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Mashing Gears and Clogging Arteries: Why Tour de France Riders Dope



It has become common to find the latest and greatest riders of the Tour de France (TDF) in the news often lately. Unfortunately, this is not because of the fortune or fame they acquired by performing well in the race or even because of the thousands of calories, sweat, and passion they poured into their training. They are in the news because of the cheating accusations mounted against them for performing *too* well in their sport. Underdog victories and superhuman

performances are not regarded with positive feedback but instead provoke suspicion, investigation, and rigorous drug testing. Road cycling has turned sour. As a result, the fan base is wavering and quickly losing hope in the sport (Caple). This is happening not only because drug use exists, but also because it is becoming increasingly hard to find a rider who is willing to be honest and accountable for his actions. It seems to be the case nowadays that half of the battle for a rider is winning the Tour de France, and the other half is spent on months of litigation in proving his innocence. Having the winner determined some period of time after the riders cross the finish line is not fair for the spectators as it makes the experience less exciting. In this research paper I present evidence that attempts to show that the act of doping in the Tour de France is not entirely dependent on personal choice regarding the desire to win, but it is more a function of performance expectations from the spectators, employing teams, and race organizers, but more importantly, these cyclists are simply trying to complete the race in good health. To provide context for this evidence I outline the basics of cycling and cycling culture. In addition, I also describe what the Tour de France is and give a brief history on drug usage in the event. I intend to demonstrate that the only way to deal with the mass doping usage by most Tour cyclists is to make the course less rigorous so that it does not interfere with their health.

What is Cycling?

The sport of cycling is an odd one to most Americans. It does not exactly require the technical skills of shooting a fade-away three pointer or the explosive force of tackling a quarterback. It does seem to require a taste for odd clothing, too much coffee, and of course overly expensive racing machines. It must seem maddening to the average American that a cyclist would spend anywhere from \$1,500 to 10,000+ for a bicycle and even crazier that they would ride around town wearing skin-tight spandex that complements the colors on the bicycle's

frame (*Specialized*). Oh, and we must not forget the legs. Any self-respecting cyclist who wants to look *pro*¹ must have silky smooth shaven legs. As my teammate² always says, “It accentuates the calf muscles, and the ladies like it” (Fuentes).

Thankfully, cycling does go beneath the highly debatable style choices, and, in fact, much of the aesthetics behind the rider and his machine serve a very important purpose. Speed and aerodynamics are the two most important factors a cyclist must consider when riding. Modern road bikes are made out of light but strong materials such as carbon fiber and are shaped to place the rider in an aggressive aerodynamic position³. Choosing carbon fiber over other materials such as steel or aluminum can reduce the weight of a bike to as little as 15 pounds and increase quality aerodynamics by lowering wind resistance. The skin-tight spandex uniforms known as cycling kits are another attempt at reducing drag. Having less air resistance and lighter bikes is extremely important. By having both of these properties, riders conserve more energy by having a reduced weight to push over long distances and lower opposing wind forces (*Specialized*).

Having such unconventional workout apparel and equipment, the sport would inevitably have a culture created around it. Within a community of riders, a social hierarchy exists in the group based not on what you own, but on how many people you know and how hard you work on the bike. The community tries to organize group rides that range from light workouts with lots of socializing to strenuous workouts as fast as a race. All of this is done to create an environment

¹ *Pro* is a common saying by American cyclists. It stands for dressing like a European racer and riding on a European made bicycle. Using this silly logic one can conclude that a \$5,000 American made bike is not *pro* whereas a European bike, even if only half the price, is *pro*.

² Armando Fuentes is my teammate and fellow rider of the UCSB cycling team. He has been riding bikes for over 4 years and has done well to integrate himself in the social hierarchy of the Santa Barbara cycling community.

³ The frame itself also possesses aerodynamic properties. Typically higher end bikes will achieve optimal quality by giving the bike an extremely narrow profile and mounting the brake calipers partially inside the frame to reduce drag.

that promotes strong friendships and a hard work ethic (Fuentes). This type of lifestyle exists both at the amateur and professional levels of road cycling. It is this kind of lifestyle that makes training for the Tour de France all the more bearable.

The World's Hardest Race

With few cycling fans in America, it is easy to see why so little is known about the sport. Alexander Wolff, a writer for *Sports Illustrated*, sums it up best when he says, “[If] cycling is known today to the typical stateside sports fan at all, it’s through a single race, the Tour de France...” (Wolff). The Tour is the biggest cycling race. It is so big, in fact, that it is the only race worthy enough to get full coverage in the U.S.⁴ Much of the American interest in the Tour can be attributed to cancer survivor and ex-professional cyclist Lance Armstrong and his seven straight wins in the event. Armstrong’s name, image, and marketing campaign, Livestrong, are synonymous with the color yellow, which is the same color as the leader’s jersey in the Tour de France—the jersey given to the rider with the shortest cumulative time at the end of each stage of the Tour.

There are twenty-one stages in the Tour de France.⁵ This equates to 2,000 miles of racing and a “vicious vertical climb summing 50,000 feet in all” (“All About the Race”). To put it in perspective, this is exactly like riding a bike from Los Angeles, California, to the state of Pennsylvania for three weeks straight with only two rest days, while climbing the height of forty Empire State Buildings stacked on each other along the way. To make matters even more difficult, the riders come together to contend for the title as the world’s best rider and will race as hard as necessary to assert their dominance. With this mentality, riders seek strategic deployment of their energy via team tactics. In the Tour, the riders are divided into teams. All of the riders on

⁴ The only channel that receives full coverage of the Tour de France is Versus Network, a substation of NBC.

⁵ There is one stage per day, so there are a total of twenty-one days of racing.

a particular team are there with the purpose of making sure their team leader crosses the finish line in first place, even if this means sacrificing their own performance. They accomplish this by drafting and attacking. Drafting is the racing technique of riding right on the back of somebody's rear wheel. This very important method allows the rider in the rear to conserve energy since the rider in the front is breaking all of the wind for him⁶. Teammates will frequently do this for their team leader. Attacking is the opposite of drafting. When a rider attacks, he breaks away from the draft of the rider in front of him, explodes out of the saddle, and attempts to drop everyone around him⁷. This technique generally only works during a mountain climb where a strong rider capitalizes on the pain everybody else is feeling and pulls away. During times like this, a psychological battle emerges as competitors repeatedly attack each other in an attempt to convince other riders that they are too weak to keep up. Jens Voight, another elite TDF competitor, describes his experience on the mountains:

Your lungs are burning, you got the taste of blood in your mouth, your legs are burning, and you don't want to turn around anymore⁸. You know that if someone now attacks, you will be blown out of the water, but you tell yourself "just keep going, just keep going" and you make it happen.

Voight's experience is not unique; it is something that the riders have to deal with each day in the race. The speed of these rides, which are often over one hundred miles, averages 25 to 28 mph on the flats and 21 to 25 mph on the climbs (Stein). Some of these climbs, such as the Col du Tourmalet, have grades as steep as 10.2% (Jameson). The calorie expenditures on each of these stages range from 5,000 to 10,000 a day. Based on the distance and rigor of the TDF, it is

⁶ Typically riders from the same team will rotate and break the wind for each other so that everyone gets rest at some point.

⁷ To drop somebody is to create a gap wide enough between a rider and his competitor where the competitor can no longer benefit from drafting.

⁸ What he means is not wanting to pedal the bike anymore

the hardest athletic event in existence today, so hard in fact, that some contend it is pretty much impossible to complete without some sort of external aid.

TDF Drug Usage

It should come as no surprise that road racing has been tainted by participants' drug usage. There will always be at least people who want to win so badly that they are willing to cheat just to get there. Every now and then we hear of an athlete from a mainstream sport that wanted to win a little too badly and accidentally got caught for using performance enhancers, but what about other athletes in the field? Cycling is not only currently riddled with drug usage, but it is also "the sport has experienced constant doping allegations and scandals since its inception" (Steiner).

The first Tour de France was held in 1903. The first confirmed event of cheating came about in 1904, when the winner of the 1903 race, "hopped [onto] a train for part of the route" in a desperate attempt to defend his title (Wolff). When cheating in this manner became ineffective, riders were then directed to drugs. Barrie Houlihan, professor of sport policy, notes, "Belgian cyclists were reported to have taken ether-soaked tablets, the French caffeine tablets, while the British allegedly relied on a range of drugs including strychnine, heroin, brandy and cocaine" (33). The point of using these drugs was to either encourage a positive mentality or mask the physical pain the riders were putting themselves through. In recent years, drug usage in the Tour has evolved into blood doping, which places an emphasis on increasing the physical ability through the use of blood transfusions and EPO⁹.

A blood transfusion is the practice of giving athletes blood that may be their own or from a donor. The purpose of doing this is to increase the amount of red blood cells in the body. This concept is built on the premise that the amount of oxygen available to the muscles is directly

⁹ EPO is short for erythropoietin

proportional to the amount of red blood cells in the body; therefore, increasing the number of such cells allows for a larger quantity of oxygen to be given to the muscles. Without enough oxygen to supply muscles in a race, riders are subjected to hypoxic conditions that leave them with lactic acid buildup and fatigue.¹⁰ One of the most effective methods of blood transfusion is to take out the blood from a rider, separate the plasma, and then store the red blood cells in a cool location. Eventually these cells will be transfused back into the rider's body after he has had a chance to restore the lost blood. This results in a normal amount of red blood cells plus the extra unit that was transfused. Some of the risks involved include contracting illnesses from donors with diseased blood and having the body reject the blood altogether (Houlihan). A more efficient but risky method that achieves similar results is EPO. Although erythropoietin is usually referenced as a blood-doping technique, it is a naturally occurring protein hormone produced in the kidneys that binds to receptors in bone marrow to stimulate the production of red blood cells. The doping version of EPO refers to a synthetic version of the natural hormone that is taken orally and yields the same results. The problem with this synthetic version is that it is difficult to determine just how many red blood cells are produced after taking the drug since it varies from person to person. Even if a small dosage is administered, there is no telling how many red blood cells the rider will produce. This is extremely dangerous, for it can make the blood too thick and clog arteries possibly causing a heart attack (Jenkins).

Although there are risks involved with doping, many riders still resort to it. Reports from John Hoberman show that “over the past 50 years, a majority of Tour champions as well as second and third place finishers have been confirmed or accused dopers at some point in their careers.” One understandably might think that all riders do this to win the race, but data indicates something far more interesting, which is that “on average, the 50th-place finisher has not lost

¹⁰ Lactic acid buildup in a muscle causes soreness, which is commonly felt the day after a hard workout.

ground on the winner in the overall time standings since 1998. This would suggest widespread doping by virtually all racers, since the peloton¹¹ is going faster, not slower” (Hoberman).

As was explained previously, a team of riders is only out on the field to give their leader the best advantage possible, which means sacrificing their own performance for his gain. A term given to all of these riders is *domestiques*, which is French for servant (Landis, *Positively False* 52). The team management sometimes tells riders that they must follow competitors’ attacks preventing breakaways or using up all of their energy before the halfway point of a stage even if it puts them in dead last. Although it requires more energy initially, the domestiques are able to sit up and relax for the rest of the race once their job is done. Why would someone who is not trying to win the race and only needs enough strength for a few hard efforts before resting become dependent on doping?

Beyond the Human Limit

Twenty-one days of hard racing is enough to weaken even the strongest of riders. Floyd Landis, a three time Tour de France rider, recalls in his book *Positively False*: “It’s not just that my legs hurt or that my lungs seared with the effort. Those are givens. But when you push your body past a certain point, you enter a whole different area of pain when you can barely will yourself to go on, and it feels like the more you think about it, the less you even care about pushing” (xi). This was the mentality of the rider favored to win the 2006 Tour. Landis notes that he expended up to 10,000 calories per day while racing. He is 5 feet 10 inches tall and entered the 2006 Tour at about 152 pounds. At the end of the Tour, while eating as much as he could, he lost about seven pounds of non-water weight. This is a significant weight loss for cyclists, who burn thousands of calories per day and tend to have very little fat, indicating that Landis lost a great deal of muscle. Furthermore, Landis notes that his upper arms were thinner than his

¹¹ A peloton is a large group of riders in a race.

forearms, his ribs were sticking out through his skin, and his wife said he looked like a coat hanger with his skin hanging off (66). Immediately after the Tour, Landis “slept for two days straight” (67). The only scientifically sound explanation for this type of behavior is the massive calorie deficit he generated and subsequent anemia (Anemia). By pushing hard in the race, he wore out his red blood cells, which require replacement after constant vigorous activity. As a result, his body went into some sort of hibernation state to allow for this type of recovery to take place (Matschiner).

All of this post race pain was inflicted as a result of finishing the Tour de France. More interestingly though, the description above chronicles the effects the race had on his body even with doping. In 2011, Landis came forward on a television interview and admitted to receiving blood transfusions during that same 2006 Tour. He also admitted that “every single person on the team did it” (Landis, Interview by Graham Bensinger). Given the previous information that all team members work for one rider and realizing how ineffective it would be to have all team members working against each other to win the race, one may conjecture that the most probable cause for this type of behavior is to combat the detrimental effects of the Tour to the mind and the body. As ex-Tour rider Frankie Andreau puts it, “[doping] is a matter of survival” (Hamilton).

Trying to Please Everybody

American sport fans love to see great achievements during games, such as a grand slam in baseball when it is most needed. Accomplishing a feat like this is rare and takes effort, but fans still crave to see it whenever possible. European cycling fans are similar in that they like to see amazing things accomplished as well. Attacking on the steepest part of the climb and solo finishing a race three minutes ahead of the peloton are feats that every fan wants to see.

Alexander Wolff understands that they “make the biggest heroes of those who suffer most.” A direct result of this desire, the Tour de France, was created on the premise that the “ideal race would be one survived by a single rider” (Wolff). This trend has not ended since the first Tour, as race officials have not decreased the difficulty or the distance of the race. At this point, 99 years later, the Tour has integrated itself into France’s culture and will likely leave the fans displeased if they cut down the rigor or distance of the course. Alberto Contador, winner of the 2010 Tour de France who was later revoked of his title due to doping, has said, “The race was too difficult, and there needed to be limits. We had a stage that was seven and a half hours, five climbs” (See).

Aside from the fans’ insatiable appetite for pain and the race officials’ desire to please the fans, riders face internal pressure to dope as well. In 2001, Tyler Hamilton, an ex-Tour rider, decided to come out and talk about his experience with doping on the US Postal Service cycling team – the same team on which Lance Armstrong claimed many of his TDF titles. Hamilton became a professional rider in 1995; two years later he had the potential to join the Postal Service Tour de France team. When speaking to one of the team doctors, he was recommended EPO. Hamilton, having never doped before, was hesitant. He said that the doctor recommended that it was “a good idea for the team, for [himself], and [his] health” (Hamilton). On top of this, the team management encouraged it, and the team doctors supervised it. The message conveyed by Hamilton’s words are clear: he either had to take up doping or give up his chance to race on the TDF team.

* * *

Lance Armstrong is not the only rider who deserves the respect of the American audience. Every single rider who has started the Tour de France should be recognized for his hard work, perseverance, and insanity. Based on the evidence presented in this paper, it should be obvious that almost no other sporting event comes close to the rigor that is the TDF. This race is so difficult, in fact, that it harms the health of the riders that participate in it. The reason why this is so is because the calorie expenditures are way too high, and the extended intensity of the race reduces the red blood cell count to dangerous levels within the riders. Aside from eating all day and sleeping, there is no real solution to getting that red blood cell count up again without blood doping. Stephen Matschiner, a former agent who has represented many world-class athletes, argued before a court that blood transfusions were one of the only ways to keep the athletes safe during the event (Vinton). After conducting my research and looking at all of the evidence, I would agree that, when done in a safe and conservative manner, blood doping can be beneficial to a rider's health when subjected to the extreme conditions of the Tour de France. After reading that last sentence, one may conclude that I support doping, but this is not completely correct.

During the course of my research I found myself in an internal struggle trying to understand why I could not take a definite stance on the legality of doping in sports, particularly within the Tour de France. Based on the evidence presented above, it became logical to think that doping should be allowed, and yet my conscience left me feeling like this was somehow wrong. What I did not realize was that my struggle between logic and conscience was misguided. Once I understood this, everything became clear to me: doping should never become legal due to the ethical issues regarding fair and honest sportsmanship. Also, the Tour de France in its current state should not be legal. There is a big problem if the riders, event organizers, team doctors, and

team management recognize that this race is physically impossible to complete without performance enhancers. A race does not need to be twenty-one days long with only two days of rest. An athlete should not have to ruin his health to please the fans and take home the yellow jersey, let alone complete the race. The Tour de France, a race to determine the rider with the most endurance, should be reconstructed in a way that protects the riders from health problems but still maintains the fierce physical and psychological battles that fans crave. There are many ways to achieve this such as simply extending the amount of rest days given to the riders or cutting down on the distance and rigor of the course. This will not change the spirit of competition, as the athlete who has worked the hardest and wants to win the most will always take home the victory. Even with proposed radical changes such as this, doping will persist in some form, but at least it will be reduced to the familiar reasons of greed and desperation, not some ridiculous survival technique to maintain one's health.

Works Cited

- “All About the Race.” *Le Tour de France*. Amaury Sport Organisation, 16 May 2012. Web. 29 May 2012.
- “Anemia”. *PubMed Health*. A.D.A.M., Inc., 7 Feb 2012. Web. 29 May 2012.
- Austen, Ian. “2012 Tour de France Winner Found Guilty of Doping.” *The New York Times*. The New York Times Company, 6 Feb. 2012. Web. 26 May 2012.
- Caple, Jim. “With Contador, Cycling Loses Yet Again.” *ESPN*. ESPN Internet Ventures, 7 Feb. 2012. Web. 26 May 2012.
- Fuentes, Armando. Personal interview. 5 May. 2012.
- Hamilton, Tyler. “Interview with Tyler Hamilton.” *60 Minutes*. CBS. WBBM-TV, New York. 23 May 2011. Television.
- Hoberman, John. “Dopers On Wheels: The Tour’s Sorry History.” *NBC Sports*. NBC Universal, 20 Sept. 2007. Web. 26 May 2012.
- Houlihan, Barrie. *Dying to Win*. Strasbourg: Council of Europe, 2002. Print.
- Jameson, Will. “Tour de France: Let’s Rank the Climbs.” *Podium Café*. Vox Media, Inc., 29 Jun. 2010. Web. 12 May 2012.
- Landis, Floyd. *Positively False: The Real Story of how I Won the Tour de France*. New York: Simon Spotlight, 2007. Print.
- Landis, Floyd. Interview by Graham Bensinger. In *Depth with Graham Bensinger*. Yahoo!, 15 Jul. 2011. Web. 26 May 2012.
- See, Jen. “Is the 2012 Tour of California Too Hard?” *Bicycling*. 15 May 2012. Web. 26 May 2012.
- Specialized*. Specialized Bicycle Components, 2012. Web. 26 May 2012.

Steiner, Jason. "Genetic doping: The Lance Armstrong Case as a Preview for Future Regulations." 1.22 (2011): 41-92. Print.

Vinton, Nathaniel. "Stefan Matschiner Found Guilty on Blood-Doping Charge." *NYDailyNews*. NY Daily News.com, 12 Oct. 2012. Web. 26 May 2012.

Voight, Jens. "Interview with Jens Voight." *2008 Tour de France*. Versus. WRC-TV, Paris. 20 Jul. 2008. Television.

Wolff, Alexander. "Tour de France, Cycling a Clash of Cultures for Americans, Europeans." *Sports Illustrated*. Turner Broadcasting System, Inc., 8 Jul. 2009. Web. 29 May 2012.