1

2

3

4

5

6

7

8   **Exploring Perceptions of Group Processes in Ice Hockey Officiating**

9

10   Submitted to: *Journal of Applied Sport Psychology*

11

12   Submitted: December 1, 2016

13   Resubmitted: April 10, 2017

14

15

16

17

18

19   Main Body Word Count: 6976

20

1   **Abstract**

2   Understanding factors that influence sport officials' performance is vital to ensuring fair sport

3   competition. Through semi-structured interviews ($N = 17$), we explored officials' perceptions of

4   group processes that occurred among ice hockey officiating teams. Participant responses

5   revealed numerous ways that group processes were present within officials' interactions, and two

6   unique characteristics involved the transient nature of officiating groups (frequently performing

7   with different officials) and intra-team competition pertaining to post-season assignments. In the

8   discussion, we expand on the unique nature of officiating groups, synthesize activities in which

9   officials seek to enhance groupness, and provide insights for future interventions and researchers.

10

11   *Keywords:* group dynamics, sport officials, intra-team competition, performance psychology

1   Exploring Perceptions of Group Processes in Ice Hockey Officiating

2   Peak athletic performance requires perceptual-cognitive skills (e.g., anticipation; Müller

3   & Abernethy, 2012), social support (e.g., elite coaching; Bloom, Crumpton, & Anderson, 1999),

4   and talent development (e.g., sampling sport; Côté, 1999). While less frequently studied,

5   referees, assistant referees, umpires, and linesmen/lineswomen (collectively termed *officials*

6   herein) represent central sport figures, and understanding their peak performance is equally

7   important. Officials' tasks are complicated, as they attempt to make rapid, accurate decisions

8   that influence competitive outcomes. Soccer officials, for instance, make up to 200 observable

9   decisions per match (Helsen & Bultynck, 2004). Though officials have been researched to

10   understand athletic performance, it is beneficial to study officials for the sake of optimizing

11   officials' performances (Rix-Lièvre, Hancock, & Côté, 2014). The first step in such an endeavor

12   is to identify criteria that facilitate successful performance, enabling officials to learn and apply

13   those criteria. Mascarenhas, Collins, and Mortimer (2005) proposed five skills required for

14   officials' success: (1) fitness/positioning; (2) knowledge/application of the law; (3) game

15   management; (4) contextual judgment; and (5) psychological features. Certainly, these skills

16   outline requisite criteria for peak individual performance. Overlooked by Mascarenhas and

17   colleagues, however, are the complexities of teamwork. In ice hockey, up to four officials (i.e.,

18   two referees and two linesmen) work collectively during competition. Therein, officials possibly

19   engage in interdependent actions where one official's performance influences, and is influenced

20   by, in-game partners. Understanding the critical role of group dynamics in these interactions,

21   therefore, is paramount to understanding officials' performance.

22   Group dynamics describes "the nature of groups, the laws of their development, and their

23   interrelations with individuals, other groups, and larger institutions" (Cartwright & Zander, 1968,

1   p. 19). Individual and group factors influence how groups function, as do cognitions and

2   behaviors of individuals in the group. One official rarely adjudicates a competition, and group

3   processes are likely present. For example, officials make collective decisions, plan movements,

4   and communicate—described as effective coordination (i.e., members act in complementary

5   ways to succeed; Eccles & Tenenbaum, 2004). Interactions in and around competitions might

6   represent group-based teamwork, including maintaining positive interactions among members, or

7   preparing, executing, and evaluating group performances (McEwan & Beauchamp, 2014).

8   Social psychology theories might explain how group processes satisfy desires for group

9   membership and influence individual experiences. Researchers suggest humans have an innate

10   need for inclusion (Baumeister & Leary, 1995; Brewer & Caporael, 2006), and although officials

11   perform individual tasks, an innate need to belong is likely present and should be considered.

12   Additionally, officials typically belong to larger organizations (e.g., officials' associations) that

13   provide structure and guidance for members. Such organizations might constitute a core element

14   of officials' social identities (e.g., Tajfel & Turner, 1985). Since group identity influences a

15   range of outcomes from efficacy (e.g., Rubin & Hewstone, 1998) to adherence behaviors (e.g.,

16   Spears, Doosje, & Ellemers, 1999), understanding the specific groups to which officials identify

17   is important. Whereas officials belong to larger organizations, competitions are officiated in

18   smaller groups, highlighting that task-specific performance subgroups exist. Thus, the contexts

19   of group membership are important considerations when investigating officials.

20   Applying the aforementioned group processes to enhance officials' interactions and

21   performance depends on whether officials represent legitimate groups. This is significant, as not

22   all collections of individuals conceptually and practically represent groups (Carron & Eys, 2012).

23   Carron and Eys (2012) consolidated five characteristics that must be satisfied for group

1   classification: (1) members must see themselves as a group (*self-categorization*; Tajfel & Turner,

2   1985), (2) members likely influence one another (*common fate*; e.g., Fiedler, 1967), (3) the

3   group's existence is rewarding to individual members (*mutual benefit*; e.g., Bass, 1960), (4) the

4   group experiences emergent roles, norms, and leadership (*social structure*; Newcomb, 1951),

5   and (5) members interact frequently (*quality interactions*; Shaw, 1981). Despite belonging to a

6   larger organization, officials commonly perform with partners they have rarely, or never, met.

7   This calls into question whether officials meet the five characteristics for group classification.

8   Considering whether a collection is a group—and by extension, experiences group

9   processes—is conceptualized as entitativity (i.e., the degree to which a collection of individuals

10   is an entity; Campbell, 1958). The degree of entitativity (also termed *groupness*) could result

11   from the group's physical properties, or individual perceptions of group members (Hamilton,

12   2007). Recent findings indicate that athletes who perceive increased groupness also experience

13   greater commitment, intentions to return, and identity perceptions (e.g., Martin, Balderson,

14   Hawkins, Wilson, & Bruner, 2017; Spink, Ulvick, McLaren, Crozier, & Fesser, 2015).

15   Considering their unique nature, obtaining a clear understanding of how group processes apply to

16   officials is critical, especially since group processes are more potent in true group environments,

17   compared to mere affiliations (e.g., Estabrooks, Harden, Johnson, & Pardo, 2014). Therefore, it

18   was important herein to investigate group processes among officials, exploring the extent to

19   which officials believed group processes to be evident in their interactions. Such knowledge is

20   imperative to optimizing group performance and officials' personal experiences, achieved

21   through interventions, policies, or broader organizational practices.

22   Beyond exploring officials' group processes, the present study serves as a foundation for

23   research oriented toward improving officials' performance, retention, and social experiences.

1   Group cohesion elevates athletic performance (Carron, Colman, Wheeler, & Stevens, 2002), and

2   possibly, the same is true of officials. This is relevant, as officials' performances typically

3   require teamwork to execute tasks. Secondly, officials' performance requires a complex skill set

4   necessitating talent development, which is undermined by high attrition (VanYperen, 1998).

5   Consequently, the officials' talent pool is prematurely minimized, leading to advancement based

6   on necessity rather than competence (Auger, Fortier, Thibault, Magny, & Gravelle, 2010).

7   Suggestions for reducing officials' attrition include enhancing positive affect (VanYperen, 1998)

8   and facilitating social connections (Hancock, Dawson, & Auger, 2015), both of which are

9   influenced by group processes. Thus, our purpose was to study the nature of group processes

10   and group characteristics among ice hockey officials. Considering this research was initiated on

11   an assumption that groups influence many aspects of officials' experiences (e.g., on-ice

12   performance; social interactions) we specifically sought to: (1) explore the group processes

13   revealed within these groups—including whether ice hockey officials met the five characteristics

14   needed to constitute group members (Carron & Eys, 2012), and (2) study how group processes

15   shape officials' personal experiences and performances. In doing so we believed we could

16   identify whether officials constitute groups, making inferences for improving officials'

17   performances.

18   **Method**

19   **Qualitative orientation and methodology**

20   The lead author is an experienced ice hockey official (he officiated in the Canadian

21   Junior Hockey League), and his belief that group processes were relevant for officials prompted

22   the research. We applied a realist ontology and post-positivist epistemology couched within a

23   critical realist orientation (see Maxwell, 2012) that guided the current methodology. From a

1   realist stance, group concepts like status, performance, or cohesion are natural group processes

2   that emerge among officials and represent an underlying reality. We thus presumed that personal

3   experiences could be probed and interpreted using existing theories and research pertaining to

4   group dynamics in sport. By using critical realism we acknowledged the fallibility of claims of

5   generalizable laws and, instead, used theory as a way to describe individuals' unique experiences

6   in groups (e.g., referees vs. linesmen; newcomer vs. veteran) and to explain how these

7   experiences may be impacted by group structures.

8   In line with this orientation, we utilized a generic descriptive methodological approach

9   (i.e., Caelli, Ray, & Mill, 2003; Sandelowski, 2000) by adopting common tools from dominant

10   qualitative perspectives. Our descriptive methodology applied to data collection, sampling (e.g.,

11   purposeful sampling and semi-structured interviews: Patton, 2002; Polkinghorne, 2005) and

12   thematic analysis (Braun, Clarke, & Weate, 2016). We also adopted tools from more specific

13   methodologies (e.g., collaboration during analysis; Hill, Thompson, & Williams, 1997). Each

14   tool was employed as a piece in an overall methodology with the goal of describing officials'

15   experiences with groups.

16   **Participants**

17   We used purposive sampling, identifying participant criteria that enabled descriptive

18   interviews (Patton, 2002). We sought elite amateur ice hockey officials with at least two years'

19   experience in the Canadian Hockey League[1] or the Canadian Junior Hockey League[2]. In these

20   leagues, officials perform in four-person teams, with two referees (i.e., responsible for awarding

---

[1] The Canadian Hockey League (athletes 16-20 years) is a national amateur ice hockey league, which includes a small percentage of international players. It is considered the most elite amateur ice hockey league in the world, producing 40-50% of the draftees for the National Hockey League (http://www.nhl.com/ice/page.htm?id=31877#2).
[2] The Canadian Junior Hockey League (athletes 15-20 years) is a national amateur ice hockey league, one tier below the Canadian Hockey League. Players often attain collegiate scholarships, with a small percentage being drafted to the National Hockey League. We recruited from one branch of this league, the Central Canada Hockey League.

1   goals and assessing penalties) and two linesmen (i.e., responsible for monitoring off-sides and

2   icings). We sampled participants until saturation was reached (i.e., iteratively analyzing data to

3   identify when few novel concepts were revealed), yielding 17 male officials (M_{age} = 30.53 years,

4   SD = 5.62, range = 22-40; $M_{experience}$ = 13.0 years, SD = 7.17). This represented 10 referees

5   (coded R1 to R10) and seven linesmen (coded L1 to L7). Ten officials were employed in the

6   Canadian Junior Hockey League; seven worked the Canadian Hockey League.

7   **Procedure**

8   We obtained institutional research ethics board approval before recruitment, and

9   participants provided written consent prior to the interviews. The Referee-in-Chief for each

10   league was contacted via email, wherein the authors explained the project purpose and data

11   collection process. The Referee-in-Chiefs were asked to forward the email to all association

12   members, asking interested officials to email the research team regarding participation.

13   Face-to-face semi-structured interviews were conducted by the first (n = 14) and second

14   (n = 3) authors. Both interviewers engaged in online journaling after each interview, describing

15   main themes discussed by the participants, as well as researchers' insights. Every three to five

16   interviews, the interviewers spoke on the phone to share insights and reflections. The interviews

17   were conducted in mutually convenient public spaces over two summer months (participants'

18   off-season). Interviews averaged 40m51s (range: 30 to 50 minutes; transcribed verbatim totaling

19   122,386 words). Following initial analysis, officials were emailed their coded transcripts and a

20   summary of results. We encouraged participants to provide feedback or to identify discrepancies

21   between their intended meanings and our interpretations; however, no participants replied.

22   **Interview Guide**

1   Interviews were guided by open-ended questions (see Appendix A) and probing

2   questions when necessary. Interviews began with initial questions to establish rapport (Patton,

3   2002) and develop a shared sense of each participant's pathway through officiating. We

4   encouraged participants to describe the nature of their interactions with other officials, contrast

5   their positive and negative experiences, and reflect on how the groups to which they belonged

6   affected their experiences. Core questions included, "Can you discuss some of the things that

7   might lead you to consider yourself to be part of a group or not?" and "Can you provide

8   examples to demonstrate how feeling close to your fellow officials enhances or hinders your

9   performance?" Actual interview processes shifted over time, and emerging concepts were

10 probed in later interviews. For example, it emerged that group processes existed for on-ice

11 performance (i.e., task-specific context), peer relationships (i.e., social context), and officials'

12 organizations (i.e., organizational context). Interviewers probed each potential context.

13 **Analysis and Validity**

14   Interviewers completed post-interview reflective journals, which were shared with the

15 research team through an online document. Entries detailed the core concepts participants

16 discussed, researcher observations, and emerging concepts. The goal of journaling was to

17 maintain sensitivity to the ways that the researchers' prior experiences and the research process

18 shaped interviews (Mays & Pope, 2000). This helped challenge assumptions and allow all team

19 members to take on the role of critical friends, while ensuring interviewers could use shared

20 knowledge to advance toward later interviews (Bradbury-Jones, 2007; Hill et al., 1997). This

21 process laid a foundation for thematic analysis, where the objective was to move beyond

22 descriptions of group experiences and advance toward an understanding of officials' group

23 dynamics both in and out of competitions (e.g., Braun et al., 2016; Patton, 2002). Phase one of

1   analysis was open coding, which was conducted by the third author. After reading transcripts

2   and interviewer journals, the third author reviewed the interviews on a line-by-line basis to

3   identify descriptive content (e.g., participants' experience) and analytical codes (e.g., feeling

4   powerless as new officials); emergent concepts were labelled using NVivo®. This process

5   revealed 82 unique open codes, primarily grouped by the third author into 18 categories.

6   Regarding the phase of developing, refining, and naming themes, the research team

7   independently reviewed the coded interviews before hosting a conference call to discuss how to

8   represent the data using core themes. During the conference call, it was noted that the majority

9   of officials' group experiences could be positioned rather effectively using Carron and Eys'

10   (2012) framework. In fact, 14 of the 18 categories could be collapsed within one of the five

11   defining characteristics of groups (Carron & Eys, 2012); four categories fell outside group

12   dynamics theory, and were retained within two themes that depicted the unique forms of

13   transience and competition that underpin officials' groups. The first author then returned to the

14   interviews and notes to interpret the data using this framework, identifying representative quotes

15   and experiences that supported descriptions of each theme. As Carron and Eys' (2012)

16   framework was applied to represent the data *after* initial coding, this thematic analysis was

17   neither inherently inductive nor deductive. Rather, it represents abductive reasoning (Ryba,

18   Haapanen, Mosek, & Ng, 2012) as it acknowledged participants' unique group experiences,

19   while recognizing an opportunity to frame some of those experiences using characteristics that

20   underpin what it means to be in a group.

21   For validity, it is important to recall our critical realist orientation where numerous forms

22   of validity are sought. Whereas internal generalizability to participants' experiences and

23   evaluative validity are considerations, the most central forms of validity outlined by Maxwell

1   (2012) include descriptive validity (i.e., accuracy of an account and the extent that it represents

2   participants' experiences), interpretive validity (i.e., whether the description holds true to the

3   experiences and perspectives of the participants) and theoretical validity (i.e., the extent that a

4   given interpretation presents a legitimate explanation of a phenomenon). In this light, an

5   understanding of officiating groups is gained when effectively describing and interpreting

6   participants' experiences, and when forming legitimate explanations of key constructs and how

7   they relate to one another.

8   Descriptive and interpretive validity were addressed by adopting reflexive processes that

9   recognized the unique positions of varying participants, interviewers, and research team

10   members. Notably, this project was conducted as a research team, where each member

11   contributed to the design, interviewing, transcribing, analysis, and writing. Journaling provided

12   opportunities for teamwork to influence the interview and analysis process, and allowed each

13   member to challenge assumptions and advance interpretations of the interviews despite

14   geography separating the authors. The first and second authors also entered the project with rich

15   personal experiences in elite ice hockey (first author is an official; second author was a player)

16   that informed the research—especially when interpreting sport-specific norms, rituals, and

17   values. Regarding theoretical validity, we targeted participants' varied experiences by

18   contrasting reflections of referees and linesmen, as well as veterans and relative newcomers, to

19   explore how differences in status shaped experiences (e.g., comparison: Maxwell, 2012; constant

20   comparison; Corbin & Strauss, 2010). Not only did this approach provide a detailed

21   understanding of group interactions among ice hockey officials, it also allowed us to incorporate

22   group dynamics theory in the latter stages of analysis, which enabled opportunities to better

23   explain various features of officiating groups.

1   Whereas 'criteria' of methodological quality often fail to accomplish validity (see Burke,

2   2016; Sparkes & Smith, 2009; Tracy 2010), methodological coherence and meaningful

3   contributions are two common criteria that should be considered in the current investigation.

4   Although the current study adopted tools from several methodologies, the project was guided by

5   a critical realist theoretical orientation and applied methodological tools that suited this

6   orientation. Although some methodological tools are not essential to a realist ontology (i.e.,

7   journaling and varying the interview approach with time), they were selected to enhance

8   interpretive validity within this novel context. Additionally, we sought a significant contribution

9   with meaningful claims to officiating research. By seeking participants who belonged to similar

10   contexts in a similar geographic region, we sought a rich depiction of experiences from distinct

11   actors who were bound within a broader system of elite Canadian ice hockey. This did not

12   represent a collective case study approach (see Hodge & Sharp, 2016), but it was an attempt to

13   develop meaningful claims in the participants' context. In other words, by drawing all

14   participants from a single context we could learn norms and shared experiences in that context

15   and build upon them to strengthen the link between our findings and applied practice.

16   **Results**

17   Officials discussed task-focused interactions among four officials collectively performing

18   on-ice, as well as communication that took place before, during, and after games. Group

19   interactions also extended outside of the arena through social activities, friendships, and

20   mentorships that represented informal group settings. Lastly, participants noted that governing

21   bodies facilitated group interactions. Collectively, officials described experiences across

22   organizational, task-specific (i.e., on-ice performance), and social contexts—with each context

23   representing unique group characteristics and considerations. Embedded in these contexts and

1   the group's impact on the individual, participants reflected on the nature of group-related

2   processes they experienced. Using Carron and Eys' (2012) framework, data were primarily

3   grouped into five themes representing central group characteristics. Two additional and unique

4   themes were officials' transient nature and intra-team competition.

5   **Characteristics that Constitute a Group**

6   **Self-categorization.** As an essential characteristic for the classification of a group, all

7   participants perceived themselves as group members. On one hand, officials consistently

8   referred to the four individuals on the ice as a team, "We're a team on the ice—it's a team

9   game…we're the ones working together, we're the ones coming together, and we're the ones that

10   have to stick together [and] get each other's backs during the game." (R8) Alternatively,

11   participants referred to their broader affiliations and identity as hockey officials, including

12   descriptions of the larger officials association:

13   [We call ourselves] Team 21—we're the 21st team in the league, there are 20 actual

14   hockey teams. We're a team out there whether you like the [other] guy or not. You have

15   to respect him and you do have to be a team for that two and a half hours. For me, I think

16   it's really important and the more I do this, the more committed I feel to that idea. (R7)

17   Officials stated that these shared identities ultimately facilitated group pride:

18   It's a pretty proud thing to go on the ice. Especially in the playoffs with a pretty packed

19   arena knowing that you're the four that kind of control the atmosphere and the tone for

20   the entire place. So it's a pretty proud feeling once you're out there, knowing that you've

21   accomplished enough to get to this level. It's a select few that get to do what you

22   do…you still get goose bumps when you get out on the ice. (L2)

1   When describing group experiences, officials categorized themselves within their

2   organization, and as on-ice groups. By categorizing themselves as belonging to these groups and

3   valuing their membership, participants reflected on resulting experiences of pride and identity.

4   The quotes exemplified that categorization was not only a personal experience, but a collective

5   one where participants tied feelings of commitment and cohesion to shared identities as officials.

6   **Common fate.** Across participants, it was apparent that when a significant event

7   occurred to one member, it influenced other officials. Influential events included specific on-ice

8   tasks, or more general group-related perceptions shared among members, such as cohesion and

9   conflict. For on-ice performance, all participants spoke of the degree to which their performance

10   was influenced by on-ice partners. One participant described shared penalty call responsibilities:

11   You don't want to be the guy calling 10 penalties and you don't want be the guy who

12   didn't call the 10 penalties. For the most part, in the four-man system, 50% of the calls

13   both your hands go up [to indicate a penalty]—at least. The other 50% is in your zone in

14   front of you. You get what I'm saying? [Penalty calls] should be fairly even. (L6)

15   Similarly, maintaining consistency in the application of rules was paramount: "You rely on your

16   referee partner to be consistent, just like you hope to have some consistency. So whether it is

17   [penalty calls] like holdings, trippings—things like that—you know you're on the same page."

18   (R9) Alternatively, when rule application was inconsistent, it could lead to conflict:

19   There's been some times, too, when you're right there and you see [the play]—you're

20   like, "No penalty". And your partner's hand shoots up [to indicate a penalty]. I

21   remember when [the four-man system] first came in, guys would lose their [expletive] in

22   the room on guys who called a penalty, but they go home and watch the tape and it's a

23   penalty. Most of the guys have learned that when your partner calls a penalty you say,

1   "Okay", and most of the time you just want to find out why it was a penalty. You just

2   wanna get in his thought process. So you're like, "On that play what did you see?" And

3   he'll say, "Okay, well I saw it this way." And you're like, "Okay, fair enough." (R5)

4 Beyond executing one's duties, every participant discussed the group-related perceptions that

5 were contingent on interactions with fellow officials—notably, cohesion and conflict. Officials

6 highlighted the need to act cohesively, recounting the importance of having similar goals to their

7 officiating peers, and setting aside personal conflict for the group's benefit. One official stated:

8   …I had done a game with that guy and I put those feelings aside for the next 60 minutes

9   because there was a task at hand to accomplish. It's never easy, it's always in the back of

10   your mind, but you need to put it aside for the sake of the team. I'm still talking to him

11   because we still have a job to do. (L2)

12   Participants indicated that team members influenced their on-ice performances. As one

13 official reported, "If one guy screws up, it falls on the crew at the end of the game." (R8) Thus,

14 common fate means that—despite positional differences, conflicts, and competition—the nature

15 of their activity demands cohesion and fosters actions to form a shared vision (e.g., asking why a

16 partner called a certain penalty). Such results also highlighted the importance of minimizing

17 harmful behaviors (e.g., interpersonal conflicts) that negatively influence on-ice performances.

18   **Mutual benefit.** In ideal cases, officials' group experiences were rewarding—both by

19 sharing social support, and by satiating desires to belong and feel connected. In terms of

20 support, many officials expressed its necessity during stressful events, and how the predominant

21 source of support was other group members:

22   It's important that referees feel part of the group, because they would use the group as a

23   support system. The guys that may not be confident or saw something that they're not

1   sure, they just want to go to the guys and say, "Hey, did I make the right call there?" or,

2   "What did you see?" And if that group setting wasn't there, they wouldn't be able to do

3   that—they'd just be sitting on the ice with a lot of thoughts to themselves. (R4)

4   Whereas support was typically provided during on-ice performances, belonging and

5 feeling connected to the group extended beyond that environment. One participant eloquently

6 described why these perceptions were so important for officials:

7   Nobody wants to be part of an association where they don't feel welcome. And I think

8   the onus is on each member of the group as to the level of involvement they want to have

9   within the group. I mean, I don't think it would be fun for somebody coming to work a

10   game together and feel they are an outsider, or on the outside looking in. (L4)

11 Sense of belonging was often fostered by social activities that allowed officials to feel connected

12 to the larger group, and these could be formal, (e.g., season-end banquet, referee vs. linesmen ice

13 hockey game) or informal in nature:

14   Even if it's going to the [restaurant] down the street, splitting a pitcher of beer, and

15   talking about the game. Or the experience—guys you haven't been on with a lot, maybe

16   just talking about how the season's gone. Or if you haven't seen them since last year,

17   how their summer was, how the family's doing. It's relaxing after the game just to kind

18   of catch up with the guys. (L2)

19   Among the mutual benefits of belonging to officiating teams, participants discussed on-

20 ice shared decisional support, while off the ice, participants described a sense of belonging and

21 feeling connected to team members. Thus, reciprocal interdependence was present, as officials

22 gained something from membership, yet needed to contribute something in return.

1   **Social structure.** Participants reflected on the social structure present among officials,

2   which was demonstrated by how members of on-ice groups and officials' organizations often fit

3   within certain forms of subgroups, occupied individual roles, and shared normative expectations.

4   Unmistakably, central fault lines divided officials into referees and linesmen, along with

5   divisions separating those who were older and had more seniority with relative newcomers:

6   There [are] groups that stick together. You have the old-boys club, you have the guys

7   that kinda grew up together refereeing that seem to be a lot closer, and then you have the

8   younger guys that tend to stick together as well. And, you know [this younger group]

9   could be a mix of referees and linesmen, or just linesmen. (R4)

10 These fault lines often distinguished those with more power in the organization. Accordingly,

11 this structure also underpinned the roles that group members fulfilled; for instance, "We don't

12 have an official crew chief, but I think it's unwritten that, 'Ok he's the more senior [referee], he's

13 kind of the crew chief.' (R1). Traditions or norms also followed:

14   There is also cultural stuff…typically rookies will give away their first game fee. So a

15   rookie comes in and works his first game, but he isn't getting paid that night because the

16   other guys take their money. Or if you happen to be somewhere where you can go out

17   for dinner and drinks, the rookie buys those because that's his initiation…like,

18   "Congratulations! You made the league." (R10)

19   Social structure provided the most insight into group divisions based on position (i.e.,

20 referees vs. linesmen) and seniority (i.e., veterans vs. newcomers). Typically, referees had

21 greater social capital (e.g., power) than linesmen, as evidenced by their informal appointment as

22 crew chiefs, even when a linesman had seniority. Meanwhile, veterans (regardless of position)

1   typically prescribed group norms and traditions (e.g., mandating that rookie officials bought

2   post-game drinks). Social structure, therefore, influenced on- and off-ice group experiences.

3   **Quality interactions.** All participants noted that communication was vital, which was

4   categorized as quality interactions. Communication existed during competitions (i.e., task

5   communication) and outside of competitions (i.e., social communication). Participants noted

6   that, before each game, task communication was imperative to establish a shared understanding.

7   Specifically, officials shared their on-ice tendencies (e.g., positioning, penalty standard) and

8   knowledge of any players who would be participating in the game (e.g., players to keep an eye

9   on). Task communication continued during performances, as evidenced below:

10   [During games there is] lots of verbal [communication] with the linesmen; they'll speak

11   to each other out loud across the ice. There is also a lot of communication between

12   [referees] and linesmen because they cross paths a lot. So the linesman that is standing

13   on the blue line, on their way to the other end, the [referee] will always pass that

14   linesman on the way to get into position [and ask questions] like, "What did you see there

15   with the puck? Did it tip off the mesh? Did that high stick—was it actually high or was he

16   jerking my chain?" (R10)

17   Participants explained that communication existed away from the arena, through social

18   media or negative discussions about group members, which could have a detrimental impact:

19   Guys who speak negatively about other officials… if they're talking about those guys,

20   who's to say they're not talking about you when you're not around. You lose that sense

21   of community when you start to badmouth guys or put them down or talk about how this

22   guy did a bad job or this guy. (R2)

1   Quality interactions extended to mentorship, as many officials noted that senior officials

2   serve the role of mentor, aiding young officials' development through constant discussions of on-

3   ice performance. Lastly, officials articulated that relationships/friendships are important:

4   Most of my friends now are referee buddies…my close friends are all referee friends. I

5   golf with [a fellow official] quite regularly. There's other guys that I golf with quite

6   regularly, and then there's other guys that I'll just go for a drink with from time to time.

7   It's expanded my group of friends. There's guys that I never would have met that I've

8   met through refereeing. (R1)

9   As officials' on-ice tasks demand collective actions, participants believed they needed to

10   use communication to improve performance (i.e., task communication, mentorship). In fact,

11   officials achieved teamwork mainly through on-ice communication. Friendship provided further

12   evidence of quality interactions, as most officials described creating or strengthening friendships

13   with other officials. Thus, quality interactions existed in multiple contexts.

14   **Unique Elements Pertaining to Ice Hockey Officials**

15   **Transience.** Contrasting group definitions, a unique aspect of officials' groups was that

16   they were constantly changing. Participants recalled the challenges associated with the brief

17   amount of time they worked with other officials—often switching partners from one game to the

18   next:

19   The thing about 90 guys that you work with is, you're never working a lot with the same

20   guys, so you're always concerned—you're always thinking about doing the right thing

21   and making the right call—but you're also concerned about showing up at the rink on

22   time and doing all the little things that made you successful to get to that point.

23   Particularly when you're meeting new guys. (R7)

1   Further emphasizing the unique challenges of such transience, one senior official highlighted

2   how unlikely it would be for sport teams to adopt similar transient approaches, as doing so would

3   likely decrease team performance.

4   When considering the challenges of transience, officials suggested that trust is heightened

5   when working with familiar partners: "I think [familiarity] makes [performance] better because

6   there's that trust. As a referee group, you kind of have to—I'm not going to say rely on each

7   other—but you have to respect their judgment and not overrule them." (L3) Further, officials

8   enjoyed themselves more when working with friends: "When I get a game and I see the four

9   guys on the game and they're all good buddies…I'm more excited to get to the game you know.

10   The car ride, jokes, the game, the beers afterwards." (R8) Despite enjoying working with

11   familiar partners, officials noted that skill is prioritized over familiarity for important games:

12   I'd rather work with somebody I like. But if you're working the [final game], that game

13   means the most, and as tough as it is, I'd rather pick my buddy to [officiate] a regular

14   season game. I definitely pick the guy that knows what they're doing for the finals. (R3)

15   Altogether, participants believed their group's transient nature was a salient construct,

16   unique to their profession, and worthy of consideration in relation to individual and team

17   performance. Participants even noted that their organizations set clear guidelines for members in

18   terms of pre-game communication to facilitate communication among unfamiliar officials (e.g.,

19   referees ought to establish areas of responsibility).

20   **Intra-team competition.** A second finding was the constant, underlying intra-team

21   competition. Indeed, in addition to working as a collective group during competitions, each

22   official is rated individually by the organization, and ratings influence important game

1   assignments (e.g., post-season games). Participants' discussions began with post-season

2   assignments as a measure of advancement and the competition to earn those positions:

3   Guys that are given a chance to go to the playoffs understand [it] is a great opportunity,

4   and they've worked hard—you earned it. You've elevated your game and you are one of

5   the best guys in the league. So there's respect that's gained and earned. (R6)

6   I'm out there to be the best, and I don't expect you to give me your [post-season] spot. If

7   I'm going to get your spot it's because I'm going to take it from you and I'm going to

8   earn it. If people have problems with that…they can kiss my [expletive]. (R8)

9   Participants also indicated the intricacies between individual goals for progression and

10 managing the on-ice product with their group members:

11   As a team, you want to have the best product on the ice that night. We take great pride in

12   what we do, so of course we all want to do the best job. But then, as individuals, you

13   want to do the best job too—so you want to be the best official on the ice. That's how we

14   get [to officiate in the] playoffs…and I think all referees are competitive that way. So it

15   makes you work hard because if you're working with another solid guy, you definitely

16   want to out-skate him or make sure you get all the penalties and stuff like that. (R5)

17   Finally, participants conceded intense competition could lead to negative emotions for

18 deselected officials:

19   It's tough. There's lots of mixed emotions that come from either if he makes it and I

20   don't make it. My supervisors all say I did very well—I don't know what his [supervisor

21   scores] are if I can't see them. But I know that I did this well on the dry land stuff and he

22   did very poorly. Or I know that I worked this many games and he's only worked this

23   many. So there's mixed emotions—people get mad and people get happy. (L6)

1   Although participants demonstrated collective orientations and strove to effectively

2   officiate contests as a team, the desire to be selected for post-season competitions was an

3   important consideration for group and individual performance.

4   **Discussion**

5   Our purpose herein was to investigate group processes among officials (including

6   whether they could be considered groups), while also studying how they might shape officials'

7   personal experiences and performance. For officials, group processes were prevalent across

8   three contexts (task-specific, social, and organizational), and participants' responses articulated

9   the necessary characteristics for group classification (Carron & Eys, 2012). Importantly,

10   participant responses were derived from elite officials with years of experience, meaning they

11   had access to rich personal histories. Generally, responses aligned with group dynamics

12   research, though officials' transient nature and intra-team competition were unique themes.

13   Considering that participants described various activities that enhanced group processes, we

14   dedicate a section to highlighting and integrating these findings.

15   **Group Processes in Officials' Groups**

16   The results showcase the importance of group dynamics for officials, as Carron and Eys'

17   (2012) group categories were all represented within participant responses. Notably, self-

18   categorization occurred predominantly through group identity and shared pride, whereas

19   common fate was evident through shared responsibility for penalty calls, as well as how

20   cohesion and conflict influenced performance. For mutual benefit, the officials' group provided

21   social support, leading to a sense of belonging. The social structure of officials' groups included

22   divisions based on roles (referees vs. linesmen) and seniority (veterans vs. relative newcomers).

23   Finally, officials indicated that quality interactions occurred through task-relevant and task-

1   irrelevant communication, as well as mentorship. These are several examples of the salience of

2   group processes identified in ice hockey officials' groups, reinforcing the need for further

3   research pertaining to additional processes that might influence officials' experiences at both the

4   individual and group levels.

5   At the individual level, enhancing group experiences might be a practical resolution to

6   address ongoing challenges with officials' attrition (e.g., Auger et al., 2010; Hancock et al.,

7   2015). Though officials' involvement was secondary to other duties (e.g., employment), group

8   experiences were motivating. It is worth considering the extent that social environments are rich

9   enough to satisfy officials' basic psychological needs for competence, autonomy, and relatedness

10   (Deci & Ryan, 2000). Presumably, positive group experiences reflect relatedness (e.g., 'Team

11   21'). Additionally, our study demonstrated how groups support officials' feelings that their

12   involvement is self-determined and autonomous (e.g., input into group decision making), along

13   with perceptions of competence (e.g., social support). Satisfying officials' basic psychological

14   needs through group processes could be an important avenue for officials' organizations to

15   explore, with the goal of establishing positive experiences and commitment.

16   Regarding group performance, Steiner (1972) suggested that group effectiveness is the

17   result of a group's potential productivity, subtracting process losses during performance. This

18   seems applicable to interactions with officials' groups, as participants frequently alluded to

19   process losses that impacted them, including poor communication, conflict, and lack of cohesion.

20   For instance, officials stressed challenges when their personal philosophy about play-calling and

21   communication conflicted with those of their on-ice partners. Considering cohesion and conflict

22   share an inverse relationship in sport teams (Paradis, Carron, & Martin, 2014), the reciprocal

23   cohesion-performance relationship (and by extension, the conflict-performance relationship;

1   Carron et al., 2002; Paradis et al., 2014) seems relevant for officials groups. We suggest

2   officials' organizations investigate methods of enhancing communication and reducing conflict.

3   It was evident that group processes existed among officiating groups. Thus, it is

4   important for future researchers to study officiating cohesion among the transient, on-ice teams,

5   as well as the broader organization. This might provide an opportunity to extend our

6   understanding of group cohesion, its application to different groups, and particularly how

7   cohesion forms in groups that continually shift membership.

8   **Uniqueness of Officials Groups**

9   The unique transience of officials' groups—whereby an individual performs with many

10   officials during the course of a season—might influence on-ice performance. To manage the

11   demands of such transient groups, participants debriefed with their group before games to

12   discuss personal tendencies and past experiences. These processes link to the preparation phase

13   of teamwork (McEwan & Beauchamp, 2014), and exhibit planning activities vital for enhancing

14   coordination (Eccles & Tenenbaum, 2004). Officials' reflections on the benefits of shared

15   understanding, rule knowledge, and protocols for on-ice interactions can be explored using the

16   concept of shared mental models (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000).

17   Essentially, shared mental models represent a common understanding or similar beliefs among a

18   group, and such coherence pertaining to the competitive environment could position officials to

19   best adapt during challenging situations and predict other group members' actions. Thus, two

20   applied strategies for adapting to group transience are: (1) establish common pre-game

21   debriefing and planning practices, and (2) strengthen shared mental models by establishing a

22   common understanding of rules, philosophy, and protocol.

1   Intra-team competition involved intense rivalry for prestigious post-season assignments,

2   which are predicated on subjective officials' rankings assigned by supervisors during the season.

3   Whereas these statements align with positional competition in sport teams (Harenberg et al.,

4   2016), unique features existed. First, officials stated intra-team competition was superseded by

5   the need for interdependence, cooperation, and teamwork (e.g., Carron & Eys, 2012) to ensure

6   successful on-ice performance. Secondly, only two referees and two linesmen are assigned to a

7   post-season game, resulting in elevated intra-team competition. Finally, a stark contrast is that

8   competing teammates can typically see each other perform (either in practice or competition), or

9   their performances are objectively measured (e.g., timed sports), while the transient nature of

10   officials' groups makes this a near impossibility. It is important for researchers to examine the

11   influence of intra-team competition on group dynamics, performance, and transience, while also

12   investigating methods to reduce intra-team competition. This could include understanding the

13   consequences of intra-team competition (Stanne, Johnson, & Johnson, 1999) and the relationship

14   between intra-team competition, cohesion, and conflict (Harenberg et al., 2016; Paradis et al.,

15   2014). Practically, officials' organizations ought to consider how to make post-season selections

16   that minimize intra-team competition, possibly improving officials' performances.

17   **Officials Engage in Activities that Enhance Groupness**

18   Officials engaged in implicit and explicit approaches to enhance groupness. First,

19   officials cultivated group identity, which was best embodied by Team 21. In the Ontario Hockey

20   League (a branch of the Canadian Hockey League), there are 20 teams. Officials and the

21   organization created the concept of the 21st team, with shirts and helmet decals resembling this

22   identity, increasing perceptions of cohesion (e.g., Carron & Spink, 1993; Paradis & Martin,

23   2012). Considering the overt intra-team competition, these efforts to maintain a cohesive

1   environment are important, and research supports the ability for cohesion to facilitate

2   performance, satisfaction, adherence, and efficacy (Paradis & Martin, 2012). Second, formal and

3   informal mentorship existed, and officials spoke to the resulting impact on performance and

4   development, as well as the connection to the officials' group as a whole. Peer leaders provided

5   mentoring functions including instrumental functions (e.g., task instruction, career assistance)

6   and psychosocial functions (e.g., role modelling, friendship), leading to increased confidence and

7   performance (Hoffmann, Loughead, & Bloom, 2016). Lastly, officials described additional

8   activities that enhanced groupness such as formal meetings, and shared travel/accommodations.

9   Opportunities exist, however, to implement theoretically-grounded group development

10   and relationship building activities. Many of the activities officials described were unsystematic

11   and not sustained—similar to team building in other organizations (Shuffler, DiazGranados, &

12   Salas, 2011). Officials could build upon existing applied efforts to develop a shared identity

13   (e.g., Team 21), which might involve integrating ways for officials to establish a unique identity

14   each season, receiving input and acceptance from all members. Future researchers could

15   investigate a team building protocol to be piloted and implemented across officials' groups,

16   facilitating a direct team building approach. Finally, associations ought to explore formalized

17   peer mentoring relationships by pairing senior and junior officials. Developing systematic,

18   theory-driven interventions can increase organizational adherence and satisfaction (Hoffmann &

19   Loughead, 2016), which might affect officials' confidence, performance, and development.

20   **Limitations**

21   Limitations of this research include generalizability and social desirability. Ice hockey

22   officials frequently interact with each other and players (i.e., interactors; MacMahon & Plessner,

23   2008), but not all sport officials operate similarly. For instance, gymnastics judges (i.e.,

1   monitors; MacMahon & Plessner, 2008) and soccer assistant referees (i.e., reactors; MacMahon

2   & Plessner, 2008) have fewer interactions with athletes and other officials. Thus, we caution

3   against generalizing our results to other sport officials—especially non-interactors. A second

4   consideration is social desirability. During recruitment, we informed potential participants of the

5   nature of the study, which was to examine group processes in ice hockey officials. As such,

6   participants with negative group experiences might have declined to participate and readers

7   should consider this.

8   **Conclusion and Applied Recommendations for Officials and Organizations**

9   Officials perceived themselves as group members (on- and off-ice), possessing unique

10   elements (i.e., transience and intra-team competition), and engaging in activities that enhanced

11   groupness. Importantly, several themes have practical considerations, and we have advanced

12   five applied recommendations to guide officials and their organizations.

13   1.   Institute team building activities to improve on-ice performance and reduce attrition.

14   2.   Establish mentorships to pair referees with linesmen, and veterans with newcomers.

15   3.   Create transparent policies to inform post-season assignments.

16   4.   Minimize transience by creating smaller officials' groups that frequently work together.

17   5.   Mandate standardized pre-game discussions that facilitate communication among *all*

18   officials, with the aim of enhancing on-ice cohesion, while reducing on-ice conflict.

19   The above recommendations provide guidelines for officials' organizations, who ought to

20   consider methods that facilitate group processes, thereby improving performance. The depth of

21   our results highlights the need for continued research in this field to understand the impact of

22   group processes on performance, retention, satisfaction, and well-being.

23

1   **References**

2   Auger, D., Fortier, J., Thibault, A., Magny, D., & Gravelle, F. (2010). Characteristics and

3   motivations of sports officials in the province of Québec. *International Journal of Sport*

4   *Management, Recreation, & Tourism, 5*, 29-50. doi: 10.5199/ijsmart-1791-874X-5b

5   Bass, B. M. (1960). *Leadership, psychology, and organizational behavior.* New York, NY:

6   Harper & Row.

7   Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal

8   attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.

9   doi: 10.1037/0033-2909.117.3.497

10   Bloom, G. A., Crumpton, R., & Anderson, J. E. (1999). A systematic observation study of the

11   teaching behaviors of an expert basketball coach. *The Sport Psychologist, 13*, 157-170.

12   doi: 10.1123/tsp.13.2.157

13   Bradbury-Jones, C. (2007). Enhancing rigour in qualitative health research: Exploring

14   subjectivity through Peshkin's I's. *Journal of Advanced Nursing, 59*, 290-298.

15   doi: 10.1111/j.1365-2648.2007.04306.x

16   Braun, V., Clarke, V., & Weate, P. (2016). Using thematic analysis in sport and exercise

17   research. In B. Smith, & A. Sparkes, (Eds.), *International handbook of qualitative*

18   *research in sport and exercise* (pp. 191-205)*.* New York, NY: Routledge.

19   Brewer, M. B., & Caporael, L. (2006). An evolutionary perspective on social identity: Revisiting

20   groups. In M. Schaller, J. Simpson, & D. Kenrick (Eds.), *Evolution and social*

21   *psychology* (pp. 143-161). New York, NY: Psychology Press.

22   Burke, S. (2016). Rethinking 'validity' and 'trustworthiness' in qualitative inquiry: How might

23   we judge the quality of qualitative research in sport and exercise science? In B. Smith, &

A. Sparkes, (Eds.), *International handbook of qualitative research in sport and exercise* (pp. 330-340)*.* New York, NY: Routledge.

Caelli, K., Ray, L., & Mill, J. (2003). 'Clear as mud': Toward greater clarity in generic qualitative research. *International Journal of Qualitative Methods, 2*, 1-13.

Campbell, D. T. (1958). Common fate, similarity, and other indices of the status of aggregates of persons as social entities. *Behavioral Science, 3*, 14-25. doi: 10.1002/bs.3830030103

Carron, A. V., Colman, M. M., Wheeler, J., & Stevens, D. (2002). Cohesion and performance in sport: A meta-analysis. *Journal of Sport & Exercise Psychology, 24*, 168-188. doi: 10.1123/jsep.24.2.168

Carron, A. V., & Eys, M. A. (2012). *Group dynamics in sport* (4th ed.). Morgantown, WV: Fitness Information Technology.

Carron, A. V., & Spink, K. S. (1993). Team building in an exercise setting. *The Sport Psychologist, 7*, 8-18. doi: 10.1123/tsp.7.1.8

Cartwright, D., & Zander, A. (1968). *Group dynamics: Research and theory.* New York, NY: Harper & Row.

Corbin, J., & Strauss, A. (2010). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Thousand Oaks, CA: Sage.

Côté, J. (1999). The influence of the family in the development of talent in sport. *The Sport Psychologist, 13*, 395-417. doi: 10.1123/tsp.13.4.395

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*, 227-268. Doi: 10.1207/S15327965PLI1104_01

Eccles, D. W., & Tenenbaum, G. (2004). Why an expert team is more than a team of experts: A

social-cognitive conceptualization of team coordination and communication in sport.
Journal of Sport & Exercise Psychology, 26, 542-560. doi: 10.1123/jsep.26.4.542

Estabrooks, P. A., Harden, S. M., Johnson, S. B., & Pardo, K. A. (2014). Group integration interventions in exercise: Theory, practice, and future directions. In M. R. Beauchamp & M. A. Eys (Eds.), *Group dynamics in exercise and sport psychology* (2nd ed.; pp. 164-182). New York, NY: Routledge.

Fielder, F. E. (1967). *A theory of leadership effectiveness*. New York, NY: McGraw-Hill.

Hamilton, D. L. (2007). Understanding the complexities of group perception: Broadening the domain. *European Journal of Social Psychology, 83*, 1076-1094. doi: 10.1002/ejsp.436

Hancock, D. J., Dawson, D. J., & Auger, D. (2015). Why ref? Understanding sport officials' motivations to begin, continue, and quit. *Movement & Sport Sciences – Science & Motricité, 87*, 31-39. doi: 10.1051/sm/2014018

Harenberg, S., Riemer, H. A., Karreman, E., Dorsch, K., Paradis, K. F., & Martin, L. J. (2016). All for one, but not one for all? Positional competition and cohesion in interdependent sport teams. *Journal of Sport & Exercise Psychology, 38,* S201.

Helsen, W. F., & Bultynck, J-P. (2004). Physical and perceptual-cognitive demands of top-class refereeing in association football. *Journal of Sports Sciences, 22*, 179-189. doi: 10.1080/02640410310001641502

Hill, C. E., Thompson, B. J., & Williams, E. N. (1997). A guide to conducting consensual qualitative research. *The Counseling Psychologist, 25*, 517-572. doi: 10.1177/0011000097254001

1   Hodge, K., & Sharp, L. (2016). Case studies. In B. Smith, & A. Sparkes, (Eds.), *International*

2   *handbook of qualitative research in sport and exercise* (pp. 62-74)*.* New York, NY:

3   Routledge.

4   Hoffmann, M. D., & Loughead, T. M. (2016). A comparison of well-peer mentored and non-peer

5   mentored athletes' perceptions of performance and satisfaction. *Journal of Sports*

6   *Sciences, 34*, 450-458. doi: 10.1080/02640414.2015.1057517

7   Hoffmann, M. D., Loughead, T. M., & Bloom, G. A. (2016). Examining the experiences of peer

8   mentored athletes competing in elite sport. *The Sport Psychologist*. Advance online

9   publication. doi.org/10.1123/tsp.2016-0052

10   MacMahon, C., & Plessner, H. (2008). The sport official in research and practice. In D. Farrow,

11   J. Baker, & C. MacMahon (Eds.), *Developing sport expertise: Lessons from theory and*

12   *practice* (172-190). New York, NY: Routledge.

13   Martin, L. J., Balderson, D., Hawkins, M., Wilson, K., & Bruner, M. W. (2017). Groupness and

14   leadership perceptions in relation to social identity in youth sport. *Journal of Applied*

15   *Sport Psychology.* doi: 10.1080/10413200.2016.1238414

16   Mascarenhas, D. R. D., Collins, D., & Mortimer, P. (2005). Elite refereeing performance:

17   Developing a model for sport science support. *The Sport Psychologist, 19*, 364-379.

18   doi: 10.1123/tsp.19.4.364

19   Mathieu, J. E., Heffner, T. S., Goodwin, G. F., Salas, E., & Cannon-Bowers, J. A. (2000). The

20   influence of shared mental models on team process and performance. *Journal of Applied*

21   *Psychology, 85*, 273-283. doi: 10.1037/0021-9010.85.2.273

22   Maxwell, J. A. (2012). *A realist approach for qualitative research*. Thousand Oaks, CA: Sage.

1   Mays, N., & Pope, C. (2000). Assessing quality in qualitative research. *British Medical*

2   *Journal*, *320*, 50-52. doi: https://doi.org/10.1136/bmj.320.7226.50

3   McEwan, D., & Beauchamp, M. R. (2014). Teamwork in sport: A theoretical and integrative

4   review. *International Review of Sport and Exercise Psychology, 7*, 229-250.

5   doi: 10.1080/1750984X.2014.932423

6   Müller, S., & Abernethy, B. (2012). Expert anticipatory skill in striking sports: A review and a

7   model. *Research Quarterly for Exercise and Sport, 83*, 175-187.

8   doi: 10.1080/02701367.2012.10599848

9   Newcomb, T. M. (1951). Social psychology theory. In J. H. Rohrer & M. Sherif (Eds.), *Social*

10   *psychology at the crossroads.* New York, NY: Harper & Row.

11   Paradis, K. F., Carron, A. V., & Martin, L. J. (2014). Development and validation of an

12   inventory to assess conflict in sport teams: The Group Conflict Questionnaire. *Journal of*

13   *Sports Sciences, 32*, 1966-1978. doi: 10.1080/02640414.2014.970220

14   Paradis, K. F., & Martin, L. J. (2012). Team building in sport: Linking theory and research to

15   practical application. *Journal of Sport Psychology in Action, 3*, 159-170.

16   doi: 10.1080/21520704.2011.653047

17   Patton, M. Q. (2002). *Qualitative research and evaluation methods*. London, UK: Sage.

18   Polkinghorne, D. E. (2005). Language and meaning: Data collection in qualitative

19   research. *Journal of Counseling Psychology, 52*, 137-145.

20   doi: 10.1037/0022-0167.52.2.137

21   Rix-Lièvre, G., Hancock, D. J., & Côté, J. (2014, September). *A lack of interconnectivity for*

22   *research on sport officials.* Paper presented at the First International Conference for the

23   Science and Practice of Sports Refereeing, Clermont-Ferrand, France.

1   Rubin, M., & Hewstone, M. (1998). Social identity theory's self-esteem hypothesis: A review

2   and some suggestions for clarification. *Personality and Social Psychology Review, 2*, 40-

3   62. doi: 10.1207/s15327957pspr0201_3

4   Ryba, T. V., Haapanen, S., Mosek, S., & Ng, K. (2012). Towards a conceptual understanding of

5   acute cultural adaptation: A preliminary examination of ACA in female

6   swimming. *Qualitative Research in Sport, Exercise and Health, 4*, 80-97. doi:

7   http://dx.doi.org/10.1080/2159676X.2011.653498

8   Sandelowski, M. (2000). Focus on research methods: Whatever happened to qualitative

9   description? *Research in Nursing and Health, 23*, 334-340.

10   doi: 10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G

11   Shaw, M. E. (1981). *Group dynamics: The psychology of small group behavior* (3rd ed.).

12   New York, NY: McGraw-Hill.

13   Shuffler, M. L., DiazGranados, D., & Salas, E. (2011). There's a science for that: Team

14   development interventions in organizations. *Current Directions in Psychological*

15   *Science, 20*, 365-372. doi: 10.1177/0963721411422054

16   Spears, R., Doosje, B., & Ellemers, N. (1999). *Commitment and the context of social perception*.

17   Oxford, UK: Blackwell Science.

18   Spink, K. S., Ulvick, J. D., McLaren, C. D. Crozier, A. J., & Fesser, K. (2015). Effects of

19   groupness, cohesion, and intention to return in sport. *Sport, Exercise, and Performance*

20   *Psychology, 14*, 293-302. doi: 10.1037/spy0000043

21   Stanne, M. B., Johnson, D. W., & Johnson, R. T. (1999). Does competition enhance or inhibit

22   motor performance: A meta-analysis. *Psychological Bulletin, 125*, 133-154.

23   doi: 10.1037/0033-2909.125.1.133

1   Sparkes, A. C., & Smith, B. (2009). Judging the quality of qualitative inquiry: Criteriology and

2   relativism in action. *Psychology of Sport and Exercise, 10*, 491-497.

3   doi: http://dx.doi.org/10.1016/j.psychsport.2009.02.006

4   Steiner, I. D. (1972). *Group processes and group productivity*. New York, NY Academic.

5   Tajfel, H., & Turner, J. C. (1985). The social identity theory of intergroup behavior. In S.

6   Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (2nd ed., pp. 7-24).

7   Chicago, IL: Nelson-Hall.

8   Tesch, R. (1990). *Qualitative research: Analysis types and software tools.* New York, NY:

9   Falmer.

10   Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative

11   research. *Qualitative Inquiry, 16,* 837-851. doi: 10.1177/ 1077800410383121

12   VanYperen, N. W. (1998). Predicting stay/leave behavior among volleyball referees. *The Sport

13   Psychologist, 12*, 427-439. doi: 10.1123/tsp.12.4.427

14

Appendix A: Interview Guide

Initial Questions

1. I am interested in hearing about your refereeing involvement - what have you been doing recently as a referee?
2. As a referee, you work alongside other officials. Can you describe the extent that this job is individual, or relies on interactions with other referees?
   i. In what ways do you interact with other referees?
   ii. When do you interact with other referees?

Opinion/Value Questions

1. As a referee, can you discuss some of the things that might lead you to consider yourself to be part of a group or not?
   i. What aspects of your relationships with other referees make you a group, as opposed to a collection of individuals?
   ii. What characteristics make it a group?
       a. Communication
       b. Cohesion
       c. Roles
       d. Norms/traditions
       e. Shared common goals
2. Now that we have discussed your experiences working with other referees in groups, could you describe the most influential group you've been involved with as a referee, if you can think of one?
   i. What was it that made this group so influential?
3. You described a group that had a fairly positive/negative influence on your experience. Alternatively, can you describe an experience where a referee group had a negative/positive influence on your experience?
   i. What was it that made this group so positively/negatively influential?
4. As a referee, you are often placed into a new working group for each game. Can you tell me about the challenges, if any, of this environment?
   i. What would be some strategies that you could use to limit these challenges?
   ii. Are there any organizational protocols or strategies in place to facilitate these situations?
5. Do you spend time with your fellow referees outside the sport setting?

Feeling Questions

1. In your own words, how would you describe what it means to be in a 'group' with other referees?
   i. Common fate
   ii. Mutual benefit
   iii. Social structure
   iv. Interaction
   v. Self-categorization
2. Can you provide examples to demonstrate how feeling close to your fellow officials enhances or hinders your performance?
   i. How does this happen?
3. Is it important for referees to feel like they are part of a group? Why or why not?

Summary Questions

1. If you had any advice for referee organizations about promoting positive referee groups, what would you suggest?
   i. Do you think team building exercises would be beneficial?
2. Is there anything that you think we missed and should discuss with regard to groups? Do you have any comments or questions before we conclude the interview?