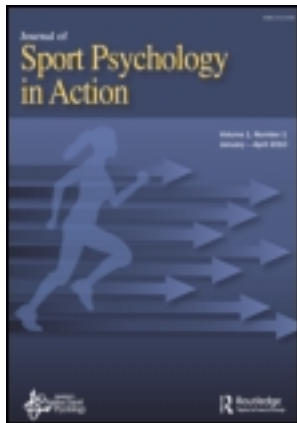


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David W. Eccles^a & Katy B. Tran^b

^a Learning Systems Institute, and Department of Educational Psychology and Learning Systems, Florida State University, Tallahassee, Florida, USA

^b Department of Educational Psychology and Learning Systems, Florida State University, Tallahassee, Florida, USA

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Getting Them on the Same Page: Strategies for Enhancing Coordination and Communication in Sports Teams

DAVID W. ECCLES

Learning Systems Institute, and Department of Educational Psychology and Learning Systems, Florida State University, Tallahassee, Florida, USA

KATY B. TRAN

Department of Educational Psychology and Learning Systems, Florida State University, Tallahassee, Florida, USA

When a quarterback and a receiver stand facing one another after an incompletion with their arms and eyebrows raised, it is clear that a key challenge for sports teams is achieving team coordination; that is, arranging team members' actions so that, when they are combined, they are in suitable relation for effective team functioning. A prerequisite to achieving team coordination is effective communication between team members, including coaches, about game plans and the roles and responsibilities of team members. This article presents strategies for enhancing team coordination and communication during practice and competition.

Watching an elite sports team perform is a special experience. Torvil and Dean's history-making actions on ice, Tom Brady's ability to find Wes Welker among the opposing defense, and Steve Nash's no-look passes exemplify the fluid coordination that can be achieved in elite sports teams. As anyone who has tried to emulate these athletes' actions knows, achieving fluid coordination in teams is not easy. Even skilled teams get it wrong. Bobby Bowden, the college American football coach, recently proposed that a loss by his Florida State University (FSU) team was due to a failure by the offense to execute schemes planned to block the opponent's defense: "Did we have so many schemes our kids didn't understand them? . . . Evidently, we got

Address correspondence to David W. Eccles, Learning Systems Institute, Florida State University, C-4600 University Center, Tallahassee, FL 32306, USA. E-mail: deccles@lsi.fsu.edu

confused. I heard the [other FSU] coaches talking sometimes: ‘Well, I thought so-and-so was supposed to do this’” (Ellis, 2009, para. 1).

Understanding how team members’ actions are coordinated is not only a practical challenge for coaches but a theoretical one for sport psychologists. Until recently, existing theory and research within sport psychology has allowed few insights into team coordination. For 40 years, theory and research related to the psychology of sports teams has been social in nature. Typically, sections concerned with teams in sport psychology texts involve social concepts such as team dynamics (e.g., Weinberg & Gould, 2007). This social focus is also evident at the level of application. For example, all the strategies proposed by Eys, Burke, Carron, and Dennis (2010) to help sport teams function more effectively are designed to impact team performance via social means (e.g., by fostering mutual trust within the team).

Insights have been gained within cognitive sport psychology about how athletes achieve skilled performance (e.g., Williams & Hodges, 2004); there is much research on the perception, attention, and memory processes underlying skilled sports performance. A shortcoming of this literature is that the unit of analysis is the individual, even when studies are concerned with teams. For example, there are no attempts in any chapter in the text by Williams and Hodges on skill acquisition in sport to understand how the *team* acquires skill in the same way as researchers in social sport psychology have attempted to understand how the team becomes cohesive.

The existing theory and research on sports teams has been useful in informing the practice of sport psychology. However, this theory and research has provided few insights into how teams undertake the tasks with which they are faced (e.g., executing plays in American football) and in particular how the coordination required to undertake these tasks is achieved. This shortcoming has been recognized recently by Eccles and his colleagues and a conceptualization of team coordination that considers both social and cognitive processes has been proposed as a response (Eccles, 2010; Eccles & Johnson, 2009; Eccles & Tenenbaum, 2004, 2007; Ward & Eccles, 2006). This conceptualization has informed subsequent research on team coordination within sport psychology (e.g., Blickensderfer, Reynolds, Salas, & Cannon-Bowers, 2010; Bourbousson, Poizat, Saury, & Seve, 2010; Lausic, Tenenbaum, Eccles, Jeong, & Johnson, 2009). The goal here is not to review the conceptualization of team coordination or the associated research in detail, but to extract from the conceptualization useful information to augment the work of sport psychologists, coaches, and others working with teams. Nonetheless, it is useful to outline key aspects of the conceptualization before presenting “best practice” information, as consideration of these aspects will better enable readers to apply this information.

A CONCEPTUALIZATION OF TEAM COORDINATION

This section provides an outline of a conceptualization of team coordination based on work by Eccles and his colleagues (Eccles, 2010; Eccles & Johnson, 2009; Eccles & Tenenbaum, 2004, 2007; Ward & Eccles, 2006).

What is team coordination?

Team coordination is the process of arranging team members' actions so that, when they are combined, they are in suitable relation for the most effective result. The term "relation" requires elaboration. Team members' actions must be arranged so they are correctly related on three dimensions of action, namely type, timing, and location. First, achieving a team action often requires that each team member undertakes a specific type of action. If a midfielder in soccer chips a ball over a defender, a waiting striker might prepare to jump to attempt a header on goal. If at the last second the midfielder passes the ball on the ground, the striker, who is already beginning to jump, might not have time to adapt to the ground pass and thus might fail to receive the ball. Second, achieving a team action often requires each team member to undertake an action at a specific time. In the soccer example, if the midfielder chips the ball too late, the striker might jump too early to get his or her head onto the ball. Third, achieving a team action often requires each member of the team to undertake an action at a specific location. If the midfield player chips the ball too far in the soccer example, the striker might not be able to adjust his or her position to connect with the ball.

Why is team coordination required?

With one individual, the task being undertaken is controlled by only one executive (i.e., brain) but, for a team, there are as many executives as team members. As each individual possesses unique knowledge about how to perform the task, individuals placed into a team will tend to select the type, timing, and location of their actions at their own discretion. Team performance suffers when team members select actions at their own discretion because, as we have seen, team members' actions must be related in terms of type, timing, and location to actions being undertaken by other team members.

How is team coordination achieved?

A key concept used to explain how team coordination is achieved is a shared knowledge state. This state is reached when each team member's knowledge

of the situation is at least similar to other team members' knowledge of the situation. In "everyday" terms, team members must be "on the same page". Individuals placed into teams often possess unique knowledge about how to perform a given task, leading to poor team coordination. However, when team members are able to achieve a shared knowledge state, team members can draw on the *same* knowledge during task performance, leading to effective team coordination.

The knowledge that must be shared for team coordination to be achieved concerns the upcoming actions of the team as a whole and its individual members. Teams acquire this knowledge in two ways, namely (a) through play and (b) via explicit planning. Shared knowledge acquired through play is often considered knowledge of "situational probabilities"; that is, knowledge of what the team and its individual members are likely to do in response to a given game situation. This type of shared knowledge can be acquired simply through experience of playing the *sport*. Players learn through experience of playing their sport what teams and individual team members will generally do in a given situation. Consider a soccer team where everyone has played the sport before but no one on the team has played together before. Due simply to their experience of playing the sport, everyone on this team knows that the defenders on their team are likely to fall back if the ball is turned over to the opponents. Shared knowledge of situational probabilities also arises from experience of playing alongside members of *one's own team*. Players come to know through playing on a specific team what their team and its individual team members are likely to do in a given situation. Consider how team members playing together on the same soccer team for a few years would learn how the left wingback on their team likes to chip the ball into the penalty area on the break. Coaches often design practice sessions and scrimmages to foster opportunities for players to learn situational probabilities related to their team and individual teammates.

Let's deal now with shared knowledge acquired via explicit planning. Coaches or other team members often provide the same information about the team's intended actions to all team members by communicating plans of action such as tactics and plays to those members. Coaches usually communicate plans initially via verbal communication but subsequently by having the team practice executing the plan (e.g., running the play) on the field. Ideally, all team members acquire the same knowledge about the play from the coach's verbal communication and/or by practicing the play.

IMPLICATIONS FOR BEST PRACTICE

Use the Dimensions of Team Coordination as a Coaching Tool

The proposal that team members' actions must be arranged so they are correctly related on three dimensions of action might serve a function at the

applied level. An understanding of the dimensions can inform how coaches and team members attempt to achieve team coordination and also how they diagnose problems with team coordination; so-called *coordination breakdowns*. Table 1 provides a demonstration of how the dimensions of team coordination might be used in these ways.

As Table 1 demonstrates, coaches and players can use the dimensions of team coordination in their evaluations of current attempts at coordinated action and when providing feedback to others about how to improve these attempts.

Train Situational Probabilities

Practice sessions and games provide opportunities for team members to acquire a shared knowledge of situational probabilities related to their own team and individual teammates. Team members play alongside their teammates within these sessions and games and thus learn their teammates' preferred responses to particular game situations. Learning teammates' preferred responses can help team members identify how they should adjust the type, timing, and location of their actions so their actions can be better coordinated with their teammates' preferred responses. However, some game situations are rare or fleeting, providing few opportunities to acquire knowledge of team-related situational probabilities. To address this challenge, researchers have suggested that knowledge of situational probabilities might be trainable independently of physical practice and competition (Williams, Ford, Eccles, & Ward, 2011). Team members might be able to refine and better share knowledge of situational probabilities by together studying teammates' actions from video of previous game play. Such study provides opportunities for team members to *repeatedly* view teammates' preferred responses to game situations and thus learn how their teammates are likely to respond when these situations arise in the future.

Encourage Position Switching

Position switching involves a team member spending time operating in the role usually occupied by a teammate with whom the member must coordinate. Position switching allows team members to gain a better appreciation of the actions performed by those with whom they interact. This understanding allows the team members to adapt the type, timing, and location of their actions so their actions can be coordinated better with those of their teammates. In a basketball team, George might not understand why Bill will not pass to him in certain situations; he believes he is open in these situations. When George switches positions with Bill, George comes to appreciate that the lane does not look as open in these situations as he thought. He also notes that he could position himself better in these situations than he has

TABLE 1 Using the Dimensions of Team Coordination as a Coaching Tool

Dimension of team coordination	Example of coordination breakdown	Example of coach's conversation with players about source of coordination breakdowns in terms of dimensions of team coordination
Type	Point guard in basketball is using a chest pass instead of a bounce pass to deliver ball to post player Striker should take ball on right foot in soccer but tries to take ball on left	Alex, I like that you are getting the ball to Sam under the basket exactly when she's ready for it but let's make sure you're using the right type of pass. Using a chest pass gives defenders a chance to steal the ball but, if you use a bounce pass, Sam is able to hold off the defender and receive the pass cleanly. Remember to use the right type of pass next time, but keep the timing and location the same. Mike, when we are running this scheme now, you're in the right place and you're timing the runs in just right but you're still trying to take the ball on your left foot, instead of your right. Think about what's required to get this right: right timing, right location, right type of action. The first two are spot on; nice job. Let's keep working on the last. Guys, the mechanics of your lifts are really nice and the lifts are in exactly the right place. That said, you're lifting a little early, which means the ball isn't being caught as effectively as it could be. So, come on, let's nail the timing.
Timing	Rugby player lifted too early in lineout	Greg, that's the right pass and you're putting it in the perfect spot but you need to deliver it a second earlier. Jack is running the out route, so the pass needs to be in the air as he is turning out or the defender can break up the pass or intercept it. Keep the location and the pass the same but just a little sooner on the delivery. Anna, you are making a great lead and offering the pass exactly when Caitlyn needs the pass. But we need you to run all the way to the sideline instead of to the baseline so that you are in a better place to receive the pass. Keep the timing of your lead the same and keep offering, but just lead outside.
Location	Football quarterback is throwing the pass to a receiver too late Hockey player should be running to the sideline instead of the baseline to offer a pass Setter for a volleyball team is setting the ball too far from the net for the inside hitter	Molly, that's a beautiful set to the inside hitter and the timing is great. The only thing is the location of the set is too far away from the net so Camilla can't make good contact when she goes for the kill. If you can place it closer to the net next time, you'll have the right set, at the right time, in the right place.

been (e.g., by turning more to the outside) to receive the ball. This adjustment might invite Bill to make passes he is not willing to make currently.

Enhance Shared Knowledge of Plans . . . During Practice

Coaches and other team leaders who construct plans for upcoming games independently of at least some team members are faced with the challenge of communicating these plans to team members so that a shared knowledge state can be achieved. A failure to communicate plans to team members or a failure by team members to hear and remember plan information decreases the chances that the team will obtain this shared state and thus achieve coordination. Consequently, strategies aimed at enhancing how plans are communicated to team members and how those communications are received by team members will likely benefit team coordination. Several such strategies are proposed below.

COMMUNICATING THE PLANS

Outlined below are four strategies aimed at enhancing how plans are communicated to team members, namely

1. *Use multiple sensory modes.* Plans should be presented to players in ways that involve their different senses. In addition to presenting the schemes the team must run during the next game by talking them through, draw them up on the whiteboard, demonstrate them with moveable magnets, and provide a playbook.
2. *Use redundancy.* Redundant communication mechanisms enhance plan communication. After talking the play through, provide players with a playbook and a handout. Then talk the play through again. Use the “onion” principle, namely provide “layers” of reminders and pointers.
3. *Use an enduring representation.* When a coach’s talk about new receiver routes is over, it’s over; the information is gone unless it was all heard and understood by the receivers. In addition to providing a talk, use an enduring representation of the information being conveyed. Aim for “anywhere, anytime” learning for players. Provide handouts of plays or let players record coaches’ talks so they can access play information anywhere, anytime.
4. *Explain why.* Athletes are more likely to attend to plans and abandon their own performance-related goals in favor of team-level plans being outlined if they understand what the proposed plans are meant to achieve and how. Furthermore, players who learn the rationale behind a given play in addition to how to execute the play will be more flexible during

performance. They are more likely to think on their feet and find ways to make a play happen should the original plan begin to break down.

RECEIVING THE PLANS

In this section, we outline three strategies for increasing the chances that players “take in” new plans, namely

1. *Enhance team members’ listening skills.* Players are more likely to understand presented plans if they attempt to listen carefully to explanations of the plans. Encourage your team members to follow the HEAR principles, namely *Head up, Eyes front, Attend fully, and Remain silent.*
2. *Encourage questions.* Even if team members listen effectively, they might not understand what’s being presented. Encourage team members to speak up with questions about plans. Provide structured “IDU” opportunities for team members to say “*I Don’t Understand*” privately to coaches to avoid social pressures “not to look foolish” in front of the team.
3. *Check plans are received.* When team leaders and players begin to believe that everyone in the team shares knowledge of the team’s plans, they tend to stop checking that the team has achieved this shared state and, of course, the team may not have achieved this state. Use “check backs” to check team members’ understanding of plans by asking players to describe plans verbally, draw schematics of them, and/or demonstrate them on the field.

Enhance Shared Knowledge of Plans . . . During Competition

Compared to before the game, time is limited during live competition. Consequently, possibilities for adjustments to practiced plays are few and it is rare that new plays can be planned. Decision-making about upcoming plays is often limited to selecting from previously planned plays. In many sports, play selections must be communicated from coaches and other team leaders to players. Reminders about selected plays and adjustments to them following changes in the opposition’s strategies also must be communicated between players on the field. Communication must occur quickly and in the presence of noise and other interfering factors. Also, there is often a need to conceal messages being communicated so that opponents do not gain knowledge of upcoming actions. Presented in Table 2 is a variety of strategies for improving the communication of plays and adjustments, so that the team is more likely to obtain a shared knowledge state and avoid disclosure of intended actions to opponents. These principles are effective in competition only to the extent they have been implemented in training.

TABLE 2 Recommendations for Improving the Communication of Plays and Adjustments During Game Play

Principle of communication	Explanation of principle	Example of principle applied
Shorten communication	Ensure words used are short and few. This will make speech easier when players are breathing hard and communication more rapid.	An offensive lineman might notice a member of the opponent's defense stepping to his left as the snap approaches and use "player on the outside" to signal this movement to his teammates. This signal could be abbreviated to "outside," provided all team members learn its meaning.
Use codes to conceal messages	Where useful and appropriate, use code words rather than real words to hide the meaning being conveyed from the opponents.	In the example above, the team could use the code "pinch" to convey the message secretly.
Repeat communications	Sometimes the first communication is not heard but simply alerts the listener that something is being said, so repeat the communication to provide an extra chance it's heard.	In the example above, the offensive lineman might say "Pinch, pinch."
Close the loop	Communication works best between two team members when they use three exchanges: 1. Player A sends the message; 2. Player B acknowledges the message; 3. Player A acknowledges the confirmation, showing his/her awareness that Player B understands the message.	Player A: "Let's run the Z route." Player B: "Ok, Z route, got it." Player A: "You got it, let's do it."
Use team members' names	When giving instructions to a specific player, start the command with the player's name (or nickname for secrecy). Hearing his/her name will help the player "tune in" to the command.	If Andy specifically wants Bob to drop back on defense in a soccer game, he might call, "Bob! Drop back! Drop back!"

CONCLUSION

When the quarterback and the receiver stand facing one another after an incompletion with their arms and eyebrows raised, we have all the evidence we need that the quarterback thought the receiver was supposed to run one route, and the receiver thought he was supposed to run another. In other words, the team failed to achieve the coordination required to make the play. In this article, we explained why team coordination is challenging but also how such coordination can be achieved. Following this, we outlined strategies for enhancing team coordination that we believe will aid sport psychologists, coaches, and other practitioners working with teams. We hope that these strategies will help teams take one step closer, literally in some cases, to achieving the fluid coordination that is the hallmark of an elite team performance.

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