Defining Teamwork:

An Analysis of Group Dynamics in Sports

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Abstract

This paper explores sports psychology and more specifically the topic of teamwork. It investigates and reviews the current relevant literature in both social and sports psychology disciplines. Theoretical models of group dynamics, cohesion, and coaching are included, forming the framework from which to create a new operational definition for teamwork, something previously missing from this field of research. Teamwork is defined as all members of a sports team having a shared and deeply imbedded understanding of: team identity, team philosophy, individual roles, and performance outcome goals. Additionally, this paper applies the new definition to a coaching intervention model – a stepwise program that explains how coaches can effectively build teamwork that leads to positive performance outcomes. This definition and model provide the basis from which research in this field of study should continue. A specific way to measure teamwork as well as adaptations for specificities like level and type of sport should also be considered in future work. This paper is intended to serve as an innovative application of sports and social psychology that not only expands the field of literature, but also serves as an accessible and useful tool from which athletes and coaches can benefit.
Introduction to Sports Psychology

This project explores the topic of teamwork, an important subject within sports psychology research. Sports psychology is an important branch of psychology that is rapidly growing and gaining more attention in the academic as well as athletic worlds. This field is rooted in traditional principles of psychology, adjusting them in novel ways that are specific to sports settings. Much like industrial and organizational psychology, sports psychology is an applied use of psychology that is used to enhance, improve, and ultimately help athletes and other individuals involved in various sports environments in reaching their performance goals. It is hard to determine one concrete definition for sports psychology as it is used for and means many different things to different audiences. It is used for practical application, professional concerns, and theoretical advancement by many types of psychologists, athletes, scientists, and other individuals. Sports psychologists, however, would define this field as a “subdiscipline of psychology that applies psychological theories and methods to an understanding of physical exercise in general and competitive sport in particular” (Lavallee, Kremer, Moran, & Williams, 2004).

There is a wide expanse of sports psychology topics that continues to grow. Some areas of interest include such topics as visualization techniques, mental toughness training, leadership principles, coaching, and – group dynamics, the basis for my project. This is just a sampling of the broad range that sports psychology covers. While there is an academic proponent to the field – research and literature that forms the theoretical basis for these ideas – by nature it is intended to be directly accessible and applicable to athletes, coaches, and other sports personnel in ways that effectively help them on and off the field. Sports psychology provides helpful pathways for solutions to such issues as managing stress, dealing with setbacks, and reaching one’s full
athletic and mental potential contributing to peak athletic performance. It is for these reasons that I believe it is an important area of study that should continue to be studied.

It is widely accepted that psychological research with an emphasis on sports first emerged in 1898 with the work of Norman Triplett who studied factors that made cyclists most successful in performance. His findings of “dynamogenic factors” is actually quite relevant to this project as he ultimately concluded that working with and the presence of others in competition “served to release additional energy stores which could improve performance” (Lavallee et al., 2004). While the field has expanded upon Triplett’s work in numerous ways since that first experiment at the turn of the nineteenth century, his study provides the first example of a sports-focused psychological project. The research and studies in sports psychology thus far have yielded so many important findings, but it is still a relatively new field with exciting opportunities for building upon previous work as well as making new discoveries that can, by utilizing psychology, aid the sports world in innovative and exciting ways.

I hope this project serves as an ambassador for the importance of sports psychology and its continual development. A comprehensive study into what teamwork is and how it can be best implemented in the sports setting by coaches is important not only to sports personnel but the more academic psychology community as well. Sports serve as the perfect venue to study social psychology and put some of the theoretical models of social psychology to a test in a “real world” setting. Many social psychology studies have been tested in other group settings like juries and various work place contexts, but sports is a compelling arena to identify new pieces of the figurative social psychology puzzle for the greater sake of the progress of psychology research. This study into teamwork specifically serves as an important insight into group dynamics through the example of sports teams and how they can achieve the highest level of
performance as a group. While social psychology serves as the basis for much of the sports-specific research, I hope this project shows that the sports setting can inform, expand, and yield novel findings of many of the social psychology models as well.

Sports psychology is, as mentioned, also intended to be accessible and useful at a very practical level. Sports play a huge role in the lives of so many people and this field intends to help them in direct ways. While there is the theoretical basis for all of the models that emerge out of sports psychology, they are created with the intention of having an active and immediately useful role for the athletes and other sports personnel they were intended. The work of sports psychology aims to be an aid to athletes in the same way that they maximize their resources in terms of training, nutrition, and the other more physical aspects of sport. The mental side of sports is just as important (if not more!) and thanks to the growing work of sports psychology, athletes, coaches, and other individuals of all levels can maximize their “mental game” and utilize the ways that psychology can be the difference in accomplishing their athletic goals. A study into teamwork specifically is extremely applicable as so many athletes compete as a part of a team, yet there still isn’t a clearly defined way to explain what “teamwork” is! By developing a definition, ways to improve it via the role of the coach can also be introduced – all for the purpose of maximizing performance and helping athletes achieve their goals, particularly those that are collective team goals.

**What is teamwork?**

I find teamwork to be of particular interest as it can be found across many different contexts – there are groups of people working towards common goals in every venue of professional life – yet there is something very unique about how teamwork functions in the
sports setting. While much is drawn from social psychology, the theoretical models surrounding sports-specific teamwork are, like other areas of sports psychology, developed with the idiosyncrasies of sports environments in mind. As this project will show, there is a plethora of studies and research looking into team dynamics and cohesion, but the notion of “teamwork” still leaves much to be explored. For this reason, I find it especially compelling to investigate as well as important to work towards a more comprehensive and all-encompassing understanding of what exactly it is and how it can be measured and increased for the purpose of helping sports teams (and their coaches) achieve their performance goals.

There are many theories contributing to an overall understanding of “teamwork,” especially through models which explain how groups function, what makes them effective or not in accomplishing given tasks and goals, and the dynamics that exist in groups of people across many different settings. The definition of “teamwork” in the sports and social psychology fields is one that is both debated and not fully developed. While many studies and considerable research looks into factors of cohesion and how groups work, a clear empirical definition of teamwork as well as testable ways to measure it have not emerged.

In addition to developing an operational definition of teamwork in the sports setting, this project also creates a new model which utilizes the psychology of coaching and connects the new definition of teamwork to coaching interventions; how coaches can most effectively build teamwork as a mechanism towards increasing performance outcomes and coaching efficacy.

First, a theoretical basis for “teamwork” will be outlined from both the social psychology and sports psychology backgrounds. Next, an overview of the ways in which teamwork and cohesion have been measured will be introduced. This comprehensive literature review and
analysis then provides the basis for the new definition and corresponding coaching intervention model regarding teamwork – how to define and measure it as a function of sport performance. Another potential outcome of this project could be the outline and compilation of a “coach’s handbook” which outlines the ways in which teamwork can be built, fostered, and improved, presented in a way that is both accessible and convenient to coaches.

Although much of this project is a literature review surveying the research about teamwork – a key topic in the sports psychology field – the novel piece that emerges is a starting point for new research and experimental directions. As mentioned, an empirical and operational definition of the encompassing term “teamwork” has not, as of now, been developed fully in the sports psychology research. Additionally, developing an accessible handbook for coaches presents a new model that shows the unique relationship between teamwork and coaching.

The coaching intervention model that explains how coaches can actually build teamwork is a direct reflection of the novel teamwork definition that is a product of this research project. I believe this is an important outcome as it suggests an open pathway for new directions of research in sports and social psychology revolving around the unique team and group dynamics that exist in the sports setting. Additionally, the coaching intervention model presents something new to the coaching psychology field and explores the ways that coaches can make a real difference and play an important role in enhancing their teams’ performance outcomes via effective teamwork.
Social Psychology: Group Dynamics

Important parallels can be drawn from different factions of psychology, and I will connect developments in social psychology to the sports setting before getting into the theoretical models based more directly in the sports psychology literature. The social psychology models form the basis for and the components of group and team dynamics and the foundations of “cohesion.”

One of the definitive theories is social identity theory. This theoretical understanding of intergroup relations states that “the more closely an individual identifies with and defines themselves in terms of group membership, the more inclined they are to maximize differences between in-group and out-group” (Tajfel, 1982). That is, the more an individual feels a sense of belonging in a group- whether it be in the workplace or an athletic team, the more effort they will give on a personal level towards the group efforts to set their group apart from any other group. Lavallee and his colleagues (2004) relate this to sports teams, explaining that this principle is reflected in competitiveness and effort towards common goals. The more individual team members identify with the collective team or club identity, the better the performance results will be. It is important to note, however, that this correlation has not been investigated in-depth in the sports psychology field yet as an operational definition and specific measures of “teamwork” are needed – aspects that this project seeks to supply.

While Tajfel’s social identity theory (1982) was developed without the sports setting in mind; it has important relevance to developing a definition for teamwork. As stated, the more an individual identifies with the group they are a part of, the more effort they will contribute towards maximizing differences between in-group and out-group. So, in the sports setting- this
means doing everything possible to set one’s own team apart (i.e. by beating) from another team. In developing my own definition of teamwork, I take this into account as having a strong team identity that all individual members can relate to and feel a part of is then a prerequisite of effective teamwork. Before “teambuilding” can really start, I believe it is important to first get all individuals ‘on board’ with the team identity so that they are motivated to contribute maximum effort towards the team goals.

Another important theoretical model is social combination theory (Steiner, 1972). This model defines groups by the types of tasks they have to achieve. This categorization then serves as a means of comparison for “actual and potential performance” on specific tasks and therefore determines the “extent of losses attributable to group processes” (Lavallee et al., 2004). That is, it is a way of determining how effective a collective group or team effort is, taking into account the types of tasks the group is aiming to achieve and the individual members’ efficacy. This model shows that groups typically are not capable of exceeding the potential of each individual’s contribution. This model, along with others in the social psychology field, lean toward the prediction that individuals work better alone than in groups. Additionally, they often show that groups are actually a detriment to best achieving tasks. This is certainly true in many cases, but later in this analysis, it will become clear that there is something different about the sports team setting that can be an exception to this otherwise widespread finding.

In this social combination theory, Steiner’s (1972) first taxonomy of tasks is that of “unity” tasks and “divisible” tasks. Unity tasks are defined as those which cannot be broken down and group members work together on one single task. Divisible tasks are things that can be broken down into smaller parts and individual group members are assigned to specific components of the larger task. The second taxonomy is that of “maximization” and
“optimization.” Maximization refers to tasks that require quantity from each team member rather
than “optimization” – referring to tasks that need quality and precision from each team member. Taking these categorizations into account, Steiner classifies group tasks into five specific types which organizes and explains the types of group and individual contributions necessary:

1. **Additive tasks:**
   - These tasks are divisible and maximizing. They require the sum of individual contributions – for example, a rugby scrum.

2. **Disjunctive tasks:**
   - These tasks involve one group solution which could be achieved by one or any number of group members – for example, a mountaineering expedition.

3. **Conjunctive tasks:**
   - These tasks require every individual in the group to complete a given task individually in order for it to be finished collectively – for example, a relay race.

4. **Compensatory tasks:**
   - These tasks are dependent on an average of each member’s contribution – for example, ice skating judges (this type of task is not common in sports, but frequent in sports judging where average scores are compiled for a final collective score).

5. **Discretionary tasks:**
   - These tasks involve group members collaborating and combining efforts in order to achieve a task or reach a final solution – for example, a treasure hunt.
This task classification as set forth by social combination theory makes some important distinctions regarding how groups work to achieve tasks and how different types of tasks affect the importance and type of individual contributions toward group goals. Another theory which takes some of these same factors into account is social facilitation theory (Strauss, 2002). This model explains the effect and influence of others’ presence on an individual’s performance. This is especially relevant when looking at how individuals (team members) perform in a group or team.

This model is mediated by both task difficulty level and presence of others. Tasks with low demands and dominant, well-learned responses (“easy”) are facilitated while “hard” tasks – with high demands and non-dominant responses are inhibited. These effects are then heightened by the presence (and known evaluation) of others. In other words, if a task is easy and you are working in a group and/or know others are evaluating your work, you will do a better job than if the task is difficult and you are working alone (Strauss, 2002).

This complex theoretical model is important in working towards a teamwork definition for many reasons. For one, it seems to fundamentally defy the idea that teamwork is a positive correlate of higher performance outcomes. The more sports-specific theories that explain this contradiction will be introduced later, but it is important to see some of the differences that exist between social and sports psychology. It also breaks down and provides the framework for how individuals perform on different types (with varying levels of difficulty) of tasks in the group setting. It shows that there is not simply one pattern of behavior for performance as a part of a group, but rather many different factors that are crucial in determining how groups will best function – via the “teamwork” of individuals. As shown as examples in the five task types classification, different types of sports correspond to different types of group tasks. This
exemplifies how theories from the social psychology literature can be adapted to the sports setting and used, in this case, working towards new ways to define and understand something like teamwork.

An extremely related and definitive theory within social psychology is the principle of social loafing. This is the basic model that says individual effort is reduced when working as a part of a group (Latane, Williams, & Harkins, 1979). This effect occurs as individuals believe others in the group will pick up the slack, therefore their maximum efforts are not important or needed.

An expansion of social loafing theory is that of social impact (Latane, 1997). This model explains that as a member of a group, you feel like responsibility is shared among all members and thus leading to less effort given on an individual basis. Along with the idea of social loafing, this explains the lack of innovative work from general “group projects” as well as why individuals working on a personal level seem to exert more time, effort and commitment than when they are in a group setting.

Although these theories explain how individuals working in a group tend to contribute less and do not develop the most creative or effective ideas, there are a number of factors that impact the extent to which social loafing plays a role in group dynamics. These factors are examined in the work of Karau and Williams (1993, 1997) and include: group size, identifiability of individual effort, strength of group identity, nature and attractiveness of task, degree of trust between group members, interdependence of group members, extent of involvement with the group, group cohesiveness, intergroup comparisons, and personal responsibility. These factors are especially important in working towards a new definition of teamwork and finding ways to
measure it. These factors are directly applicable to sports and can be adjusted as needed to align with the dynamic and constantly changing environment of a sports team. In fact, sports-specific theories draw specifically from these factors identified by Karau and Williams.

In general, social loafing is an interesting platform when considering the setting of a sports team. This well-researched and proven theory that individuals do not contribute the same maximum effort they do if they were working alone seems to be inaccurate for how sports teams function – specifically the positive effects of teamwork. In the next section, this will be elaborated on in great detail as more recent theories developed by and for the sports context provide answers for how to counteract the effects of social loafing and why cohesion on a sports team is different than other groups of people for which social loafing has been shown to apply.

In the same realm of social psychology research, the social exchange theory (Homans, 1961) says that people are motivated to exert minimum effort for maximum reward. This is otherwise known as the allocation strategy. This coincides with both the social impact theory and social loafing ideologies. While these models clearly, based in evidence, apply to group dynamics, there is something unique about the sports setting that influences the way team dynamics unfold. I would argue – and through my own definition will show – that the positive outcomes of teamwork in the sports setting serve to motivate individual athletes to actually contribute maximum individual effort toward group efforts. The social exchange notion that we want maximum rewards for minimum effort is important to understand, however, as it is a key piece contributing to why sports is different – why athletes are motivated to contribute maximum effort for maximum reward. Additionally, as part of a team – sports psychologists have determined ways to motivate athletes in such ways that they want to contribute maximum
individual effort for maximum team rewards of which they identify with and feel like an important part.

Sports Psychology: Team Dynamics

There is significant work in the more specific field of sports psychology investigating this encompassing realm of “teamwork” and team cohesion. Much is rooted in the social psychology principles previously explicated, but there are certainly exceptions and modifications for the sports setting for which these principles need to be adjusted. Sometimes novel theoretical models are created to explain the unique types of interactions and situations that arise in sports and in this case, on sports teams.

Cota and his colleagues (1995) investigated team cohesion and team dynamics in sports. Their most important conclusion and finding was a key distinction between task cohesion and social cohesion. Task cohesion refers to how well a group operates as a working and complete unit. It is also called “group integration” and takes into account the group or team members’ perception of the group or team as a whole. Social cohesion on the other hand is defined by how well team members like each other. High social cohesion would be marked by a strong team identity and positive and strong feelings of personal attraction to the group by each individual team member (Cota, Evans, Dion, Kilik, & Longman, 1995).

Additionally, Cota and his colleagues (1995) dissected team cohesion further and determined primary and secondary dimensions of cohesion. The primary dimension of cohesion is marked by views of individual group members and is, most simplistically, the group or team’s ability to resist social disruption. The secondary dimension of cohesion refers to the “features of
a group that predispose it toward certain states” (Cota et al., 1995). So, for example, if a team has well-defined roles for each team member, the team will be more stable and structured.

Cota’s work is an important development in working towards a better understanding of teamwork. He and his colleagues carefully dissect the components of cohesion most relevant to sports teams. While drawing from ideas of social psychology and how types of tasks affect how group dynamics unfold, their classification of task cohesion versus social cohesion is crucial. On sports teams, it is important that there is unity in understanding of both – what performance goals need to be achieved (task) as well as in mutual respect among teammates (social). In simple terms – it is actually very important that teammates like one another! A sports team brings together individuals of many different personalities, some which may clash at times, but by being cohesive in both achieving team goals together as well as appreciating what each member has to contribute, a team can have success in performance. This model also takes into consideration the importance of team members feeling as though they have a well-defined and contributory role towards performance goals which combat the effects of social loafing.

Carron (1982) is perhaps the key figure in studying team cohesion and identifying factors of team cohesion that contribute to the development of a highly cohesive team. He concludes that there are four key factors that foster and build the necessary prerequisites for a cohesive team environment to exist.

The first is situational factors – these are factors which include such aspects as size, organizational orientation, geographical variables, contractual responsibilities, normative pressures, and intergroup conflict (Carron, 1982). For successful and strong team cohesion, these situational factors can really make or break a team. For example, having a very large team
(common for sports like football or baseball, among others) could be a detriment to having team cohesion, but having low intergroup conflict is another aspect of “situational factors” which could counteract such situational and often unavoidable aspects of sport.

The second factor category is personal factors. This includes personal attributes of team members including gender, maturity level, shared perceptions, individual satisfaction, similarity among other team members, and all other personal attributes (Carron, 1982). The third factor group of Carron’s (1982) cohesion factors is leadership factors. This takes into account the coach, captain and other leadership positions’ behavior and styles, communication, coach to athlete relationships, and leadership decision-making style. Ultimately, the coach, captains, and other leadership figures of a sports team are going to play a major role in dictating the dynamics on the team. I am especially interested in how coaches can foster strong teamwork.

The fourth factor category is team factors – a comprehensive slate of factors grouped together as they involve the team dynamics as a whole – intergroup relationships, task characteristics, ability, achievement orientation, homogeneity, intragroup cooperation, experience level, group norms, stability, and team maturity (Carron, 1982). This is perhaps the most important factor that contributes to successful team cohesion development as it revolves around the complex relationships on a collective team.

Analysis of many studies reveals and confirms that there is a strong positive correlation with team cohesion and performance. That is, having strong team cohesion is often present with the team’s success and positive performance outcomes. However, a causal link has not been determined. It is unclear whether high performance causes higher cohesion or if it is the initial strong cohesion that leads to the high performance. In two important analyses – Mullen and
Cooper (1994) and Slater and Sewell (1994) – this missing piece, the causal link is investigated. Mullen and Cooper (1994) concluded that there is a slight lean towards performance causing greater cohesion. The work of Slater and Sewell (1994) confirms this finding in their more specific study of collegiate hockey teams, but there is still not enough evidence to make any sweeping claims about the direction of this correlation. Both these studies emphasized that it is more of a circular and reciprocal relationship in which they are continually influencing one another.

The sports setting (as opposed to other “real life” group contexts) in particular yields this cohesion-performance correlation, especially in cohesion in task commitment (rather than the more social relationships). When this theory is put in comparison to some of the social psychology models (like social identity or social combination theories for example), it clearly takes the main ideas and adapts them to the sports world. There are so many different factors and complexities that exist on sports teams as compared to any other group environment and I find Carron’s (1982) work to successfully consolidate many of them into this model.

It is an important model to explain in my study of teamwork as it serves to explain the positive correlation between sports performance and team cohesion, thus providing rationale for the need to continue to develop a teamwork definition and ways to improve it. Cohesion is proven to be a correlate of increased performance which is the goal of sports teams, so the need to maximize this correlation is very important on a practical level. There is considerable research that still needs to be done in this area, however, as both Mullen and Cooper (1994) and Slater and Sewell (1994) explain that the field lacks longitudinal studies, sport-based research, multivariate analyses and more types/levels of sports studied.
Another important theoretical model in the relevant sports psychology literature is that of team development. Drawing from group development models, Tuckman (1965) along with others in the field have developed models for how teams develop. Ultimately the goal is to develop a highly cohesive team – the predicted outcome if the team can successfully achieve each stage of development.

Tuckman (1965) developed a four stage process of team development. The first stage is forming – this occurs when the group first comes together. This is considered the orientation stage in which simply getting to know one another as teammates is important. Becoming familiar and comfortable with all members of the team is a crucial first step towards developing as a successful and cohesive team.

The second stage is storming – this stage emerges as team roles are assigned and the stresses of competition factor into team dynamics. For example, after a preseason during which a new team gets to know one another (the forming stage), the season starts and team members are competing with one another for starting spots and playing time. This can, understandably, be a time of tension and stress as team members are still trying to figure out how they fit in and contribute to the team. The pressures of competition play a major role in influencing team development as well. The teammates who have come to know each other well soon become intergroup threats to each other as they battle for leadership and influential roles on the team in competition.

The third stage of development is norming – it is during this stage that the stresses of the prior stage are calmed a bit as individual roles are established. Additionally, overall team rules and standards of behavior stabilize and the norms of the team are set. It is during this
developmental stage that important components of cohesion are developed leading into the fourth and final stage.

The fourth stage is performing – this is the ultimate stage of team development maturity. It is at this point that the group has matured to a stage it is able to work cohesively and effectively as a unit. The tension of competing for influence should not, at this final stage, be a destructive force anymore and all individuals understand how their personal role contributes to the collective team efforts in performance and competition.

One very crucial component missing from Tuckman’s model of team development (1965) is the inevitable fact that there are constant and continual changes and conflicts in group dynamics, especially on a sports team. I would argue that the third stage (“norming”) should be modified. Successful team development and the resulting team cohesion does not rely on individuals simply setting for their “role” on the team. Instead, healthy competition should continue into the “performing” stage and beyond. Team members should want to keep getting better and make more of an influence on the team for the betterment of the group. This adjustment is reflected in my own coaching model and teamwork definition which takes the dynamic and fluid nature of the sports team environment into consideration.

Although social loafing effects would seem to apply to the group setting of a sports team, studies and field research have shown that there is actually something different about a sports team that does not produce the lack of individual effort in a group. Rather, the more closely someone identifies with a group, the less likely they are to loaf (Hogg, 1992). So, I would argue that strong team cohesion and commitment to a team is actually an effective way to reverse the effects of social loafing and enhance and increase individual effort toward group goals. This
explains why a strong team identity is especially important. If individual members of a team do not feel closely a part of the group or do not identity with the team mentality, philosophy and overall identity, social loafing will again be activated.

Another important expansion of Hogg’s work is that of Brehm and Kassin (1996) and (Sanna, 1992). Their works determined four important principles that explain the social loafing and social facilitation phenomena. The first is that presence of others in group team setting enhances performance on easy tasks. This occurs because individuals will be more motivated under evaluation of others when they are confident they can do well on tasks they are familiar and comfortable with. The second principle examines when tasks are difficult. Individual performance in a team setting may worsen as stress and arousal levels increase. The third principle is that when the presence of others decreases the evaluation of an individual’s work and effort, performance on otherwise easy and familiar tasks will be impaired. This occurs due to a lack of motivation caused by the basic principle of social loafing. Individuals on a team, for example, may feel that they can “free ride” and let their teammates put in the hard work while they ride on their efforts in this case.

The fourth and final principle is most relevant to the novel piece of this project. Brehm and Kassin (1996) and Sanna (1992) explain that performance on otherwise difficult tasks will actually be enhanced and improved in a group setting because individuals feel less anxiety and stress in a group setting – a phenomenon coined “social security”. So, if teammates feel comfortable and cohesive with one another, understandably they will feel more confident and relaxed to achieve difficult tasks. In the sports setting, these “difficult tasks” are the high pressure competitive game (or race/match) situations in which there are significant demands to perform well. If a team member does not feel a close or important part of the team – that is –
they do not identify closely with the overall group – anxiety and stress will probably cause decreased performance. Additionally, if someone does not feel like their work is valued as a part of group efforts, they will fall back on assuming everyone else will put the work in. That is, if an individual does not feel important to or identity with the team, social loafing effects result.

Another crucial model in the sports psychology literature that comprehensively explains the way individual effort in a team setting can be maximized is the collective effort model (Karau & Williams, 2001). This is, in large part, what I am investigating and as a result devising an effective way that coaches can facilitate higher team performance outcomes as a product of maximized individual efforts. Karau and Williams’ (2001) thorough research yield some important findings about the way individual team members are motivated in the team/group setting.

Their work shows that individual performance in a team setting is only enhanced if the individual team member anticipates that the increase in effort will be commensurate with an increase in personally valued rewards (Karau & Williams, 2001). That is, team members not only need to identify with and feel important to the team efforts, but they need to see that they on a personal level will reap the rewards of their work towards group goals.
The following is a visual aid depicting the collective effort model that I have adapted from Karau and Williams (2001). This diagram shows the circular pattern that leads individuals on a team to perceive their effort as valuable to the collective team performance outcomes, motivating them to contribute maximum effort.

Another outcome of this collective effort model (Karau & Williams, 2001) is a suggestion for how individual effort can be maximized. First, you make it evident that there will be personal and valuable rewards for individual efforts, as previously explained. Another aspect of this is that when personal involvement in the group task is highlighted and both group and individual-level performances are known to be evaluated (for example, in the high pressure situation of needing to win a game), individual performance will be maximized when they know that their work is a valued and indispensible part of achieving these evaluated goals. This effect is maximized when the team goals are clearly defined, challenging, yet at the same time attainable.

Also, going along with many other models, individual efforts in the team setting are also maximized when the team is unified in purpose and mentality and collective team efficacy is
high. It is this final piece that makes understanding these underlying theories of sports psychology so important to developing a more thorough understanding of teamwork. Working towards a definition for teamwork is essentially a synthesis of these social and sports psychology models, taking what is applicable and also understanding why others are not. As shown through this review and assessment of sports-specific theories revolving around the group dynamics of sports teams, how individuals perform best as part of a team, and the factors leading to cohesion, the encompassing notion of “teamwork” has not been operationally defined and that is why I aim to start filling in some of the missing pieces.

**How To Measure “Teamwork”**

Drawing from both social psychology and sports psychology backgrounds, researchers have developed a number of ways to statistically and quantitatively measure cohesiveness in groups. In the sports context, sports psychologists have created surveys and questionnaires which aim to measure team cohesiveness and dynamics.

One key measuring scale for assessing group dynamics is the Group Environment Scale (Moos & Humphrey, 1974). This, along with the Group Attitude Scale (Evans & Jarvis, 1986) and Perceived Cohesion Scale (Bollen & Hoyle, 1990) are surveys that gather information about how individuals view the efficacy and cohesion of the group of which they are a part. Without going into the exact scales and measures, these three scales are the definitive developments in measuring group cohesion.

More relevant to my project, however, are measures developed in the sports psychology field which analyze team cohesion in a quantitative way. The Sports Cohesiveness Questionnaire
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(Martens, Landers, & Loy, 1972) is a 7 item scale assessing cohesion factors which influence sports teams. The seven items are – interpersonal attraction, personal power, value of membership, sense of belonging, enjoyment, teamwork, and closeness. This survey has been and continues to be widely used by sports psychologists, but it has not been formally validated.

One product of my work is in assessing “teamwork” which is, as a part of this 7-item scale, only one component of what Martens and his colleagues (1972) describe as “sports cohesiveness.” I am still interested in how to both define and measure “teamwork” itself as a factor contributing to successful team cohesion and ultimately collective performance.

Another measuring tool is the Team Cohesion Questionnaire (Gruber & Gray, 1982). This is a 13-item scale which derives six composite scores measuring: team performance satisfaction, self-performance satisfaction, value of membership, leadership, task cohesion, desire for recognition, and affiliation cohesion. This survey, in my opinion, is a more thorough way to analyze team cohesion as it takes into account how individuals see themselves as a part of the group. This yields more accurate findings about how cohesive a group is as it takes into account the complex nuances of team member relationships, particularly the importance of individuals feeling as though they are an integral, recognized, and influential part of the team efforts and performance.

Another measure is the Multidimensional Sport Cohesion Instrument survey developed by Yukelson and his colleagues (1984). This scale identifies four key factors – attraction to the group, unity of purpose, quality of teamwork, and valued roles. Similar to the Team Cohesion Questionnaire (Gruber & Gray, 1982) this scale does identify important factors contributing to cohesion, but it has not been formally validated and has not found widespread use. It was
actually made in specific regards to assessing basketball teams, which suggests that perhaps every sport or at least different categories of sports require different ways of measuring their teams’ cohesion.

Finally, the Group Environment Questionnaire (Widmeyer, Brawley, & Carron, 1985) is the most widely used and reliable measure. It has been validated and is the most accepted scale for quantitatively assessing team cohesion in sport. This measure considers the many different types of variables which mediate the positive cohesion-performance correlation. Most notably, it takes into account the type of sport, team, and individual goals – making it a more specific and therefore more accurate way to measure team cohesion as a correlate of performance outcomes. This scale has 18 items that ultimately measures four components of cohesiveness:

1. Attraction to the group (social) – group members’ perceptions about personal involvement, acceptance, and social interaction
2. Attraction to the group (task) – group members’ perceptions about personal involvement with group tasks, productivity, goals and objectives
3. Group integration (social) – group members’ perceptions about similarity, closeness, bonding within the whole group as regards social aspects
4. Group integration (task) – group members’ perceptions about similarity, closeness, and bonding within the whole group as regards its tasks
These categories of cohesion take into account the social versus task cohesion distinction, contributing to its widespread and validated use. It is clearly an effective application of the multifaceted nature of cohesion and provides an opportunity to consider a range of variables that may mediate the cohesion-performance relationship (Lavallee et al., 2004). In developing new ways to measure the complexities of team cohesion and more specifically – the “teamwork” component, measuring tools should certainly be taken from Widmeyer and his colleagues’ (1985) sophisticated and thorough Group Environment Questionnaire. This will be further discussed in a later section of my project in which new ways to define and measure teamwork are suggested.

All of these measuring tools are similar in form – questionnaires that athletes complete and whose answers – ratings on scales for various components - are then statistically manipulated. I think that the development of cohesion (and through this project – teamwork) measuring tools should, however, expand to include perhaps both observational as well as narrative reporting from team members. Interviewing athletes and coding their stories for patterns would reveal a lot more information, especially in the sports setting when it may be hard to rate on a scale the complex interpersonal situations that can arise throughout a dynamic and constantly changing season. It should also be noted that in working towards measuring teamwork, surveys or other measuring tools should be administered multiple times longitudinally and results compared. This could reveal, for example, how well a team can handle disturbances, stress, or other events that could drastically change both social and task cohesion of a team. These are just a few adjustments that could be made to these existing measures and taken into consideration when developing an operational and measurable definition for teamwork.
The Role of the Coach

While all of the models, especially coming out of the sports psychology literature, explain why team cohesion is important, there are a few missing components to a well-rounded understanding about what teamwork is and how coaches can facilitate it.

There are countless books, specific to a wide range of sports, that provide “team building” exercises and explain the importance of having a cohesive team. Again, a missing component is providing an effective way that coaches can mediate this and actually improve performance outcomes. One book in particular that was of great interest to me due to its specificity to soccer is a work by Rinus Michels, a world-renowned coach of various club and national teams at the highest level. He outlines his own process of team building and what has brought his teams great success. Without getting into its minute details or the specificities of building cohesion for soccer teams, his analysis of the psychological team building process is most relevant to this project. He explains some important prerequisites to successful team building.

First, willingness and readiness on the part of the players to work hard and for the better of the team is crucial (Michels, 2001). This initial willingness, however, is not a constant factor. In fact, both internal and external pressures are going to continually sway players’ motivations on both individual and team levels. Michels (2001) explains, “the motivation to optimize the level of performance cannot be separated from the individual mentality to win at all costs. That winner mentality has a positive influence on the willingness to collectively work to achieve a common goal.” This efficiently summarizes and combines many of the cohesion theories already addressed, taking into account the conditions under which individuals work best in a team.
setting. Michels also goes on to explain the constantly changing dynamics that occur on a team. He calls upon the common saying, “what works today is not guaranteed to work tomorrow” and emphasizes just how much this applies to the sporting world. In the context of a sports team, there certainly are no guarantees as injuries, constant changes in personnel, and the ups and downs of wins, losses, and other factors shift the way teammates interact with each other and thus, has a major impact on what is effective at different times in order to facilitate the highest level of performance. This is especially important for a coach to understand.

The coaching intervention piece is crucial to building effective team cohesion and maximizing team performance, but the way a coach does this is going to change constantly. It is also important to understand that there is not a set model for how all coaches should treat their teams under various circumstances – different things are going to be effective for different groups of people. Coaches need to understand the complex relationships within their team and how these relationships are affected by both internal and external factors – from handling wins and losses to “off-the-field” drama. Overall, the most important aspect of developing a coaching intervention model explaining how to facilitate effective “team building” is that it must be fluid, adjustable, and flexible. For example, after a loss, some players may need a firm and direct speech – an angry speech that motivates to work harder. Others would not respond well to that and need a more gentle reassurance that they can win the next game and one loss is not the ‘end of the world.’ The collective group as a whole may react to various events differently from day to day as well. A coach’s job to mediate these changes and still maintain a strong and constant team identity is not easy!

Michels also classifies three other types of team building. While these levels of team development are leaning towards the specificities of soccer, they address the more tactical and
sports-specific aspects of team development as the psychological component is – although the focus of this project – just one part of the team building process and establishing a cohesive unit. The first additional type of team building is organizational – this refers to laying down “ground rules” for the way each team member functions as a part of a unit. Michels draws a parallel to traffic rules – individuals must follow important guidelines so that there isn’t chaos on the roads. Also, following traffic laws soon becomes automatic and you don’t have to put much cognitive effort into obeying the rules. Same applies to establishing set rules on a sports team. Established rules and norms of behavior over time become second nature and team members should successfully coexist with each other. In the sports setting, these rules might be such things as not being late for training sessions or respecting your teammates on and off the field.

The second type of team building is the strategical component. Michels goes on to cite soccer-specific examples about attacking and defending, line-ups and other soccer-related components, but essentially this team building ensures that all team members are “on the same page” on the field. When substitutions are made, for example, players know exactly how to interchange with one another seamlessly. The final type of team building according to Michels is tactical – again this is more sport specific and refers to developing a style of play and tactical arrangements. Organizational, strategical, and tactical team building are all important to overall team cohesiveness and the success in these areas also contributes to the psychological aspect of team building success.

This is just one example of applying knowledge about team dynamics and cohesion to how coaches can actually play an active role in team development and building teamwork effectively. However, I aim to reconstruct an operational definition for teamwork with an emphasis on making it a more measurable factor that contributes to successful performance
outcomes. This ‘new’ definition is the product of synthesizing previous theories and models. The more practical product of this research, however, is an application of this synthesized definition to a coaching intervention model.

**Defining Teamwork**

Throughout much of my research, psychologists in the field have noted in the concluding sections of their work that one distinct piece missing is a clear definition for teamwork. In their comprehensive analysis and literature review of teamwork and performance in the sports and social psychology fields, Carron and his colleagues (2012) explain that although there is considerable and progressive work surrounding team cohesion and group dynamics, there is a critical need to determine exactly what the nature of teamwork in sport is and also its antecedents and consequences. Once an operational definition is established and these questions are answered, the focus can shift to investigating a way to assess and measure teamwork in a quantitative way (Carron, Martin, & Loughead, 2012).

In working towards the development of an operational definition of teamwork, it is important to understand its classification as a type of cohesion. As previously assessed, there are a lot of factors contributing to a group or team’s cohesiveness. Donnelly and his colleagues (1978) explain that “there can be no such thing as a non-cohesive group; it is a contradiction in terms. If a group exists, it is to some extent cohesive.” However, I am interested in what separates teams that merely possess some level of “cohesion” from those that have a unique bond and connection that actually contributes to higher performance outcomes, ultimately the collective goal of sports teams.
There is certainly insight into team development and ideas about the team building process, but without a clear direction as to what “teamwork” really means this field work’s practical use is limited. Grounded in the extensive and innovative work already done and previously reviewed, I aim to suggest an operational definition of teamwork that, drawing from existing measuring tools, would be quantitative and testable. More importantly, I aim to apply this in a practical and helpful way to a new model that explains how coaches can effectively build teamwork in a way that yields positive performance outcomes.

My novel ideas are not to be taken as finalized theories, but rather a new direction for how psychologists, coaches, and other personnel might consider the all encompassing notion of teamwork. Additionally, I hope that it provides a framework for future developments and a more concrete way to measure teamwork that in return can provide practical feedback that sports teams can actually use! In general, one thing I noticed missing from the literature, among many theories and models, is a more practical and applicable approach. The coaching intervention model is intended to reflect all the important work that has already been done and apply it in a meaningful way that is both accessible and effective for coaches to use.

Again, this model is both open to interpretation for coaches to use in a way that is most meaningful and useful to them and is merely a start to the continual process of developing a more comprehensive body of work for coaches to utilize in new ways for the betterment of their teams. Throughout all of this, the ultimate goal is kept in mind – success and increased performance outcomes. These developments are only the start to filling a void in this faction of sports psychology research.
My original definition for teamwork is as follows:

**Teamwork** is a multi-faceted type of cohesion that is associated with a deeply connected team that shares understanding about all aspects of their:

1. **Team Identity:**
   
   All team members rate their own identity as closely tied to that of the collective team. This sense of belonging and identity contributes to increased individual efforts toward group goals (Hogg, 1992).

2. **Team Philosophy:**
   
   Once a team identity is established, a team philosophy can emerge. All team members contribute to this philosophy which dictates normative standards for team behavior, rules, expectations, and goals.

3. **Individual Roles:**
   
   Members of the team feel as if they are an important part of the group upon which others rely. They feel comfortable with their teammates leading to decreased anxiety and increased confidence and thus performance (Brehm & Kassin, 1996), (Sanna, 1992). Additionally, individuals feel as though their contributions are an important part of achieving team performance goals. It is important that they see that their efforts will bring rewards meaningful to them on both a personal level as well as for the benefit of the team (Karau & Williams, 2001). A key part of understanding individual roles in a way that contributes to strong teamwork is that they will be dynamic and constantly changing. Successful teamwork does not mean settling for a permanent role, but rather a collective sense of fluidity and continual striving for the most influence, effort, and support possible towards team performance goals.
Additionally, it is especially important that team members realize that not only should they be challenging themselves to assert themselves into more influential roles but also that team roles will be shifting and changing as a result of many different events that could occur. (For example, a star player may get injured and need to find a way to take on new roles for the team.)

4. **Performance Outcome Goals:**

   For the first three components of this teamwork definition, the team must be cohesive and united in their understanding of the collective group’s identity, philosophy, and individual roles. This cohesion, however, must be driven towards clearly defined performance outcome goals. Cohesion without purpose is not necessarily a positive or productive attribute of a successful team. But when this cohesion is built for the purpose of achieving collective goals, “teamwork” emerges. This final component of the teamwork definition is actually what ties together the other three parts as the purpose of building teamwork is so that performance outcomes may be increased. It is this aspect of the definition which makes it a more operational application that can be measured and as a result utilized for practical uses by coaches and their teams in pursuit of excellence.

   As a result of this definition, teamwork can then be quantitatively measured by having team members rate various aspects of all four components through a survey that can then be scored and yield a teamwork rating. It will be similar to past measuring tools, drawing from their methodologies, but with questions that address directly these four components of teamwork. As mentioned, teamwork could also be measured through narrative analysis or even observational data – seeing how teammates interact, asking individuals how and to what extent they identify
with and feel important to the team. Additionally, I think it would be important to gather quantitative data in these ways at various stages of team development and a team’s season, taking into account the dynamic changes that can occur both socially and in response to positive or negative events (whether it be wins and losses or other external influences).

Now that a more clear definition with measurable components for teamwork has been established, the creation of a model for how coaches can use this is possible. My working model of a coaching intervention that explains how coaches can take this teamwork definition and apply it to building teamwork in an effective way that results in higher performance outcomes is shown below. This model again is a suggestion for the direction that research in this area of sports psychology should continue. It is, as mentioned, a direct application of my new teamwork definition, but the model draws from existing models of team development and team building, synthesizing their most applicable components and ideologies.

**Coaching Intervention Model: Building Teamwork**

**Step 1:** Establish your coaching philosophy and initial expectations and performance goals for your team. This should be implemented every day in practices and interactions with the team, but a coach could also present this in an initial team meeting.

**Step 2:** Take in direct feedback from the team on both a collective level as well as from individual members regarding what they want to accomplish as their performance outcomes. Based on these findings, adjust rules and norms of behavior as needed. A coach could do this by sending out feedback surveys regularly as well as having individual meetings with their players.

**Step 3:** Through observation as well as direct feedback on the expectations your team has of each other and of you, start to establish a team identity in a way that “gets everyone on board.”
There is a clear understanding of what the goals are and how – collectively – they will be achieved. Again, this should be clear in everything a coach does, but could be reinforced by a team meeting presentation, posting team goals in the locker room, and other reminders so that it is immersive and all team members are “on board.”

**Step 4:** Based on what team dynamics emerge and how players take on and react to dynamic and changing roles, adjust the team identity that keeps core values but caters to team members, making each individual feel important, effective, and always with the ability for upward mobility and increased influence (as a result of increased effort and contribution). Coaches should be sure to reassure team members who may have taken a negative turn while encouraging those that are working upwards. In practices and all aspects of coaching, it should be evident that every individual has the opportunity to have a more and more influential role based on performance, attitude, and work ethic.

**Step 5:** Based on both team members’ reactions and what events may transpire through the course of a season – both “on and off the field” – adjust performance goals and continue to cater to changing roles. It is important, however, to maintain high expectations and genuineness to your philosophy. Again, it is crucial that a coach keep communication lines open and be transparent in all decisions – so that they clearly reflect the team identity, philosophy, and collective goals.

This model functions as a “domino effect” as each step is building off the previous, taking into account constant feedback from team members and events happening within and to the team. Again, an important emphasis is on its dynamic and fluid nature – team building is not
a permanent or stringent process. Rather – effective team building that leads to success in performance is flexible and based on continual changes and feedback. As a coach, your role is not to force strict rules on the team, but instead to mediate and facilitate team development and the continual changes it will endure.

Conclusion

In conclusion, I hope that a comprehensive literature review that dives into both sports and social psychology fields provides a base of information about team and group dynamics, especially the factors of cohesion. This knowledge, then, is taken to create a new definition and model of teamwork and how coaches can effectively implement it into their programs. This is simply the start of filling in what is missing from the field work in this area and many more developments are still needed. Particularly, devising a way to statistically measure and score team members and collective teams on scales of teamwork and adapting it to specific sports settings would be important next steps. I suggested an inclusive measuring system that would rate all dimensions of teamwork with the addition of observational and narrative measures, but the specificities of this system would need to be refined and developed in way that would make it a widespread and replicable tool.

One way to make these findings more understandable and accessible to athletes and especially coaches could be through the compilation of a coach’s handbook. This would break down the teamwork definition and more importantly the coaching intervention model in a way that is more relatable to coaches and how they can implement it in realistic ways.
First, the handbook would include a brief introduction relaying some key background information regarding the origins of teamwork. The majority of the book, however, would break down the multifaceted definition of teamwork and stepwise model of coaching. It would provide more explicit examples for how to build teamwork and how it can make a real and lasting impact for their team in achieving performance goals. I briefly mentioned some examples of how each step of the coaching model could be put into action, but the coaching handbook would outline in great detail such components as how to construct a team meeting about building a team identity or the best way to make a team member feel an important and contributing part of the team when they are struggling, for example. As an aspiring coach myself, I have plans to complete this handbook and make it accessible to other coaches (particularly adapted for soccer coaches, although this initial teamwork definition and coaching intervention was made to be applicable across all sports and levels).

This is another future direction that this project can and should go – working towards an all-encompassing definition for teamwork is an important first step, but I did not touch on such issues as differences in gender, type of sport, or level of competition. The coaching model in particular can be modified for these differences and the corresponding factors adjusted to meet the varying needs of different types of athletes and coaches. For example, while my suggestions for a teamwork definition and how coaches can use it are quite broad in scope and purpose, the specific needs of a recreational soccer team of 12-year olds will be different than that of a professional soccer team. Different types of sports, gender differences, and other demographic differences should be assessed on a more specific level in relation to how building teamwork can be most helpful. In addition to refining and expansion of my novel definition and coaching intervention plan, these specificities should also be considered in future work.
The main product of this project that I hope is the continual focus is finding ways to create applications for theories and research of psychology to the real world. The novel definition for teamwork is constructed in a way that can be directly useful to coaches and athletes in achieving their performance goals. This teamwork definition and corresponding coaching intervention model exemplifies how sports psychology is a field meant not only to expand the theoretical framework of psychology and its many disciplines, but also to provide meaningful and practical solutions that can be immediately effective in daily life. In this investigation of what teamwork is, it is intended to be accessible to athletes and coaches in helping their sports teams achieve performance goals in a rewarding, efficient, and innovative way.
References


