Sports Coaching Review

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rspc20

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To cite this article: Chelsea Currie, Bradley W. Young & Bettina Callary (2021): Mutuality in a coached adult sport team: the masters team sport model of interdependence, Sports Coaching Review, DOI: 10.1080/21640629.2021.1952810

To link to this article: https://doi.org/10.1080/21640629.2021.1952810

Published online: 02 Aug 2021.

SPORTS COACHING REVIEW
https://doi.org/10.1080/21640629.2021.1952810

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Mutuality in a coached adult sport team: the masters team sport model of interdependence

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ABSTRACT

Coach-athlete relationships are an important factor influencing sport experiences. Research has focused on understanding relational approaches to coaching Masters athletes primarily as they are applied to individual-sport athletes. This study explored relational coaching strategies within a Masters all-women team context, the nature of dyadic relationships between a coach and each team member, and interdependence in the broader team. We employed multiple semi-structured interviews with 11 competitive Masters synchronised skaters (MSks) and their coach, and in-person observations over the course of a season. Following interpretative phenomenological analyses, we found interdependence extended beyond the coach-athlete dyad plane, that the coach engaged directly and indirectly in two other social-relational planes to foster mutuality in the team, and that MSks cultivated interdependence on their own. In light of the inadequacy of prevalent coach-athlete models to account for these complexities, we introduce the Masters Team Sport Model of Interdependence: a comprehensive model of mutual interdependence accounting for coach-athlete dyads, coach-team interactions, and mutual relationships amongst MSks.

ARTICLE HISTORY
Received 6 November 2020
Accepted 29 June 2021

KEYWORDS
Coaching; masters athletes; adult sport; relational coaching; team climate

Masters sport comprises competitive sport for adults who are in a distinct category from youth or younger high-performance adults. Masters athletes (MAs), who are generally 35 years and older and who prepare via training in advance of competitions (Young, 2011), are a fast-growing cohort. Recent works described how coaches help MAs acquire positive outcomes relating to fitness, performance improvements, and social connections (Callary, et al. , 2015a, 2017). Rathwell et al. (2020) noted the importance of adult-oriented sport coaching practices in fostering these and other outcomes.

Coaches of MAs, or Masters coaches, play a key role in validating athletes' investment of personal time and effort (Callary et al., 2017). Masters swimmers attributed initial attraction, enrolment, and continued involvement in

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a club to a structured, dynamic, and social coached programme (Stevenson, 2002). Having a coach is associated with MAs' confidence in learning new skills, and in navigating challenges in practice and competition (Ferrari, et al., 2016). Masters coaches who demonstrate relational skills to connect, communicate and empathise with people, play a benevolent role in MAs' sport experiences (Callary et al., 2020).

Most of what is known about coaching MAs derives from work in individual sports, which focus on the psychology of coaching the individual within the group. There is scant consideration of a coach's role and aspects of relational coaching across a group of MAs. Yet, understanding whether a coach is crucial in an adult team sport, the nature of a coach's roles and relational interactions, and how they play out in various facets of a team context could prove important in helping coaches understand how to effectively coach this context and in substantiating the need for coaches in adult sport. This study explored this topic with particular attention to how a contemporary model of relational coaching, the 3 + 1 Cs model (Jowett, 2007), pertained to an all-women Masters sport team.

The 3 + 1Cs model is arguably the most popular and versatile model of coach-athlete (C-A) relationships in present empirical inquiry: it has proven to be highly applicable in a variety of contexts including same-gendered and mixed-gendered C-A dyads primarily within individual sport contexts (Jowett & Carpenter, 2015) but has also been investigated comparatively within team sports (Jowett, Kanakoglou, & Passmore, 2012). Considerations of the 3 + 1Cs and C-A dyads have also been utilised at various competitive levels including youth (Jowett, et al., 2017), university (Jowett & Chaundy, 2004), and Olympic athletes (Jowett & Cockerill, 2003). The 3 + 1Cs model has thus framed C-A relationships in youth and elite contexts, explaining enhanced relationships of reciprocity between the co-actors. Notably, it is a model of interdependence based on assumptions attributed to *dyadic relations* – between two co-actors, and each actor's assessment of the benefits and costs of their social exchanges (Jowett et al., 2017). C-A dyads that have more benefits than costs are perceived as mutually beneficial when there are strong feelings of *closeness* (i.e., trust, respect), *complementarity* (i.e., demonstrating reciprocal and corresponding behaviours), and *commitment* (i.e., shared intentions to stay together; Jowett, 2007). Together, the embodiment of these Cs results in the expression of *co-orientation* between a coach and an athlete (i.e., the +1 C), which is associated with demonstrations of being "on the same page".

Little work has scrutinised whether the 3 + 1Cs model is bounded by the dyad, and whether it sufficiently accounts for more team-oriented sport contexts in which a coach is located (cf., Jowett & Chaundy, 2004). For example, does the same coach, who interacts with many dyads in the same team context, create constraints to a dyadic model? Similarly, assuming that

a team is more than the sum parts of its many dyads, would this have implications for how the 3 + 1Cs model is understood within a team setting? Poczwardowski et al. (2006), for example, suggested there may be distinct group-related considerations, specifically proposing emotional climate and cohesion, or collective dynamics beyond the dyad, as influencing interdependence in dyads within a team.

Although the 3 + 1Cs are prominent in understanding C-A dyads in collegiate/varsity and elite individual sport contexts (e.g., Jowett & Carpenter, 2015), we wished to conduct the first explicit examination of its facets in a Masters team sport. This appears warranted, especially considering Callary, et al. (2020) suggestion that the 3 + 1Cs model could be a suitable starting point for better understanding C-A relationships in Masters sport, because of its conceptual overlap with themes of psychosocial coaching in this cohort. Reviews of psychosocial research on MAs underscore the heterogeneity of MAs' participatory motives (ranging from performance- to participatory-oriented; e.g., Young, et al., 2018). It is plausible that a team of MAs comprises many individuals with diverse goals, prior sport experience, and sporting lifestyles (Rathwell, et al., 2015) and their relational needs and preferences for interdependence with a coach vary. Further, it is logical for adult relationships to be different than relationships between an adult and child; and one cannot simply extrapolate coaching literature from younger team cohorts. In sum, we sought to understand the unique interdependent relational demands between a coach and athletes within a Masters team.

The present study

This study focused on a synchronised skating ("synchro") team. Synchro is a female-dominated on-ice sport which features 10–20 figure skaters performing artistic manoeuvres to a choreographed, 3-minute programme. Judges assess elements of speed, form, finesse, posture, and creativity. Synchro is internationally recognised (e.g., at the World Masters Games) and caters to a range of performance levels at national and regional competitions. As high performance figure skating peaks at a younger age than many other sports, Masters-sanctioned synchro divisions begin as young as age 18. Coaches have designated roles in preparing Masters synchro skaters (MSks) technically and crafting choreographic elements. MSks rely on each other to execute group performances, which are judged on elements of unison, shape, and timing. Thus, the demands of the sport offered the potential to examine interdependence within a team setting.

As coaches have been portrayed as significant contributors in Masters' sport development and experiences, there is value in understanding how relational, interdependent approaches to coaching benefit various outcomes

in MSks' sport experience. Leveraging the 3 + 1Cs model, the research team a) explored the suitability and constraints of the dyadic 3 + 1Cs model, and b) considered whether the phenomenon of interdependence in a coached team requires an expanded conceptualisation. In pursuing these aims, the team asked, "What are C-A relationships like within a female Masters team sport setting as they relate to the coach, the MAs, and the team collectively?"

Methodological considerations

This study was guided by interpretative phenomenological analysis (IPA; Smith, 2016) in accordance with three main functions (Larkin et al., 2008): Firstly, IPA is uniquely concerned with understanding participants' subjective lived experiences of a shared phenomenon. Secondly, it extends beyond participants' descriptions because the researcher develops an interpretative hermeneutical analysis of the data within that particular context. Finally, to do so, the researcher conducts a detailed analysis of data from one participant before moving on to the next (an idiographical approach; Larkin et al., 2008), and as the analysis progresses, the researcher can begin "cautiously making claims for the group as a whole" (Smith, 2016, p. 330). Research questions are typically broadly constructed so that unanticipated themes might be developed (Smith, 2016). IPA was the most suitable choice for this study, wherein we searched for descriptions of the phenomenon of relationships within adult team sport, and interpreted these using Jowett's 3Cs+1 model as well as searching for expanded conceptualisations within this context.

Methods

All procedures received institutional ethical approval. The coach and all MSks on the team (whether/not they elected to partake in interviews) provided informed consent.

Participants

Purposive sampling was used to find a team competing in a sport that required collaboration, whose athletes were consistently present at training and competitions, and whose coach had at least five years of experience coaching MSks. Pragmatically, this threshold helped to screen potential coaches that had sufficient experience of the context to speak to relationships. This way, the investigation could focus on the coach's role in relational coaching across the team, rather than initial immersion and development of a rookie coach. One coach and 20 MSks from the same synchro team in Canada consented to participate. The coach was a 32-year-

Table 1. Participant demographic information and prior experience in synchro and with the current coach.

Participants	Age	Prior years of synchro experience (categorical response)	Prior years coached by Maddy
Maddy (Coach)	32	10–15	–
Ellen	55	20–30	5+
Joan	53	20–30	4
Holly	53	20–30	5+
Sylvie	52	20–30	5+
Anneka	36	10–20	4
Danni	35	0	0
Clare	33	10–15	5+
Steph	31	10–15	5+
Alex	29	10–15	0
Erika	28	0	0
Julia	18	5–10	1

All names are pseudonyms; eleven Masters synchro skaters and the coach participated in interviews.

old nationally certified figure skating coach with a graduate degree in sport sciences, who was well respected in the synchro community. She had national-level skating experience, coached for 12 years, 10 of which were with MSks. The 20 MSks (mean age of 39) regularly attended a weekly practice with the coach (including 1.5 hours off-ice and 1.5 hours on-ice), from September until Regionals Championship in March. The coach was paid four hours per week and received an honorarium for competitions and choreography. The principal investigator (PI) observed the team as a whole and interviewed the coach and 11 MSks based on availability, with purposeful recruitment to ensure members varied in age and prior years of synchro experience (Table 1).

Participant observation

The PI observed 55 hours of training and social gatherings. She was also embedded with the team for two weekends at away competitions, including travel, accommodations, social activities, pre-competition preparation, and competitive performances. Observing the team in their natural sport environment enabled a fuller understanding of the sport and terminology, helped construct contextual knowledge, and tangibly illustrated what participants shared in interviews. The information recorded throughout observations was not used as a direct source of data (only the interviews were); however, in observing the various team-based relationships, the PI recorded field notes that focused on interactions that showed mutual benefits, responsiveness, and/or interdependence between participants. She used these field notes to formulate interview questions and they helped to contextualise what participants shared within the interviews. Training sessions comprised on- and off-ice activities (e.g., warm-ups, choreography, group discussions).

When she accepted the team's frequent invitations to join them, participants appeared excited to share their experiences. She thus engaged as an "insider" (fan of the team), while observing as a "professional outsider"(researcher).

Interviews

Over the season, the PI interviewed the coach at three time points (beginning, middle, end), and each MSk on two occasions (first month of season, last month). In all, 25 interviews were transcribed verbatim. Semi-structured, in-person coach interviews lasted 75–90 minutes.

First set of interviews

The coach was probed with questions pertaining to closeness (e.g., "Is it important to you to develop personal relationships with your athletes?), complementarity ("Do you feel as though your relationships influence your methods/coaching style?"), and commitment ("Do your relationships with skaters influence how committed you are to the team?"). This built a foundation to understand the coach's perspective of her dyadic C-A relationships in the team. MSk interviews lasted 30–60 minutes. In their first interview, MSks were asked to "describe the one-on-one relationship you have with your coach".

IPA maintains an idiographic commitment, where each interview is transcribed and analysed as a case in its own right (Smith, 2016). To understand the suitability of the 3 + 1Cs model within dyads in a Masters setting, first the coach transcript and then each of the MSks' transcripts were analysed in turn. The coach transcript was read and re-read by the PI and notes were made regarding a deductive analysis using the 3 + 1Cs model. To consider the constraints of this model and whether data might suggest a need for extended conceptualisation, the PI then conducted an inductive pass on the coach transcript to interpret additional emerging concepts beyond the dyad. The second and third researchers (critical friends) repeated this process separately from one another and from the PI, providing notations and comments.

The hermeneutical interpretative approach inherent in IPA (Smith, 2016) meant that the team could adopt a unique *two-dimensional* analysis within the first set of interviews (see Figure 1). Subsequent to the analysis of the coach transcript, each MSk transcript was analysed and interpreted in relation to the coach's transcript (vertical dimension) to explore the C-A dyadic relationship. They were then associated to one another (horizontal dimension) to interpret interdependence amongst MSks. The protocol for IPA is typically linear and iterative (Smith, 2016), as was the case in this study. MSk interviews were transcribed and analysed by each of the

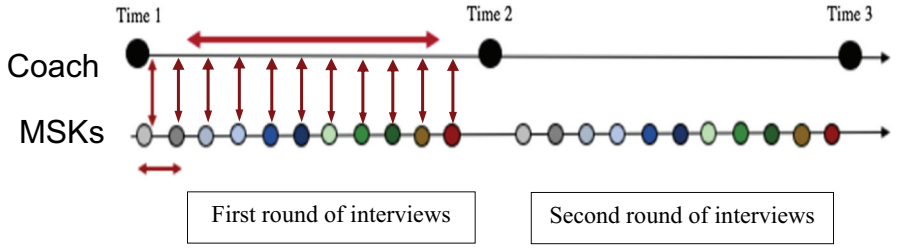

Figure 1. Progression of interviews and analyses. Each coloured bullet represents an individual interview participant. Horizontal arrows illustrate the analyses between time points of each coach interview, as well as each MSk interview. Vertical arrows illustrate how the transcript for each of the MSks was initially considered with the C-A dyad in mind.

researchers separately, then data were continually revisited within the group of researchers.

Theme development in initial round of interviews. As the PI moved through the first round of interviews, she noted the development of themes related to the dyad but increasingly found the balance of data pulled theme development towards an extended conceptualisation. Clusters of *inductive* concepts (early subthemes) pointed to interdependence beyond dyadic relations as defined in the 3 + 1Cs model. The interviews with the MSks resulted in the development of inductive concepts related to dyads of MSks. Moreover, responses from the coach and the MSks characterised relationships that occurred in the social setting of the team as a whole and within smaller sub-groups.

At the end of all first-round interviews, the PI sketched a representation of emerging data as a triangle, with the coach's one-on-one interactions with the MSks confined to one side of the triangle. She justified the sketched triangle to her critical friends, explaining how there was also substantial data that represented reciprocal interactions and cooperating behaviours between the coach and skaters at the group level (another side of the triangle), while also noting that skaters had talked about mutual relations with each other (not involving the coach; the third side of the triangle). The PI felt a triangular conceptualisation authentically represented the data and convinced her critical friends with reflections on specific excerpts from transcripts. A decision was made to use this conceptualisation as a lens for probing in successive interviews (see Figure 2). This team-based IPA approach is in line with Callary et al. (2015b).

Successive set of interviews

In keeping with past work that performed IPA over two time-points (e.g., McDonough, Sabiston, & Ullrich-French, 2011), the team began analysing

data from second interviews after completing analyses for all first interviews. The researchers analysed all the data from the second set of interviews before analysing the third coach interview last.

The second coach interview, at the mid-point of the season, served as a checkpoint to revisit the data collected thus far and to reflect upon alignment of what the coach and MSks were describing. It also sought to expand on the first interview, intervening field note observations, and emerging themes, including the decision to extend our conceptualisation beyond the dyad. For example, the PI asked the coach to consider how she built mutual relationships in the team beyond one-on-one interactions. Based on the analysis of this second interview, conducted and analysed before the MSks' second interviews, the planes of the triangle became further solidified. The third coach interview at the end of the season followed up for clarification on information from previous interviews, observations in field notes, for corroboration/contrast derived from interviews with MSks, or on themes that had developed (e.g., "How have your relationships changed from the start of the season with the new members of the team?").

The second round of interviews with the MSks occurred near season's end. The probes were also shaped by the decision to extend the conceptualisation of the triangle (moving beyond the C-A dyad). For example, the PI asked, "are there any team norms or expectations that influence how the team functions?" and asked questions for further elaboration on the nature of relationships amongst MSks and their implications for the team climate. Various probes followed up on information from the first interviews more fully and were informed by intervening field note observations.

Theme development based on successive interviews. The analyses of transcripts from interviews conducted near season's end (i.e., second of MSk interviews and third with the coach) sought to interpret how the participants' experiences were consistent with, and/or changed relative to the data from earlier in the season. Transcripts were coded according to the triangle conception. Within each plane of the triangle, data were further analysed to find sub-themes, including the 3Cs in the C-A dyad plane; peer advising, and roles and expectations in the MSk dyad plane; and super-group and sub-group interdependence in the coach-group plane. When the researchers separated coded data into each plane, codes were found that related to outcomes of interdependence, which were coded separately. Finally, there was some overlapping data, or instances where relationships between the actors in one plane influenced or were influenced by relationships between actors in another plane. These were then coded into one of three vertices of the triangle according to which two planes the coded data overlapped.

Rigour

In line with IPA, the team adopted a relativist epistemology that accepts multiple realities (Smith & McGannon, 2017) to apply criteria in a contextually situated and flexible manner (Burke, 2016). We selected four appropriate techniques for rigour that complemented the methodology and design (Smith & McGannon, 2017). Firstly, the second and third authors assumed roles as critical friends by thoroughly analysing the transcripts. Engaging with critical friends encouraged reflexivity by challenging one another's construction of knowledge, and added depth, contributing ideas that the PI might not have considered (Smith & McGannon, 2017). Secondly, an initial discussion between the PI and the third author regarding the PI's prior experiences in sport helped to uncover assumptions and biases that might have an influence on what questions she asked and her interpretations of responses. Although the PI had no pre-conceptions/experiences of synchro, her significant sport experiences were team-based, which she credited for meeting the important people in her life; thus, she was aware of how her own experiences shaped her conceptions regarding relationship development through sport. Thirdly, the research team acknowledged that the coach participant had a graduate degree in the field of sport psychology. It is not exceptional to find a highly educated coach in both sport and academic domains (e.g., Callary et al., 2017). Rather than dismiss the coach's experiences, the PI led an intake interview to better understand how the coach's academic knowledge influenced her coaching. Finally, the PI forwarded transcripts to the participants and asked them to read, add/remove content, or discuss any material with the PI. Two MSks provided notes on their transcripts. This step engaged each participant in a process of iterative consent and embodied a responsive relational ethic in the study, wherein it was assumed that the interviewees knew their context best and could exercise the right to have excerpts removed (Palmer, 2016).

Ethical considerations

The PI acknowledged a responsive relational ethic (Palmer, 2016) by granting that the culture of Masters sport has been historically ignored in research, and that her research was an opportunity to listen to the participants and offer new insights. The relational ethics also meant that despite her background in team sport (as a collegiate player), she conceded she might not be able to fully understand the fine-grained nuances of this cohort, and she would need to be open to understanding ethics through the lens of the participants (Palmer, 2016). For example, the PI followed a MSk's lead during an interview to judge whether responding to a probe

on an observed scenario in practice could cause discomfort. The PI also acknowledged the need to change marginalising practices whereby researchers have historically failed to consider and give voice to women in sport. As a woman who was within a similar age as the coach and many of the MSks, it is likely that there was no perceived gender-influenced power imbalance, but the PI remained attuned to power relations. In many ways, the PI let the coach lead. For example, the second and third interviews, based on the first interview and on observations, allowed the coach to decide what she wanted to discuss; the coach always named the time and place for interviews, and the PI always asked the coach if she could attend practices/events.

With respect to the PI's ethics in the field (Palmer, 2016), she adopted the role of "team fan", which allowed her to refrain from giving pretence that she was a member of the team, while allowing her to interact comfortably with participants in their natural settings. The PI was particularly sensitive to exposing any vulnerabilities of the coach or MSks; she was fully aware that even when anonymised, her accounts may nevertheless identify persons via distinctive social, physical or ethnic characteristics (Erben, 1993). Procedural ethics from the host institution dictated that the PI could not, in interviews, explicitly probe instances of conflict that MSks had with the coach due to the risk of identifying confidential information.

Results

The results present *The Masters Team Sport Model of Interdependence* (TSMI; see Figure 2). In the centre lies the *mutuality* of the relationships of all team members, which is woven into the results in each relational plane. Three relational planes represent different dimensions where members interact with one another: the *C-A dyad* plane, the *Athlete(s)-Athlete(s)* plane; and the *Coach-Group* plane. The TMSI also refers explicitly to what occurs at the *vertices* of the planes, which considers the direct and indirect roles of the coach in the relational experiences of the team and the complexities of involving athletes as mediators in the shaping of mutuality within the team. Finally, the model points to *outcomes* that result from mutual interdependence on the team. The results elaborate upon each aspect, providing illustrative quotes.

Coach-Athlete Dyad Plane

Participants described essential one-on-one relationships, involving the coach and a MSk, that were characterised by interactions representing closeness, complementarity, and commitment.

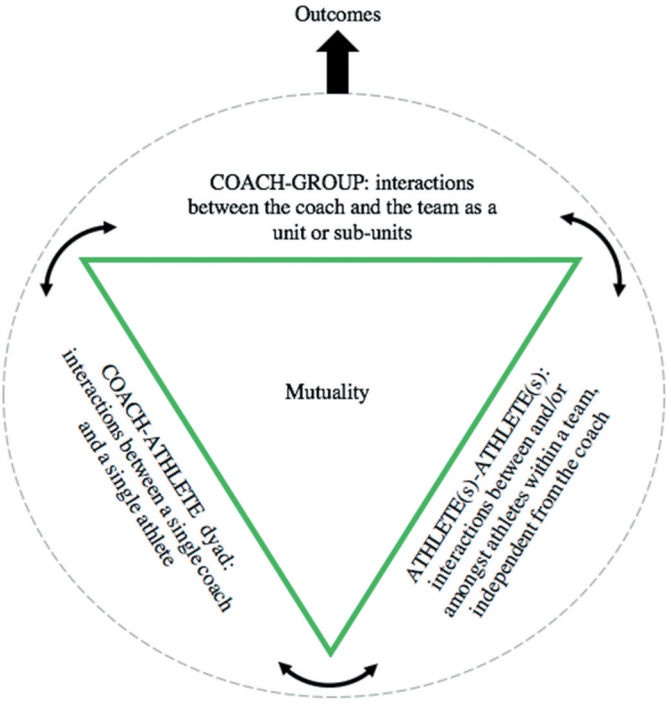

Figure 2. The Masters Team Sport Model of Interdependence (TSMI) represents the complex network of influential relationships that exist in a Masters team including the Masters coach, and Masters athletes.

Closeness

The affective component embodied varying degrees of emotional attachment, representing either sport-focused C-A dyadic relationships, or C-A dyadic friendships that extended beyond sport. Some MSks were content that their C-A relationship focused on functions within sport and did not require an affective attachment, which we refer to as conventional C-A relationships. Danni perceived the role of Maddy, the coach, strictly within the boundaries of sport:

> Maddy drives the team. I think it's very important that she is the leader. If not, no one will be motivated. She motivates us right? Her job is to make sure we do the best we can do, so we have a good programme and we're proud of what we achieve . . . but she's a very social person and I'm not that social really.

Conventional dyads proved to be effective for the coach and predominantly sport-focused MSks, as the coach was able to meet their athletic needs by maintaining reliable C-A relationships with less emphasis on socio-emotional attachment. Yet friendship was an important asset in other dyads. MSks like Sylvie described their relationship with Maddy as a big part of their life:

> I consider her to be among my better friends. We do things outside of skating, we train for the half marathon together, we socialise together … We got into what we would call Maddy-Mondays! She would come over after skating, have dinner, throw laundry in, and we'd chat, it was awesome for both of us.

Maddy reciprocally spoke about her MSks, describing the emotional attachment of having "some of these women as my actual best friends". She described having Sylvie around during one of life's milestone moments, "My boyfriend and I just bought a house and we had Sylvie over for dinner and that was like our first night cooking in our new home!" Our data revealed mutuality – Maddy's close relationships not only positively influenced many of the MSk's experiences in and out of the sport, but her own as well.

Commitment

The coach and various MSks described reciprocal intentions to commit to their sporting relationship over the course of a season, and/or for future seasons. They relied upon one another for short-term commitment. Julia shared how Maddy's passion crucially kept her committed, "If a coach doesn't really feel committed to us, it's hard for us to be committed to them, to showing up, and being consistent". Mutually, Maddy's demonstration of her commitment to each MSk was evident in the way she modelled her engagement and encouraged them to skate.

Maddy adopted accommodating qualities in promoting long-term commitment to individuals. When a veteran MSk was considering exiting the team, she stated:

> I don't know how much fun Ellen had this season. She always says, 'I don't know if I'm coming back'. I am a little worried, so I'll be on her this summer. And next year, I'll do whatever she wants, like 'tell me who you want to skate next to and you can have it'.

In turn, Ellen felt that because her queries were heard and answered, she was more likely to stay committed to Maddy:

> If I feel like she knows what she's doing, and she's willing to listen to my feedback if something's not working, then I am more committed. But if the coach shuts me down like I just can't execute or say anything, then I'm not committed and I leave.

Maddy's receptive coaching style helped to reinforce various MSks' commitment to their dyadic relationship, which served to maintain their engagement.

Complementarity

The coach and many MSks described instances where the behavioural interactions between coach and skater during training were corresponding,

evidencing responsiveness between dyadic members. Such responsiveness was particularly illustrated around delivery (by the coach) and preferences (of the MSks) for technical feedback. Many MSks valued individualised feedback when Maddy tailored styles of delivery to them. Anneka liked that she got the constructive criticism to help her learn, but appreciated how Maddy equally acknowledged when she performed well:

> She will take us one at a time for like four minutes and say, 'okay, you need to do this, you need to do that, this is your strength, this is your weakness. So, work on that, keep going on this'.

Maddy showed complementarity in providing feedback the way MSks wanted. For example, when Maddy described giving Steph feedback, she said Steph would, "not question it, not be offended, not try to justify it, but just be like, 'oh okay, got it'". Mutually, Steph said, "I don't mind being called out because if it's something that I didn't know I'm doing wrong, then I'm like 'oh, show me what it's supposed to be.' I don't want to keep doing it wrong".

Despite Maddy's effort to correspond with individual MSks, the individual needs of the few did not always complement the needs of the many. Due to the coach's priority to meet the needs of the whole team in limited time, there could sometimes be a lack of complementarity, especially when Maddy needed to attend to the team programme at the expense of individualised, dyadic attention. She explained how this depended on the time of the season, "First two months of the season, the team programme comes first, and then I work on the individuals [secondarily] . . . there isn't time for individual coaching". Danni noted, "With 20 people, she has to focus on overall what the programme looks like. It's hard to go into detail and give feedback to everyone early in season. Everyone's focus is to put the programme together and then fine-tune." Danni and Maddy mutually understood the limits that existed for the complementarity of dyadic relationships during these times.

Athlete(s)-Athlete(s) Plane

Interdependence within the team was far more than a sum of C-A dyads. The MSks demonstrated interdependence amongst themselves in the absence of the coach, which necessitated the development of a plane to discern athlete-to-athlete relationships. This theme outlines relationships that existed dyadically between MSks, or amongst a group of MSks.

Peer advising

Teammates exhibited interdependence that promoted learning within the sport. Joan looked to peers to advise her on skill refinement, "Anneka or AJ,

they're really good skaters technically and they look good. If I see them do something, I probably want to do it the way they do it because I know their technique is beautiful to watch". Although Joan was a veteran MSk, she sought out the younger skaters to replicate their style. Erika, who was a newcomer to the team, appreciated how veterans provided advice:

> Sylvie told me 'your only responsibility is to grab the person you're skating towards. The person behind you will catch you – that's not your problem!' So, I can focus on reaching one person as opposed to two. Maddy can't coach me sometimes because there's so much to deal with, so the little tips are nice from everybody else.

Many MSks described how their teammates shared valuable life lessons, enriching their peers' personal development beyond skating. Clare praised a teammate who helped prepare her for a job interview. Further, Julia explained:

> I could ask any person on the team, "Should I do this, or that?" and they will not judge. Even if you don't ask for advice, they'll say 'Maybe you should do this . . . ' But it doesn't come across in a controlling way, they're actually trying to help you.

Each MSk provided examples of how the range of ages among teammates added richness in perspectives. They described the team as a "family" where in and out of skating, "literally and figuratively, we're holding you up!"

Roles and mutual expectations

The MSks adopted their own responsibilities to contribute to the training and social context, which justified various athlete-appointed roles that were mutually agreed upon. Clare articulated roles pertaining to interpersonal, financial, and travel management duties: "Steph's the people, Judy's the money, and Katy books the hotels, puts the schedule together. I think it makes everything easier because it's not always the same person that has to be stressed with everything." Erika described these skater-regulated roles as crucial, "[the roles] are really key to make the team work because Maddy is only one person. She can't keep track of the absences, the dresses and everything". The MSks, especially those like Joan who hustled weekly between skating and demanding jobs, were appreciative: "It's always a 'wow factor' because I just have to show up, get ready, put the skates on and perform!"

The MSks also held expectations of one another, such as the expectation to regularly attend training and competitions. If there were conflicting priorities that interfered with a MSk's ability to attend training, they expected an absent teammate to review the online material (e.g., posted videos of practice) to be prepared for subsequent practices. Joan said, "Not having [a teammate at practice], I find that tough . . . that body that is

supposed to be there [in our choreographed pattern] is not there, so there's a hole." Holly described this succinctly as "respecting everybody else's time" and Sylvie said, "not 'no-showing', not coming late all the time, or if you can't be there, letting everyone know in advance." MSks depended on one another to be present at practice, to avoid leaving a literal gap that interfered with the group's progress.

Coach-Group Plane

Participants described relational, interdependent aspects between the coach and the team as a whole, or with subsets of athletes.

Interdependence within the super-group

Maddy interacted with the team as a whole, in relation to training and pre-competition engagements. She provided group feedback regarding programme or technical information and organisation. Many MSks appreciated how Maddy created 10–20 minute video commentaries regarding the group's performance following training/competition and disseminated them by email.

Maddy also facilitated group discussion and gave the MSks a voice in refining the programme. Anneka responded well to this: "Maddy gives us a lot of latitude, just like 'ok, you guys decide on the arms for this [part of the routine]. You guys, if you have an idea, go ahead'". Maddy left some decisions to her MSks, which allowed them to feel involved in their programme development and optimised her time to pay attention to other needs.

Recognising Maddy's skating experience, the MSks sometimes asked her to join them on the ice to go through the manoeuvres so she could get better perspective on their questions. Steph recounted, "Last practice, someone just said, "Come skate in our line so you can feel what you're trying to get me to feel, or so you can feel how weird it feels for us." In turn, Maddy acknowledged this mutually benefitted her.

Several MSks credited Maddy's on-ice terminology, specifically how she addressed them as "friends", for creating a comfortable atmosphere. Erika noted this helped make the group feel "really welcoming and open to having new skaters". Julia further explained how the social environment that Maddy established added to the team climate:

> If there wasn't a friendship-type relationship then we would lose the whole fun part to the team. And it would also be very like, team—coach *(places one hand above the other)* instead of the coach being part of the team. So having her involved, I think, is really important.

Maddy mutually valued the relationships she was able to collectively build with the women on the team, "If everyone left, I don't know . . . I'd have to

really think about how I want to spend my time. I love skating but, take everyone out of it, would I still want to do as much of this? Probably not." The coach mutually depended on the social team atmosphere to fulfil her experience, just as much as the MSks.

Interdependence with sub-groups

On some occasions, Maddy depended on interactions with subgroups of the team for sport-specific input on how she was doing. Maddy found relations with a group of older, veteran MSks very helpful in establishing her footing when she first started Masters coaching. One of these skaters, Ellen, noted that, "Maddy kept worrying about how we'd react [to her telling us what to do] . . . we were like 'no, you're the coach, tell us what you want. We'll do what you want, that's the deal'". Another veteran, Joan, commented on how Maddy learned over time, "She always used to ask us permission almost. She did change that, Maddy's more assertive now, which she should be". This give and take created opportunities for the coach to learn adult coaching approaches from MSks, while they reciprocally learned skating technique from her.

With a different sub-group, Maddy interacted with MSks who were new to the team. They were still learning about synchro, and to accelerate their acculturation and skill development, she explicitly gave them more frequent coaching feedback. She felt the new MSks were receptive, "Erika and Danni have the perfect personality for what I want a new skater to be. They don't have egos and are both very methodological with how they apply my feedback." Maddy and the new MSks mutually depended on each other. From Maddy's special attention, the new MSks learned the sport more efficiently, and because of their positive attitudes and receptivity, it took pressure off Maddy to integrate them in the team.

Social subgroups that included the coach formed due to lifestyle factors related to culture, age, or similar interests such as non-synchro sporting activities. Clare explained, "Everyone gets along regardless of whether you hang-out outside of skating or not. Some become closer by virtue of [being a similar] age, sometimes it's interest. A lot of them do dragon boat together so that's another opportunity to bond." Ellen agreed: "[Sub-groups] are usually around age. You have some that are able to transcend. Like Maddy is part of every group because she's just so curious by nature! It's one of the things we love about her".

Not all MSks found themselves in these coach-sub-group relationships. Danni did not find this problematic. Although she knew they existed throughout the team, she did not feel excluded by social subgroups, nor was she concerned that Maddy comingled with each subgroup. She stated, "Some people have been skating together for a long time, some do other sports and activities together. But I don't feel that these [sub-groups] impact the rest of the team, or people feel excluded by that." Maddy understood

some MSks' priorities did not always allot for social activities outside of synchro, but to keep an inclusive environment, she kept the possibility open. "I think everyone knows that I'm available [outside of the sport context] to anyone who wants. If they invite me to do things, then I'll do those things, or when I organise, I invite everyone."

Vertices: the dynamics between planes

Interactions that occurred in relationships in one plane often influenced interactions in another plane. Such interactions traversed the vertices of the TSMI, representing dynamic aspects of interdependence. They also underscored how the coach could indirectly influence, or be indirectly influenced by, considerations within the athlete plane.

C-A←→ C-Group

Dynamic interdependence was evidenced when interactions within a C-A dyad influenced interactions between the coach and team, or vice versa. To illustrate, Maddy recounted how she had encouraged the team to do two full run-throughs of their programme at a practice, which was a taxing ask, and she noted many MSks were feeling lethargic. She turned to Steph privately, confiding she was unsure, asking, "How many [run-throughs] are you feeling?" Steph responded, "Well, I'm debating between zero and one". Maddy entrusted this dyadic feedback to decide to omit run-throughs for the team. This type of dynamic, where the C-A dyad informed coach decisions with the whole team, was determined by Maddy's solicitation of information from particular, trusted (but not all) dyads. Maddy admitted, "Lots of skaters I wouldn't ask those kinds of things, because they wouldn't be thinking about the whole team, only about themselves".

C-A←→ Athlete(s)-Athlete(s)

Translation across this vertex represents how interactions within a C-A dyad influenced interaction between or amongst athletes, or vice versa. For example, Julia described "a good system of communication with Maddy because Steph talks to people on the team, what they want, and then talks to Maddy and vice versa." Steph acknowledged she was a liaison between the coach and her teammates, "I get complaints [about things Maddy does], things skaters bring up during practice. Maddy and I have discussions about that". Conversely, Maddy used her dyadic interactions to encourage a MSk to peer mentor another MSk. Clare described how Maddy sat her down and coaxed her to take Erika, the new, youngest skater, "under her wing". Maddy had anticipated the two would be a good match and noted that Clare enjoyed this peer role. This example illustrates how the coach

used poignant dyadic relations to indirectly influence relationships in the athletes' plane.

Athlete(s)-Athlete(s)←→ Coach-Group

Interactions amongst athletes influenced interactions between the coach and the team unit (super- or sub-groups). The MSks often refined strategies amongst themselves and then transferred this information from their respective athlete group to the coached team context. Steph described a scenario where the MSks had been working on their own to resolve an element, "We'll do a quick check along our line – 'Is this what we're supposed to be doing?' If there's no consensus among our line, then we'll bring it to Maddy". This influence also went the other way, in which the coach-group interactions would transfer information to interactions between athletes. The MSks acknowledged how Maddy's approach to setting a friendly and collegial tone in the coached team context carried over to interactions when she was not present. Sylvie remarked, "How she coaches the team influences all the relationships because she accepts feedback and she creates a vibe where, it's ok to say things, but also that you treat people with respect."

Outcomes of team interdependence

In the first month of the season, the MSks and coach outlined what they anticipated to be optimal outcomes and desired sport experiences. While they were a competitive team, their season-long goals varied from working as a team, improving skills, and getting a workout, to forming relationships and having fun. Maddy stated "I'm striving for them to get workouts in, to have positive interpersonal relationships with the people they're there with, and that they improve. Those are really my only goals. Anything above that, bonus." Julia described the same goals:

> I'm really big on team. So, we're all working together and there's the least amount of conflict. And not just the team members are working together, but we're working with the coach and she is working with us, not just 'I'm telling you what to do'. At the same time, not the team telling her what to do the whole time. I'm big on having fun as a team and as an individual. It's not just about skating. Sometimes, someone's having a bad day and we just all make her day better by working together. I also like fitness, I like something that kicks my butt that I have to really work hard at.

Later in the season, the MSks were asked if the outcomes of their season matched their initial aspirations. Almost unanimously, they discussed outcomes related to the Regionals competition weekend as the highlight, but the reasons *why* varied from the team performance scores, to the collective feeling of unity. Ellen illustrated:

> The two skates at Regionals were awesome. I personally had little boo-boos, but the feeling that we got on the ice collectively . . . yeah, it was nice to have that feeling. It was this team, and we had two [skaters] new to synchro, and lots of new people. It's kinda hard to get a team to gel together, but we walked off the ice and it was like, you know when you "drop the mic?" That was the moment.

Maddy followed up:

> Regionals was great because everyone got along really well, we had a lot of fun as a team, and the two skates matched what they've been practicing, and then the scores matched what we expected. Everyone left Regionals feeling like we did really well, we're a good team, and we had fun. And that's all I want: we reached our potential.

Anneka described how she felt the team's focus and collective "team spirit" were more about building unity than performing to win, and were a reward for their interdependent efforts:

> The team spirit makes all the difference. [The spirit was] just very respectful, fun. I think what people wanted to do this year was not so much fitness, for example, it wasn't so much a performance year. I don't want to say we didn't care about our performance because I think we did, but it was more, 'let's be together and have fun'. All the ingredients were there just to have a positive, fun, experience!

Anneka touched on the conformity involved in being on a highly interdependent team. She alluded to the benefits, but also about potential costs of having to conform to group goals for team spirit and cohesion.

Discussion

The aim of this study was to explore facets of interdependence between dyadic coach-athlete relationships and beyond the dyads, in the broader team setting. The research team, referred to throughout this discussion informally as *we*, also provided insight into the unique role that a coach plays in establishing and building relationships in an adult sport team setting. Our data were framed within the TSMI, which illustrates how mutuality is embodied in various interdependent planes within a team, resulting in desirable outcomes as described in the experiences of the coach and the MSks.

The 3Cs+1 model

Results for the C-A dyad plane affirm that dyadic relationships between the coach and MSks embodied characteristics of closeness, commitment, and complementarity (Jowett, 2007). There were multiple findings that reflected nuances for adult sport. First, dyadic C-A relationships were not bounded by sport. Whereas in youth and younger high performance sport, we would not expect a coach to be a friend with an athlete and interact with them in

a close socio-emotional manner away from the sport venue (in fact, this would be highly problematic and ethically concerning), many of our MSks wanted this type of friendship. Visiting skaters at their homes and interacting with them "extra-curricularly" was viewed as important by both the coach and many skaters, with each recounting benefits of this type of closeness. These findings ask whether a coach should be a friend of their athletes. On one hand, this facet of closeness might characterise a healthy relational aspect of coaching adults, yet friendship can also result in favouritism (thereby marginalising some).

In terms of commitment, the skaters wanted the coach to overtly display her commitment through enthusiasm and modelling of wholistic engagement in what she was preparing for them. In Masters sport, the coaching research suggests that a coach's enthusiasm for leading/managing adults cannot be assumed as many coaches wear multiple "coaching hats", with the Masters hat being the least important or an afterthought compared to their roles with other cohorts (Callary et al., 2017). Thus, whether the coach can show investment and immersion in the adult athletes' experience is critical, as is the extent to which she can display accommodating qualities (e.g., tailoring scheduling demands for an athlete).

In terms of complementarity, it was noteworthy how some MSks noted the extent to which the coach tailored her constructive criticism in either a public or private fashion. MAs in Callary et al. (2015a) study noted the importance of coaches knowing how, to whom, and when to give feedback to MAs who had different preferences. However, this is the first study to link this idea to complementarity of behaviours. Finally, our findings revealed the struggle to deepen complementarity in what adult athletes saw as a pragmatic but real constraint on how extensively the coach could interact with them within a team setting. The MSks recognised their coach had to forfeit time one-on-one to attend to the team collectively. This extends Poczwardowski et al.'s (2006) suggestion about distinct group-related cohesion as influencing interdependence in dyads within a team.

An expanded conceptualisation of interdependence

The most noteworthy finding in this team context, was interdependence could not be exclusively conceptualised according to dyadic elements. We also found that a team does not function as a collective of C-A dyads. Jowett et al. (2005) suggested that coaches and athletes in individual sports (e.g., athletics, swimming) may have more opportunities to develop deeper interdependent relationships and described team sport C-A relationships as potentially "*hierarchical, more formal, less intimate*, and *more flexible*" (p. 159; italics added). Though we cannot compare between individual and team sports, we think it is important to appraise our results with respect

to these features. Our findings showed the coach's willingness to give latitude to adult skaters to sometimes direct themselves and provide feedback to the coach (to which the coach was expected to adapt), evidencing autonomy-supportive coaching practices (Rocchi, et al., 2013). Indeed, in a study examining best practices for coaches re-engaging adult women in sport, Cronin et al. (2019) found that it was important for coaches to personalise the sport experience through choice and to balance autonomy. In the present study, similar autonomy-supportive practices moderated traditional notions of hierarchy between the coach and athletes. Further, friendships, which were manifest in the sport venue and continued outside of sport, replaced formality and promoted intimacy. The C-A relationships were very flexible in the synchro team, especially because of additional considerations for interdependence such as how the MSks built relationships amongst themselves. The importance of flexible and dynamic interdependence means that, even if a single C-A dyad did not demonstrate high interdependence, this did not necessarily preclude either the coach or the MSk from experiencing positive outcomes related to their overall experience in the team, because the nature of interdependence and mutuality extended beyond dyads and was embodied across multiple planes.

We interpreted co-orientation as something that could manifest within a dyad (the coach being "on the same page" with many athletes in their one-on-one interactions) which is in keeping with Jowett's (2007) conceptualisation. However, we interpreted co-orientation as mutuality that was embodied across different planes in the team more broadly, manifested in their interdependent, collective strivings. We submit that that the 3Cs have a place *within* the overall team interdependence model. For example, when asked about commitment, MSks attested they were committed to the coach but *also* to their teammates, and to the team entity and to their love of the sport. When asked about complementarity, the MSks described reciprocal and corresponding behaviours that complemented the coach, but also their peer MSks. Indeed, there was evidence of the 3Cs in the mutuality of the coach and the team, in conventional team venues (e.g., at practices, at competitions, in dressing rooms, team buses), at the super-group and subgroup levels. In sum, to understand the complexities of the Masters synchro team, we needed to extend conceptualisations of interdependence in sport, through the use of the TSMI.

When considering the 3Cs+1 model, there appears to be far more dialogue characterising the development of relationships, and less dialogue on the consequences of those relationships. Our results offer insights into these consequences, at least in terms of how members experienced outcomes of interdependence. In this team, mutuality manifested from a series of meaningful social engagements, training experiences, and performance situations. These outcomes were variably described as forming relationships

and social bonds, being held to account for investing in training, skill improvement, feeling part of something bigger than oneself in readying for team competitions, collective feelings of unity, and fun. Due to the mutuality in the team, many interviewees, including the coach, noted that these outcomes were experienced "as a team and as an individual". These outcomes appear to satisfy many of the unique involvement opportunities that MAs seek in adult sport and represent descriptions of a quality Masters sport experience (Young, et al., 2021).

Implications of the TSMI for masters coaches

An important piece to note with regards to the coach's position in the TSMI is how it frames her roles and responsibilities. The TSMI depicts the coach as having a direct role on two planes – - the C-A dyad and in the C-GROUP plane. This direct role aligns with traditional models of coaching, such as Côté et al.'s (1995) coaching model, where the coach is placed at the centre to depict the centrality of the coach's role in athlete development, athlete management, and coach-directed decisions. However, our findings did not permit us to assign a coach a central, directing role within the Masters team. Instead, the TSMI accepts that the coach's role in leadership is shared, can be direct and indirect (i.e., can be mediated through athletes), and needs to be accepting of relational influences that happen outside the coach's auspices or influence. Our findings indicated non-conformity to traditional coaching ideologies. Instead, the coach is a co-actor of equal status as the MSks, despite having leadership status, and is depicted as such in the TSMI. This speaks to the shared power relations that other research has uncovered in coached Masters sport, whereby the MAs drive the process as much as the coach does (Callary, et al., 2021; MacLellan, et al., 2018).

The TMSI outlines how, on an interdependent Masters sport team, the coach may adopt substantially influential, dynamic, *indirect* roles towards the plane that represents social exchanges among the MSks. Following from their proposition that coaches play a central role in individual-sport athletes' experiences, Jowett et al. (2017) stated that "the relationship developed between the athlete and his/her coach is of prime importance for the athlete" (p. 17). Our results, collected in an all-female Masters team, both complement and nuance this statement. They suggest that within an adult team sport, the coach plays an important role in terms of technical and organisational skills in the Coach-Group plane, can have a very important influence in individual dyads, and is a symbiotic team constituent with direct and indirect responsibilities. This means the MSks' experiences are influenced in part by the coach and her actions, and in part by other MSks and the relationships developed therein. The athletes themselves, including key leaders and sub-groups, can effectively mediate

the coach's leadership when she is not supervising or present. Our findings broach the question of how these athletes are selected and/or develop, and the attributes of effective intermediaries that allow them to be viewed benevolently.

Overall, the TSMI suggest there is more equal weight (ergo, an equilateral triangular model) placed on the coach and the athletes to collaborate to realise sport outcomes. This finding of collaboration and interdependence as a shared contract, aligns with recent research on Masters coaching. MacLellan et al. (2018) noted the importance of a Masters coach using two-way communications, affording opportunities for athletes' self-directedness, and explicitly attending to and reciprocating the efforts of adult athletes. One of the emerging aspects of coaching MAs is that a coach may need to become comfortable with relinquishing control, for example, in allowing athletes freedom to resolve challenges in an unsupervised manner (MacLellan et al., 2018). Importantly, the TSMI suggests that coaches need to be comfortable with being less directive, assuming indirect roles in the optimal functioning of their team, and recognising that much happens in terms of team interdependence when they are not present (i.e., in the athlete(s)-athlete(s) plane). The TSMI, built in the context of Masters sport, therefore promotes trusting athletes and cultivating collaborations.

This study also has broader implications for understanding team-based Masters sport. Within their sport, MSks relied upon one another to be challenged, and to hold each other accountable to be better versions of themselves as athletes. Elements of peer advising/mentoring were evident, which had a telling impact on the team interdependence. Our findings indicated multiple peer advisory relationships amongst skaters that enhanced the lifestyle and training development of teammates. These types of mentor-protégé relationships benefit both parties and encourages peer learning over the course of multiple seasons/generations of a team.

Limitations, future research and conclusion

We acknowledge the PI may have had limited ability to speak to conflicts that (potentially) existed within the team because of procedural ethical constraints on not probing these instances in interviews. Sharing details of certain stories could have exposed both the teller, and the individual(s) featured in the stories, which could have had negative consequences for the coach, skaters, and/or relationships within the team. Thus, there is the possibility that instances related to costs of interdependence in this team were underrepresented in the data. Participants did not speak to tension/conflict on the team, though some spoke to issues in previous seasons. Regardless of whether tension manifested, none of the narrated conflicts were so detrimental as to outweigh the rewards that participants reported.

Research has only recently begun to consider concepts of communication and conflict in relation to the 3 + 1Cs model (Wachsmuth, et al., 2017). Future research could examine conflict within relational scenarios and environments of Masters sport. Finally, while the notion of interdependence could be understood in various team venues, including those outside of the realms of sport, our findings are constrained to an all-women context. Future research could inquire about relationships and interdependence within an all-men or mixed-gender sample. Future work could compare the variability of Masters team climates and experiences related to the TSMI, across multiple groups or sports.

In sum, this study described the nature of the C-A dyadic interdependent relationships in Masters sport, and the broader development of interdependence throughout a Masters synchro team. Findings illustrated the direct and indirect roles that a coach played in establishing and building relationships within the team. The Masters TSMI visually represents the diverse yet mutually interdependent relationships among members. In a female Masters team sport, interdependence exists beyond the C-A dyad, and the coach is not necessarily the *central* determinant of relational, social and developmental outcomes for the athletes. Rather, the group functions interdependently on three social-relational planes and mutual co-orientation is a product of dynamics within and across these planes.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Social Sciences and Humanities Research Council under Insight Grant [435-2018-0968]. The authors whose names are listed above certify that they have no affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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