experiences of Neutral Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Both players are playing at the same level (10) It becomes more subtle (4) It's hard to gain momentum (2) You're just playing (1)	Physical Execution (17)		"Sometimes it gets down to a point or two..." (P6, Lines 204-205)
You're battling it out (5) You feel good (3) The momentum shifts a lot (2) You're getting tight (2) You're confidence is good (1) You're concentrating (1) The outcome of the match is uncertain (1)	Psychological (15)	Experiences of Neutral Psychological Momentum (40)	"...when the match is even, you have like a really good opportunity to like try to break down your opponent..." (P8, Lines 202-203)
Relationship with partner is good (5) Relationship with partner is a little more serious/intense (2) Unstable relationship with doubles partner (1)	Doubles-specific (8)		"A little more serious ... but... it's not too stressful either..." (P10, Lines 559-562)

As table 4 illustrates, participant experiences of neutral psychological momentum, when the match is even, were also categorized into the three higher order themes of “Physical Execution”, “Psychological” and “Doubles-specific”. Participants described that when the match is even both players are playing at the same level, momentum becomes more subtle and it’s hard to gain sustained momentum. "Sometimes it gets down to a point or two. Uh so I can't tell you that every match I play, if I win, I somehow created this momentum..." (Participant 6, Lines 204-206, Appendix K).

The “Psychological” higher order theme emerged as participants described their experience of neutral psychological momentum as battling it out, feeling good, confident and concentrating. One participant said, "...when the match is even, you have like a really good opportunity to like try to break down your opponent, and you can prove it to her that you are better than her, you can--you deserve to win more than she does..." (Participant 8, Lines 202-

205, Appendix M). Others noted that they get tight, the momentum shifts a lot, and there is uncertainty over the outcome of the match.

Participants' "Doubles-specific" experiences of neutral psychological momentum included that their relationship with their doubles partner is good, but is a little more serious and intense. One participant shared that the relationship with their doubles partner is:

A little more serious, because you know, there's always, you know, if you lose focus for just that one second, you find yourself at a break, down a break, you know, the momentum falling into your opponent's favor, but you know, it's not too stressful either, because you know, there's a chance that we can break them also, you know, take the lead for ourselves... (Participant 10, Lines 559-563, Appendix 0).

Another participant explained that when the match is even, the relationship with their doubles partner is unstable: "... if I feel like they're pretty confident, I feel good playing with them. If they're not so confident in the fight and over-analyze the situation, I get a bit irritated with them..." (Participant 1, Lines 551-552, Appendix F).

Table 5

Strategies for Developing Positive Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Win the big points/games/tiebreaks/sets and matches (81)			
Impose your style of play on your opponents (69)			"... momentum you build by winning points and by winning points you have to play that point individually and as best you can" (P14, Lines 619-620)
Take your opponent out of their game (58)	Physical Execution (371)		
Play more aggressively (52)			
Physical Fitness (35)			
Hold your serve/break their serve (33)			
Use all the resources (28)			
Change your strategy a little (9)			
Luck can develop momentum (6)			
Confidence (97)			
Maintain Intensity (51)		Strategies for Developing Positive Psychological Momentum (747)	"... you just have to believe in it... it just comes with it. You know, the hard work that you've put into it. That's the momentum you're building..." (P2, Lines 159-161)
Energize (41)			
Feel support from Coach (30)			
Pre-Point Routine (25)	Psychological (319)		
Pre-performance routine (21)			
Visualize points in your mind (16)			
Reframing - you like pressure (13)			
Effective use of Changeovers (11)			
Increase your focus (9)			
Set goals and objectives for the match (5)			
Pick the right partner! (19)			
Play aggressively (14)			
Get off to a really good start (8)		Doubles-specific (57)	
Play smart doubles tennis (7)			
Break their serve (5)			
Keep working together (4)			

Table 5 shows that the strategies participants shared for developing positive psychological momentum were also grouped by “Physical Execution”, “Psychological”, and strategies that were “Doubles-specific”. Physical execution strategies included winning the big points/games/sets and even matches: "...momentum you build by winning points and by winning points you have to play that point individually and as best you can." (Participant 14, Lines 619-620, Appendix S). Another participant emphasized the importance of winning tie-breaks as a way of developing positive momentum to go on to win the match: "... in most

cases [after winning a tie-break], probably you'll win the next set by a score of 6-2 or 6-1 or whatever, like in juniors, 6-0, like tons-- I mean 99 per cent of the juniors, they win a set 7-6, they win the next one 6-0. It's crazy." (Participant 8, Lines 520-522, Appendix M). Other physical execution strategies included imposing your style of play on your opponents and taking your opponent out of their game, playing more aggressively and using physical fitness to develop positive momentum: "...in gaining momentum, physical shape is so important, and in keeping momentum, it's important, because I think losses of concentration stem primarily from tiredness. As you get more and more tired, you tend to have a harder time concentrating..." (Participant 5, Lines 304-307, Appendix J).

Strategies mentioned under the "Psychological" higher order theme for developing positive psychological momentum included using the confidence built up in practice to trust your game during matches.

One participant said:

"...you put in hours of practice and like hard work and training and it's consistency that builds up your skill level so that you can perform at a certain level consistently...then you can kind of draw on the momentum... So like the more confident you are with your game, the easier it is to start creating momentum for you and keeping it going." (Participant 12, Lines 131-137, Appendix Q).

Another participant added:

...you just have to believe in it. I would say probably most, you know, athletes--you know, it just comes with it. You know, the hard work that you've put into it. That's the momentum you're building...you're setting yourself up to give yourself the best chance. (Participant 2, Lines 159-163, Appendix G).

Other psychological strategies that participants cited included maintaining your intensity, energizing, feeling the support from your coach, staying within their Pre-Point Routine, using a Pre-Performance Routine, and visualizing points in their mind.

One “Doubles-specific” strategy shared by participants to develop positive psychological momentum came down to picking the right partner: "... I feel like I pick the right partners. So you know, uh I've picked them for a reason that I enjoy playing with them." (Participant 7, Lines 537-539, Appendix L). Other doubles-specific strategies included playing aggressively, getting off to a really good start, and playing smart doubles tennis.

Table 6

Strategies for Maintaining Positive Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Don't let your opponent have a chance to get into the match (108)	Physical Execution (354)		"...the beginning of the second set--huge, huge...if you won the first set close, you want to make sure that you keep the guy down. You don't give him the chance to get right back in." (P5, Lines 506-509)
Keep doing what you're doing (76)			
Stay patient with your game plan (46)			
Stay equally aggressive or more so (36)			
Play steady (32)			
Keep it simple (20)			
Make a high percentage of first serves and the first volley (18)			
Try to close it out (18)			
Maintain or Increase Intensity level (84)	Psychological (536)	Strategies for Maintaining Positive Psychological Momentum (930)	"... a match can turn on one point, so you have to treat every point as being important... you have to maybe even concentrate harder so that you can finish it uh finish off the match." (P13, Lines 89-93)
Stay in the moment/process (84)			
Stay Focused (83)			
Stay Positive (74)			
Stay relaxed & loose (43)			
Stay Motivated (38)			
Keep your pre-point routine (36)			
Emotional Control (35)			
Stay calm (33)			
Set match goals and objectives (17)			
Use Cue words (9)			
Maintain a good relationship with your doubles partner (22)	Doubles-specific (40)		"I think there's a belief that there's a faith that good things are going to happen, that you're going to keep this going." (P6, Lines 697-698)
Maintain Intensity level (9)			
Focus on what you need to be doing (6)			
One of the players should drive the partnership (2)			
Hold your serve (1)			

The emergence of the general dimension “Strategies for Maintaining Positive Psychological Momentum” is illustrated in Table 6. Within the “Physical Execution” higher order theme, strategies for maintaining positive psychological momentum included not letting your opponent have a chance to get into the match. For example, one participant believed that there are key moments in a match to do this and to maintain the momentum:

...the beginning of the second set--huge, huge...if you won the first set close, you want to make sure that you keep the guy down. You don't give him the chance to get right back in. And if you're able to get a good start on the second set, what typically

happened, I won the match easily in the second set. But if he got an early break, it was three sets almost every time. (Participant 5, Line 506-511, Appendix J).

Other physical execution strategies mentioned by participants included: keep doing what you're doing, stay patient with your game plan, and stay equally aggressive in your shot selection or more so.

“Psychological” higher order theme strategies for maintaining positive psychological momentum included: maintain or increase your intensity level, stay in the moment or process, stay focused, and stay positive. One participant said:

...a match can turn on one point, so you have to treat every point as being important. Just because you're maybe up 2 sets to love and well in control the third set, it doesn't mean you're going to win. So therefore you have to maybe even concentrate harder so that you can finish it uh finish off the match. (Participant 13, Lines 89-93, Appendix R).

Another participant described the way to stay focused:

...play one point at a time. It's simple to do, it's simple to conceptualize and to understand; it's unbelievably hard to do it. Um, and the closer you can get to doing that, I think the more you can, um, have the momentum... (Participant 14, Lines 225-228, Appendix S).

Participants also cited some “Doubles-specific” strategies to maintain positive psychological momentum. They included: maintain a good relationship with your doubles partner, maintain your intensity level, and focus on what you need to be doing. One participant commented: "I think there's a belief that there's a faith that good things are going to happen, that you're going to keep this going." (Participant 6, Lines 697-698, Appendix K).

Table 7

Strategies for Overcoming Negative Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Stay patient/hang in there (124)	Physical Execution (545)		"Maybe the guy's just on fire, and he's just played for the last 12 minutes, unbelievable stuff. Okay, well, let's just hang in there long enough to let it dissipate..." (P6, Lines 269-271)
Slow it down (122)			
Switch to aggressive (70)			
Get opponent out of their game (68)			
Switch to staying back (58)			
Adjust quickly (43)			
Take more risks (31)			
Physical Fitness (outlast opponent) (29)			
Stay motivated (155)	Psychological (909)	Strategies for Overcoming Negative Psychological Momentum (1,614)	"It's impossible to have positive momentum when you're negative. It's like trying to be happy when you're crying." (P12, Lines 302-303)
Regain your focus (117)			
Maintain perspective (108)			
Integrate pre-point routine (105)			
Confidence (trust your game) (101)			
Stay in the moment/process (89)			
Be Positive (79)			
Increase your intensity (42)			
Relax (41)			
Stay calm (41)			
Reframing: "I like the pressure"/"diamonds are made under pressure" (17)			
Feel the support from Coach (14)			
Positive encouragement to your partner (65)	Doubles-specific (160)		"... where you've got a partner who has been playing well, and now all of a sudden... they've missed a couple of shots... and they're starting to get a little ticked off, and now you have to kind of do a job on them to stem this tide..." (P6, Lines 636-640)
Keep working/moving together (24)			
Stay calm (19)			
Strategize after every point (16)			
Team confidence (16)			
Maintain perspective (10)			
Energize (6)			
Get back on serve (1)			
Encouragement from your coach (1)			
Be accurate with your shot making (1)			

Table 7 illustrates that the general dimension "Strategies for Overcoming Negative Psychological Momentum" was also comprised of "Physical Execution", "Psychological", and "Doubles-specific" higher order themes. When discussing physical execution strategies

for overcoming negative psychological momentum, participants stressed the importance of staying patient in your style of play and hanging in there: "Maybe the guy's just on fire, and he's just played for the last 12 minutes, unbelievable stuff. Okay, well, let's just hang in there long enough to let it dissipate and go away." (Participant 6, Lines 269-271, Appendix K).

Other participants emphasized the importance of slowing things down to try to break the opponent's momentum. One participant said:

... you have to try different things when your momentum is not going well uh whether it's you know, maybe you can take your time a bit more: if you're been rushing, you're slowing your opponent down you know, you do up your shoe lace, you can do a lot of little things. Now the girls take a break after the third set when you know, somebody's lost the second set and it's one set all – the girl who lost the second set nine times out of ten will take a bathroom break. All they're trying to do is break the momentum down of the player. (Participant 13, Lines 393-399, Appendix R).

Some participants spoke of the need to switch your style of play to play more aggressively and to get your opponent out of their game. Participants also discussed the importance of adjusting quickly to tactics. One participant said:

... if you're losing points, you know, in a certain way, you need to be able to recognize the trend that's going on because winning matches very often comes down to who's making the little adjustments.... I can lose momentum that I have when I don't recognize right away what I didn't do right the previous point... don't make the same mistake twice. And that very often prevents the other guy from getting a little momentum. (Participant 14, Lines 371-378, Appendix S).

The "Psychological" higher order theme strategies for overcoming negative psychological momentum were heavily detailed by the participants. Strategies primarily focused on the need to stay motivated, to regain your focus, and to integrate a Pre-Point

Routine. Participants also mentioned the need to maintain a healthy perspective, for example, with regards to luck: "... go into it thinking the luck is going to even out. Uh bad bounces are going to even out, bad calls are going to even out." (Participant 13, Lines 726-727).

Participants also highlighted building confidence and trusting your game as particularly pertinent when trying to overcome negative psychological momentum. One participant explained one way in which juniors can better learn to cope with pressure:

A lot of the kids today, when they play they play out of their age group... the kid says "oh well, I'm playing two years out of my age group" so you know, "he's two years older than me" so you know, "that's the reason why I lost". So you're not willing to deal with, cope with pressure. I think you should play in your matches that you're supposed to win, because that teaches you how to cope with pressure. (Participant 13, Lines 167-172, Appendix R).

Participants also recommended reframing as a way of dealing with the pressure associated with experiences of negative psychological momentum. For example, one participant stated: "Diamonds are made under pressure." (Participant 8, Line 129, Appendix M). Staying in the moment and process was also noted, as was being positive. For example, "It's impossible to have positive momentum when you're negative. It's like trying to be happy when you're crying." (Participant 12, Lines 302-303, Appendix Q). Finally, some participants believed you should look to the support of your coach. One participant stressed: "... it's important for your coaches, yeah for a lot of kids, especially if their parents is their coach, you know, the coach has to be...--is actually like your rock. You've got to look to your coach for support..." (Participant 10, Lines 716-719, Appendix O).

"Doubles-specific" strategies for overcoming negative psychological momentum included giving positive encouragement to your doubles partner, to keep working and moving together, and to stay calm. One participant said:

... where you've got a partner who has been playing well, and now all of a sudden... they've missed a couple of shots... and they're starting to get a little ticked off, and now you have to kind of do a job on them to stem this tide...”don't panic. Don't try to get it all back right now”. Uh you know, “don't try to make up for a couple of bad shots by hitting a couple of great shots. Try to get back even and then let it go.”

(Participant 6, Lines 636-655, Appendix K).

Table 8

Strategies under Neutral Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Execute your game plan (39) Be more aggressive (24) Try something slightly different (20) Stay Patient (6) Play to your strengths (on the day) (6) Play Steady (4) Physical Fitness (2)	Physical Execution (101)		"... I just like to stick with the game plan, because there's not--there's no big deal, if it's even." (P9, Lines 343-344)
Pre-Point Routine (21) Be positive (19) Stay calm (10) Motivation (9) Confidence (9) Increase Focus on the basics (8) Emotional Control (8) Stay relaxed/loose (6) Fight your opponent point by point (5) Produce under pressure (5) Stay in the moment (4) Energize (2) Preparation (research a player before the match) (1)	Psychological (107)	Strategies under Neutral Psychological Momentum (276)	"...we get 25 seconds between points. So 80% of the match is clearly spent between points. Well, if I can manage the 80%, I know the other 20%, which is during the points, will be fine. And so when a match is even, I really have to stay disciplined..." (P6, Lines 385-387)
Maintain a good relationship with your partner/if not stronger (23) Strategize (13) Focus in the moment (10) Keep things simple (6) Increase intensity (pump each other up) (5) Win two points in a row when receiving (4) Establish a between points routine (4) Try to break the opponent's serve (3)	Doubles-specific (68)		"...you want to talk as much as possible with your partner and strategize... keep things simple... try to make two points in a row. In doubles, that's pretty important." (P4, Lines 510-513)

The general dimension “Strategies under Neutral Psychological Momentum” (i.e. when the match is perceived to be even) is illustrated in Table 8. Within the “Physical Execution” higher order theme, strategies included executing and staying with your game plan. For example, "...I just like to stick with the game plan, because there's not--there's no

big deal, if it's even." (Participant 9, Lines 343-344, Appendix N). Other strategies included being more aggressive and trying something slightly different.

Under the "Psychological" higher order theme one strategy mentioned was to stay disciplined to your Pre-Point Routine. One participant said:

...we get 25 seconds between points. So 80 per cent of the match is clearly spent between points. Well, if I can manage the 80 per cent, I know the other 20 per cent, which is during the points, will be fine. And so when a match is even, I really have to stay disciplined... (Participant 6, Lines 385-387, Appendix K).

Other strategies included being positive, staying calm and motivated, developing confidence and increasing focus on the basics.

"Doubles-specific" strategies for when there is a perceived neutral psychological momentum comprised of maintaining a good or even stronger relationship with your partner, to strategize and focus in the moment, and to keep things simple. For example, "...you want to talk as much as possible with your partner and strategize. Uh maybe you want to--again, keep things simple, return, make the return, make--try to make two points in a row. In doubles, that's pretty important." (Participant 4, Lines 510-513, Appendix I).

Table 9

Advanced Perceptions of Psychological Momentum

Raw data themes	Higher order themes	General dimensions	Quote
Momentum is tangible (6) You want to recognize it and take advantage of the momentum (5) Momentum more tangible in a doubles match than in a singles match (20) Momentum is not tangible - you can't really control it (2) Momentum is easier to see outside the court (watching) than inside the court (playing) (2)	Tangibility of Momentum (35)		"I could see it, as the match progressed, that his passing shots got closer and closer to the singles sideline, and at 4-4, he hit the lines... I could feel the momentum. I saw the momentum" (P7, Lines 93-98)
Confidence precipitates momentum (29) Momentum precipitates confidence (8) Confidence & Momentum are cyclical - the more momentum, the more confidence, the more confidence, the more momentum (3)	Relationship between Confidence and Momentum (40)		"They're synonymous. I think they're very positively correlated..." (P12, Line 573)
Coach affects you gaining/losing momentum (17) Coach can't directly affect you gaining/losing momentum (6) Parents, friends or partner watching affect you gaining/losing momentum (12) Parents, friends or partner watching your match does NOT affect you gaining/losing momentum (5) Spectators affect you gaining/losing momentum (11) Spectators do NOT affect you gaining/losing momentum (4) Perceived match-up with their opponent - Player reputation, past match history, if someone's injured (10) The surface - can develop momentum more quickly on grass (points are shorter) vs. clay (long points) (1) The era - more opportunity for momentum changes in today's game (1)	Factors that may affect Momentum (67)	Advanced Perceptions of Psychological Momentum (142)	"They play a huge factor...my dad was my coach...whenever I made a mistake, an easy mistake...he was the one getting pissed off, showing emotion, and that affected me in a bad way...I'm not focusing on what I need to do with the next point. I'm thinking about my dad and how he's getting frustrated..." (P10, Lines 708-716)

Finally, Table 9 shows three higher order themes emerged to create the general dimension of "Advanced Perceptions of Psychological Momentum". Firstly, in "Tangibility of Momentum", participants explored the degree to which momentum is a perception or

whether it is in fact more tangible. Some of the participants believed momentum was relatively tangible. For example, one of the participants said:

I could see it, as the match progressed, that his passing shots got closer and closer to the singles sideline, and at 4-4, he hit the lines. The second set, he won 6-1, but I could tell that the match was turning, as his shots were getting better and better... I could feel the momentum. I saw the momentum. (Participant 7, Lines 93-98, Appendix L).

Others made a case for momentum to be mainly a perception. For example, one participant explained:

... I could feel momentum shift, and I think it's more like it was in my mind, but I had someone videotape one of my matches, and I could see that--I thought I was missing more of my shots. I really wasn't missing that many shots. It was just in my mind that I was missing. So I was beginning to think that it was more like a psychological thing, because really I was still making shots, but in my mind, I was missing a little more. (Participant 9, Lines 282-286, Appendix N).

Some participants suggested that momentum is more tangible when you are watching a match compared to when you are playing in it. For example, one participant stated: "... a lot of times, it's a lot easier to see it outside the court than it is inside the court. You--you watch it--you watch players. You look at their body language..." (Participant 7, Lines 681-682, Appendix L). Another explained, "... I was coach of the [country z] Davis Cup team for ten years and I can tell you I've seen a lot of matches and you see a lot of momentum change in a match...you can't control it, but if you're just watching it from the outside..." (Participant 13, Lines 481-484, Appendix R).

Other participants believed that momentum was more tangible in doubles matches as opposed to singles matches. For example, "... I think that in the doubles match, I think the momentum switches back and forth a little more often than singles. It's just because maybe

because the pace is quicker and the points are shorter" (Participant 4, Lines 475-477, Appendix I). Another participant added, "... there's more people on the court; so there's more momentum shifts. You get some momentum shifts that happen between a team, between opposing teams, with an individual alone and how that affects the partner." (Participant 12, Lines 503-505, Appendix Q).

Within the second higher order theme "Relationship between Confidence and Momentum" the majority of participants believed that confidence is a precipitator to momentum. For example, one participant said: "... the more confident you are, the more likely you're going to be to shift the momentum, but once you shift the momentum, then it's going to make you more confident... So for me, confidence comes first, but then it's like a cycle as well." (Participant 8, Lines 449-453, Appendix M). Another participant analysed Roger Federer's performance during the final of Wimbledon 2008 against Rafael Nadal to illustrate this perspective: "...my assessment was that, because Federer's confidence was still not quite where it usually is for him, uh it was hard for him to capitalize on the momentum shifts..." (Participant 1, Lines 654-657, Appendix F). Some participants believed that momentum is initially a precipitator to confidence. For example, "... the more you have momentum, the more confidence you have, and the more confidence you have, the easier it is maybe to get momentum" (Participant 14, Lines 924-925, Appendix S). Other participants concluded that confidence and momentum are synonymous. For example, "They're synonymous. I think they're very positively correlated..." (Participant 12, Line 573, Appendix Q). Lastly, some participants emphasized that confidence was arguably the most critical issue when discussing momentum in tennis. For example, one participant expressed:

... after reading all of your questions a couple of days [ago], I kept thinking of that word, and finally at the end, I saw the word "confidence," and I said, "That's really what it's all about." You know, are you confident that your game, that your style of

play that you're imposing on this opponent, whether you're ahead, whether you're even, or whether you're behind, is it going to take you to the finish line where you want to end up being? (Participant 6, Lines 777-782, Appendix K).

Another said: "... it's right there. When you have momentum, it's built on something, you know. It's built on your confidence. You're confident; you feel good, you know" (Participant 7, Lines 560-562, Appendix L).

Within the third higher order theme "Factors that may affect Momentum" participants discussed the impact of coaches, parents, and spectators on momentum. The majority of participants suggested that coaches and parents can affect you gaining or losing momentum. For example, one participant expressed:

They play a huge factor...my dad was my coach...whenever I made a mistake, an easy mistake...he was the one getting pissed off, showing emotion, and that affected me in a bad way...I'm not focusing on what I need to do with the next point. I'm thinking about my dad, and how he's getting frustrated... (Participant 10, Lines 708-716, Appendix O).

Other participants argued that coaches do not generally affect you gaining or losing momentum:

...tennis is really an individual game. So college tennis is very unique in that you can have coaches on the court, but like out there in the pros or in juniors, you are not allowed to have the coach. So you have to create your own momentum... (Participant 8, Lines 533-536, Appendix M).

The majority of participants believed that spectators can affect you gaining or losing momentum. Of the participants believed spectators shouldn't affect you gaining or losing momentum and said: "... you can't control the crowd, but you control how you let it affect you." (Participant 13, Line 651, Appendix R).

Participants also discussed that their perceived match-up with their opponent can affect momentum before a ball is hit in a match. These were based upon their opponent's reputation, past match history, and lastly an injury to self or to an opponent. Others suggested that the court surface can also affect momentum, in that momentum can be developed more quickly on grass since the points are shorter, as opposed to on clay where the points can be longer. One participant added that the court surface preference of a player can also affect their ability to gain momentum in a match: "The different surfaces come into effect. Overall, like I'm not a clay court player. So I naturally kind of go in not with that, you know, as positive as I would be as on a hard court." (Participant 2, Lines 111-113, Appendix G).

Finally, one participant believed that momentum was affected by the era in which tennis was being played:

When we played in my day [1960s], you didn't sit down when you changed ends, you had to stand up: you were only allowed one minute to change ends and you were not allowed 25 seconds points...maybe the fact that it's not so continuous today, the game, maybe that's-- causes more opportunity to, for people to lose concentration for momentum to change too. (Participant 13, Lines 431-437, Appendix R).

Discussion

Initial Perceptions of Psychological Momentum

“The greatest thing in this world is not so much where we are, but in what direction we are moving” Oliver Wendell Holmes (1809/1894). It is possible to draw a parallel between the aforementioned quote and the overwhelming perception of psychological momentum among participants: that is, that momentum plays a role in every match and that there appears to be a constant shift or struggle of the momentum between players throughout a tennis match. There certainly appears to be a variety of terms and phrases that suggest that momentum is perceived to be a relevant factor when assessing the dynamics of a match. One participant shared, “I think Jim Courier likes to use that phrase... things like “Mr Momentum has changed his address!”...” (Participant 14, Lines 93-95, Appendix S). Participants also defined perceived psychological momentum in terms of it being within a period of time, and that it something that can switch or shift “all of a sudden...” (Participant 9, Line 104, Appendix N).

These findings, which highlight the significance of psychological momentum within tennis matches, are congruent with the perspective of Joel Drucker, Tennis Analyst for ESPN and The Tennis Channel, who said: “you can definitely see the ways it plays out and when a player has a chance to take a lead and doesn’t, and someone catches up, the momentum is arrested” (J. Drucker, personal communication, September 29, 2008). He believes that momentum is very apparent in professional matches: “it’s very vivid at that level because they’re so technically proficient” (J. Drucker, personal communication, September 29, 2008).

Conversely, the participants’ perceived significance of psychological momentum in tennis matches is incongruent with the findings of Richardson, Adler and Hankes (1988). Of the 60 follow-up interviews conducted from an original sample of 119 players competing in 163 best of three sets matches in three U.S.T.A. tournaments, Richardson et al. found that 50

per cent of the players had not perceived a turning point or any effects of psychological momentum in their match.

It is possible to conceptualize that the differences in ability accounted for the discrepancy between my findings and those of Richardson et al.: the participant sample interviewed by Richardson et al. was comprised of 3.5-5.5 U.S.T.A. ranked players, compared to my sample, which comprised of at least 5.5 U.S.T.A. or Open level. It might be possible that players that are lower in ranking may not perceive the existence of psychological momentum as such a significant dynamic in matches compared to higher ranked players. This perspective appears to be shared by Joel Drucker, who said: “at the civilian [recreational] level, between the levels of the game people play and some of the weaknesses people have, the technical thing is just going to become apparent and the momentum, it doesn’t really matter” (J. Drucker, personal communication, September 29, 2008). This could have important practical implications for coaches and sport psychology consultants when implementing momentum strategies with athletes. It is important to understand the individual athlete’s experience and awareness of psychological momentum during their matches, since ability levels may affect this.

Experiences of Positive Psychological Momentum

A significant finding was the similarity between participants’ experiences of positive psychological momentum and the phenomenon of having a peak performance. One participant said: “... you feel like you’re seeing the ball like a water melon...you’re connecting and you feel like you’re somewhat in a zone” (Participant 14, Lines 497-499, Appendix S). This is similar to Jones and Harwood’s (2008) finding that participants had described “feelings of invincibility” and “doing things you would not usually do” (p. 62).

This also supports the study of Mack and Stephens (2000), who argue that with momentum, you're "on a roll". This also mirrors the perspective of Mary Joe Fernandez, ESPN Analyst and U.S. Fed Cup Captain, who had said: "when you have it, it feels great, everything seems dandy and the ball looks bigger to you, it feels bigger and again, it's the belief, the confidence all coming together in your favor" (M.J. Fernandez, personal communication, October 12, 2008).

Participants also identified playing better and winning the points, games, sets and matches with experiences of positive psychological momentum. Similarly to Jones and Harwood's (2008) findings, this supports both the Multi-Dimensional Model of Momentum and the Antecedents-Consequences Model of Momentum which suggest the positive perceptions of psychological momentum enhance subsequent performance (Taylor & Demick, 1994; Vallerand et al., 1988). The findings also affirm the research by Bar-Eli et al. (2006), who also interpreted momentum as significantly improving performance during a particular period of time compared to the player's overall record. Moreover, the findings are similar to the research by Covassin (1996), who found that winning players demonstrated a significantly greater proportion of positive precipitating events (65.2 per cent).

In addition, participants in this current study mentioned feeling confident, calm and felt motivated. This is highly comparable to the findings of Adler (1981), who found that a positive shift in momentum led to increased confidence, more stabilized emotions, and intensified motivation. It also supports the findings of Mack and Stephens (2000), who believed that momentum leads to corresponding changes in self-efficacy and affect.

Other shared experiences of positive psychological momentum to those described in the study by Jones and Harwood (2008) include the opponent's level of play dropping (opponent making mistakes), feeling confident, being positive, thinking ahead, receiving encouragement from the crowd, and having a strong awareness that you have the momentum

(perceiving success). In contrast to Jones and Harwood's findings, other experiences of positive psychological momentum described in the present study included feeling relaxed, happy, having fun, feeling physically fit, being focused, being patient, receiving support from family and friends and enjoying some good luck. In experiences of positive psychological momentum in doubles tennis, the key emphasis among participants was having a good relationship with their partner and a high level of synchronicity (e.g. both playing/moving well).

It is clear that the commonalities demonstrated among the players' experiences of positive psychological momentum can help athletes and coaches recognize a physical and mental skill set that appears to be linked here to enhanced performance. Among others, being focused, relaxed, positive, motivated, physically fit, being patient in your style of play, and in doubles having a good relationship with your partner. Sport psychology consultants could assess around these areas and tailor interventions for the athlete according to their strengths and weaknesses in these specific areas.

Experiences of Negative Psychological Momentum

Participants identified not playing smart tennis, not executing, and losing the big points, games, and sets with experiences of negative psychological momentum. This is again similar to Jones and Harwood's (2008) findings in supporting both the Multi-Dimensional Model of Momentum (Taylor & Demick, 1994) and the Antecedents-Consequences Model of Momentum (Vallerand et al., 1988) in their proposal that negative perceptions of psychological momentum decrease subsequent performance.

However, contrary to the findings of Jones and Harwood (2008), there appears to be further support for the Multi-Dimensional Model of Momentum (Taylor & Demick, 1994) in its suggestion that for momentum to have a significant impact on competitive outcomes

positive momentum would have to occur for one athlete and negative momentum would have to occur for the opposing competitor. For example, in addition to the aforementioned examples of a perceived decrease in their own performance in times of negative psychological momentum, participants cited the opponent as dictating the match and that the opponent's play was improving. These findings also appear to be shared by Mary Joe Fernandez, who said: "It's a combination of a player having it and the other player losing it. And those two forces together create a snowball effect that really changes matches..." (M.J. Fernandez, personal communication, October 12, 2008).

In addition, participants mentioned feeling a lack of self-confidence, frustrated and felt a dip in motivation. This is again highly comparable to the findings of Adler (1981), who found that a negative shift in momentum led to decreased confidence, less stabilized emotions, and reduced motivation. It also further supports the findings of Mack and Stephens (2000), who believed that momentum leads to corresponding changes in self-efficacy and affect.

Another significant experience of negative psychological momentum was that participants said that they were feeling the pressure, including pressure from their coach. This was also a theme in their doubles-specific experiences, where participants said that they and/or their partner panic. This certainly compares to the findings of Ashford and Synesi (2007), who found that participants associated negative momentum with choking in a pressurized situation where they may feel overwhelmed. Ashford et al. found that participants attributed this to a lack of confidence, also one of the prominent features of participants' experiences of negative momentum in the present study.

Shared experiences of negative psychological momentum to those described in the study by Jones and Harwood (2008) include having bad luck, the official making a bad call (referees decisions), loss of focus (concentration), engaging in negative self-talk (negative

criticism), frustration, a lack of self-confidence (reduced confidence), and feeling the pressure. In contrast to Jones and Harwood's findings, other experiences of negative psychological momentum shared by participants included over thinking things, rushing, the opponent engaging in gamesmanship, and seeing it as a learning experience. In their experiences of negative psychological momentum in doubles tennis, the key emphasis was on not working together anymore with their partner, not communicating, and one or both partners feeling frustrated.

The experience described by participants by far the most, however, was having a loss of focus. Athletes, coaches, and sport psychology consultants should pay particular attention to the importance of focus in the competition arena. Athletes should seek to increase their awareness levels of their own focus against fluctuations in their performance. Sport psychology consultants can help athletes assess their focus, to help them identify the times in a match where they feel they are most susceptible to a loss of focus, and design interventions to strengthen their focus.

Experiences of Neutral Psychological Momentum

Contrary to the research of Jones and Harwood (2008), analysis of the data resulted in the emergence of an experience of psychological momentum that could not be categorized as positive or negative, but reflected times in a match where participants perceived the match to be even. Interestingly, participants did not describe this 'neutral' genre of momentum in terms of there being a tied score in the match; although for many it may have been implied.

Participants described their experience of neutral momentum as both players playing at the same level. Some participants said that when the match is even it's hard to gain momentum and even if you gain it, the momentum shifts a lot. This certainly reinforces the findings of Silva, Hardy and Crace (1988), who in their study of psychological momentum in

intercollegiate tennis found that where sets are split in a best of three match the player who won the second set did not necessarily go on and win the match. They negated the existence of positive momentum when the sets were split as an antecedent of performance outcome. This is reflected in the present study by one participant stating that the outcome of the match is uncertain.

Participants related their experience of when the match is even to battling it out. Some felt they were getting tight, while others felt good including in terms of their confidence, and were concentrating. In doubles matches participants tended to see their relationship with their partner as good yet a little more serious and intense while another believed their relationship with their partner to be unstable at such times. These contrasting experiences are both possibly due to the perceived closeness of the match.

Some participants described momentum when the match is even as being more subtle. This appears to differ from the findings of Richardson, Adler and Hankes (1988) that when sets become more competitive, the shift in momentum is more emphatic. It could be hypothesized that Richardson et al.'s findings vary due to the aforementioned difference in ability levels compared to the present study, where players may have less tools to reverse the momentum.

Strategies for Developing Positive Psychological Momentum

Whilst there was a certain degree of overlap between the strategies used by players to develop positive psychological momentum and the strategies used to maintain it, there were subtle strategic differences in the findings that justified the emergence of two separate general dimensions. This is contrary to the study by Jones and Harwood (2008), who grouped both the strategies to develop and the strategies to maintain positive psychological momentum together.

One of the most frequently cited strategies by participants to develop positive psychological momentum was to win the big points, games, tie breaks, sets and matches. This is consistent with the findings of Vallerand et al. (1988), who found that the scoring patterns led to beliefs that the player having positive momentum should win the first set and possibly the match. It also supports Silva et al.'s (1988) finding that winning one of the first two sets predicted match outcome for female and male players. Moreover, it underlines Richardson et al.'s (1988) finding that there appears to be key games in a match that can predict match victory.

Other significant strategies mentioned by participants included to impose your style of play on your opponents, to take your opponent out of their game, and to play more aggressively. This mirrors the strategies that, according to Joel Drucker, author of *Jimmy Connors Saved My Life* (2004), had been used by Jimmy Connors against Ivan Lendl on his way to winning the 1983 U.S. Open final: Drucker explained that after Lendl's double-fault at set point in the third, Connors didn't wait for Lendl to miss again, he took it to him (and ended up winning ten straight games and won the tournament) (J. Drucker, personal communication, September 29, 2008).

Participant strategies were also highly correlated to the Multidimensional Model of Momentum's proposition that a series of cognitive, affective and physiological changes result in the development of momentum (Taylor and Demick, 1994). For example, participants highlighted the importance of increasing your focus, energizing and using physical fitness to outlast your opponent. Other strategies given included holding your serve and breaking your opponents serve. Both reinforce the findings of Richardson et al. (1988), who found that the participants that did perceive a turning point attributed it to factors including breaking their opponents serve and holding serve. Additionally, having a pre-performance routine was cited by participants as contributing to the development of positive momentum. This supports the

findings of Covassin (1999), who found that an athletes' pre-competition mood state is another predictor of who is able to control psychological momentum during the match.

Doubles-specific strategies tended to target the need to be compatible with your partner and to play aggressively. Getting off to a good start and breaking the opponents serve was also given as doubles strategies. The rationale behind needing to get off to a good start was captured well by one participant: "...because [in doubles] points sometimes are shorter, and consequently ...you can lose quicker. You can lose points quicker. You can lose games quicker. So you really have to get a really good start..." (Participant 7, Lines 497-500, Appendix L).

The most referenced strategy to develop positive psychological momentum, however, was confidence: that is, building confidence through preparation and hard work in practice. This is highly similar to the findings of Jones and Harwood (2008), who found confidence to be a common trigger and outcome of perceived psychological momentum. Jones et al. suggested to practitioners working within intervention settings in team sports that: "attention should be given to the role of preparation, to prepare players tactically, technically, physically and mentally to build confidence and manipulate their perception of personal and situational sources"(p. 68). Practical implications from my own findings suggest that the information offered by Jones and Harwood could also be applied here to individual sports. One of the participants said:

"...make the practices harder than at any point you would play in a match, so by the time you get to a match playing, a point was like, "Gosh, that wasn't as hard as the 20 side to sides I had to do in practice."" (Participant 2, Lines 166-168, Appendix G).

Coaches should therefore seek to develop training programs that prepare players physically, technically and tactically to supersede match demands. Equally, sport psychology consultants should assist athletes in building their confidence and self-efficacy.

Strategies for Maintaining Positive Psychological Momentum

The most frequently shared strategy for maintaining positive psychological momentum was not letting your opponent have a chance to get into the match. One participant cited the beginning of the second set as a highly significant period of a match: "...if you won the first set close, you want to make sure that you keep the guy down. You don't give him the chance to get right back in." (Participant 5, Lines 507-509, Appendix J). This seems to conflict, however, with the findings of Richardson et al. (1988), who identified that only game four in the second set increased the probability of match victory.

Maintaining or increasing intensity level, staying motivated and staying focused (e.g. using cue words) and in the moment were all offered as vehicles for ensuring the momentum would stay with the player and not switch to the opponent. This was similar to the findings of Jones and Harwood (2008), who found that maximising effort, maintaining concentration, and playing as if you did not have the momentum would help maintain and develop momentum. This is similar to the advice of Higham (2000), who suggested that when momentum is positive, players should avoid the dangers of complacency. Athletes and coaches should therefore be aware of the potential risk for letdown when momentum is perceived to be positive. Sport psychology consultants could create interventions designed to help the athlete maintain their intensity, motivation and focus throughout a match.

Other strategies mentioned that were similar to those described in the study by Jones and Harwood (2008) included staying relaxed, setting goals, and keeping it simple (back to basics). Additional significant strategies in the present study included to keep doing what you're doing, to stay equally aggressive or more so, to stay positive and keep your pre-point routine. Doubles-specific strategies were hinged primarily on maintaining a good relationship with your doubles partner and similarly to singles matches, maintaining intensity levels were also seen as important.

Strategies for Overcoming Negative Psychological Momentum

According to one participant: “it’s more important to focus on it [momentum] when you don’t have it: if you want to try and break the other guys’ [momentum], it’s ways of trying to get you back in the match...” (Participant 14, Lines 1000-1002, Appendix S). Data analysis certainly reinforced the emphasis across the majority of participants on the pertinence of strategies to overcome negative psychological momentum. It was by far the biggest area of discussion, in terms of descriptions of physical execution strategies, psychological strategies, and doubles-specific strategies.

The two most frequently cited physical execution strategies included staying patient in your style of play and slowing it down (e.g. between points, taking a bathroom break between sets). The latter strategy supports the study of Adler (1981), who argued that psychological momentum is fragile and could be diffused by interruptions such as timeouts and injuries. This also compares to the findings of Richardson et al. (1988), who found that the players in their study who had perceived a turning point in their match had in part attributed it to taking more time between points or games. Similarly, Higham (2000) suggested that when momentum is against you, players should not rush or be rushed by the opponent and should take time between points.

Others mentioned the need to change your style of play: for example, to switch to playing more aggressively and to take more risks or to switch to staying back. Adjusting quickly tactically appeared to be highly significant in not letting the opponent gain momentum. One participant said: “...winning matches very often comes down to who’s making the little adjustments.” (Participant 14, Line 373, Appendix S). The strategy of changing tactics as a way to overcome negative psychological momentum parallels the findings of previous research (Jones & Harwood, 2008; Higham, 2000). Equally, the strategy

of taking more risks compares to the research of Taylor and Demick (1994), who found that the most common precipitating event to a change in momentum was the use of the dramatic shot (45.4%) e.g. drop shot, lob.

Significant psychological strategies shared by participants included the need to stay motivated, to regain your focus and stay in the moment. One participant said: “A mistake is a loss of momentum, but the great player will be right back there the next point and have let it go.” (Participant 12, Lines 253-254, Appendix Q). Participants cited integrating a pre-point routine as helping them achieve this. Participants also emphasized the importance of maintaining perspective and being positive: for example, of going into the match thinking the luck is going to even out (as opposed to feeling the luck is against you if you get a bad call or bad bounce). Equally, participants reiterated the need to develop confidence in order to be able to trust your game through times of adversity. For example, one participant said: “[in junior tennis] I think you should play in the matches that you’re supposed to win, because that teaches you how to cope with pressure.” (Participant 13, Lines 171-172, Appendix R). Using reframing to embrace the pressure was also cited: “Diamonds are made under pressure.” (Participant 8, Line 129, Appendix M). This is similar to the text sent by Billie Jean King to Maria Sharapova before her 2008 Australian Open final that Maria quoted in the presentation ceremony as saying: “Pressure is a privilege” (ESPN2, January 26, 2008).

The study by Jones and Harwood (2008) had also found managing pressure to be a strategy shared by participants to overcome negative psychological momentum. Other shared strategies from their study and the present study included the need to relax and stay calm (managing anxiety), and to feel the encouragement from your coach. Moreover, in doubles matches, the priority among participants in the present study was to receive positive encouragement from their doubles partner in times of perceived negative psychological momentum, and to keep working and moving together. This resonates with the conclusion of

Jones and Harwood that team cohesion was significant, and that “synchronous efforts and team encouragement through good *and bad* patches” were important to participants (p. 69).

The practical implications of the present study here are numerous: athletes should take advantage of the many aforementioned strategies to help them overcome perceptions of negative psychological momentum during matches. Doubles players should ensure that they understand the needs of their partner in terms of what encouragement should look like in order to offer them the most effective support. As one participant said: “...really good doubles teams know how to approach each other when a person is being negative with herself or with her partner...” (Participant 8, Lines 435-437, Appendix M). Coaches should attempt to enter their junior players into tournaments in the same age category to provide them with experience in matches that they are more expected to win. Coaches should also recognize the importance of showing their support to their players during matches. Sport psychology consultants could assist athletes by assessing around and creating interventions according to their motivation, focus, confidence, pre-point routine, relaxation and positive self-talk.

Strategies under Neutral Psychological Momentum

Participants shared strategies that can be used specifically for when the match is perceived to be even. This is again in contrast to Jones and Harwood (2008), who grouped strategies as either to develop and maintain positive psychological momentum or to overcome negative psychological momentum.

The principal physical execution strategy mentioned by participants was to continue to execute your game plan. However, participants also noted that when the match is even it might be necessary to try something slightly different and/or be more aggressive in your style of play. Just as the earlier observations from the present study suggest that match outcome is

uncertain, it also presents tactical disparities among participants that compare to a ‘stick or twist’ conundrum: that is, “do I continue with my game plan or try something new?”

Psychological strategies employed by participants when the match is perceived to be even are relatively similar to the strategies used to maintain positive psychological momentum: for example, being positive, staying calm, staying relaxed and loose, and staying in the moment. However, there was a particular emphasis on staying disciplined with a pre-point routine, as well as increasing focus on the basics; both of which seem to suggest an allegiance to a ‘stick’ strategy. Conversely, the strategies based on increasing motivation, energizing and fighting your opponent point by point tend to imply more of a ‘twist’ strategy i.e. a need for something extra. The data suggests that both strategies are plausible options which can ultimately only be decided by the athlete given the situational factors of the match.

Doubles-specific strategies offered by participants were also similar to the strategies described to maintain positive psychological momentum: for example, maintaining a good relationship with your partner. However, there also appeared to be more work needed when the match is even; not only in terms of ensuring the relationship was stronger, but also in strategizing and increasing intensity. This again may be attributed to match outcome being ‘in the balance’.

Advanced Perceptions of Psychological Momentum

Results from the data analysis also highlighted differences in participant’s perceptions regarding the tangibility of momentum. For example, some participants felt that momentum was relatively tangible during a match: “I could feel the momentum. I saw the momentum.” (Participant 7, Line 98, Appendix L). However, the videotape analysis by another participant revealed disparity between perceived momentum in terms of perceived match performance and actual performance. Findings from the present study did, however, suggest that

momentum is more tangible in doubles matches than in singles matches. This was attributed to the pace being quicker and the points shorter. This is similar to the findings of Adams (1995), who believed that running all nine balls in back-to-back nine-ball games was a consequence of the shorter time course involved between re-racks (compared to basketball, where shots may be several minutes apart) and as such the pace of the game is faster.

Similarly to the conclusions drawn by Jones and Harwood (2008), the findings of the present study suggest that psychological momentum is intrinsically linked to confidence. It supports the hypothesis provided by Mack and Stephens (2000) that momentum leads to corresponding changes in self-efficacy. It is therefore indigenous that strategies for developing and maintaining positive psychological momentum and for overcoming negative psychological momentum were centred to building confidence. Most of the participants believed that confidence precipitates momentum and some vice-versa. Either way, it is certain that athletes, coaches and practitioners need to pay particular attention to developing the athlete's confidence.

It is also important to discuss the factors identified in this study that may affect player's ability to gain or lose momentum. Firstly, similarly to Jones and Harwood (2008), the majority of participants in the present study believed that coaches do impact player's ability to gain or lose momentum. For example, where players perceived pressure being exerted by coaches during a match, they experienced a perceived negative psychological momentum. In addition, participants often cited feeling the support from their coach as a precipitator to them developing positive psychological momentum and overcoming negative psychological momentum. Applied information can be drawn directly from one of the participants, who urged: "... it's important for your coaches, yeah for a lot of kids, especially if their parents is their coach, you know, the coach has to be...--is actually like your rock. You've got to look to your coach for support..." (Participant 10, Lines 716-719, Appendix O).

A second factor is the affect that a player's parents, friends, and/or partner can have on their ability to gain or lose momentum in matches. Results suggested that the presence of parents, friends and/or their partner can impact the player's ability mainly to gain (than lose) momentum. One participant shared: "There's sometimes when, you know, a player has a whole box of people cheering for them. So...it's nice just to have somebody, one person there that you know is rooting for you in your corner." (Participant 2, Lines 654-656, Appendix G).

A third factor is the affect spectators have on player's ability to gain or lose momentum. Similarly to the research of Jones and Harwood (2008), the encouragement from spectators can positively affect a player's ability to develop and maintain positive momentum and to overcome negative psychological momentum. The present study, however, also explored how a partisan crowd in favor of the opponent can potentially affect you losing momentum. One participant recalled: "I was playing at Wimbledon one year against a British player...I served a couple of double-faults and the crowd clapped. Well, that pissed me off..." (Participant 13, Lines 654-658, Appendix R). The same participant concluded: "... you can't control the crowd, but you control how you let it affect you." (Participant 13, Lines 651, Appendix R). Practitioners should empower athletes to take control of their emotions rather than allow the crowd to greatly affect them.

The impact on momentum by a player's perceived match-up with their opponent also needs to be explored further. For example, similarly to the findings of Jones and Harwood (2008), the present study found that an opponent's reputation could impact a player's perceived psychological momentum. It is possible to suggest that this is again connected to a player's confidence. That is, player's perceptions of their opponents reputation, their past match history or whether or not someone is injured all impact a player's confidence going into a match. It seems timely to recall the perspective among some participants that confidence and momentum are synonymous; a sentiment also shared by tennis analyst

Drucker, who said: “momentum is a sibling, if not a synonym of confidence...” (J. Drucker, personal communication, September 29, 2008).

In addition, the court surface was cited by participants as affecting the player’s ability to gain or lose momentum. The rationale appeared to be two-fold: firstly, because some surfaces (e.g. grass) are more welcoming to the development of momentum than others (e.g. clay). Participants attributed this to the fact that on grass, points are shorter. This again supports the findings of Adams (1995) that momentum is more likely to develop in a game that moves more quickly. Secondly, because a player’s perceived ability at the different court surfaces would put them either on the front or back foot. One participant said: “I’m not a clay court player. So I naturally kind of go in not with that, you know, as positive as I would be as on a hard court.” (Participant 2, Lines 111-113, Appendix G). Again, this appears to support the perspective that momentum is synonymous with confidence.

The comparison of psychological momentum across time also warrants further discussion. The present study found that momentum might be affected by the era in which tennis was being played. For example, one participant pointed to the game becoming less continuous today compared to the 1960s. The participant suggested that the 25 seconds points and extended changeovers have resulted in more opportunities for players to lose concentration and for momentum to change. It could therefore be hypothesized that in the modern game, players that perceive they have negative psychological momentum have more opportunities to interrupt the momentum and reverse it.

Future Directions

The predominance of quantitative research on psychological momentum during the last 30 years has more recently begun to make way for qualitative methodological research to explore athlete's own perceptions of psychological momentum (Burke et al., 1997; Ashford & Synesi, 2007; Jones & Harwood, 2008;). The present study was intended as a continuation of our understanding of psychological momentum specifically from the perspective of competing tennis players and to provide applied information for athletes, coaches and sport psychology practitioners. It is clear, however, that more in-depth qualitative research is still required in order to build on the knowledge gained to date. Future researchers could explore perceptions and strategies of psychological momentum in a highly specific tennis population in an attempt to better control the ability variable. For example, researchers could study the perspectives of WTA Tour players or study the perspectives of 'Excellence' players in junior tennis at a specific age category. Alternatively, researchers could focus on exploring doubles players perspectives, given that the findings of the present study suggest that momentum could be particularly critical in doubles. Future researchers could also explore player's perspectives on psychological momentum in other sports settings that have not yet been researched qualitatively.

Conclusion

In conclusion, the findings from the present study suggest that psychological momentum plays a significant role among competing tennis players. Strategies shared to maintain or develop positive psychological momentum and to overcome negative psychological momentum were centred on physical execution, psychological or were doubles-specific. A new genre of momentum, 'Neutral Momentum', emerged, where participants described their experiences and specific strategies for when they perceive the match is even. For some momentum appears to be more tangible on court than simply a perceived psychological phenomenon. It also appears to be more critical in doubles matches or on grass/hard courts, where points are shorter and the pace of the game is faster. Coaches, parents, family, friends, partners, and spectators were considered to affect player's ability to gain or lose momentum. Above all, momentum appears to be synonymous with confidence. The practical implications of the study for athletes, coaches, and sport psychology practitioners are numerous. Above all, it is imperative that an athlete's confidence is sufficiently built prior to a match (e.g. through hard work and practice) so that they feel they can perform throughout the fluctuations of perceived psychological momentum in a match.