Creating an Environment for Sportsmanship Outcomes

A Systems Perspective

MARY SARA WELLS EDWARD RUDDELL
KAREN PAISLEY

Sportsmanship in Youth Sports

Systems modeling can guide the changes needed to improve the sport environment.

The following two articles complete this two-part feature edited by Gary Ellis. In the August issue, after an introduction by Ellis, Greg Bach described the Parents Association for Youth Sports and its approach to improving spectator behavior. Then Elaine Raakman explained the Justplay system, which surveys game officials and uses the results to enhance the management of sport behavior.—Ed.

Poor sportsmanship is an increasingly serious problem in youth sport programs. In addition to the horror stories of violence and aggression that we read in newspapers or hear in the media, Fred Engh (2002) of the National Alliance For Youth Sports pointed out that almost half of all youth sport participants (45.3%) have been yelled at or insulted; 21 percent have been pressured to play while injured; 17.5 percent have been hit, kicked, or slapped; and 8 percent have been pressured to intentionally harm another player.

Perhaps even more frightening are the examples of poor sportsmanship from parents and other adults who should serve as role models for young participants. Sportsmanship violations involving parents and other adults range from verbal abuse and taunting, to assaults against players, other parents, and officials, and in an extreme case, to manslaughter. These negative experiences and critical incidents reflecting poor sportsmanship can lead youths to restrict their participation in physically active recreation or to drop out altogether. In fact, in *Why Johnny Hates Sports*, Engh (2002) reports that of the 20 million youths who participate in sport each year, approximately 70 percent will stop participating before they reach age 13. This dropout rate evokes particular concern in light of alarming increases in childhood obesity and other health problems related to inactive lifestyles (National Institutes of Health [NIH], n.d.).

Creating environments that encourage sportsmanship may help to combat this trend of critical incidents, boost participants' levels of fun, and, as a result, increase their desire to stay involved in youth sports. Recently, the authors of this article implemented a program to address the sportsmanship problem by employing a number of techniques stemming from prosocial behavior theory. Prosocial behavior is a voluntary and positive form of social behavior, toward an individual or group, which is unselfishly motivated and results in positive social feedback or rewards (Bar-Tal, 1976; Bierhoff, 2002). Based on this theory, the program uses three general strategies:

1. It "personalizes" referees, teammates, and opponents through pre-game introductions and post-game social events.

2. It provides punishments and rewards for poor and good sportsmanship, respectively. Punishments were implemented through liberal use of technical fouls and similar techniques among players, coaches, and spectators, while rewards included good sportsmanship certificates and awards.

3. It promotes a positive attitude toward participation by using the following methods:

• Creating a community of good sportsmanship by displaying banners about the league's commitment to sportsmanship, by maintaining a league web site, and

by periodically distributing—to players, officials, coaches, and spectators—stickers attesting to the value of good sportsmanship.

• Strengthening personal commitment to good sportsmanship. This was accomplished through the public display of a signed petition on a large poster at the entrance to the gymnasium. All players, coaches, and spectators were asked to sign the petition.

• Reducing score discrepancy effects (blow-outs) by resetting the scoreboard to zero when one team scored 16 points more than its opponent. Previous research has shown that close games, even when participants lose, are evaluated as being more fun than being on a winning team during a "blow-out."

This article shows how a systems model can evaluate the effects that a prosocial behavior-based youth sports program had on participants' enjoyment, on the number of critical incidents, and on participants' intent to continue in the program. The "systems" perspective is important because sportsmanship, or the lack thereof, is not a stand-alone phenomenon. Rather, it occurs within unique cultural, social, and physical settings. To understand the network of relationships between sportsmanship and the many relevant components of each of these settings, it is necessary to construct a systems model of the most important relationships. Once constructed, systems models can inform managers, policy makers, administrators, and leaders by identifying the key factors essential to understanding problems that may arise. Systems models also allow managers to estimate the effects of different policy, programming, and leadership options on key elements within the system. In the systems model discussed in this article, the authors were interested in how elements of the program might be expected to influence enjoyment, good sportsmanship, and the number of critical incidents experienced during participation in a basketball league.

Systems Modeling: A Primer

Most systems are composed of four basic parts: elements, interrelationships, boundaries, and functional utility. Elements are the variables being studied in a system. Usually, the basic unit of analysis in a system is a specific type of element called "stocks." Stocks are "reservoirs"—collections of resources of interest. In the current evaluation, stocks include enjoyment, critical incidents, and intent to continue participation in youth sports. As an example, in the authors' systems model, fun can flow into or out of the reservoir, and the overall amount of fun over the course of a season would increase or decrease as a result of this in-flow and out-flow.

Another type of element, called a "converter," regulates the flow of a resource into a stock. One or more converters can be used to model rates of increase into and decrease out of stocks. Converters, along with other components of a system, are illustrated in the model of fun in basketball that appears in figure 1. In that model, playing time serves as a converter. As playing time increases, the model proposes that flow of enjoyment into the stock called "fun" increases.

The second key part of systems models is interrelationships. As with elements, two kinds of interrelationships are most frequently modeled: "flows" and "connectors." Flows represent the direct movement of a resource (e.g., fun, intent to continue, and number of critical incidents) into and out of a stock. Connectors represent the linkages among the various elements in a system and describe the strength of those relationships (figure 1).

In the systems model represented in figure 1, the stock is a collection of the resource "fun." The arrow into fun represents all of the things that increase fun, while the arrow away represents all of the things that decrease it. The model diagrammed in figure 1 specifies two converters. These are "playing time," which increases fun, and "bench time," which decreases fun. The arrows that connect each of the converters to their respective control valve are the model's connectors. The final step in completing the model is to describe the strength of relationships among the system's elements, which is typically done by using equations for each of the various connections.

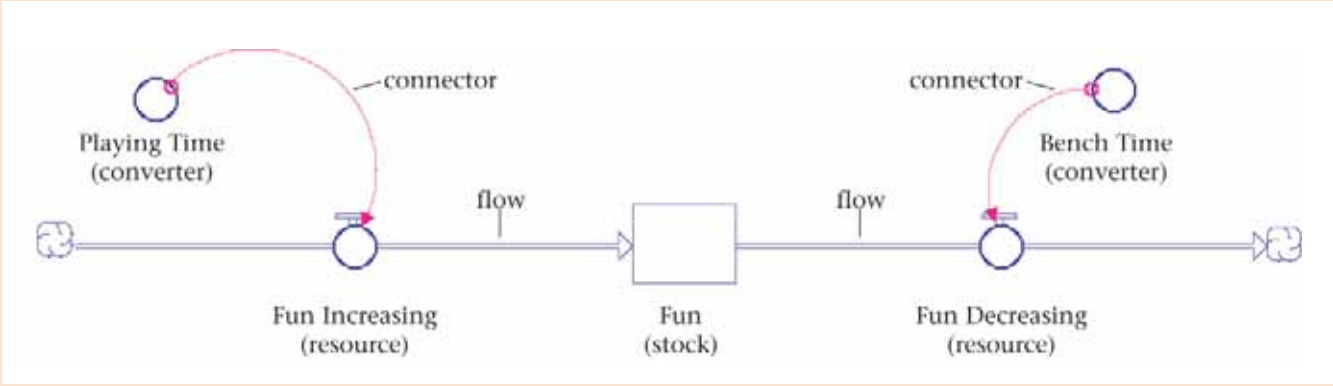
Identifying the system boundaries is the third key part of a systems model. Bounding the system simply means making a judgment about which elements should and should not be included in the model. No hard-and-fast rules exist for bounding a system. The system should be one that is complex enough to give an accurate picture of the phenomenon in question, but not so complex as to be overwhelming. Bounding the system serves an important function by reminding the manager or policymaker that all systems models are artificial.

The final key part of a system is functional utility. Functional utility refers to the idea that the behavior of a system is synergistic, or greater than the sum of its parts. An example would be a team whose members are well-connected, especially when playing. Such a team gains a sense of team spirit as opposed to feeling like a group of individual players. Direct effects, indirect effects, and feedback loops all give a system this character.

Two types of systems models exist: expert and judgment-based. Expert systems are those where relationships among elements can be described with precise mathematical relationships. Judgment-based models, which were used in this evaluation, are less accurate and do not aim to make numerical predictions of the system. Rather, their purpose is to describe complex relationships, to identify sticking points or "frictions" that cause relationships to go in unexpected ways, and to examine counterintuitive results in order to correct assumptions that managers may have that are either incorrect or overlooked.

Analysis of judgment-based systems models is often divided into two phases: (1) model building and (2) policy simulation and analysis. Model building involves creating an accurate description of a phenomenon or situation in terms of system components (stocks, flows, and connectors). Policy simulation involves making changes to the system and simulating the effects of those changes on the behavior

Figure 1. System Components



of the system.

The first step in the model-building phase is to bound the system. One must identify the elements to be included in the system and determine which elements should be considered stocks and which should be converters. Next, relationships are specified, and their respective strengths are identified. Finally, the model must be validated. Validating a model entails running a simulation of it, without changes or interventions, and comparing its performance with how things are in the real world. Since the model-building phase is intended to be an accurate description of the phenomenon or situation in question, the model performance should strongly correlate with what actually happens in the real world. If the model does not reflect the real-world situation, it must be adjusted until correspondence is reached. As a simple example, if a model predicts high levels of fun in the context of a particular league, but participants report low levels of fun, the model needs to be adjusted to reflect that reality.

After a model has been built and validated, the policy-simulation phase can begin. This phase includes changing the values of select variables and running simulations of models reflecting those changes to determine their effects on desired outcomes. For example, in the model in figure 1, one might increase playing time and examine its effect on perceived fun. The model in figure 1, however, is too simple to be informative. A more complex model might reveal that, as the effect of playing time is filtered through another variable, such as a coach's derogatory remarks (an indirect effect), the level of fun, in fact, fails to increase. The friction in this system is the coach's insensitive behavior. If fun is an explicit and highly valued goal of a given league, then a variable has been identified for future policy considerations. Further, in future simulations, it may be found that decreasing coaches' yelling has no effect on fun because other variables, such as playing in a close game, were more important.

Evaluation of the Sportsmanship Program

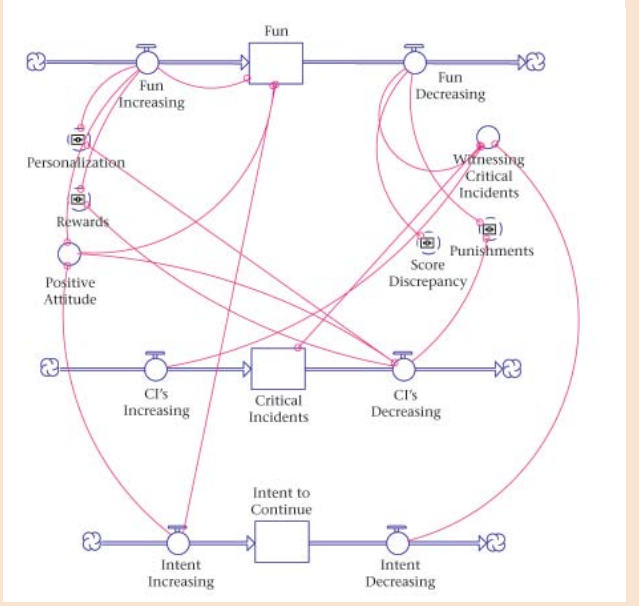
This article presents a systems model based on two sets of observations of a youth basketball program (Ellis, Henderson, Paisley, Silverberg, & Wells, 2004; Wells, 2005; Wells, Ellis, Paisley, & Arthur-Banning, 2005). As was already mentioned in this article, the program was grounded in prosocial behavior theory and was designed to reduce unsportsmanlike behaviors and critical incidents, while increasing good sportsmanship and fun. Specifically, the authors' evaluation attempted to answer the question, "How would prosocial behavior policies in a youth sport program that included personalization, punishments, rewards, and promotion of a positive attitude affect the number of critical incidents in the league, the participants' perception of fun, and the participants' intent to continue playing in the future."

Figure 2 presents the program and its intended outputs as a systems model. In this model, fun and intent to continue are represented as stocks. A central assumption of the program was that good sportsmanship could be increased by attacking unsportsmanlike behaviors through reducing critical incidents. These events were also represented as stocks. Thus, the overall system model is composed of three subsystems: a fun subsystem, a critical incidents subsystem, and an intent-to-continue subsystem.

"Fun" is the stock that anchors the fun subsystem. The reservoir of fun is filled by three converters: personalization, rewards, and positive attitude. Two feedback loops are also built into this subsystem. As the reservoir of fun increases, it, in turn, acts as an agent to create more fun. In other words, fun feeds on itself. The second feedback loop involves positive attitude and fun. Here, positive attitude increases fun, which, in turn, increases positive attitude. Rounding out the fun subsystem are three converters that decrease fun: witnessing critical incidents, punishments, and score discrepancy. As each of these three increases, a corresponding decrease in fun will occur.

The second subsystem, critical incidents, is anchored by the stock "critical incidents." This reservoir is filled by witnessing critical incidents. The logic here is based on the idea of a releaser cue, or a psychological tendency for individuals to engage in behaviors, from which they would ordinarily refrain, after seeing others performing them. Witnessing the action of another person seems to release inhibitions that would otherwise hold one's behaviors in check. In other words, a parent who ordinarily would not yell at a referee in a basketball game for eight-year-olds is more likely to do so

Figure 2. Program and Outputs



if he or she sees another parent doing so first. Accordingly, a feedback loop is built into this subsystem as witnessing critical incidents increases further critical incidents. Of course, more critical incidents means more witnessing of such behaviors. Four converters decrease the reservoir of critical events: personalization, rewards, punishments, and positive attitude. Increases in each should decrease the reservoir of critical incidents. Further, the fun subsystem is linked to the critical incidents subsystem through personalization, rewards, witnessing critical incidents, punishments, and positive attitudes.

The intent-to-continue subsystem is anchored by the stock called "intent to continue." Two system elements, the converter called "positive attitude" and the stock called "fun," increase the intent to continue, while witnessing critical incidents decreases levels of intent. Indirect effects can be traced by following paths along the diagram in figure 2, where one element connects to a second element through a third. For example, critical incidents affect the number of critical incidents witnessed by participants, which, in turn, affect the intent of participants to continue playing in the future. More complex indirect relationships can be traced as well, such as the impact of personalization on fun, which leads to a better attitude, thereby decreasing the number of critical incidents.

Validation of this model was performed by setting the elements of the sportsmanship program variables to zero (that is, simulating the league before the program was instituted) and running a computer simulation of the model across an eight-week season. The model was built and simulated using the computer systems analysis program Stella. Performance on three outcome variables (fun, critical incidents, and intent to continue) was compared to actual post-season observations and participant self-reports.

The results of simulating the league with no program implementation appear in figure 3. This simulation demonstrates that, in the absence of the sportsmanship program, critical incidents continue linearly as the season progresses. Thus, players' exposure to critical incidents appears to create a cumulative effect of releasing more negative behaviors as the season progresses. The reservoir "fun" empties rapidly, and participants continue to play for more extrinsic reasons. "Intent to continue" follows fun, but initially lags behind. This suggests that fun is a key motivator of participants' intent to continue. Intent remains strong longer than fun, perhaps because it is motivated by extrinsic reasons such as saving face (not being seen as a quitter) or parental pressure. If lack of enjoyment persists over time, however, a decline in intent is likely to follow.

Figure 4 illustrates the results of a simulation when the program elements are implemented. In this simulation, the number of critical incidents is dramatically reduced. What is important, however, is that fun and intent to continue increase as critical incidents decline. Critical incidents seem to be a key element in fostering negative experiences for league participants. It is also interesting to note that there is a substantial lag before fun and intent to continue increase. This seems to suggest that league participants are already socialized to expect an atmosphere of excessive competition and everything that comes with it. It takes a while for the new pattern to be processed. Fun and intent are slow to increase, but once the new social atmosphere is accepted, fun and intent increase rapidly.

Conclusions

As this article demonstrates, systems modeling offers a valid method for recreation, physical education, and lifestyle professionals to determine the effectiveness of their policies on the desired outcomes of their programs. Systems modeling is particularly useful because outcomes such as sportsmanship are influenced by more than one attribute of the program, and it is, therefore, important to analyze them in the context of the entire system. Programs designed specifically to serve youths also include several elements, the interactions of which must be considered in order to determine effectiveness. The relationship between elements within the program (e.g., other participants, referees, regulations, leaders) and elements outside the program (e.g., peers, family, school, work) may all have a potential impact on the desired outcomes. Employing systems modeling with these programs will give a greater understanding regarding the best means to help a program achieve its goals.

The example provided in this article suggests that implementing techniques based on prosocial behavior theory—including personalization, rewards, punishments, and promoting a positive attitude (Ellis et al., 2004; Wells et al., 2005)—can improve sportsmanship in the youth sport environment by reducing critical incidents and increasing fun and intent to continue participation in the future. This information implies that many of the techniques used are

Figure 3. No Implementation

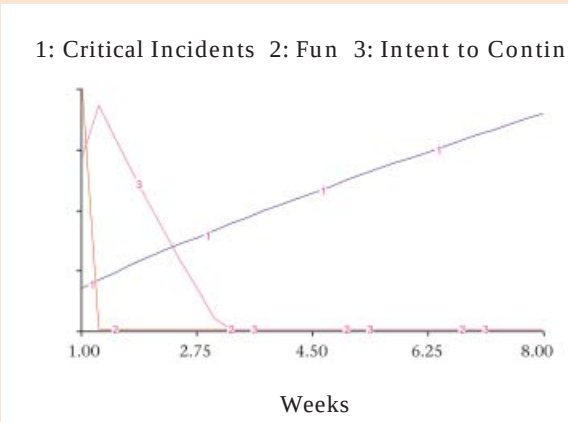
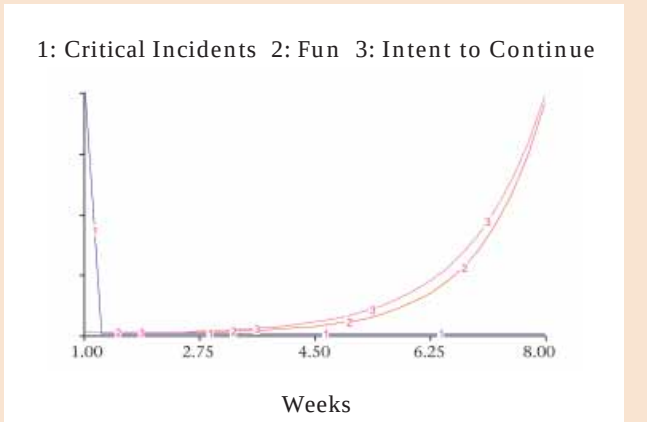


Figure 4. Full Implementation



effective at promoting better youth-sport experiences. Parks and recreation professionals, as well as educators, could use these and similar techniques to improve their programs.

Personalization can occur both in youth sports and in physical education classes. The program that was evaluated in this study employed pre-game introductions and post-game socials, but other techniques could also be used. Creating league rosters or web sites that list the interests of the participants may make players more aware of the similarities they share with their opponents, helping them to see them as people, not merely as the nameless, faceless opposition. In physical education classes, when team sports are played, it might be useful to ensure that groups of friends are split, creating an instant connection among opponents.

Punishment in this league was accomplished through the liberal use of technical fouls, and rewards took the form of good sportsmanship certificates and awards. These techniques could be used similarly in other recreation settings and physical education classes. Technical fouls can be used not only for players and coaches, but also for spectators, helping those watching the game to understand that unsportsmanlike behavior is unacceptable in the sport environment as a whole. In a physical education setting, semester-long classes could provide an award for the individual who demonstrated the best sportsmanship throughout the term.

Several of the techniques used to promote a positive environment can be applied in other settings also. Posting positive sportsmanship signs in gymnasiums could serve as a reminder in youth sports leagues, as well as physical education classes. Further, contracts can be signed on the first day of practice or class so that players or students know the expectations they have agreed to live up to, and posting the contracts in a prominent area of the gymnasium or field can serve as a frequent reminder of this commitment.

Finally, minimizing score discrepancies can occur through the organization of teams. In recreational leagues, it would be beneficial to allow only individual, not team, registrations. An opening season clinic could then be used to form teams based on demonstrated ability (in order to keep the teams as even as possible). Teams in physical education courses could be created in a similar manner, or even rearranged on a daily basis, in order to make sure they are similar in ability.

Promoting good sportsmanship through the use of these techniques and others based on prosocial behavior theory can affect the entire sport system. The interactions of each component can then help lower the presence of critical incidents, while increasing the amount of fun enjoyed by participants and their intent to continue participation in the future. These improved experiences, one hopes, will ensure that youths continue to benefit from engagement in physical activity throughout life.

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Mary Sara Wells (mary.wells@health.utah.edu) is an assistant professor at Clemson University, Clemson, SC 29634. Edward Ruddell (edward.ruddell@health.utah.edu) is an associate professor, and Karen Paisley (Karen.paisley@health.utah.edu) is an assistant professor, at the University of Utah, Salt Lake City, UT 84105.