Dynamic social networks in high performance football coaching

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Background: Sports coaching is largely a social activity where engagement with athletes and support staff can enhance the experiences for all involved. This paper examines how high performance football coaches develop knowledge through their interactions with others within a social learning theory framework.
Purpose: The key purpose of this study was to explore how coaches interact with others in developing their coaching knowledge within the Australian Football (soccer) context. Moreover, this project examined how to best conceptualise these interactions using social learning concepts such as communities of practice (Wenger 1998), informal knowledge networks (Allee 2000), networks of practice (Nichani and Hung 2002) and dynamic social networks (Mallett, Rossi, and Tinning 2007).
Method: Six high performance football coaches were interviewed using a semi-structured schedule. The interview data, which was transcribed verbatim, was content analysed using the procedure outlined by Côté et al. (1993).
Results: From the interviews three themes emerged: influence of others on learning; learning through work and play; and elite football identity. These themes were examined under the lens of social learning theory.
Conclusions: The coaches in this study reported that they considered 'coaches of influence' as their most important source of information. In particular, it was the interactions with experienced football coaches who were most valued. In these interactions ideas and views about football coaching were exchanged and are best represented as a dynamic social network.

Keywords: learning; knowledge networks; communities of practice; coaching

Introduction

The development of Australian football in the last 10 years has seen a significant rise in the profile of the sport. The new millennium resulted in the establishment of a new and improved professional league in Australia (the A-League). Due to the inclusion of eight new professional football teams in the A-League there has been an increase in the number of Australian developmental and elite coaches. In addition to employment with A-League teams, there is a state-based system of Academies and Institutes of Sport that employ significant numbers of coaches and athletes in a range of sports including football. Full-time football coaches in these Australian Institutes and Academies (AIAs) were chosen as a focus for this research. This sample of coaches were chosen for this research due to the importance of their role in developing Australia's future senior football team.

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At the same time as the increased professionalisation of football (and arguably football coaching) in Australia, the increasing global interest in coaching science research has resulted in a greater recognition of the complexities and dynamics of the coaching process (Lyle 2002; Cushion, Armour, and Jones 2003; Gilbert and Trudel 2006). Of prime interest to some coaching researchers and coach educators has been how coaches learn in this turbulent and chaotic environment (Mallett 2010).

The recent literature has been useful in highlighting how coaches learn (Gilbert and Trudel 2001; Cushion et al. 2003; Jones, Armour, and Potrac 2003; Trudel and Gilbert 2004; Gilbert and Trudel 2005; Nelson, Cushion, and Potrac 2006). A constant finding is that coaches learn from others (Culver and Trudel 2006, 2008; Erickson et al. 2008). Further examination of how subtle and textured understandings of these interactions and the role they play in developing coaching knowledge is still in its infancy. Previous work has shown that associated with the dynamic and complex nature of the coaching process are the many social relationships that operate within this process (Mallett, Rossi, and Tinning 2008). For example, a high performance coach's network can often include players, officials, support staff and administrators. In addition to this network of people within organisations (e.g., clubs), it appears that coaches seek counsel from people both within and external to the club or team. There has been limited research examining the nature of these social relations in developing coaching knowledge (Trudel and Gilbert 2004). The key purpose of this research was to understand how high performance football coaches (HPFC) learn through their interactions with other coaches with respect to the notion of social learning networks. The work of HPFC often operates in a highly contested environment; thus, the interactions with others (or lack thereof) can both facilitate and thwart coaches' learning (Mallett 2010).

Learning through social networks

In order to understand how high performance football coaches learn through social networks, four conceptualisations of social networks were considered in this research: communities of practice (CoP; Wenger 1998), coach communities of practice (CCoP; Culver and Trudel 2006), informal knowledge networks (IKN; Allee 2000), networks of practice (NoP; Nichani and Hung 2002) and dynamic social networks (DSN; Mallett, Rossi, and Tinning 2007). While we will contend that all of these networks are somewhat undertheorised, CoP has gained the greatest attention in a range of sport and educational settings. As such, CoP (including CCoP) will be given the most consideration in the following section, including a discussion of its specific application in a coaching setting. A more cursory account of IKN and NoP will then be given, and finally, the notion of DSN will be examined.

Community of Practice (CoP) and Coach Community of Practice (CCoP)

A community of practice is a concept with strong links to a social theory of learning. Social theorist Etienne Wenger proposed that we all belong to numerous CoPs (1998). Wenger proposed that the CoP we belong to changes over time and has the capacity to alter the course of our lives. Some CoPs are named, others are not, and they can be structured or unstructured, formal or informal and at times are so pervasive they rarely come into focus. What is known is that CoPs exist in homes, workplaces, schools, bands, teams and just about any area in which there are groups of people who share the same interest and goals (Wenger 1998). Three key dimensions underpin Wenger's (1998) notion of a CoP: (a) mutual engagement, (b) a joint enterprise, and (c) a shared repertoire.

Mutual engagement is the first characteristic of practice where 'people are engaged in actions whose meanings they negotiate with one and another (Wenger 1998, 73). In a CoP, mutual engagement is more than a group of people who share a common characteristic; it is the requirement that each member must actively engage with other members of the community (Galipeau and Trudel 2006). Examples of mutual engagement for head and assistant coaches in a team sport may include training, strategies to include in competition, and coach meetings (Culver and Trudel 2006).

Joint enterprise involves the collective process of negotiation by the members within the CoP regarding the purpose for participation. Each member actively interacts with one another, sharing information and assisting each other to pursue the jointly agreed goal (Wenger 1998). Thus, a joint enterprise in a CoP implies a common purpose, such as coaching a team (Galipeau and Trudel 2006). An example of joint enterprise was reported in Trudel and Gilbert's (2004) ice hockey study, which used the mandate of the national governing body of ice hockey in Canada to promote fair play and positive hockey experience for all participants. This is an example of a shared common purpose for all the hockey coaches.

Shared repertoire includes the routines, gestures, words and actions that are common to each CoP (Wenger 1998). This 'shared culture' is what distinguishes one CoP from another, as it enables its members to speak and understand issues relevant to their CoP (Galipeau and Trudel 2006); for example, after a win a team may sing their team song. These routines within the CoP are what contribute to forming the identity of the people who belong to a particular CoP.

More broadly, whilst the learning that occurs within a CoP is of importance, it is the formation of relationships and the deeper sense of participation between its members that sets it apart from other learning networks. Specifically in coaching, a CoP has been used by authors (e.g., Culver and Trudel 2006) and conceptualised more narrowly as a Coach Community of Practice (CCoP). One study in the area of coaching, by Trudel and Gilbert (2004), examined traditional forms of CoP to examine whether ice hockey coaches who share common interests and through regular interactions were able to form a CCoP. Trudel and Gilbert (2004) noted that coaches within the youth ice hockey structure 'did not participate in a CCoP or that their CCoP was very limited' (169). Thwarting the possibility of a CCoP in this environment was the 'win at all costs' mentality of the youth coaches. This approach to coaching stifles the engagement between coaches within their league when attempting to provide solutions to problems. In essence these coaches failed to display a joint enterprise.

Despite the issues identified by Trudel and Gilbert (2004), the coaches within a team or club environment have the possibility of forming a CCoP. Coaching staff are presented with the opportunity to interact and engage with other coaches through continual mutual engagement, joint enterprise and a shared repertoire. The interactions within a CCoP are theorised as fostering deep levels of knowledge development and expertise (Trudel and Gilbert, 2004). The utility of both CoPs and CCoPs will be considered in this paper with respect to the current results.

Informal knowledge networks (IKN)

Consideration for the utility of other social networks outside of CoPs and CCoPs must be addressed to provide a holistic picture of social learning networks. Another social network proposed for understanding learning is an informal knowledge network (IKN) (Allee 2000). The bonds between stakeholders are unstructured in an IKN and the 'relationships are

always changing and the purpose is to collect and pass the information on' (Allee 2000, 8). An example of an IKN may include the relationship that a coach may have with other coaches in their sport. In this example each party may actively seek information from each other. Allee (2000) suggested that members tend to work closely and 'require a sense of mission, in that people want to accomplish or do something that arises from their shared understanding' (8). An IKN has similar characteristics to CoPs with respect to the notion of mutual engagement; however joint enterprise and shared repertoire are not displayed in an IKN. These two elements (joint enterprise and mutual engagement) of CoP are not displayed in an IKN because the relationships are 'loose and informal' (Allee 2000, 8).

Networks of Practice (NoP)

Social relationships are also formed in NoPs, however, they are somewhat loosely bound by the parties that formed them (Nichani and Hung 2002). An example of a NoP is where a coach may use Internet blogs or Internet chat sites with other coaches about certain areas of coaching practice. In this example, the coaches may not know each other yet information exchange may take place. Both IKNs and NoPs are valid forms of communication within coaching; however, they do lack the deeper sense of belonging and membership defined by Wenger (1998) for CoPs. Like IKN, there are a number of features in the conceptualisation of NoP that distinguish it from Wenger's CoP. For example, the members of NoPs are usually not known to each other. Moreover, NoPs may be considered to be loosely knit groups that move across numerous communities. As a consequence of this somewhat loose nature, there is weak reciprocity amongst members due to the spread of the network and the members are only bound by the indirect explicit flow of information (Nichani and Hung 2002).

Dynamic Social Network (DSN)

Mallett and colleagues (2008) examined how coaches within the Australian Football League (AFL) came to know how to perform their coaching work. The results of the study showed that the participants sought information from several sources; however, there was a strong reliance on learning from other people. Coaches preferred a dynamic and evolving informal coaching network, which Mallett and colleagues described as a *dynamic social network* (DSN). The social network was dynamic in that, as the coaches in the sample developed their coaching they sought others (experienced coaches) to assist them in solving problems they encountered. The composition and arrangements of the coaches' DSN often took several years to take shape and continually evolved throughout their career. Unlike the relationships found in IKNs, NoPs, and to some extent CoPs, those involved in the coaches' DSN tended to be people (confidantes) with whom the coaches had established trust and respect over a long period of time. Moreover, a DSN is different to an IKN or NoP in the manner in which the relationships between members are developed. In an IKN the relationships are loose and informal and the members simply exchange information between each other (this relationship is even weaker within a NoP). A DSN is characterised by the development of a trusted and respected relationship between a coach and a confidante where the coach actively seeks counsel from a person. Moreover, the relationships found in a DSN generally result in changes to coaching practice due to the highly applied nature of the discussions and knowledge generated.

Accordingly, Mallett and colleagues (2007) argued that the DSN of the coaches in their sample were not clear examples of a CCoP, IKN or NoP. For example, the coaches did not display aspects of joint enterprise within their context. They also argued that their coaches exhibited limited aspects of fully functioning CCoP (e.g., atypical degrees of peripherality, low frequency and often superficial nature of interactions), due to the highly contested nature of their work and the protection of information from others. The DSN reported in the study by Mallett and colleagues (2007) were characterised by coaches seeking information from a small but trusted group of confidantes in fairly surreptitious ways (i.e., privately seeking these people out and conversing at times and places removed from the immediate sport context).

Method

In developing their craft coaches seem to learn from others. Nevertheless, the nature of these relationships is poorly understood. Therefore, this research investigated how coaches interacted with others in learning their coaching craft.

Participants

The participants in this study were high performance football coaches who were employed as head coaches, normally on one- to two-year full-time contracts. These coaches were responsible for the everyday management of the football players (aged between 14 and 17) in an Australian Institute or Academy of Sport (AIA) environment. Within this context, these head coaches worked with squads of approximately 25 athletes and were usually assisted by support staff (e.g., assistant coach, specialist positional coaches, strength and conditioning trainers, nutritionists). The AIA system is used to identify players with significant talent and represents the best athletes in the state within the football system. The HPFCs therefore are often judged on three main criteria: the number of players who go on to play in the national team (both junior and senior squads), the number of professional contracts that are offered to players and the results from competition.

In all, six male coaches, aged between 33 and 57 years ($M = 36$ years, $SD = 8.04$) participated in the study. Each coach held a Senior Football Coaching award and had completed the highest level of coaching in Australian football (Level II Certificate in Coaching). The total coaching experience of participants averaged 13 years, with a range of 5 to 20 years ($SD = 5.29$).

Procedure

In total 10 coaches were identified as potential participates for this study. Of the 10 coaches approached, six participants voluntarily consented to participate in a face-to-face or telephone interview. None of the participants had a previous relationship with the primary researcher. The interviews took approximately 60 minutes (range = 56 minutes to 98 minutes). With permission from the participants, all interviews were recorded and later transcribed verbatim, resulting in 190 double-spaced pages of transcribed text, which was used for data analysis.

Data collection

The primary goal of the study was to develop an in-depth understanding of social networks in high performance coaching; therefore semi-structured interviews were designed to capture relevant data. The standardised approach to developing the interview schedule consisted of a series of pre-planned and open-ended questions organised into a number of inter-related sections. The semi-structured interview encompassed four key areas: (a) the importance of others in the development of coaching craft; (b) the nature of the relationships between coaches in the same sport and/or others; (c) the benefits and limitations of accessing other coaches in developing coaching knowledge; and (d) how the relationship between AIA coaches and those considered to be valuable to their development might be enhanced.

For each interview the same format was followed, so that each participant was given the opportunity to respond to the same questions and in the same order. The interviewer began by speaking generally about the purpose of the study. Then, the background demographic information about each participant was collected. From this point, a series of questions related to the four key areas were asked. Additional probing questions were asked to assist in clarifying participants' responses.

Data analysis procedure

The inductive data analysis procedure for this study was based on the work conducted by Côté et al. (1993), and their method for organising and interpreting unstructured qualitative data. This method involved two phases. The first phase involved the identification of meaning units, which are segments of text that reflect an idea, episode or piece of information (Côté et al. 1993). The six interview transcripts were initially analysed line by line by the first author who divided the text into meaning units. This was followed by the creation of categories, which involved listing and comparing the meaning units that best represented the data from the interview transcripts (ibid.). Côté et al. (1993) proposed that 'the purpose of the second step of interpretational analysis is, therefore, to re-contextualize the information into distinct categories, resulting in a set of categories which serves as a preliminary organizing system' (132). The objective of the data analysis in this project was to build systems of categories that emerged from the data to represent how coaches conceptualise their networks for learning in high performance coaching.

Credibility of data interpretation

Once all the interviews were completed transcripts of the interviews were sent to each participant prior to data analysis. This form of member checking gave the participants time to clarify or change any of their responses at their discretion. They were also asked whether they had any comments, questions or concerns about the interview. The participants made no changes to the transcribed text. Once the transcripts were approved they were included in the data analysis procedure.

The meaning units and categories were discussed at length amongst the authors, two of whom were experienced researchers in qualitative methods. Triangular consensus was sought in the identification of meaning units and subsequent creation of categories and themes. In a few cases where there was a lack of agreement, further discussion took place until a consensus of opinion was reached.

Results and discussion

Inductive analysis of the data from the six interviews produced 153 meaning units, 31 categories, nine subthemes and three major themes. The themes are termed as: influence of others on learning; learning through work and play; and elite football identity. The results were examined in light of the research on coach development and specifically coaches' learning networks.

Due to the high number of meaning units it generated and the number of coaches that mentioned it, the most dominant theme was the *influence of others on learning*. This theme included the subtheme of *direct learning from knowledgeable others in football*, which referred to HPFCs discussions with other football coaches (these included current and former coaches) as a source for information. *Direct learning from others from all sports* was another subtheme and this referred to the discussions of HPFCs with coaches from other sports that were in close physical proximity (e.g., the basketball coaches) as a source for learning. The HPFCs in this study also made reference to learning from others in ways that we categorised as *indirect learning of coaches' philosophy and behaviours*. This was enacted by the HPFCs through observing coaches in situ and in particular reading autobiographies about other coaches. Finally, the coaches in this study also referred to the *barriers to the exchange of information*, which included discussions about the limited access to opposition coaches.

The second major theme was *learning through work and play*, which included the two subthemes of *learning from playing experience* and *learning from coaching tasks*. All six participants discussed the importance of playing experience in developing their knowledge about coaching and the majority also reported the importance of coaching experience. It was reported by the coaches that conducting tasks other than hands on coaching in their daily routine was also important for their development as a coach (e.g., administrative work).

The final theme was the development of an *elite football identity*. All the coaches in this study had represented Australia at the senior level and were also former professional athletes. As such, there appeared to be strong links to each of their *identities as former players*. All the coaches commented that given that they had performed at the highest level they were therefore knowledgeable about what it took to be successful. Coaching was seen as a logical transition post playing to remain connected to the game. The coaches in this sample discussed a *passion for coaching* which motivated them each day to become better coaches. Not surprisingly, it was noted that there was an emphasis placed on the *importance of winning*.

Research in coach development has shown that along with other sources (such as learning on the job), coaches develop their knowledge through social networks (Culver and Trudel 2006; Rynne, Mallett, and Tinning 2010). The football coaches in this study were found to be similarly engaged in regular interactions with other coaches who were seen as valuable sources in developing their coaching knowledge. Of interest in this study was the nature of these interactions and specifically the characteristics of the social networks reported by the participants.

Consideration of communities of practice in football coaching

As noted previously, Wenger's (1998) notion of a community of practice (CoP) has been proposed as a useful framework to conceptualise the development of coaching knowledge through social interactions with others (e.g., Culver and Trudel 2006). In the current study, there appeared to be the potential for coaches to create a CCoP within their AIA teams and

between AIA teams of different sports as the common goal across the AIA settings is to produce Australia's next senior players. However, as in previous studies (e.g., Trudel and Gilbert 2004), individual coach agendas appeared to thwart a cohesive and integrated common purpose. As a result the coaches involved in this study failed to display all the characteristics of a healthy CoP in their coaching environment. Specifically, while a shared repertoire was reported there was an absence of joint enterprise and mutual engagement within the interactions of the coaches of this study. The AIA coaches were driven to be the best and to achieve performance success with their teams. Luke typified this desire when he said, *'Winning at this level is everything, if you win you are respected and most importantly you get another contract to coach next year'.* This drive for success, more specifically to win, suggests that the HPFC operates in a highly stressful and often contested environment. The competitive nature of these coaches of different football teams stifles the sharing of information and thus the joint enterprise, as described by Michael, *'*[the coaches I coach against are] *great coaches but again it's a secret. I'm not going to tell you. This is my secret and I'm going to be a great coach but I'm not going to tell you'.* Opposition coaches are seen as 'rivals', which promotes a sense of working in isolation. Culver and Trudel (2006) describe this 'in terms of an individual, instead of a joint enterprise' (101).

Some mutual engagement was evident between the head coach and the assistant coach of the same team but was not present across coaches from different football teams. The opportunity to create a CCoP within the AIA team would seem likely considering the shared sense of mission between the teams' coaching personnel. Meeting with the other coaching staff in the same team to discuss training, season goals, player selection, and team tactics were all reported by the coaches in this study; However, these interactions were mostly superficial, where information is exchanged in order to achieve outcome goals, with limited in-depth discussions. Hence, in terms of learning there was little evidence of 'dense relations' between the head coach, assistant coach and other actors in the team. When asked about the nature of interactions between coaches within the same team, Damon commented, *'Well, they probably give you what they want to give you, you know what I mean?'* Damon's comment typifies the responses of this cohort of HPFCs, as it appeared that protection of some valued information between coaches of the same team existed. Unsurprisingly, the guarding of information was even more pronounced with respect to opposition coaches, *'Are you kidding? Speaking with opposition coach? No way, you need to find other people to get that information'* (Michael). Whilst the HPFCs in this sample valued learning from others as a major source of information, it appeared that these interactions did not extend to dialogue with opposition coaches. In the competitive environment of high performance coaching, the head coach could be selective in what information they chose to share. This is probably related to the volatility of coach employment (e.g. short term contracts, few jobs) whereby the head coaches might be wary of the ambitions of assistant coaches (adversarial rather than collegial relations). The head coach still needs to interact with the assistant coach and others to ensure the short-term success of the team, yet it is argued that these interactions are not what Wenger (1998) describes as mutual engagement. Consequently, these findings suggest that while there is some mutual engagement between coaches of the same team, the depth of the engagement was reported as superficial.

The coaches in this study did display a shared repertoire (e.g. routines, words, tools, stories). This was not surprising as the greater football community share some common tools such as colloquial language, anecdotes, skills, drills. Toby exemplified this in his comment: *'We use quite a bit of technology here, for example, we have GPS tracking system on our players to measure work rate and all that, which is great for our*

program'. Contemporary GPS technology and the associated tools and terminology are examples of a shared repertoire that was evident, both within and between AIA teams.

To summarise, the data did not support a fully functioning CoP or CCoP either within AIA or between AIA teams. However, there was some evidence for the occurrence of mutual engagement, joint enterprise, and shared repertoire within each AIA team, which suggests there is the potential for possible formation of a CCoP. The highly contested nature of high performance sport combined with the volatility in coach employment probably hinders denser relations between coaches in individual AIA teams.

Consideration of other networks

Coaches reported they had access to technology such as the Internet and associated e-networks. Nevertheless, coaches reported their preference for face-to-face interactions with others and rarely used NoPs (Nichani and Hung 2002). This is a surprising finding considering the plethora of information available. It was suggested by one coach that finding the information via e-networks on online required time and it was simpler in most cases to ask others for assistance.

There was some evidence supporting an IKN, however this was not the major source of knowledge for these coaches. For the football coaches in this study the interactions took place with other coaches who were not necessarily involved in football. For example, Damon said, *'You speak to, say, the netball coach and you speak to the basketball coach, you speak to the hockey coaches. There's a wealth of knowledge in these departments'*. In addition, these discussions with coaches of other sports tended to be informal in nature; for example, taking place in the corridors of the work buildings or in the tearooms. The information exchanged in these informal settings tended to be *'more about how to deal with different situations and things. So more man-management type thing rather than actual, physical football-related issues'* (Luke). These interactions were loose and informal, and the coaches moved in and out of contact with these other coaches, which is consistent with the notion of an IKN. These informal knowledge networks were infrequently used and serendipitous; however, multi-sport organisations in which coaches from various sports are in close proximity do have the potential to develop these social networks.

When seeking football related-information, interactions with other football coaches were considered necessary and the coaches in this study were deliberate and strategic regarding whom they sought for this information. It was evident that the HPFCs valued the information they obtained from other more experienced football coaches. For example, Michael spoke of approaching another coach to try and *'pick his brains about things I need to know'*. The purpose of these discussions was often to extract information regarding aspects of football coaching to fill perceived gaps in their own knowledge and to affirm solutions to issues.

Over time, these interactions with experienced coaches resembled the beginning of a valued and trusted relationship. This implies that these coaches were beginning to move beyond the loose conceptualisation of an IKN to create an inner circle of confidantes whom they sought specific football-related information to enhance their coaching.

Beyond CoPs, NoPs, and IKNs

As reported previously, a finding from the data that emerged was a sense of identity from the HPFCs. It is proposed that this was reflective of an elite playing identity, which thus aided the coaches' ability to establish some credibility with the football community. In

essence, the reputation these participants had established as players meant that they were able access more experienced and knowledgable coaches and/or former teammates when presented with a problem in their early coaching career.

The building of relationships with others was informal and largely instigated and controlled by the coaches of this study. Mostly these relationships led to meaningful dialogues, which assisted in coach learning, as exemplified by Toby's comments:

> Speaking to people that are more experienced than yourself, I think it is important to have mentors. I have a couple of mentors that I speak to regularly and it's interesting. I think when you first start off, it is more of a teacher and pupil thing. As you get older it is more of a friendly relationship, you're in the same game and you have a mutual respect so you share views and opinions. (Toby)

All six coaches in this study described a relationship with a person whom they consider to be a 'mentor'. It should be noted that common understandings of terms like 'mentor' seem so far removed from their mythological origins that they are barely comparable with respect to their nature, focus and outcomes (Ehrich, Hansford, and Tennent 2004). Despite this, and the lack of conceptual clarity in modern discussions of mentoring (Jones, Harris, and Miles 2009), for the purpose of this research, the use of the term 'mentor' by the HPFCs can be taken as an indication of the elements of mutual trust and respect. Moreover, for the HPFCs, the term 'mentor' referred to a person with whom the HPFCs had developed a close professional relationship through many years of contact. The relationships described by these coaches were informal and unstructured, thus the term 'people of influence' or 'confidante' (Mallett, Rossi, and Tinning 2007) might serve as a better descriptor than 'mentor'. The HPFC's 'person of influence' was seen as one of the very few people in their coaching life whom they felt they could trust with the most sacred of information.

How HPFCs create their own network

The nature and form of the relationships valued by the HPFCs bear some resemblance to those described by Mallett, Rossi, and Tinning (2007). The DSN was seen to be informal and dynamic as it took several years to take shape and continually evolved throughout the careers of the AFL coaches. Like IKNs, NoPs and to some extent, CoPs, a lack of theorisation inhibits the textured understanding of a coach's DSN; however, based on the findings of Mallett and colleagues it appears that a DSN is characterised in the following ways: the coaches are agentic in developing their own network, trust and respect are highly important between the members, the nature of the relationships changes and evolves over time, and the small membership may change over time. This notion of coaches' DSN was examined in the context of the HPFC.

The coaches in this study were agentic in developing their own social network. Although Mallett, Rossi, and Tinning (2008) reported the AFL coaches included coaches and others (businessmen, wives) in their DSN, the HPFC in this study only included football coaches. These confidantes were chosen by the AIA coaches to assist with pertinent issues and were selected on the basis of their perceived superior and more extensive football knowledge and experience. For example, Luke commented, '[Coach] *has so much knowledge about football and coaching that you were just amazed by his credential'*. As a consequence, these coaches of influence were chosen because they had a proven 'track record' of success in football. Peter described his person of influence as one who was '*generally*

regarded as one of the best youth coaches around'. As such, former coaches of successful teams were described as the type of person the HPFC sought for information as they were thought to possess the domain-specific knowledge to pass on.

The coaches of influence were described as experienced coaches who may or may not still be coaching and had the necessary skill and knowledge that each participant required to develop their knowledge. Nevertheless, the AIA coaches contacted their coach of influence irregularly: *'Sometimes it could be a few times a week, it could be once a fortnight, it could stretch out to once a month or longer'* (Toby). All six coaches mentioned this irregular contact as they felt they only sought counsel when they required.

As the coaching experience and knowledge of the HPFCs developed so did their need to access people who were relevant to their particular stage of development. Michael discussed this dynamic membership of his network: *'I can remember back in the early days when I would continuously talk and work with certain people, whereas that doesn't happen nowhere near as much now because I know more than I did'*. AIA coaches agentically selected coaches based on the stage of their development and specific needs. For example Peter stated:

> I have very compartmentalised influences all the way along because you see I'm always passing through them. I'm never staying in a place and bringing everyone with me. I'm always the type of guy who's always moving forward. I go where the information is. (Peter)

Peter's statement typifies the extent to which these relationships change and evolve over time. The reference to *'passing through'* and '*never staying in a place'* implies that this coach agentically sourced his coach of influence as he required. Other coaches also mentioned the evolving and dynamic nature of their interactions. Some of these coaches of influence were valued for different things in different ways. For example Damon stated, *'if I want to know about team tactics I go to this guy, and if I want to know about player issues I go to that guy'*. In essence the development of the HPFC is dynamic in nature. It is purely driven by the need to access the most relevant person at the time when it is needed most and the decision of whom they go to is governed by whom they think they have access to.

Even when HPFCs identified a need and a person who might be able to assist, the establishment and maintenance of the relationship was somewhat problematic. Developing a social network was described as a lengthy process and the coaches were cautious. Damon commented that*, 'it's hard to find a coach that can help you and you need to spend a long time with people before you can get what* [information] *you want'*. This finding is supported by Mallett, Rossi, and Tinning (2007), who reported that the development of mutual trust and respect between coaches took many years to build. This lengthy process of identifying confidantes has the potential to thwart coach development. Moreover, the results-driven imperative of professional sport is a deterrent to developing trust between coaches. This resulted in coaches feeling that sharing of information regarding football knowledge might impact on their on-field results, as typified by Jacob's comment, '*coaches go into the cut throat business of coaching where it's all about winning, if you get the results you are a good coach, if not you are a bad coach and you get the sack*'. This fear of replacement was reported by the HPFC in this study and thus the coaches of influence chosen were those who were seen as a peripheral member to the club or organisation.

Conclusion

The aim of this paper was to conceptualise the social knowledge networks that operate in this sample of elite football coaches. Social networks were identified by the coaches in this

sample as a useful way to solve issues and shortfalls in their coaching practice. The data suggests that the nature of the interactions between the HPFC and other more experienced (and perceived as more knowledgeable) coaches seem consistent with the notion of a DSN (Mallett, Rossi, and Tinning 2007, 2008).

The coaches in this study operate in an environment that does not display fully functioning CoP, CCoP, NoP, or IKN. It is proposed that the interactions of the HPFC are dynamic, in that they change throughout their careers to the extent that their coaches of influence can be many. Finding a coach of influence is a lengthy process as it can take years to build mutual trust and respect. The nature of the work of HPFC is highly contested and thus the information and knowledge is sacred. This is a barrier for information and knowledge transfer and can inhibit learning.

From this research important questions still remain unanswered. What is not known is what influences the agency of coaches in seeking help from others. In particular, beyond satisfying the search for people of influence who were experienced and respected, were the HPFC's people of influence chosen because of convenience or serendipity or was the securing of these people an active process? Specifically, the coaches in this sample were all former elite athletes, thus it could be proposed that access to experienced former coaches would be simpler considering their playing status. Future research needs to address the affect of identity in the creation of social networks, especially those who were not former elite players.

Naturally, there are some limitations with this study. As this study focused exclusively on elite football coaches, caution must be applied when attempting to generalise these findings to other sport settings. Further research needs to address the appropriateness of social networks to describe coaches' learning in both team and individual sports and settings in countries other than Australia. It would provide further insight into the effect that sport and setting have on the characteristics of those social networks.

The highly contested environment of professional coaching and the volatility of coach employment thwart more dense relations with other coaches in the team and league. The interview data suggest that through conducting their work, HPFCs are presented with numerous issues, some of which they have the resources to resolve (e.g., through their existing knowledge base or through interactions with other coaches). Some issues, however, require the counsel of experienced coaches (the coaches of influence in their DSN). Further insight is needed to address what triggers the decision to contact a person in a coach's DSN (i.e. threshold decision point: Lyle 2002). By understanding how coaches learn their craft through their interactions with others, coach development could potentially assist coaches through the learning process.

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