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This thesis titled
Enhancing the Agenda: A Content Analysis of Weekly Magazine
Coverage of Performance-Enhancing Drug Use
in Competitive Athletics, 1986-2006

by

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Abstract

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Athletes utilizing supplements to boost performance in sports have existed as long as athletic competition. Recently, media reports about this issue have increased after performance-enhancing drugs became part of the culture of baseball, the American pastime. Previous research has demonstrated the agenda setting effects of media coverage of steroids in sports. Weekly news magazines, such as Sports Illustrated, Newsweek and Time, are crucial media that set the public agenda for numerous topics, including athletics. The period between 1986 and 2006 saw performance-enhancing drug use develop from an unacknowledged phenomenon to a topic discussed around the water cooler at work. Through content analysis, this study associates the agenda setting effect of weekly news magazine coverage of the issue of performance-enhancing drugs in sports with the frames used to take this issue outside the locker room and into the public consciousness.

Approved:_______________________________________________________

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Chapter 1: Introduction

Over the last few decades, the issue of performance-enhancing drug use in sports has grown from a fringe problem into a major ingredient in the sports news cycle. Today, it is difficult if not impossible to go through a weekly news cycle without encountering a couple of stories about performance-enhancing drug use in competitive athletics. While there is a long history of performance boosting programs in sports, the issue truly gained prominence when Ben Johnson was stripped of his gold medal in the 1988 Olympic Games. Prominent publications, including weekly periodicals, were instrumental in informing the public and shaping perception of the issue of performance-enhancing drug use in sports. This thesis explored the relationship between magazine coverage of performance-enhancing drug use and the effect this coverage had on public perception of performance-enhancing drug use in competitive athletics.

For almost as long as sport has existed, cheating has been a part of the game. Pitchers in baseball would use files to improve grip on baseballs, or they would use spit to give pitches extra movement. Batters would counter by corking their bats, giving them an unfair advantage in their swings. Other sports have different methods of taking advantage of the situation to gain an unfair competitive edge in the game. Sport is an activity that is supposed to occur on a level playing field that invites any and all to compete with one another in an
environment people hope is a fair, calibrated competition in which the rules are
the same as they were when they played the games as children.

Instead of cheating with equipment or technique as had been the protocol
in the past, science has taken cheating in sports to the next level. The sports
landscape is constantly changing, and performance-enhancing drugs must
change along with it. Blood doping was an early approach to increasing
endurance in sporting events. This process, which is popular in such sports as
cycling and distance running, boosts an athlete’s red blood cell count, thus
increasing his or her endurance (Kois, 2004). Like other technological
developments, the blood boosting and performance-enhancing regimens
improved with time. New improvements that specifically target athletic
shortcomings include anabolic steroids, creatine, erythropoietin, human growth
hormone and stimulant drugs. The illegal means to boost athletic performance
also improves faster than the ability to test for these illegal substances.

The documented history of performance-enhancing drug use is vast and lengthy.
The use of performance-enhancing substances in competitive athletics has its
roots in antiquity. Reports in medical science indicate that the Greeks ate sheep
testicles before competing in the ancient Olympic Games in order to gain a
competitive edge. The testicles contained high levels of testosterone, and in
theory mimicked the effects of today’s androgenic athletic supplements
(Hartgens & Kuipers, 2004). While media coverage may have increased related
to drugs in sports, performance-enhancing drugs have long been used to gain a competitive edge, changing and developing all the while. The first drug regulations in competitive athletics came in 1963 after a Dutch cyclist died as a result of blood boosting in the Olympic Games (Corelli & Gains, 1996). This was hardly the last controversy in competitive athletics. In the 1990s, it was revealed that the East German women’s Olympic team was unknowingly dosed with steroids in the 1970s and 1980s. The team won many medals, but the medals came at the expense of many of the women’s health (Cowell, 1998, pp. 1). This was one of many allegations of widespread, governmentally-mandated performance-enhancing drug programs in Eastern bloc countries. The first prominent Olympic athlete to have his legacy tarnished by a positive steroids test was Canadian sprinter Ben Johnson, who brought the issue to the forefront of sports discussion in a manner that was greater and more pervasive than ever before when he beat American icon Carl Lewis in the Olympic 100-meter dash in South Korea (Johnson & Moore, 1988). The high profile of the event, coupled with the implications of cheating, made performance-enhancing drugs an important topic that moved outside the realm of professional body building circles into such sporting events as track and field that had never before been connected to media coverage of performance-enhancing drug use as a means of self improvement (or controversy).
Another historically significant development in the narrative of performance-enhancing drug use and its consequences was the death of Lyle Alzado. Anabolic steroids were called Alzado’s ticket to the National Football League (Puma, 2007, pp. 1). Before his death, Alzado connected his brain cancer to his lifelong steroid abuse on the television news program “First Person” and in an article on the cover of Sports Illustrated. Denham demonstrated the agenda setting effects of Alzado’s admission of steroid use by connecting Alzado’s revelations to subsequent legislation (1997). Alzado’s connection between his cancer and steroid use, in fact, did set the agenda for the media, who used frames that were pulled directly from the mouth of Alzado from interviews in Sports Illustrated and television.

Cycling is a sport with a long history as a testing ground for performance-enhancing drugs. The first controversy started with Dutch cyclist Knud Enemark Jensen, who died in the 1960 Olympics under the influence of amphetamines (Murphy, 2007). Seven time Tour de France champion Lance Armstrong and 2006 champion Floyd Landis have vehemently denied performance-enhancing drug use despite ample evidence that spoke to the contrary (Schneier, 2006; Ruibal, 2006; Ford, 2006). The champion of the 1996 Tour de France Bjarne Riis was also recently stripped of a title when he admitted to using performance-enhancing drugs in the run to his victory (Whittle, 2008). Many athletes were disqualified for performance-enhancing drug use in the 2007 Tour. The Tour de
France, cycling’s crown jewel, was referred to in a derogatory manner as the Tour de Drugs by satirists connecting the dots in the relationship between competitive cycling and performance-enhancing drugs (Wojciechowski, 2007).

Recently, a culture of secrecy and an overall atmosphere of fan skepticism of sporting events in America’s game, Major League Baseball, led to a prominent governmental intervention. On March 17, 2005, players and corporate executives were called into Congress to testify about performance-enhancing drug use in Major League Baseball (Barrett). This issue was put into context and possibly directly related to the release of two books critical of steroid use in baseball. The first was *Juiced* by Jose Conseco, a former player who claimed to have firsthand knowledge of rampant performance-enhancing drug abuse in sports. The second, *Game of Shadows* by Lance Williams and Mark Fainaru-Wada, offered a more in-depth analysis of the topic. Through years of investigative reporting, the two San Francisco Chronicle, *Sports Illustrated* and ESPN reporters tied performance-enhancing drug use (particularly THG, which at the time was an undetectable steroid developed by the Bay Area Laboratory Co-Operative (BALCO) scientists to Barry Bonds and Jason Giambi in baseball as well as Marion Jones in track and field. The actions taken by Major League Baseball that followed the Congressional hearings have done little to decrease the allegations of performance-enhancing drug abuse in the sport. The most recent indication of real action came in the form of a federal indictment issued to Barry Bonds
regarding his 2003 court testimony, testimony which was contradicted by the book *Game of Shadows* (Fainaru-Wada & Quinn, 2007). Giambi had previously been called in to meet with former Senator George Mitchell after his tacit admission in *USA Today* that he used steroids (Curry, 2007). Mitchell headed the commission examining performance-enhancing drug use in baseball. Giambi also tested positive for amphetamines in 2007 (Quinn, 2007). Other athletes, including Gary Matthews Jr. in baseball and Evander Holyfield in boxing, were linked to an investigation of a steroid and human growth hormone distribution ring (Thompson & Quinn, 2007). In 2007, Marion Jones forfeited 5 Olympic medals she had won in the 2000 Olympic Games as a result of steroid abuse (Zinser, 2008). Alex Rodriguez, the most famous baseball player with the highest salary in the biggest media market, has also been ensnared by the performance-enhancing drug controversy. A *Sports Illustrated* article by Selena Roberts and David Epstein disclosed that Rodriguez tested positive for steroids in the 2003 survey testing program instituted by Major League Baseball (2009). Rodriguez was named the 2003 American League Most Valuable Player. Rodriguez defended himself on ESPN, and later implicated a cousin in obtaining the drug Primobolan over-the-counter in the Dominican Republic for Rodriguez to use. Further investigation connected Rodriguez to Angel Presinal, a controversial Dominican trainer previously arrested with performance-enhancing drugs (Curry, 2009). The situation, much like the cloud hanging over sports, will take some
time to sort itself out. Baseball, an important contributor not only to the culture of the United States but also to that of the world, and athletics in general have stumbled upon a credibility issue because of rampant drug use that could trouble sports for years to come.

Sports are an important to social, cultural and gender issues in society. Research in the field of sports has addressed the issues that arise in sports through the theoretical lenses of economics, sociology, psychology, sports science and communication to name some of the many analyses that have been applied to athletic events and related culture. Social capital and the agenda setting function of mass media have been used to connect sporting events with the social sciences (Palmer & Thompson, 2007; Denham, 1997, 1999 and 2000). Performance-enhancing drug issues have stirred controversies in sports, with investigations of the BALCO laboratory that allegedly created these drugs, bringing up serious allegations of cheating and doping in baseball and track and field (Longman, 2004). This is one of many drug scandals in the history of sports. The sport with the classic archetype of the steroid-addled athlete, football, also has not been without its own problems. Shawne Merriman led the National Football League in sacks and was named All-Pro despite a previous positive test for the anabolic steroid nandralone in the 2006 season (Wilner, 2007, pp. 1). As many as 8 players currently face suspension because of a positive test for the
drug bumetanide, a diuretic that sometimes is used to mask steroid or amphetamine use (Schmidt & Battista, 2008).

The relationship between media and professional athletics is symbiotic or synergistic. Over time, media serve to springboard games that went from local events experienced by a select regional audience into an international phenomenon that today is enjoyed by people from various regions and social classes. Historians have demonstrated the relationship between media and athletics, and magazines in particular have played an important role in the development of the athletic organizations, from college to the professional ranks. Oriard’s book Reading Football details how media coverage of football emblazoned the sport on Americans’ consciousness: “Football’s formative years were also a golden age of print, an era when more newspapers and periodicals reached more people and a wider range of readers than in any time before, and when the print media had greater power than in any time after” (1993, pp. xix). As of 1904, the U.S. Bureau of the Census reported that weekly periodicals reached more than 17 million people, demonstrating the pervasiveness of the medium. The number of publications declined as time went on, but the percentage of people who were reached by periodicals increased three to four times. Oriard also connected general weekly magazines to increasing the visibility of football. “Football was considerably more important
to the general interest weeklies, chief among them Harper’s…the general interest weekly stood next to the daily newspaper in coverage of football during the 1890s, and continued to do so into the 1950s” (1993, pp. 139).

Oriard’s book connects media coverage to the cultural significance of both football and baseball. “Only with the formal organization of the intercollegiate game during the last third of the 19th century, and with its constant coverage in the popular press, did sport become a significant part of American culture” (1993, pp. 277). There are several other works that connect the emergence of sports in American culture to the media (Rader, 2002; Anderson, 2001a and 2001b). The integral role of media, particularly magazines, to the emergence of sports as cultural phenomena is demonstrated in these texts. The past pervasiveness of media in constructing the public perception of sports suggests that today the same media may still play a role in shaping opinions about the issue of performance-enhancing drug use in sports.

Today, athletes have a wide array of pick-me-ups available, from blood doping and erythropoietin that increase endurance, to human growth hormone and newly developed steroids that can promote muscle growth while sometimes eluding even the best testing techniques, to illegal drugs such as amphetamines that can be used to increase alertness and energy (Haley, 2003). Expanded media coverage has highlighted legal and ethical problems in sports, from racial and gender issues to the modern performance-enhancing drug issue, and it has
also focused the lens more on the lives of athletes, who themselves are properties in whom owners have invested millions of dollars. The investment of time and money by fans also makes this an important issue to consider. For example, in the last year of available data, football fans spent more than 6 billion dollars on tickets and memorabilia in 2006, trailed closely by Major League Baseball (Isidore, 2006). Baseball revenue is also intimately linked to local television revenue (Lowry, 2003). Money spent by fans serves as a measure of abstract value, and according to this concept, the revenue generated by fans demonstrates how they value the sports experience (Ingham, 2004). The media scrutiny may have helped to identify the issues that go along with performance-enhancing drug use in sports, which are important to fans. The ways to push performance to a greater level include anabolic steroids, which are synthetic derivatives of the male hormone testosterone (Haley, 2003). This is one of many options.

Another issue raised regarding athletes and performance-enhancing drugs is the subsequent result of children using substances because they saw the improved performance of athletes they consider heroes. This thinking is supported by the Taylor Hooton Foundation, a charity begun to promote awareness of the health problems of steroids after Taylor Hooton, a high school senior, committed suicide following his previous use of steroids to improve his athletic performance (Durrett, 2007).
Athletes doing whatever it takes to get ahead in the game have existed nearly as long as sport itself. Widespread media coverage of these issues, however, has not. There are a number of events throughout the history of sports that potentially could impact the public perceptions of athletes, the condition of sports and the pervasiveness of performance-enhancing drug use in sporting culture.
Chapter 2: Literature Review

There is a great deal of theoretical research on sports during the period of time examined in this study. In the United States, where the American pastime exists as a cultural icon, baseball has a history of protecting itself through public relations, helping the game survive gambling scandals and labor disputes that were equally as socially significant and pervasive as the recent coverage of the performance-enhancing drugs (Anderson, 2001). Public relations professionals were also found to slant the coverage of the journalists in favor of Major League Baseball’s “desired meaning of the game and its administration,” in a historic study of the Major League Baseball public relations office (2001, pp. 4). The study can be compared to the ability of professional sports organizations, which all have active public relations support, to commit themselves to a message and a symbolic interactionist construction of reality (Anderson, 2001). Symbolic interactionism was identified by Blumer (1969) as the way that people give meanings to unfamiliar things through previous experiences and social interactions. Reporters often write stories that conform to management expectations in order to keep communication channels open. Professional sports organizations have received preferential coverage for years from media eager to keep in contact through these channels, according to another study by Anderson (2001b).
Sports and public relations can have a real world impact. Sports such as baseball, football and basketball can impact the reader or viewer, both of whom are connected to the ideological nature of constructed texts (Lines, 2002). Public relations officials are the intermediary between sports organizations and the media, and media are the intermediary that delivers the messages to the public. Public relations professionals and sports journalists create meaning in text or broadcast form by connecting news events to concepts or ideas that already exist in the public consciousness. Athletes also demonstrate a strong influence over young people’s attitudes and understanding, based upon studies done in experimental settings (Lines, 2002). The influence of sport pervades both genders in terms of hero construction, based upon the research. A study by Fox (2002) also demonstrated that children, teens in particular, are influenced by athletes, and that they often cannot explain the influence. The children are, however, strongly influenced by athletes. Although the research deals with advertising, the influence exhibited by prominent athletes cannot be overlooked. Denham (2006) also identified that news stories in publications such as Sports Illustrated, carry more weight with children forming opinions on whether or not to use steroids than do commercials stressing avoidance of the drugs. This suggests that youth may need the influence of news stories to wade through the scientific jargon that says steroids are bad for their health.
Another important factor in coverage of sports media is that mediated messages can have an impact on how fans perceive sporting events (Dietz-Uhler et al., 2002). By analyzing the message, researchers found that fans gave favorable opinions of athletes based upon altered variables in a controlled study. This material suggests that in certain instances, negative or positive coverage of local or hometown athletes will influence fans more than will coverage of out-of-town athletes.

Nagel and O'Toole (2004) determined through comparative financial modeling that sports leagues’ punishments were fairly benign or non-existent in many instances based upon data of fines in major American sports leagues. Drug suspensions were part of the punishments studied, although other factors, such as profanity, fights and arrests for illegal activities other than performance-enhancing drug use were also included. This is in line with the drug suspensions in Major League Baseball, which were non-existent at first. Later, after great public outcry, the league modified their minimal level of punishment (Kiely, 2005). The Major League Baseball Players’ Union has enjoyed a prominent position of power in the sport since the 1970s, with the current union viewed as one of the nation’s strongest labor organizations by historian Charles Korr (2002). This might help to explain the silence that was prevalent at the time when players refused to speak about steroid and performance-enhancing drug use in the sport. Players believed it was part of the game, and they felt they risked isolation by
speaking out. Plus, they had the country’s strongest union defending their position. In a team game, the position of outsider represents a break in the chain.

Another major theme that arises in reports of performance-enhancing drug use is the negative health effects of many of the substances in a long-term health context. Hartgens and Kuipers (2004) detailed a host of health problems that are associated with steroid use, from vanity concerns like acne and hair growth to serious problems like cancer and gender-changing characteristics. Other drugs, such as erythropoietin, have also been linked to deaths of nine cyclists in a period of 18 months (Kindred, 2004). These details, plus the influence of the athlete behavior on children, might create some kind of social responsibility response from press members as well as members of the news media who cover sports at any level, including writers for weekly magazines. The press developed a stance that recognizes that because the press is protected by the First Amendment, the media have a responsibility to report issues that affect the public in a fair manner (Seibert & Schramm, 1956). Examples of social responsibility would include reporting on the detrimental health effects of performance-enhancing drug use (in studies duplicated many times with consistent results) and covering such issues as children actually using performance-enhancing drugs because of famous athletes.

There are a few different theories that guided this research. The communication guidepost is the agenda setting function of mass media. The
theory was first proposed by McCombs and Shaw in their landmark political study “The Agenda Setting Function of Mass Media” (1972). This was the original study that connected topics covered by the media to the agenda of public interest. The more media cover an issue, the more aware and interested the public would be in that issue. At the time of the initial agenda setting study, the evidence of media influence on public perception of issues and issue salience was in its infancy. More recently, it has become one of the two most cited theories in mass communication research (Bryant & Miron, 2004).

Agenda setting is recognized as the central theory that explains how news media create issue salience in the public (Davie & Maher, 2006). McCombs and Reynolds state that, “Although many issues compete for public attention, only a few are successful at reaching the public agenda,” (2002, pp. 1). The most important issues of the day become part of the public agenda, demonstrating the agenda setting effect of mass media. This theory has been replicated and validated in more than 350 empirical studies since the initial McCombs and Shaw study. The process has been replicated in a variety of settings in a variety of countries. McCombs identified the Acapulco Typology in one of his studies about agenda setting in Mexico. The Acapulco Typology demonstrates that agenda setting takes place in other arenas outside of American politics. Later, this allowed agenda setting to move into other arenas, such as athletic competition. This research on performance-enhancing drugs fits within the first typology,
focusing on all of the items in the sample and measuring public change in issue salience (McCombs & Reynolds, 2002,). Certain issues give the public a greater need for issue orientation. For example, a person doesn’t need the news media to inform them of such obtrusive events as a fire in their back yard. Media are needed to tell the public about issues they don’t experience on a daily basis. Steroids and performance-enhancing drugs fit in this category. While athletes can be viewed on television or in person, only reporters have direct access to the athletes and the executives who oversee sport. Therefore, in order for the public to know about a performance-enhancing drug problem in sports, media need to identify both the problem and to establish its importance to the audience. This works in much the same way that Oriard connected media coverage of football to its cultural emergence in America. The public is alerted to the phenomenon through a demonstrable increase in coverage. According to definition, “Priming occurs when news content suggests to news audiences that they ought to use specific issues as benchmarks for evaluating the performance of leaders and governments. It is often understood as an extension of agenda setting,” (Scheufele & Tewksbury, 2007, pp.11). Priming also can take place outside of the realm of politics as part of agenda setting.

The two concepts to arise in issue orientation are relevance and uncertainty (McCombs & Reynolds, 2002). The more relevant and uncertain an event, the greater the likelihood a media consumer will need issue orientation.
This framework falls within what is called first-level agenda setting, where the media informs the public as to what issues are important. Second-level agenda setting occurs when the media frames how an issue should be perceived by the public. The agenda is set through a process of priming the public to an issue. Priming also deals with the idea that the public cannot receive every bit of information from the media. The public draws on information related to issues that are salient to them.

Another idea intricately connected to the framework of agenda setting is the concept of framing. McCombs and Shaw, the two architects of agenda setting theory, stated along with Weaver that “priming and framing should be viewed as natural extensions of agenda-setting” (Scheufele, 2000, pp. 297). McLeod, Kosicki and McLeod explain framing by stating, “Consideration of framing effects on audiences has become an important and lively research area. A key theoretical concern is that news reports can alter patterns of knowledge activation,” (2002, pp. 230). Framing is intimately connected with agenda setting. Framing is a method by which the media can demonstrate what is important in a given news cycle, and the frames can also help to shape public opinion on the same issue.

Agenda setting must also demonstrate a change in salience or public opinion. This is often performed through survey research. In some situations, such polling organizations as Gallup were cited as the measure of opinion
change (Jones & Baumgartner, 2004). In others, the researchers crafted their own surveys to measure specific details about the shift in perception on a given issue (Wood & Vedlitz, 2007). Researchers can demonstrate a shift in public opinion by measuring media coverage and attitude shift. Through this method, the agenda setting function of mass media can be demonstrated.

Another important sub-category of agenda setting is the area of intermedia agenda setting. This view turns agenda setting sideways. Rather than examine the media influence on the public, it measures media influence on other media outlets. Reese and Danelian’s study (1989) of the New York Times’ coverage of drug policy pointed out that the nationally prominent newspaper would set the media agenda for coverage of the issue. These findings have been duplicated in many other settings (Levin & Frensley, 2007; Kiousis, 2004; Chang, 1999). The New York Times is a popular choice because it is such a prominent, respected publication that sets the national agenda on many different levels. This is confirmed by all of the directly aforementioned studies.

As discussed earlier, research patterns have indicated that McCombs’ original theory has held consistent across media and in different research journals, academic papers and book chapters. A meta-analysis performed by the originator of agenda setting identified the concepts of public agenda setting, attribute agenda setting and intermedia agenda setting (McCombs, 2005). The work has generally found that prominent media can set all three agendas across
countries and platforms through salience, framing, psychological and sociological patterns. Sungtae-Ha’s 2002 research demonstrated that public agenda is correlated with amount of coverage, and that Gallup Poll coverage can measure a set agenda change. “In professional sports, the media agenda is set by sports news and broadcasts,” (McCombs, pp. 553). This is one of the many ways this theory has been applied to sports.

A number of studies have demonstrated agenda setting related to sports and news coverage. Denham authored four different studies on the agenda setting function of television and magazine coverage of steroids as both an intermedia, legal and public agenda setter (1997; 1999; 2000; 2006). Denham’s first study described a climate in the 1980s that was strongly opposed to drugs. A series of cover stories in Sports Illustrated coupled with the zeitgeist acted as an agenda setter six months later for the legislators who passed the Anabolic Steroid Control Act (1997). Later coverage of Lyle Alzado speaking about his cancer on television and in Sports Illustrated in the form of a cover story impacted press coverage at other outlets, demonstrating the pervasiveness of intermedia agenda setting in this area, as well as identifying health as an important frame in steroids coverage (1999). One of the other studies by Denham cited in this literature review identified the impact that high profile athletes have on the public’s perception of the issue of performance-enhancing
drug use (2000). Denham (2006) also demonstrated the impact of media coverage including *Sports Illustrated* on young athletes:

> Because adolescents frequently idolize professional athletes, whom they observe earning millions of dollars and living glamorous lifestyles, they might be inclined to experiment with the drugs professionals have been known to use. Through mass communication, they also may develop inaccurate perceptions of health risks, as well as perceptions of normalcy about drug use in sports. (pp. 809).

Denham (2006) found a correlation between *Sports Illustrated* and first- and second-level agenda setting for young athletes.

Maguire also looked at sports by exploring the sociology that makes sports affect the audience in the way it does. The book *Sports Worlds: A Sociological Perspective* examined the relationship between media and sporting events with a focus on negative relationships between the two (2002). Matthes found that media can have an impact on agenda setting for audiences based upon a sports organization’s agenda being compatible with the audience perception of an issue like sports rules violations (2006, pp. 422-4). This idea ties in with the concept of issue salience.

The theoretical literature, plus history of sports and research in sociology, has demonstrated that sports are socially significant in society. Researchers have also demonstrated the agenda setting process in national magazines (Pratt, Ha & Pratt, 2002). Recent developments in sports, including the nature of performance-enhancing drug use in sports alongside the social significance of
sports in daily life, suggested that a content analysis of coverage of performance-enhancing drug use would shed light on how the issue was covered. The content analysis, backed by the previously cited literature, provides a framework that can help explain how public perception and understanding of the performance-enhancing drug issue was shaped and guided by media coverage.

BALCO, a laboratory connected with allegations of performance-enhancing drug use in the book *Game of Shadows*, was cited widely as evidence of widespread performance-enhancing drug use in sports. The coverage in this book, as well as subsequent coverage in other media outlets, was so pervasive that agenda setting theory suggested it could also have influenced public perception of the issue.

*Hypotheses and Research Questions*

**H1:** Coverage of performance-enhancing drug use will cluster around specific events rather than occur at an even distribution over time.

**H2:** Allegations or mentions of problems in specific sports will increase after specific events when compared to previous coverage.

**H3:** News magazines will concentrate coverage on different sports than a sports magazine will, and coverage of performance-enhancing drug use will be greater in the sports magazine than in news magazines.

**H4:** Increases in coverage of performance-enhancing drug use in athletic competition will be associated with the Gallup Poll results,
demonstrating the agenda setting effects of media coverage of the issue of performance-enhancing drug use in competitive athletics.

RQ1: How are frames used throughout the coverage period?

RQ2: What specific events drew the most coverage of the issue of performance-enhancing drug use in competitive athletics?

RQ3: Is there any evidence of intermedia agenda setting between sports magazines and news magazines?
Chapter 3: Method

The study included magazine articles from January 1, 1986, through December 31, 2006. The articles were selected from three major magazines with the greatest distribution in their respective categories: *Time*, *Newsweek* and *Sports Illustrated*.

This content analysis was performed by coding articles selected from *Sports Illustrated*, *Newsweek* and *Time*. Through content analysis, data were compared to the dates of significant performance-enhancing drug allegations, including Lyle Alzado, Lance Armstrong and the BALCO steroid lab controversy that ensnared Barry Bonds and Jason Giambi, as well as other incidents. The sample period for the research spanned from 1986 to 2006 based upon the historical events discussed in the introduction coupled with 2006 being the last year Gallup conducted a poll on performance-enhancing drug use in sports. Articles from 1986 through 1995 were selected from the *Reader’s Guide to Periodical Literature*. The articles were selected from this guide under the topic headings of steroids, performance-enhancing drugs, blood doping and drugs in sports.

All articles with references to performance-enhancing drug use were included in the census. Some articles were coded from microfilm. While blood doping is not a performance-enhancing drug, the activity often accompanies performance-enhancing drug use, and it assisted as a search parameter. The
sample from 1996 to 2006 used the same search parameters, but the articles
were selected from the EBSCO Search Premiere because all of these periodicals
are archived there. EBSCO does not include stand-alone photographs in the
directory, so photographs were not included. Also, on a practical level, direct
photographic evidence of performance-enhancing drug use didn’t exist in the
magazines, so the photographs without articles were not included. Articles were
coded as briefs (less than 1 page), features (1 page or greater in length),
infographics, editorials and other category. The coding is explained in greater
detail in the appendix.

In order to ensure the reliability of selecting articles from both the EBSCO
Search Premiere and the Reader’s Guide to Periodical Literature, the articles
from 1996 through 2006 EBSCO selection were compared from the Readers’
Guide to Periodical Literature selections. Of the 257 articles that EBSCO located
related to “steroids” and “performance-enhancing drugs,” 205 articles were found
in the Readers’ Guide to Periodical Literature, giving a reliability index
percentage of 96.69%. This number might have been higher if the Readers’
Guide to Periodical Literature indexed every article that was included as part of a
package. For example, a cover story about steroids might contain articles written
by more than one author. In many instances, it appears that the Readers’ Guide
to Periodical Literature would only list the one article rather than listing two
articles individually. This is further supported by the fact
that every date selected by both methods matched. Only the exact number of articles didn’t match. By examining the magazines listed in the Readers’ Guide to Periodical Literature, the articles selected by EBSCO would match 100% of the time if the print guide subdivided articles the same way that the Web database did.

Sports Illustrated was chosen as a magazine to be studied as it is the largest circulation sports publication during the period being studied. According to the Magazine Publishers of America, the circulation of Sports Illustrated was 3,280,630 in 2006, making it the 15th highest circulated magazine and the highest circulated sports magazine (2006). Time and Newsweek were also selected based upon their coverage of a wide range of events. This, coupled with the circulation statistics (Time: 8th: 4,082,740; Newsweek: 16th: 3,130,600), make each publication culturally prominent. The media penetration achieved by these magazines suggested that these would be among the most influential magazines in terms of influencing public awareness of the issue of performance-enhancing drugs.

The time frame selected in this study starts January 1, 1986, 18 months prior to the first high-profile performance-enhancing drug story; and it ends December 31, 2006. The period should be sufficient in order to determine coverage patterns before the Ben Johnson steroid scandal. The time period included a number of significant events in the history of performance-enhancing
drug use in sports. The coding protocol was based upon a previous protocol used by Denham. This census created a universe of 21 years of articles about performance-enhancing drug use.

Certain materials had to be excluded from the sample. The first exclusion involved leaving articles pertaining to corticosteroids out of the sample. While corticosteroids are structurally related to anabolic steroids, the drugs are used to treat allergic reactions and respiratory conditions, and have no performance-enhancing qualities. Articles about asthma, for example, were found in the EBSCO search, because corticosteroids are utilized in the treatment of asthma. These articles were excluded from the sample.

This coding system also concentrated specifically on drug use by human competitors. Some competitive events, such as horse racing, have a history of using banned performance-enhancing products to achieve competitive success (Talk of the Nation, 2005). While this may be a serious issue, the focus of this thesis was the use of performance-enhancing drugs by human competitors rather than programs administered to animals.

Certain types of human competition were also excluded. Sports entertainment (i.e. professional wrestling) has a long and tragic history with performance-enhancing drugs (Associated Press, 2007). While this history and social influence may exist, the fact that these performances are scripted and predetermined gives little influence to the coverage of effects of performance-
enhancing drugs. The edge gained by a football player using steroids is more quantifiable than the edge gained by a wrestler who competes in a scripted environment. For a similar reason, professional bodybuilding was also excluded from this study. While the results in bodybuilding may not be predetermined as might those in wrestling, the events are fueled by active anabolic steroid use. The events are also fringe, with the competitors operating outside the realm of the typical media consumer’s consciousness. Coverage of all other forms of competitive athletics with human competitors that were not sports entertainment or body building was considered and coded in this study.

The unit of analysis for the content analysis was the article. The coding system identified date, magazine, article type, number of pages, sports, drugs, and a series of variables. Some of the variables were self-explanatory. Article type differentiated between features and briefs, which respectively were news items greater and less than one page in length. The articles were also coded for editorial and info-graphic content (freestanding charts and cartoons). Stand alone photographs were not coded because they are not indexed in EBSCO or the Reader’s Guide to Periodical Literature. The length of the article was subdivided into eighths of a page because this is the unit of division used by the EBSCO search. This is supported by research that found that analyzing text by breaking into single word units is not the most effective way of analyzing article content (Weber, 1983). Magazine, article type, sports, and drugs were nominally
identified variables. Mentions of health, sport integrity, legality and children’s issues were also coded as frames for their presence in articles. The articles were also coded for whether or not they were cover stories. The coding sheet and code book show this in the appendix.

The frames were coded if they appeared in the articles. Each article could contain every frame, and each article contained no less than one frame. The health frame identified articles that discussed or examined the health impact of performance-enhancing drug use on athletes. An example of the health frame is the *Sports Illustrated* article from 2003 “Body of Evidence.” The article described a host of health problems that haunted members of East Germany’s women’s Olympic team, a group that was unknowingly dosed with steroids. The integrity frame identified whether an article addressed the issue of performance-enhancing drug use harming the credibility of, or perception of fairness in, sporting competition. The 2005 *Newsweek* article “Another Poison Pill,” for example, uses Rafael Palmeiro and his positive steroids test on the heels of a vehement denial of drug use as an example of evidence of Major League Baseball’s steroids problem and describes how it hurt the credibility of the sport. The legality frame identified whether an article framed the issue of performance-enhancing drug use as a violation of laws or of the rules of the game. The most common example of this was the many articles in the three publications about the BALCO case. The kids frame identified the issue by examining how steroid
use affects children. This frame looked for articles defined either directly through usage of performance-enhancing drugs by young athletes or through influence by the athlete's status making a child believe that steroids are the way to compete in sports as an example. A 1999 article in *Sports Illustrated* by Rick Reilly entitled "Hey Mac, Do What Comes Naturally," points out that a prominent athlete like Mark McGwire using steroids could influence children who idolize sports stars. These were the frames explored in this content analysis.

Gallup poll data was utilized to measure the public opinion. Gallup is one of the most respected polling services, and its results provided a good measure for public perception of performance-enhancing drug use in competitive athletics. According to the Gallup organization, Gallup employs many of the world's leading scientists in management, economics, psychology, and sociology. The Gallup Poll has built its reputation on delivering relevant, timely, and visionary research on what people around the world think and feel. Gallup Poll consultants assist leaders to identify and monitor behavioral economic indicators worldwide (2008). Gallup also performed the greatest amount of polling on the topic of performance-enhancing drug use when compared to other major polling organizations. The poll data was compared with the results of the content analysis in order to confirm the agenda setting effect of performance-enhancing drug use in these three prominent weekly magazines.
A test of the intercoder reliability was performed by three graduate students, two in journalism and one in political science at a major state university. Ten percent of the articles were coded after they were randomly selected from the census of all articles from each magazine. The results were calculated after the initial coding pretest was finished. For the purpose of the intercoder reliability, related variables, such as drugs and sports, were combined with other related variables rather than coded separately. There were three slots in the coding used to identify sports and three slots coded to identify drug mentions in each article, and the categories of drugs and sports were coded together with related variables for the purpose of determining intercoder reliability rather than coding each separate slot for drugs and sports separately. The low number of articles involving three sports or three drugs made this adjustment necessary. See the coding sheet and the codebook in the appendix for further clarification.

Intercoder reliability, based on percentage of agreement, ranged from a low of 81.6% for the variable of integrity to a high of 100% for article, magazine, number of pages and the crime frame. The overall intercoder reliability for all variables was 93.9%. Article number, magazine, date, pages and the variable for the BALCO variable all scored 100% among coders. The lowest scoring variable was for the integrity variable at 81.6%. The integrity variable may have represented the most subjective frame in this research. While the codebook did identify three athletes being discussed in one sport as an indication of a question
of integrity, editorial judgment also was a factor in determining usage of the integrity frame.
Chapter 4: Results

There were 257 articles used in this research. Sports Illustrated published the most articles about performance-enhancing drug use between 1986 and 2006 with 187 articles. Newsweek published marginally more than Time (36 articles to 34). 2005 was the year with the greatest number of articles (67), and between 2003 and 2006, the lowest total of articles in all three magazines was 21. 1996 and 1997 were the only two years in the study that did not publish articles about performance-enhancing drug use. Some of the articles identified more than one frame associated with performance-enhancing drug use per article. There were also 339 sports included in these 257 articles. In terms of drugs in the sample, the ratio of mentions of steroids in articles to the mentions of human growth hormone in the magazines was almost seven-to-one (237 to 34).

**H1: Coverage of performance-enhancing drug use will cluster around specific events rather than occur at an even distribution over time.**

The first hypothesis was supported both for each individual magazine and for the three weekly magazines together. The news events that drew coverage across magazines included Brian Bosworth’s positive steroid tests in 1986 (covered in Sports Illustrated and Time), Ben Johnson being stripped of his gold medal in the 1988 Summer Olympics (8 stories with identical dates in all 3 magazines), as well as an average of 5 articles per year in each magazine about baseball and the steroids issue appearing from 1998 through 2005 on
matching dates. The coverage began rolling with former MVP Ken Caminiti announcing that he had used steroids in 2002, although speculation began earlier when McGwire and Bonds broke the home run record in Major League Baseball in 1998 and 2001, respectively. The publication of Game of Shadows and Juiced also generated a tremendous amount of coverage, as did the Congressional steroids hearing. These events were covered heavily in the later part of the research period.

Magazine news coverage can offer deeper levels of analysis than other media coverage because of the news cycle and space requirements (Smolkin, 2007). The coverage in this study also tended to cluster articles around particular dates. The Ben Johnson scandal involved many stories that appeared in subsequent weeks after the story was broken in the press. When Johnson finally returned to competition in 1991 after he was banned, Sports Illustrated ran stories in consecutive weeks about his comeback attempt. Stories about Major League Baseball and performance-enhancing drugs in the weekly magazines clustered quite a bit. The Barry Bonds saga and the BALCO investigation created a continuous series of clusters grouped around specific dates, including July 28, 2004, when multiple stories appeared in all magazines close to the date of the BALCO court hearings in the San Francisco area.
Figure 1
Magazine coverage of performance enhancing drug use by year
Figure 2
Articles about performance-enhancing drug use in weekly magazines by publication
H2: Allegations or mentions of problems in specific sports will increase after specific events when compared to previous coverage.

There were a few examples that strongly support this hypothesis. The most obvious example of a certain event and its subsequent coverage spawning a noticeable increase in coverage at later dates was the admission of previous steroid abuse made by former Major League Baseball Most Valuable Player Ken Caminiti (Saraceno, 2002). The initial admission by the former star player that he used steroids, coupled by his allegations that as many as 50% of players in the sport used performance-enhancing drugs, unleashed a firestorm of coverage afterward. There were eight stories related to performance-enhancing drug use after Caminiti took his story public. The next year, there were 11 stories about performance-enhancing drug use in baseball. The coverage more than doubled in 2004 (28 stories), and reached its zenith (55 stories) in 2005. Other news events occurred during that news cycle involving performance-enhancing drug use in baseball along a similar pattern, showing the evidence strongly supports the second hypothesis. There is overall evidence of an increase in coverage of performance-enhancing drug use that follows Caminiti’s announcement. Coverage in other sports, including cycling and track and field, also increased after the announcements and allegations were made by the former baseball player. This demonstrates that specific events involving performance-enhancing
drugs generated many follow up stories that come after the initial magazine coverage.

There were other stories that preceded an increase of coverage after specific events involving performance-enhancing drug use in sports. The originator of this trend came from track and field coverage. Although the increase was less dramatic, articles in the sample about performance-enhancing drug use in track and field started with three stories about sprinter Ben Johnson being stripped of his gold medal in the 1988 Olympics on September 27. There were four stories in 1989 and five stories in 1990 that involved track and field and performance-enhancing drugs as seen in Table 1 and Figures 1 and 2.

Overall, the article counts do not increase at a consistent rate. However, specific events do seem to spawn both clusters of articles around the date following these situations, confirming hypothesis one, and these events later spawn an increase in coverage, confirming hypothesis two. The last 10 years of the sample showed a great increase in coverage in *Sports Illustrated*, as well as an increase in the numbers of articles in the news magazines as shown in Figure 2. Starting in 2002, *Sports Illustrated* published 9 articles about performance-enhancing drugs. From 2003 through 2005, the coverage increased in all three magazines, and although there was a decrease in the number of articles published in 2006, there were still a substantial number of articles published in the three magazines.
H3: News magazines will concentrate coverage on different sports than a sports magazine will, and coverage of performance-enhancing drug use will be greater in the sports magazine than in the news magazines.

Hypothesis 3 differed from the previous two, both in format and results. There was a clear difference in the coverage of the magazines in terms of general coverage patterns would be expected, especially when the news magazines were compared with the sports magazine. The news magazines cover general interest news, and the sports magazine covers athletic events. Contrary to the hypothesis, however, all magazines actually were more similar to one another than different. In order to compare the sports in a rank order correlation, any sports with fewer than three tabulations were combined into a category labeled “Other.” The differences were calculated using rank order analysis, a technique that allowed the order of each sporting category based on frequencies in each magazine.

Certain sports (specifically baseball, cycling, football, and track and field) received more coverage than other sports in the sample. In order to allow the data to show greater relevance, sports with 0, 1 or 2 mentions generated by categories including hockey and golf were combined into a single category noted as “other.” This made rank order correlations more meaningful without removing the value of the measurement. Also, because there could be multiple sports
mentioned in one article, the final count was determined to be 339 mentions during the sample period, which is a larger number than the total article count.
Table 1

Coverage of specific sports and performance-enhancing drug use in weekly magazines from 1986 to 2006

<table>
<thead>
<tr>
<th>Sports</th>
<th>Sports Illustrated</th>
<th>Newsweek</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>104 (43%)</td>
<td>20 (39%)</td>
<td>19 (39%)</td>
</tr>
<tr>
<td>Football</td>
<td>45 (19%)</td>
<td>7 (14%)</td>
<td>7 (15%)</td>
</tr>
<tr>
<td>Other</td>
<td>42 (18%)</td>
<td>8 (15%)</td>
<td>6 (13%)</td>
</tr>
<tr>
<td>Track and Field</td>
<td>40 (17%)</td>
<td>11 (22%)</td>
<td>9 (18%)</td>
</tr>
<tr>
<td>Cycling</td>
<td>7 (3%)</td>
<td>5 (10%)</td>
<td>7 (15%)</td>
</tr>
<tr>
<td>Total</td>
<td>238 (100%)</td>
<td>51 (100%)</td>
<td>48 (100%)</td>
</tr>
</tbody>
</table>

The data used in this example is shown in Tables 1 and 2. Table 1 shows the categories with the highest numbers are similar in all three magazines. However, the data in Table 2 is more nuanced. When a Spearman’s rho is run between magazines, the similarity between the magazines is shown. The sports magazines are nearly identical in rank order (.998, $p \leq 0.01$). The relationship between Sports Illustrated and Newsweek (.846, $p \leq 0.01$) shares a stronger correlation than that between Sports Illustrated and Time (.834, $p \leq 0.01$).
Table 2

Breakdown of sports mentioned in articles about performance-enhancing drug use in weekly magazines

<table>
<thead>
<tr>
<th>Sport</th>
<th>Sports Illustrated</th>
<th>Newsweek</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>104 (43%)</td>
<td>20 (39%)</td>
<td>19 (39%)</td>
</tr>
<tr>
<td>Basketball</td>
<td>5 (2%)</td>
<td>2 (4%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Boxing</td>
<td>4 (2%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Cycling</td>
<td>7 (3%)</td>
<td>5 (10%)</td>
<td>7 (15%)</td>
</tr>
<tr>
<td>Football</td>
<td>45 (19%)</td>
<td>7 (14%)</td>
<td>7 (15%)</td>
</tr>
<tr>
<td>Golf</td>
<td>2 (1%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Hockey</td>
<td>3 (1%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Tennis</td>
<td>3 (1%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Track and Field</td>
<td>40 (17%)</td>
<td>11 (22%)</td>
<td>9 (18%)</td>
</tr>
<tr>
<td>Swimming</td>
<td>24 (11%)</td>
<td>4 (7%)</td>
<td>4 (9%)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0%)</td>
<td>2 (4%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Total</td>
<td>238 (100%)</td>
<td>51 (100%)</td>
<td>48 (100%)</td>
</tr>
</tbody>
</table>

This data supports the hypothesis. Although there is a correlation between the rank order of each pair of publications, the rank order establishes the differences between the coverage in the sports magazine and the news magazines. The coverage of performance-enhancing drug use was far greater in Sports Illustrated (237 times) versus that of Newsweek (51 times) and Time (48 times). The magazines demonstrated similarities in that baseball, football, track and field, and cycling are the top four sports in each of the magazines.
Another item that supports the differences between the news magazines and *Sports Illustrated* is coverage of sports like cycling and track and field. These sports and specific issues with performance-enhancing drug use are covered at a higher percentage in the news magazines than they are in the sports magazine. This factor also supports hypothesis 3.

**H4: Increases in coverage of performance-enhancing drug use in athletic competition will be associated with the Gallup Poll results, demonstrating the agenda setting effects of media coverage of the issue of performance-enhancing drug use in competitive athletics.**

The first support for this hypothesis comes from the Gallup Poll itself. The issue of performance-enhancing drug use in sports had become such an important issue that it nearly became an annual poll for Gallup between 1998 and 2006. There were eight different polls performed in six years. Each poll focused on a specific incident, but ultimately came back to the issue of performance-enhancing drug use and its effect on the game of baseball. This suggests that the issue of performance-enhancing drug use in the sport had become such an important issue that the polling organization felt compelled to gauge the opinion of the public regarding performance-enhancing drug use in sports. It was also confirmed by an interview with Gallup editor Joe Carroll about the polls. In the interview, Carroll stated that, “The issue of performance-enhancing drug use in
sports had become so noticeable that we had to gauge the public perception of the issue.” He also said:

From a general standpoint, many of the questions that Gallup asks, whether on the topic of performance-enhancing drugs in sports, the President’s proposals on issues like immigration or healthcare, or even the latest O.J. Simpson arrest, are asked to measure the public reaction to real world events, typically reported on by the mainstream media. Questions are asked to find out what Americans think about certain topics, and what they want their leaders to do in these matters. From my recollection, that was the case why we asked about this issue – how widespread the issue of performance-enhancing drugs is and was in baseball, what fans thought the impact on the game would be, and what fans wanted done about it. (2007).

While it doesn’t directly connect the poll to the agenda setting effect of the magazine coverage, there is definitely an association between the weekly magazine coverage of performance-enhancing drug use in sports and interest in the issue.

First, the number of articles about performance-enhancing drug use published yearly was examined. The articles published from 1987 through 1997 never were greater than 12 per magazine (which were published in 1988, the year of Ben Johnson’s positive steroid test). This can be seen in Figure 1. With the exception of 1999 and 2001, each year saw the publication of a minimum of 9 articles per year, seeing a high of 67 articles in 2005 published in the three magazines. Interestingly, the level of public disapproval of steroid use in baseball increased every year the number of articles increased, and decreased in 2006, the only year in which the number of articles published in the three magazines
decreased from the previous year’s totals in the last decade of the sample. This pattern indicates an association between magazine coverage of performance-enhancing drug use and the public perception of the issue.

There were a couple of other variables that were examined in order to better understand the mechanism through which these three weekly magazines may have influenced the public agenda on the issue of performance-enhancing drug use in competitive athletics. The first is the appearance of these articles on the cover of the magazine. Readers can judge the importance of a story when they see it on the cover of a magazine, much the same as the front page of the newspaper displays the most important material in a daily news cycle, and this was a variable that was coded in the research. While the percentages of cover stories compared to total articles was highest in 1988 (4 of 8 stories were cover stories, once again related to the Ben Johnson steroid scandal in the Olympics), a cover story involving performance-enhancing drug use in competitive athletics appeared at least once every year from 1998 through 2006, except in 1999. The number of cover stories also increased with time, with 9 articles involving performance-enhancing drug use appearing on the covers of the magazines between 2005 and 2006. While the percentage of cover stories to total stories about performance-enhancing drug use decreased, the total number of cover stories about steroids compared to other cover stories increased as time passed,
as seen in Figure 3. The increase in coverage over time coupled with an increase in the number of cover stories involving performance-enhancing drug use gives support to the hypothesis that weekly magazine coverage did its part in setting the public agenda, as indicated in Gallup polls, on this issue. Only one steroids article appeared on the covers of the news magazines in the time frame examined in this study. Cover stories were a regular feature of the sports magazine's coverage, especially from 2002 through 2006. Once again, there is
no evidence of a direct connection between weekly magazine coverage of performance-enhancing drug use in sports and the public perception of the issue. While the public opinion changed as coverage and prominence of the issue increased, it is difficult to separate the influence of other media (i.e. ESPN, sports radio, newspapers) from the equation in the manner this research was conducted. However, the influence of these stories appearing on the covers of prominent magazines cannot be ignored.

There are a number of other factors that were involved in the agenda setting function of weekly magazine coverage of performance-enhancing drug use in competitive athletics. The number of articles published in *Sports Illustrated* (187) outnumbered the articles in either *Time* (34) or *Newsweek* (36). This would be expected, as the main focus of *Sports Illustrated* is athletics. *Sports Illustrated* also had a greater mean article length (1.74 pages) than either *Newsweek* (1.47 pages) or *Time* (0.96 pages). There was no indication of a shift in the average number of pages per article when different years were compared with one another. The median page average per year was 1.5, the mean was 1.39 pages and the range was 3.3 pages. The longest article length was 11 pages, and the shortest was 1/8th of a page. Although there was no increase in the length of articles over time within the articles sampled for this research, the increase in the number of articles annually is enough to suggest that the
coverage is positively associated with a shift in public opinion about performance-enhancing drug use in sports.

Table 3
Frames by sport in weekly magazine coverage of performance-enhancing drug use in competitive athletics

<table>
<thead>
<tr>
<th>Sport</th>
<th>Health</th>
<th>Integrity</th>
<th>Legal</th>
<th>Kids</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>23</td>
<td>85</td>
<td>110</td>
<td>18</td>
<td>236</td>
</tr>
<tr>
<td>Cycling</td>
<td>6</td>
<td>8</td>
<td>16</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>Football</td>
<td>24</td>
<td>24</td>
<td>45</td>
<td>11</td>
<td>104</td>
</tr>
<tr>
<td>Swimming</td>
<td>8</td>
<td>1</td>
<td>22</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>Track &amp; Field</td>
<td>14</td>
<td>37</td>
<td>54</td>
<td>8</td>
<td>113</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>11</td>
<td>18</td>
<td>6</td>
<td>43</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>83</td>
<td>166</td>
<td>265</td>
<td>52</td>
<td>566</td>
</tr>
</tbody>
</table>

\(X^2=32.34, \text{ df}=12, p \leq 0.01\)

Starting in 1998, Gallup measured public opinion on the issue of performance-enhancing drug use in competitive athletics. The year 1998 was also the year that coverage of this issue began to increase greatly. In 1998, 48% of those surveyed believed that performance-enhancing drug use was a serious issue in baseball. The percentage increased to 60% in 2002 when 9 articles appeared in the magazines. The number of articles published annually and the public disapproval rating increased from 2003 through 2005 to a high of 80%. The disapproval rating decreased in 2006 alongside the total media coverage (42 articles), a year which also saw fewer articles published than in 2005 (67
articles). In 2006, the disapproval rating had dropped to 60%, while the number of articles about performance-enhancing drug use in athletics had dropped from the 2005 total of 51 articles in *Sports Illustrated* to the 2006 total of 33 articles. This supports, but does not confirm, the hypothesis. A Spearman’s *rho* on the categories (0.777, *p* ≤ 0.05) demonstrates a correlation between the factors. These comparisons to poll results appear in Appendix D.

**Table 4**

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Integrity</th>
<th>Legality</th>
<th>Kids</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>SI</em></td>
<td>40</td>
<td>92</td>
<td>146</td>
<td>26</td>
</tr>
<tr>
<td><em>Newsweek</em></td>
<td>8</td>
<td>20</td>
<td>28</td>
<td>3</td>
</tr>
<tr>
<td><em>Time</em></td>
<td>9</td>
<td>17</td>
<td>27</td>
<td>8</td>
</tr>
</tbody>
</table>

*Χ²=2.87 p≤0.82497*

The first research question asked **how are frames used throughout the coverage period?** Previous research (Denham, 1997, 1999 and 2000) indicated which frames would be identified in articles covering steroids. The history of steroids in sports was discussed in detail in the introduction. Many of the issues related to performance-enhancing drug use in athletic competition help to explain how the frames were utilized. Before 1998, articles and the frames used
regarding steroid use in competitive athletics involved the sports of cycling, swimming, and track and field for the most part. After 1998, many of the frames were connected to baseball. Baseball, a sport that is deeply entrenched in the American consciousness, gained greatly in popularity in 1998 when Mark McGwire and Sammy Sosa battled each other for the single season home run record. This increased attention also increased the scrutiny of reporters asking how these athletes achieved this surge in power. The coverage increased every year from 1998 through 2005. This data is shown in Tables 3 and 4, as well as Figures 2 and 5.

Integrity was the variable that increased across much of the period of time in the sample. The percentage of articles increased or remained constant every year in the sample. The kids frame peaked by 1998, when 50% of the articles connected the issue of steroids in sports to its effect on the children. Although more articles appeared about performance-enhancing drug use and its effects on children in 2005, it was a less substantial percentage of the articles than it was in 1998. The legality frame remained constant, appearing in more than 50% of the articles during all years of the research. This frame remained constant because the most common article involved a simple brief or article about an athlete who was suspended and arrested for using performance-enhancing drugs. This is the most common frame in the articles about performance-enhancing drugs. The health frame was used more heavily in the early articles based on percentages
than it was in the later portion of the sample. This is most likely connected to the early research on the effects of steroids on athletes. Denham demonstrated the agenda setting effects of Lyle Alzado connecting his steroid use to his terminal cancer, leading to a great deal of controlled studies performed by medical science as well as Congressional legislation.

Figure 4
Frames used in weekly magazine coverage of competitive athletics by year

The coverage of the health problems associated with anabolic steroids and other performance-enhancing drugs has also been taken up by the
government in the form of public service announcements (NIDA, 2008). This may have taken some of the onus of informing the public away from the magazines.

The integrity variable also appeared more often in certain sports than in others. The coverage of specific sports and performance-enhancing drug use varied greatly. However, comparison of percentages between sports allowed for a relationship to be established between the variable and the athletic event. Baseball (59.4% of 143 articles) and track (61.6% of 46 articles) represented the sports with the highest percentages of frames about the sport’s integrity. Football (40.6% of 59 articles) and cycling (36.8% of 19 articles) came next when ranked by percentage. The number of articles differs from the number of frames because there are multiple sports coded separately in single articles. The total article count is shown in Table 3.

The second research question asked: **What specific events drew the most coverage of the issue of performance-enhancing drug use in competitive athletics?** The events with coverage in multiple magazines included Brian Bosworth’s positive steroid test, Ben Johnson losing his gold medal in the 100-meter dash, Lyle Alzado and his fight with cancer, the East German women’s Olympic team unknowingly being treated with steroids, Lance Armstrong’s continued dark cloud of suspicion about performance-enhancing drug use, and the Major League Baseball steroids scandal. The MLB scandal can also be subdivided into a series of events which include Ken Caminiti
admitting to steroid use, the Jose Canseco book, the BALCO investigation, and the Congressional hearings amongst other events.

The third research question asked if there is any evidence of intermedia agenda setting between sports magazines and news magazines. The market penetration achieved by these magazines provides the first piece of the framework that would support intermedia agenda setting. The publications are important in their fields and are read by many people who work in the media industry. This significant position allows each of these three magazines to set the agenda for other media in fields with unrelated coverage. This is supported by the magazines’ vast circulation. There were examples of Sports Illustrated (the magazine that was expected to set the intermedia agenda) having stories appear a week or more before the same story appeared in the news magazines. There were also examples (albeit fewer examples) of the news magazines influencing the sports magazine’s content.

However, the coverage pattern, aside from a few isolated incidents, does little to support the idea of intermedia agenda setting. It was nearly as common for the news magazines to publish the first story about a topic that would later generate a great deal of media attention. The pattern demonstrated through this content analysis did little to support the hypothesis that Sports Illustrated would influence the performance-enhancing drug use coverage of weekly news magazines. It is equally easy to attribute the coverage being in one magazine
before the others as a product of the old reporting adage of “getting the scoop.”

All of the magazines may have been working on a story, but one magazine beats
the others to the press because of a key source. Amount of coverage and
number of cover stories are two factors that might have had more influence on
other publications than publication date, which was not attributable to intermedia
agenda setting despite the positive associations.
Chapter 5: Discussion

The 21-year universe of articles selected from the 3 weekly magazines provided a useful framework through which to measure the influence the magazine coverage had on the public agenda regarding the issue of performance-enhancing drug use in competitive athletics. One hypothesis that was not supported by the data was the statement that the 3 magazines would offer different coverage of performance-enhancing drug use. The magazines actually covered the specific sports and specific drugs in strikingly similar patterns when the magazines were compared as a rank order. On a qualitative level, the news magazines provided slightly higher amounts of coverage in sports like tennis and cycling. Golf and hockey were only connected to performance-enhancing drug use solely in *Sports Illustrated*. This similar coverage in the magazines was all part of informing the public opinion about the issue of performance-enhancing drug use in sports. Specific events created increases in coverage. Coverage of many sports, specifically track and field and baseball, increased significantly as time passed, and all sports saw greater coverage over time in the study period. Public opinion was positively associated with this coverage, and as coverage increased, public disapproval also increased. However, a causal relationship could not be drawn without more in depth interviews with editorial staffs of the magazines.
The frames identified by Denham (1999, 2000) that were discussed in the literature review appeared regularly in the magazine articles, and they guided the presentation of the stories about performance-enhancing drug use in competitive athletics. These frames were consistent across magazines and shifted over time. Reports from early in the sample period focused more on steroids and the health effects on users, especially children. Later reports focused more on the criminal nature of performance-enhancing drug use and how the problem grew to be damaging to the integrity of the sport.

The frames used in the coverage period were ranked in the results section by sports in Table 4. This was notable because the four highest-ranked sports (football, baseball, cycling, and track and field) have the best documented history of drug use, suggesting that these events in particular may have been used as a tool to shape public opinion in the most dramatic fashion.

Another frame with an interesting development over time was related to the influence of performance-enhancing drug use on the children. This was and has been in the past a great communication tool to attract public attention to a particular issue. Many issues, including those outside of athletics, have been framed by examining the impact of certain behavior on children, including the recently identified issue of second hand smoke and children (American Academy of Pediatric Otolaryngology, 2007). The interesting development was that the
kids' frame was frequently employed before 1999, but decreased dramatically afterwards. Between 1987 and 1998, the percentage of articles in a given year that used the children's frame hovered between 25% and 50% with an average frame count of 4. After 1998, the level never became greater than 25%, with a range of 14 articles and a median of 11 articles. Although the article count increased slightly, the higher percentages of frames involving children early in the sample might suggest that the frame was employed early in the time period and decreased as the value was more commonly accepted and understood by the public. The Institute of Medicine’s 2003 report on media advocacy noted that the media “can use its presence and power to help mobilize societal action to create the conditions for health” (Dorfman, 2003). Dorfman describes media health advocacy as the use of mass media to “advance public health policy,” and this role was undertaken early in the sample period by news magazines (Dorffmann, 2003, 218). This pattern falls in line with the previously discussed concept of social responsibility. Previous discussions of intermedia agenda setting also could connect media coverage to the government public service announcement program regarding high school athletes and performance-enhancing drug use.

Health was a frame that shared a similarly developing pattern with the children’s frame. It was frequently used at first, but the percentage of health frames decreased as time progressed. An event that created an indelible mark of
agenda setting on the public consciousness was Lyle Alzado linking his cancer to previous steroid use, an event discussed at length in this thesis. Alzado, along with the revelations of secret doping programs in the East German Olympic program that carried tragic results, might have drawn attention to this frame early in the sample period. There is the potential for health problems later in life for the athletes who used these substances to enhance athletic performance according to medical literature cited in this thesis. The frame might have the potential to increase in use as time passes, even though it decreased substantially in the second half of this sample. The reasons for this are evident in professional athletics, where the use of performance-enhancing drugs has ensnared a large number of users over the past 50 years, as well as in day-to-day life. Reports from Britain indicate that needle exchange programs, first instituted as a way to protect intravenous drug users from health problems associated with their habit, now see more needle exchanges for steroids than for all other injectable drugs combined (Davis, 2008). This, coupled with research into the negative effects of steroids in medical research (Hargens & Kuipers, Haley, et al.), only begins to hint at the health problems that await the population associated with performance-enhancing drug abuse at a future date. The data also demonstrates a decrease in coverage of children in the time studied, suggesting that social responsibility may have been considered of greater importance earlier in the sample more so than later.
Another interesting point came from the fact that 96% of drug references in these articles involved steroid use. While anabolic steroids have been the primary performance-enhancing drug abused by professional athletes, other substances, such as human growth hormone, have become more common because testing methods at the present time cannot detect the hormone.

As reported in the results section, there was evidence of materials appearing in *Sports Illustrated* and later appearing in news magazines, providing a framework that shares characteristics with intermedia agenda setting functions. Despite this important role, however, there is little evidence in the study sample for intermedia agenda setting. The only example where a story appeared in one publication before the release of the other two publications in which the same story also appeared was the BALCO story connected to Barry Bonds. This story appeared in *Sports Illustrated* one week before it was also covered by the two news magazines. This would suggest agenda setting, but the article was in fact a chapter of the yet-to-be released book *Game of Shadows*, making it difficult to differentiate between the agenda setting effect of the book versus that of the magazine. On six different occasions from 2004 through 2006, all three magazines covered a specific steroids story during the same week. On 22 different dates, two magazines covered the same story in the same week, while the third publication did not. In only two of the following weeks did the magazine that did not cover the story in the first week cover the story or some element
related to the original piece in the second week. This provides a shaky foundation at best for intermedia agenda setting. The frequency of cover stories in *Sports Illustrated* also provides a basis for a claim of intermedia agenda setting. However, this is difficult to ascertain without interviewing representatives from all three magazines.

The evidence supporting public agenda setting was far stronger in this research than it was for intermedia agenda setting. Coverage in weekly magazines was broken into specific frames to communicate more effectively with the audience consuming the message. Specific sports such as baseball were targeted with coverage because of their salience with those reading the publications. There was a similar breakdown of what sports were linked to performance-enhancing drug use in each magazine. Certain events definitely increased the news coverage of steroids, acting as a catalyst to generate stories about a new, exciting topic that the public could use more information about before reaching an ultimate conclusion. There is definitely a strong positive association between weekly magazine coverage of performance-enhancing drug use in sports and public opinion of the issue. The discussion with the pollsters at Gallup helped to establish a connection between weekly magazine coverage of performance-enhancing drug use in sports and the public agenda. However, the research techniques utilized in this project only found a positive association between coverage in one particular weekly magazine and the coverage of the
two others. It was also unable to connect the coverage of one magazine to the previous coverage of another through the methodology of the research
Chapter 6: Conclusion

Performance-enhancing drug use in athletics is an issue that will continue to develop in the future. This research ended because the last Gallup Poll regarding performance-enhancing drugs in athletics was conducted in 2006 at the time of this research. Cheating has always been a part of competitive athletics. This issue will continue to develop as time progresses despite public awareness of the issue of performance-enhancing drugs in athletics. First, the ratio of mentions of steroids in articles to the mentions of human growth hormone in the magazines is almost seven-to-one (237 to 34). Based upon the ability of professional organizations to test for such drugs as steroids and amphetamines, coupled with the current inability to test for athletes using human growth hormone, it only stands to reason that use of HGH by athletes should increase while use of the older performance-enhancers should decrease. This study was obviously unable to predict these future developments. This should be another important area to explore through future research. Also, from a historical perspective, this era of sports will be an important time to compare to other periods where performance-enhancing drug use was less common. By examining the similarities and differences in statistics and coverage in different eras, a clearer picture of the importance of media coverage of the issue of performance-enhancing drug use in sports will emerge. The coverage of
subsequent health problems that arise related to performance-enhancing drug use should also be explored.

Future research also could be used to see if the pattern of frames used in presenting the steroids issue are similar or dissimilar to the frames used to set the public agenda for human growth hormone in competitive athletics. While there are frames noted in this research, future research may provide a broader pallet of materials through which to gauge whether the findings of the research on the agenda setting effects of weekly magazines presented here hold true when the issue of human growth hormone coverage by media is examined. This is difficult to ascertain through this research. However, future research could help to compare the frames from this research to future developments in the presentation of human growth hormone use in competitive athletics.

The scope of media that could shape public opinion could also be explored in greater depth. This thesis explored the agenda setting effects of weekly magazines. This medium was chosen because the magazines are well distributed nationally, and because previous research indicated the scope of their influence (Denham, 1997, 1999 and 2000). However, there are many other media that might be worth exploring in regard to their agenda setting effects. Local newspapers would give a better idea of how media coverage influences the local agenda. Also, sports television networks like ESPN provide a great deal of information for the dedicated audience. The time span covered in this study
started when ESPN was not a national cable network. However, future research should explore specific event coverage and connect it to outlets like ESPN coverage to understand the different influence of different media related to performance-enhancing drug use in athletics. This methodology should allow researchers to determine more exactly which medium or outlet was most responsible for shaping public opinion on the issue of performance-enhancing drug use in competitive athletics.

Research by Denham (1997 and 1999) has demonstrated a number of examples of specific events that led to media coverage that later demonstrated an agenda setting effect. This research took a more long term, general approach to agenda setting over a 21-year period. Shorter time frames and specifically crafted survey research in Denham’s studies allowed for a better methodology to connect media coverage of steroid abuse to the public agenda. This could provide an exact model for how to connect media coverage to the public agenda.

Future research could also focus on different magazines that might have shaped the public agenda. The three magazines selected for this thesis were selected because of their distribution and focus on issues critical to this line of research. Another magazine that published an assortment of articles about steroids that would provide a different point of reference to study is McCall’s magazine. This women’s magazine published many articles about steroids during the time frame studied here, especially during the early 1980s, when
McCall’s published more articles about steroids than the other magazines in this sample combined. It would be interesting to compare how a women’s magazine presented the issue of steroids in athletics to the way it was presented in sports or news publications. It would be useful to compare the use of frames between different publications. The evidence for intermedia agenda setting also might be better explored between different media outside the realm of general interest weekly magazines such as Time and Newsweek.

Future research should examine whether or not coverage of abuse of newly formulated drugs in competitive athletics increases as time passes, and whether or not the coverage of human growth hormone abuse in competitive athletics follows a similar pattern to the coverage of steroids. Other substances, such as CERA, are next-generation versions of older drugs (in this case, a new form of erythropoetin) that evaded testing detection until new tests were developed (Fotheringham, 2008). These drugs and their connection to health and media coverage should be explored in future research.

The recent release of the Mitchell Report by Senator George Mitchell about performance-enhancing drug use by baseball players was an event that generated a great deal of media coverage as well as information about drug use in this sport that was not public knowledge before this time (Mitchell, 2007). The Mitchell Report was pending as of this research, and it was mentioned in the literature review of this thesis. The release of this report, and the subsequent
coverage and discussion of this report by media outlets, constituted a series of events that were critical in shaping public perception of the issue of performance-enhancing drug use by professional athletes. Future research should examine how all media, from magazines and newspapers, to radio, television and the internet, treated the release of the Mitchell Report.

Sports are an integral part of the fabric that makes up culture. Media are the channels through which most people keep tabs on events in sports. Even season ticket holders cannot keep track of the things that take place in the locker rooms or behind the scenes with professional athletes. Devoted fans spend money on athletic entertainment. Sports journalism is the intermediary by which fans can be directly connected to the athletes on the field, the athletes in which they may have invested great time and money.

In reality, reports on home runs and touchdowns only tell part of the story. Athletes are viewed as heroes, and they perform in games that take people back to their youth, a time when the only things that mattered happened on a baseball diamond or a football field. Performance-enhancing drug use is an illicit method of improving athletic abilities, and as legal and ethical issues arise, the very credibility of these athletic institutions is threatened. Sports in America are self-governed for the most part, and without swift, decisive action, the legitimacy of many of these athletic endeavors can be called into question. Sports were supposed to be a level playing field, a competition where the best competitor
always won. Today, with the media covering the issue of performance-enhancing drug use in sports, the legacy of certain athletic accomplishments will be called into question if the powers-that-be fail to contain this controversial practice. According to research by the authors of books like *Game of Shadows* as well as media reports about athletes from sports as varied as cycling, football and Olympic swimming, performance-enhancing drugs have fueled some of the most acclaimed accomplishments in the last 21 years of athletic competition. This issue will perhaps need to be examined for years to come in order to understand the true nature of its influence on all aspects of our culture.
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Appendix A: Codebook

Variable 1- Date

The date will be kept in this manner: Double digit days come after double digit month which comes after a four digit year. The digits will be separated by slashes. For example, the date October 17, 1999 would be written 1999/10/17. The four digit year will help to order the dates when the information is entered into SPSS. The two digit months and the slashes will help to separate dates like January 11, 2001, which without slashes and the zeros (which are often eliminated in SPSS) would appear 20010111. This would make it impossible to tell whether the date is January 11 or November 1, and it would also cause problems with ordering in SPSS. This problem is eliminated by adding the year at the beginning of the date. Listed are further examples of the correct method to write randomly selected dates:

February 18, 2005          2005/02/18
March 31, 2004             2004/03/31
April 1, 2002              2002/04/01

Variable 2- Magazine
1). Sports Illustrated
2). Newsweek
3). Time
This variable is self explanatory. The magazine cover can be used to identify the magazine. The magazines typically are marked on the pages by their name. The microfilms identify the magazine on the canister, at the beginning of the roll and within the content on the microfilm. The computer printouts identify the magazine on the top of the page.

Variable 3- Article type

1). Feature
2). Brief
3). Editorial
4). Infographic
5). Other

A feature is not a feature article in the traditional sense of the term. Rather than profiling a single person or event and telling the story, feature in this sense refers to an article that focuses on one individual or issue in a news setting. A feature can also be thought of as a straight news story. For example, a story alleging drug use by Lance Armstrong would count as a feature. A story about a positive steroids test by Shawne Merriman of the San Diego Chargers could be included in the feature variable. Other characteristics of the feature are length. These articles are a minimum of one page long. Their maximum length is indeterminate. A feature is also not an editorial. Certain feature columnists, such as Rick Reilly, write opinion articles that will be coded under a different variable. Newsweek columnist George Will often writes baseball articles based upon his previous experience as a beat reporter for the Chicago Cubs. His articles should
be scrutinized carefully, because he typically writes editorial articles in Newsweek. He has, however, written news articles as well for the magazine. For the most part, features will be multi-page news articles that may or may not be accompanied by photographs. Another way to look at it is that a feature is to think of it as a straight news story, as discussed before, that is a page long. A feature should take up 90 percent of a page with a 10 percent margin left for advertisements and photographs. Many articles in these three publications will fit into this category, because the magazines in this study are designed to have one page articles that follow these exact specifications. This will be the standard definition of a full-page article in this study. In the articles after 1996, the printouts actually show the page length broken into eighths. On the articles before this, it will have to be visually estimated in increments of an eighth of a page.

A brief is an article that is always less than a page. These can have many different formats. They can be small information bars located at the bottom of another article. They can be a 5/8ths of a page article focusing on multiple subjects. For example, an article might focus on Derek Jeter’s night on the town, a basketball trade involving three teams that is set to happen and a mention of allegations of Erythropoietin abuse by the Discovery cycling team. This fictional article is half of a page and would be classified as a brief because of its multiple subjects and its brevity. In Time, a section might focus on a new discovery made by scientists at the Massachusetts Institute of Technology, a new album by the
music group Outkast and a reference to steroids investigations in baseball.

Typically the text in the article is very short, rarely more than five or six paragraphs per brief. Briefs are contained in specific areas of all three magazines (the beginning and end), and in many instances the copy may be marked as being part of a brief. A brief absolutely cannot reach one page in length. At this point, it becomes either a feature or an editorial. Editorial classification comes later in this codebook. Page length is the easiest method to identify these articles, followed by the multiple focuses found in the briefs.

An editorial is written by a columnist, and often times a brief is a matter of opinion rather than a verifiable fact. According to the Webster’s Dictionary, an editorial is, “an article representing the opinion of the publishers or editors of a medium.” For this study, the op-ed column, an opinion piece written by an individual rather than a board, will also be included as part of the definition of editorial pieces. While these articles might be based upon fact, there is definitely some manner of conjecture or analysis involved in these articles as opposed to a straight telling of fact. An editorial might suggest that baseball needs an anabolic steroids testing program to save the integrity of the game. An editorial might also suggest that the Olympic Drug Testing policy is more complete than that of the National Football League. Most typically, all three magazines tend to run editorial columns in a one page format. All three also run the picture of the columnist with the article rather than run it alongside an action photograph. Editorials are often
easily distinguished from news content both visually and textually. Sebranek and Kemper define an editorial as being used for four purposes. An editorial informs, promotes, praises and/or entertains. While a news story often can do the same thing, an editorial is pretty easily distinguished from a straight news story (which is called a feature in this study). Below is a list of columnists who typically write editorial columns in this study’s magazines broken up by the individual publication. They are some of the many columnists who produce editorial material for the three magazines:

**Sports Illustrated** editorial columnists

Justin Doom  
Rick Reilly  
Bill Syken

**Newsweek** columnists

Anna Quindlen  
George F. Will  
Farid Zakaria

**Time** columnists

Richard Corliss  
Leon Jaroff  
Charles Krauthammer

Editorials are stylistically easy to differentiate from a feature. The length and the opinion elements make editorials stand out from a straight news story.
An infographic typically highlights a specific statistic or fact in a graphically interesting way. For example, if an article in *Sports Illustrated* listed Sammy Sosa's batting average and home run counts declining after steroid testing began while prominently featuring the numbers, it would be an infographic. An infographic is also less than one page. The brief text and imagery make a dynamic presentation that effectively contributes ideas. Infographics are common in all of the magazines. However, they will probably be more plentiful in the sports magazine because statistics are important measuring sticks in sporting events.

The final category will be other. This covers article types that do not fit into the aforementioned categories. Other items that might fit into this category include (but aren’t limited to) humor columns, letters to the editor, cartoons or photographic essays. If these or any other separate categories arise, there is a blank on the sheet for coding “other” variables. Describe on the blank line on the coding sheet what category the article or item falls into. If enough variables come up, they can be recoded into another category.

**Variable 4- Number of pages**

This total number of pages in articles can be determined by counting pages in the magazine or reading the line on the printout under the “source” section which will contain a reference to an eight-page article by listing it as “8p.” The articles from 1996 to 2006 will be coded by taking a page count directly from
the source section of the print out. This total does not refer to the number of printed pages on a computer printout. It refers to the number of pages printed in a magazine. The pages will also be broken down into eighths of a page and visually estimated for content. Content includes pictures and text but does not include advertisements. Articles from 1996-2006 are already of a predetermined length broken into eighths. The estimation method will only be necessary on the microfilm selection of articles.

Variable 5, 6 and 7- Sport 5,6,7). Sports

1). Baseball
2). Basketball
3). Boxing
4). Cycling
5). Football
6). Golf
7). Hockey
8). Tennis
9). Track and Field
10). Swimming
11). Other

This category is fairly simple to code as well. It leaves three blanks for mentions of sports related to performance-enhancing drugs. The number of each sport is listed above. All three lines do not need to be filled out. There will be a minimum of one sport coded per article, and there will be a maximum of three. If the article mentions multiple sports and alleges or identifies performance-enhancing drug use, the sports will be coded in the order they are mentioned in
the article. If the sentence reads, “BALCO allegedly supplied steroids to
outfielder Barry Bonds, sprinter Marion Jones as well as unnamed members of
the NHL,” line one would be “1”, line two would be “9” and line three would be “7.”
If a sport is mentioned in a brief, for example, but not linked with performance-
enhancing drugs, it is not coded. For example, the first part of a brief might
discuss Sidney Crosby won an NHL scoring title. The second part of the brief
might say that outfielder Neifi Perez tested positive for amphetamines in a
random drug test. The coding will ignore the mention of hockey and code for the
positive test in baseball. If there are four sports, the fourth sport connected to
performance-enhancing drugs will be omitted from the coding. Like the sports
variables, the fourth drug listed in an article will be omitted from this coding.

Typically an article will identify the sport being covered in a header or in
the first few paragraphs. If a sport is unclear, check for information about an
athlete or event on the ESPN Web site.

“Other” covers any sports not mentioned in the above categories. There is
a blank for the sport to be written in. Other sports not included in the listing for
space concerns include swimming, diving, wrestling, weightlifting, bodybuilding,
skiing and lacrosse. There are many other sports that could be included, and
they will also be coded under the “Other” variable. Other should only be used as
a category when all other sports aren’t able to be coded for.

Variables 8, 9, 10). Drugs
1). Steroids
2). Human Growth Hormone (HGH)
3). Erythropoietin (EPO)
4). Amphetamines
5). Other

Much like the sports category, drugs can also register more than one variable. For example, if a fictional statement reads, “Lance Armstrong was alleged to have used anabolic steroids, erythropoietin and amphetamines in order to get through previous Tour races,” the blanks would be coded “1”, “3” and “4” on the blanks in the order they were listed. If there are more than three drugs listed, only the first three will be coded. Like the sports variables, the fourth drug will be omitted from the coding.

Steroids are a varied class of drugs derived from hormones, particularly testosterone. The performance-enhancing type of steroids is called anabolic steroids. Anabolic steroids mimic the hormone testosterone and helps to build muscle mass, allowing for faster recovery time. They are chemically-related to corticosteroids, the type of drug given to people with severe allergic reactions and other medical conditions, but only anabolic steroids will be counted in this content analysis as corticosteroids are not performance-enhancing in any way. Corticosteroids will be omitted from this research. Steroids can be taken orally, topically and through injection. According to medical survey research, the most common anabolic steroids include nandralone, stanozolol and oxymetholone.
Slang for anabolic steroids includes roids and the juice. Steroids are often linked to angry outbursts known as “roid rage.”

Human Growth Hormone (or HGH) was originally a drug used for children with a pituitary gland abnormality. HGH is also used like steroids to increase size and muscle mass. However, unlike anabolic steroids, no tests currently exist for HGH, although it is banned from international Olympic competition. According to BBC reports, it is currently impossible to test for HGH because externally produced HGH is indistinguishable from the HGH produced in the body.

Erythropoietin (or EPO) is a performance enhancer used in endurance sports. It is a hormone produced in the kidneys. It is often used on patients with anemia from kidney failure. Erythropoietin increases red cells in the blood, increasing endurance by raising oxygen levels in blood. It is most commonly used in cycling and marathon running. The process by which EPO is used is sometimes referred to as blood doping. Blood doping by EPO has led to unexpected deaths in cyclists.

Amphetamines or “speed” are often used in sports with long seasons, particularly baseball. The 162-game season is played almost every day for nearly eight months. Old time players used to take “greenies” to pick them up on a down day, much like a college student drinks coffee before class. Amphetamines come in many forms, including methamphetamine, Adderall and Ritalin. Although it is commonly used to treat metabolic disorder, ADD and ADHD, it has been abused
heavily in baseball. Sluggers Barry Bonds and Jason Giambi were busted last season for amphetamine use. Ephedrine and pseudoephedrine are also related precursor drugs to amphetamines.

The category “other” accounts for any other drug that would be classed as a performance enhancer that isn’t listed here. This list does not include illegal drugs that are not performance enhancers, like cocaine, marijuana, ecstasy and heroin. Any other drugs coded for performance enhancement will be written on the line for the drugs section and considered for later classification. Creatine, a naturally occurring performance booster, will not be coded as it is impossible to differentiate natural creatine levels from those of people who are on a creatine regimen. Also, because creatine is a legal supplement that is not banned by all athletic competitions, it is not germane to the subject matter.

Variable 11- Cover story

Articles will be coded “yes” or “no” for being on the cover of the magazine. From 1996-2005, the story will be compared to the physical cover on the microfilm. From 1996-2006, the printouts display the condition of cover story in the title of the article.

The following variables are also all coded yes or no like the cover story variable. The articles can be all yeses, and at least one variable will have to be yes if all the others are no. While an article can reference all of the characteristics
described below, they cannot be all no. They can also be filled out as mixed yeses and nos.

**Variable 12- Health**

This category is coded for no or yes. No means that the article does not focus on health as a deterrent to drug use. Yes classifies an article that mentions or focuses on health as a problem with steroid use. Health issues with steroids can include cancer, tendon and joint injuries, hair loss and other life-threatening problems. Erythropoietin can cause blood to become too thick and can lead to sudden death. HGH can lead to Creutzfeldt-Jacob Disease and problems with bone structure. Amphetamines can cause a host of problems including extreme weight loss, cardiac problems and dental decay amongst a host of other complications.

**Variable 13- Integrity**

This category is coded in the same no-yes format of the last question. A Yes reference to integrity would be an example where a columnist says that the power numbers in baseball and rampant steroid use are ruining the game. Integrity is different than health. Especially in sports like baseball, which is recognized as a part of American history, integrity will come up. Integrity would also be a reference to morality of using performance-enhancing drugs. Often, these articles address a rampant problem in sports rather than a specific athlete’s problems. A No score means that the article does not address individual
or sports-based integrity. Mentions of three or more athletes alongside allegations of performance-enhancing drugs qualify automatically as a question of integrity. This is consistent with the concept of a trend, where three cases of an example show the prominence of the event. Also, an article that explicitly states that there is a problem with drug use in a sport will be coded as a yes for integrity.

**Variable 14- Legality**

Legality in the sense it is used here refers to rule breaking. Both baseball, football and basketball rules along with the state and federal laws are included under the category of legality. An article that is critical of a player breaking the rules and using a banned supplement or one that talks about a player being investigated for steroids related to the BALCO investigation are both yes answers for the issue of legality. If issues of crime or rules violations are not the focus of the article, the answer to this question is no.

**Variable 15- What about the kids?**

This variable will be coded yes if an article discusses the effect or influence that athletes using performance-enhancing drugs has on children. For example, an article that stated that widespread steroid use in baseball was leading to higher incidences of steroid use in high schools would be coded as a yes in this system. Also, any article about children using steroids or other
performance-enhancing drugs will be coded as a yes for this variable. College athletes, who are legally adults, are not coded as children.
Appendix B: Code Sheet

1). Article number

2). Date YYYY/MM/DD

2). Magazine
   1). Sports Illustrated
   2). Newsweek
   3). Time

3). Article Type
   1). Feature
   2). Brief
   3). Editorial
   4). Infographic
   5). Other

4). Number of Pages

5,6,7). Sports
   1). Baseball
   2). Basketball
   3). Boxing
   4). Cycling
   5). Football
   6). Golf
   7). Hockey
   8). Tennis
   9). Track and Field
   10). Other

8, 9, 10). Drugs
   1). Steroids
   2). HGH
   3). Erythropoietin
   4). Amphetamines
   5). Other

10). Health
   0). No
   1). Yes

11). Integrity
   0). No
   1). Yes

12). Legality
   0). No
   1). Yes
13). What about the kids?
   0). No
   1). Yes
Appendix C: Modern Performance-Enhancing Drug Timeline

1886—The first death related to performance-enhancing drugs is connected to the sport of cycling in England.

1960—A Danish cyclist dies in competition from a cocktail of performance-enhancing substances.

1960s—Players for the San Diego Chargers report being given little blue pills, later found to be the anabolic steroid Dianabol, as part of their regular training regimen throughout the decade.

1963—The Olympic Committee establishes its first testing program as a result of the death of a Danish cyclist in the 1960 Olympic Games.

1970-1985—The East German women's Olympic team is unknowingly treated with steroids that they believe are vitamins.

1986—Brian Bosworth is the most famous of 21 football players suspended from playing in Bowl games by the NCAA for a positive steroid test.

1988—Ben Johnson is stripped of his gold medal for the 100-meter dash at the Olympics in Seoul and disqualified because of a positive test for the anabolic steroid stanozolol.

1990—Congress passes the Anabolic Steroid Control Act.

1991—Football player Lyle Alzado connects his brain cancer to previous steroid use on television and in *Sports Illustrated*.
1992—Lyle Alzado dies

1998—Mark McGwire, on the way to breaking the single season record for home runs in baseball, is found to possess the steroid precursor androstenedione in his locker and admits to taking the substance, which is later banned by baseball

1999—Lance Armstrong wins his first Tour de France

2000—Manfred Ewald and Manfred Hoeppner are convicted for their roles in the East German women’s Olympic team doping program

2000—Marion Jones wins three gold medals and two bronze medals at the Sydney Olympics, but was forced to return them in 2007 after pleading guilty to perjury related to the BALCO investigation

2001—Barry Bonds breaks the single-season home run record by hitting 73

2002—Ken Caminiti, a former Major League Baseball MVP, admitted to steroid abuse in a cover story from *Sports Illustrated*

2003—Federal investigators raid the offices of BALCO after beginning an investigation of the laboratory earlier in the year

2003—Jason Giambi admits steroid use to grand jury investigators in the BALCO case


2004—Lance Armstrong wins his sixth consecutive Tour de France
2005—Jose Canseco publishes the book *Juiced*, in which he accuses baseball of turning a blind eye to the problem of performance-enhancing drug use in the sport.

2005—Congressional investigators call Jose Canseco, Mark McGwire, Sammy Sosa, Frank Thomas, Rafael Palmeiro and Curt Schilling to answer questions about performance-enhancing drug use in baseball.

2005—Victor Conte and Greg Anderson plead guilty to charges against them stemming from the BALCO investigation.

2005—Rafael Palmeiro is suspended because of a positive test for steroids five months after telling Congressional investigators that, “I have never used steroids. Period.”

2005—The French newspaper *L'Equipe* reports that six urine samples of Lance Armstrong from past Tour de France events tested positive for EPO.

2006—The book *Game of Shadows* is published, offering an in-depth look at the issue of performance-enhancing drug use connected to BALCO.

2006—Floyd Landis wins the Tour de France and is later stripped of his title because of a test showing an abnormally high level of testosterone.

2006—Shawne Merriman tests positive for nandralone, an anabolic steroid, but still makes the NFL Pro-Bowl. A rule is later implemented preventing players that test positive for performance-enhancing drug use from being named to the Pro Bowl.
2007—Barry Bonds was indicted for perjury related to the BALCO investigation

2008—Six NFL players are suspended for testing positive for a diuretic, although the suspension is still pending based upon an appeal to the league office

2009—Alex Rodriguez in connected to steroids as a result of a leaked positive test for steroids in 2003. He later admits to using steroids between 2001 and 2003.
Appendix D: Appendix Table

**Table 5**
Comparison of articles with Gallup Poll results

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<td>81%</td>
</tr>
<tr>
<td>2006</td>
<td>42</td>
<td>60%</td>
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\[(\rho=0.777, p<0.05)\]