Yearning for Muscular Power

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Young men dream of power. It is an old dream, driven in boyhood by a relative lack of it and later by a belief in what it will confer in manhood. The dream often comes through images of masculine strength—heroically muscled athletes, forceful warriors, comic book superheroes, action figures in films and video games. The dream, at its core, is a dream of transformation—from short to tall, thin to thick, fat to lean, weak to strong.

Since well before the time of Christ, a few people have known a secret which could en-flesh most of these dreams. That secret is progressive resistance exercise. It was passed down for centuries, buried for centuries more, and, from perhaps 1860 to 1960, substantially refined so that any young man with knowledge, willpower, and access to decent food and the proper implements could make steady and substantial advances toward his dreams. Around 1960, this technique became yoked with another—and almost magical—tool, anabolic steroids, and the two, together, allowed avid young men to literally transform themselves into the living manifestations of their boyhood dreams.

The Negro League star Josh Gibson may well have been the most physically powerful man to ever play the game of baseball. At a height of six feet Gibson was tall for his day but he was not unusually tall. Even so, he was exceptionally broad and thick, and even as a young man he usually weighed well over two hundred pounds at a time when most heavyweight boxers weighed less than 190. His heavy bone-structure was overlaid with abnormally dense muscling and his hands, in particular, were huge and work-hardened. It was said of him that when he gripped a bat it looked as if he could squeeze sawdust out of it. He was, by far, the greatest home run hitter in Negro League history, and some baseball historians believe that, had he been allowed to play in the Major Leagues, he would have hit more home runs than his contemporary, Babe Ruth.

Apparently, Gibson did hit more home runs than Ruth’s 714—almost eight hundred, by the best estimate—but the pro-Ruth argument is that Gibson’s were hit off Negro League pitching, which was of a lower standard than that of the Major Leagues. The pro-Gibson argument is that whenever a white Major Leaguer had the temerity to face him in a “mixed” game Josh generally treated the Major Leaguer as rudely as he treated the best pitchers in the Negro Leagues. The number of home runs Gibson hit may not be the most telling aspect of his power at the plate, however, because what is still recalled with absolute awe is the prodigious distance of many of his drives. Stories have a way of enlarging themselves over time, of course, but a good case can be made that even with the thicker, stiffer bats and somewhat deader balls used at that time Gibson hit scores of balls more than five hundred feet and a few almost six hundred feet—including the only fair ball ever hit completely out of Yankee Stadium. By way of contrast, in the Home Run Derby
held in 2003 as part of the All-Star Game, not a single ball traveled as far as five hundred feet.

Gibson was not able to do this because he somehow learned the secret of progressive resistance exercise as a boy and lifted weights diligently to bulk up his body and increase his hitting power. And since the method of producing testosterone in the lab was not discovered until the mid-1930s, Gibson was certainly not provided with a steady supply of testosterone by a friendly doctor. So what was the source of this seemingly supernormal power? People of a religious bent would say that his strength came from God. Others would say that Gibson was simply the recipient of a truly rare combination of genetic gifts. In any case, Josh Gibson was what used to be called—and in some areas is still called—a “Natural Man.” There have been others. Babe Ruth had a giant’s strength as well as a giant’s appetites. And Hack Wilson, who still holds the Major League season record for runs batted in, was so massively built that a reporter once wrote that when the 5’6” Wilson wore an overcoat he looked like “a bulldog coming out of a blanket.” A more recent example is Mickey Mantle, whose physical power was so great that his body often couldn’t handle it.

The awesome power of men such as Gibson, Ruth, Wilson, and Mantle had very little to do with what they did. Instead, it had much more to do with what they were—wonders of nature. It is certainly true that, although no amount of weight training and/or anabolic steroids can provide much help to a man trying to hit a Major League curveball, weight training or steroids—and, in particular, both together—can definitely help a man who can hit such a curveball hit that pitch a very long way farther. To more clearly understand how this came to pass requires a short look at a long history.

Over forty-five hundred years ago, a drawing was made in a funerary chapel in Egypt depicting three men exercising by lifting heavy bags over their heads. Later, Homeric poets celebrated warriors who could hurl rocks that “two men such as live now could scarcely lift,” and the classicist Norman Gardiner observed that, “it is in the muscles of the trunk rather than that of the limbs that real strength lies, and it is the careful rendering of these muscles that distinguishes early Greek sculpture from all other early art...and the typical figure of the sixth century is that of the bearded Heracles.”

The most famous of these statues is known as the “Weary Heracles.” It was originally created by the prolific sculptor Lysippus approximately four hundred years before Christ, and it showed Heracles, with his club and lion-skin, head down and leaning to his left. Some five hundred years later the same pose was reproduced by the sculptor Glycon, who gave his Heracles larger bones, heavier muscling, and, through the alchemy of genius, true athletic grace. Glycon’s statue was erected at the baths of Caracalla in Rome, and even today his majestic Heracles, which has fueled the dreams of young men for millennia, remains an iconic symbol in the world of weight-lifting and strength training.

The most famous athlete of Ancient Greece was Milo of Crotona, a sixth century B.C. wrestler celebrated for his strength as well as his invincibility. At that time, athletes like Milo trained for power, and Milo is best remembered today as the man who decided to strengthen himself for his sport by lifting and carrying across his back a calf, and to continue carrying the calf from time to time as it grew heavier. His idea was so sound that historians have reported that he eventually carried the fully grown animal at least a hundred meters. That he was able to apply this manufactured strength in the wrestling arena can be seen by the fact that he was
wreathed six times at Olympia as well as many times in the Pythian and Nemean Games. Today, 2500 years later, Milo is known as the Father of Progressive Resistance Exercise.\textsuperscript{7} Milo was not alone, of course, and classicist Rachel Robinson reports that, “There are a thousand and one other such strengthening exercises in the palaestra, in all of which the gymnastics trainer has both experience and practice....”\textsuperscript{8} This type of training was predominant for hundreds of years in Greece until its focus was shifted by the Romans, who considered training for warfare much more appropriate than training for sports.\textsuperscript{9} The most direct transfer of strengthening exercises during the Roman period can be seen in the use to which they were put by the trainers who prepared the gladiators for the Roman Games. The frequent deaths of these “athletes” in the various coliseums while the crowds roared for blood and action does not detract from the effectiveness of the strengthening exercises the gladiators used in the hope of living to fight on and perhaps win their freedom.\textsuperscript{10}

After the fall of the Roman Empire, specialized athletic training virtually ceased to exist, as men in the Western world at that time were mainly preoccupied with living from day to day. Asceticism asserted itself, and the art, music, literature, and athletics which require time and cultural support were almost forgotten. What physical training there was, was done in the service of warfare. Even so, some of the physiological truths arrived at in pre-Christian Greece were clearly represented by the training of soldiers (drilling while wearing heavier-than-normal armor, wielding over-weighted swords, etc.). What is more, writings on this subject by Galen and other ancient pundits survived the “Dark Ages” in isolated libraries, and as the Renaissance flowered, these writings were brought back to Western Europe during the Crusades, dusted off, and studied. Through such study many people became fascinated by the glories and practices of the ancient world.\textsuperscript{11}

As early as 1531, England’s Sir Thomas Elyot refers to Galen’s recommendation of resistance exercise, specifically “labouring with poises [weights]” made of lead or other metal called in Latin \textit{alteres} [dumbbells].\textsuperscript{12} And Joachim Camerarius, in 1544, recommended exercise in school, including “climbing a rope, lifting weights, and matching strength with an opponent in various ways.”\textsuperscript{13} In time, such ideas crossed the Atlantic to America. One of the earliest references to resistance exercise in the Americas comes, appropriately enough, from Benjamin Franklin, who remarked in a letter that he lived temperately, drank little wine, and exercised daily with a dumbbell in order to raise his pulse-rate and improve his endurance.\textsuperscript{14}

Among the first true champions of resistance exercise in America was George Barker Windship, who transformed himself—through heavy weight-lifting—from a seventeen year-old boy standing five feet tall and weighing one hundred pounds into a man in his early twenties standing 5’7” and weighing 150 pounds. In the process, Windship more than doubled his strength and became a very effective advocate of a heavy partial deadlift he called the Health Lift—a name he gave the lift because he believed its regular practice had made him healthy as well as strong.\textsuperscript{15} Armed with a medical degree from Harvard and the zeal of a true believer, Dr. Windship wrote about his experiences and lectured throughout the northeastern United States preaching the gospel of heavy lifting. So vividly did he describe his complete transformation that he developed a substantial following, and soon there were gyms featuring the Health Lift in most of the cities on the east coast, filled with young men—and women, too—who sought to similarly transform themselves.\textsuperscript{16}

Much of what Dr. Windship advocated would prompt little argument today from exercise scientists, but during his career he had many detractors—including some who appear to have honestly disagreed with the merits of his arguments. Others, unfortunately, although they knew from personal experience that he was correct, disagreed with him in order to profit from the lie. One man who appears to have had an honest disagreement with Windship was Dioclesian Lewis, a reformist with a particular interest in exercise for schoolchildren. Lewis lived in the same general area as Windship and was also active as a lecturer and writer, and he took strong exception to Dr. Windship’s recommendation of heavy lifting. The argument Lewis used was particularly effective in a period during which “horsepower” had an altogether more literal meaning than it does today. Lewis’ argument suggested that if a man practiced heavy lifting he would become plodding and slow, like the massive draft horses so commonly seen at that time pulling heavily-laden wagons or drawing large logs. Men who wanted to become athletes, Lewis said, should strictly avoid such heavy pushing and pulling lest they, too, become slow and ponderous—like a work-horse.\textsuperscript{17} Although Lewis’ argument appeared logical—as many performing strongmen were large men who walked ponderously to exaggerate their size—it was deeply flawed. The flaw was
that the great size and deliberate movement of the draft horse is a product not of “training” but of genetically-based selective breeding, just as is the explosive speed and relatively slender body of the racehorse.

Despite arguments such as Lewis’, men in the last half of the nineteenth century who tried heavy resistance exercise for themselves soon realized that it made them faster, not slower. A prime case in point was William Buckingham Curtis, who trained with very heavy weights as a young man and also excelled in running, jumping, skating, swimming, and throwing the hammer. Curtis’ interest in athletics and weight-lifting was life-long, and he later became one of the founders of the Amateur Athletic Union.18

Perhaps the most accurate statement during that period in the debate over whether heavy lifting would make a person a “musclebound” draft horse came from the renowned professional strongman, Arthur Saxon, who wrote that,

Although it is possible to point to several weight-lifters who are slow in movement, conception, and execution, compared with such a man as [boxing champion] Tommy Burns, it will invariably be found that these men are naturally and constitutionally slow and cumbersome, and that, if their whole record is examined, they have become far quicker men since they took up weight-lifting.19

Unfortunately, most professional strongmen were not as honest as Arthur Saxon—who also refused to claim that he was a sickly child who had been miraculously remade, through exercise, into a giant of strength. In fact, Saxon once wrote that “I will not delude my readers…with the statement that I commenced as an invalid and gradually worked my way up to my present strength. No! I have always been strong and can only guess what it feels like to be weak. My strength is still growing and I glory in it.”20 In contrast, many professional strongmen were charlatans who in their advertisements for the training courses they sold maintained that they had been weak and frail as children, and that only when they began using whatever exercise apparatus or technique they were selling did they develop their muscular and powerful physiques.

The primary reason for this deception was that it was much more costly, and less profitable, to sell the truth because the truth involved heavy weights—and heavy weights were expensive to make and expensive to ship. Other forms of exercise, however—such as rubber expanders, or wooden dumbbells, or simply calisthenics done with no weights at all—were cheap to make and cheap to mail, which made them much easier to sell. However, in order to increase their chances of selling these much less effective means of building strength and muscle size, many professional strongmen decided that—in addition to making groundless claims on behalf of what they were selling—they needed to speak ill of the very methods they had used to build the heavily-muscled bodies whose photographed images they used to sell their “training secrets.” These men were convinced that they would make more money by hiding the fact that they had developed their strength and muscle size primarily through the lifting of heavy weights.21

Charles Atlas, for example, wrote in one of his early advertisements, “The muscles that result from apparatus are bound and last only as long as the apparatus is used. As soon as the apparatus is not used, the muscles become flabby and finally disappear, leaving the user in a weakened condition.”22 The record-holding weight-lifter Thomas Inch sold rubber expanders by saying in an advertisement that his expander is “the most suitable instrument with which to train for any sport…[a boxer must only] use dumbbells of two or three pounds for fear of reducing his speed.”23

“Professor” H.W. Titus sold his “improved automatic exerciser” and other non-lifting modalities by claiming that, “Weight-lifting machines are to be avoided as one would the plague for they stiffen one and bring about a muscle-bound condition in a short time that may never be overcome.”24

Max Sick raised the level of deception even higher in 1911. Sick was one of the strongest men in history for his size, and a long-time lifter of heavy weights. Nonetheless, next to photographs of his thick, chiseled body were ads in which he told would-be customers that, “if your sport requires speed, avoid weight-lifting as you would the devil; because if you indulge in it to the extent of using [heavy] barbells, you will surely become slow.”25

Without question, this steady drumbeat of misinformation from people who knew the truth, combined with the arguments from well-meaning but misinformed teachers of exercise, drowned out the words of people like Dr. George Barker Windship and Arthur Saxon, who held that the lifting of heavy weights would not slow a
man or stiffen his muscles. By the early twentieth century, the effect of these two forms of misinformation was that it came to be almost universally accepted by exercise scientists, coaches, doctors, and athletes in general that weightlifting and the big muscles it produced would “bind” an athlete and make him stiff and cumbersome. This belief held almost total sway until the late 1950s. In the twenty-first century, when virtually every elite athlete in every sport is advised—or even required—to spend a good part of his or her yearly training time doing some form of progressive resistance exercise, it is difficult to believe that a half-century ago the training routines of athletes were so different.

That the advantages of muscle-driven power produced by weight training are now accepted is due in large part to the tenacity of a small number of men—and some women, too—who disregarded warnings about the dangers of weight-lifting and, in the process, became not only stronger, but better athletically. The most effective and tireless cheerleader in this cause was Bob Hoffman, the owner of the York Barbell Club and publisher of Strength & Health, one of the most important of the “muscle magazines” from its beginning in 1932 until the 1960s. Hoffman loved sports, and in his first year as a magazine publisher he included an article about the benefits an athlete would receive from training with weights.

Graded barbell and dumbbell exercises as taught by our methods will improve any man at his chosen sport. It will give a football player more power to hit the line harder and to gain additional yardage. It will make the player more enduring, more rugged and a better player in every respect. It will make a baseball, tennis, or golf player hit the ball harder and more accurately…and hitting power is the difference between a star and an ordinary player.26

One form of blandishment Hoffman employed
to feed (and profit from) the dreams of boys wild for muscle size and athletic power was a technique rooted in the reformist movement of the nineteenth century. The technique was begun by people like Hippolyte Triat of France, who in the middle of the century used photographs of his muscular, handsome self amidst his barbells to attract customers to his huge gymnasium in Paris. Striking—and then publishing—a pose that evoked the statuary from Ancient Greece, Triat was able to graphically imply that young men who became his students would become more like him and less like their relatively thin and weak selves.27 Soon, however, as photography began to have more and more power in popular culture, an even more effective form of advertising was born—a form that is still going strong today. That form is the “before and after” photographs depicting how completely a young man can physically improve himself.

The first of these featured David L. Dowd, who took photos of himself and then had them engraved so they could be reproduced in his book, Physical Culture, published in 1889. Dowd is shown in the “before” image to be a slightly-built young man and in the “after” engraving, made in 1883, to be altogether larger and more muscular. These twinned images were doubly effective because Dowd assumed the same pose in each, which made the transformation truly compelling.28 Over the years since Dowd’s pictures appeared, before and after photos have been a staple of advertisements aimed at young men’s hunger for physical power. Hoffman, for instance, published hundreds of before and after photos over his sixty-year career, and during many of those years he conducted an annual “Self-Improvement” contest and gave prizes to the young men whose before and after photos showed the largest gain in muscle size.29

Nor was this method of advertising limited to actual photographs. In fact, the most famous examples of the “before and after” images are the cartoon drawings which made the Charles Atlas ads so hugely successful. In the ads, a “97-pound weakling” is on the beach with a pretty girl when a muscular “bully” appears and kicks sand in his face. The bully then adds insult to injury by walking away with the weakling’s girlfriend, who appears happy to go. Angered, but unable to fight back, the weakling reads an ad for Atlas’ Dynamic Tension method of training; orders it; does the recommended exercises; is shape-shifted into a physical replica of the bully, who he then socks on the jaw; and reclaims the ever-willing girl. These ads, which were created in the late 1920s for Charles Atlas by Madison Avenue ad-man Charles Roman, were so effective that they made millionaires of both men.30 In fact, the Charles Atlas/Dynamic Tension ads fired the imaginations of young men so effectively that, even today, the ads continue and the Dynamic Tension course is sold online. So embedded in American culture did these ads become that the term “97-pound weakling” became part of our language and influenced artists such as Norman Rockwell, who replicated the message of the ads on the cover of the Saturday Evening Post with a single image of a spindly youth staring at himself in the mirror and seeing reflected there the big, muscled-up man the boy wants to be.31

Ironically, the Dynamic Tension ads created by Charles Roman for Charles Atlas depended for their success not only on their drawings; but also on an ongoing campaign against the sort of heavy strength training that Charles Atlas had used to create his own body, photographs of which ran in the ads next to the cartoons. For many years, the Dynamic Tension ads—which recommended pitting one muscle against another and thus required no equipment—also claimed that heavy weight-training would make a man musclebound, unhealthy, and even impotent. Training with weights, Atlas wrote in an early ad, is “not natural and the body was not made to use it.” He cautioned, “The extensive use of apparatus robs the user of his sexual powers. . . The results show in IMPOTENCY and nervousness.”32 Such ads infuriated the true believers in the weight-training world, and produced a long-running feud between Bob Hoffman and the Atlas camp, but beginning at mid-century, Hoffman and others who fought the myth of muscle-binding began to receive some much-needed support from the scientific community. In 1950, Dr. Edward Chui published an article in the Research Quarterly that suggested weight training would make a person faster, not slower, and in 1952 Dr. Peter Karpovich, one of the most prominent sports scientists in the U.S., had an article in the same journal refuting the notion that resistance training resulted in slower reaction times.33

Most of the articles in support of heavy resistance training didn’t come from academic journals, however; most continued to come from Strength & Health and similar lifting magazines, such as Joe Weider’s Muscle Power and Muscle Builder. A survey of such magazines in the early 1950s indicated that in most of those years there were many articles either profiling famous
weight-trained athletes or providing information about how athletes could train to become larger, stronger, and therefore better. In the late 1950s, no fewer than twenty-two articles supporting weight training for athletes appeared in the “muscle mags,” and thirteen were published in such coaching magazines as Athletic Journal and Scholastic Coach.

In the 1950s, at least nine books on the subject were also published, including the ground-breaking Weight Training in Athletics (1956) by Jim Murray and Peter Karpovich; Better Athletes Through Weight Training (1958) by Bob Hoffman; and Scientific Basis of Athletic Training (1958) by Laurence Morehouse and Phillip J. Rasch. All of these books spoke of weight training’s capacity to increase muscle mass as well as improve athletic performance. Little by little, these articles and books—along with the growing accomplishments on the playing fields and in the arenas by weight-trained athletes—began to weaken the foundations of the myth of muscle-binding, which had grown stronger over the previous seventy-five years. It was an often bitter fight, but sometime during the early 1960s a tipping point was reached and the era of the weight-trained athlete was born. At home and abroad, athletes who were at first permitted, then encouraged, and finally required to lift weights realized how profoundly systematic resistance training could improve their ability to play their sport.

Understandably, athletes were anxious to have their share of these weight-trained muscles and the power these muscles conferred. But the brave new world of heavy lifting contained an unexpected and sinister surprise. Few, if any, of these early athletes realized that the era of the weight-trained athlete and the era of anabolic steroids had begun at almost exactly the same time and place. In retrospect, however, we can see that the burgeoning of weight training for athletes and the outward spread of steroid use by athletes, became inextricably linked in the pursuit of greater and greater muscular power and the improved performances that power produced. Even though they began contemporaneously, however, weight training for athletes and steroid use by athletes were viewed quite differently. From the beginning, the benefits of weight training were trumpeted in articles, books, and speeches, but the benefits of steroids were passed from person to person largely through word of mouth as a sort of insiders’ secret. Perhaps—even before sports federations banned the use of certain synthetic hormones—there was an unspoken understanding on the part of many users that the use of these potent pills and injections involved a Faustian bargain.

In the Ancient Olympic Games, the use of various substances to enhance performance was not considered to be cheating. Nor did the use of supposedly ergogenic substances produce much disapproval in any subsequent athletic competitions, including those that sprang up in the latter part of the nineteenth century. It was only after the First World War that there was any substantial evidence that “doping” in sport was a problem that should be addressed. Even then, there was very little attempt made by officials of the International Olympic Committee or any other sports-governing body to curtail the use of such drugs as stimulants, which by the 1950s had become common in both amateur and professional sports. As for “steroids,” although synthetic testosterone had been produced in the laboratory in the 1930s it was not widely used by athletes until much later—well after the development and widespread use of a milder steroid. Finally, in 1961, the IOC formed a medical committee to address the growing use of ergogenic drugs. Some sports physicians had been recommending since the 1930s that doping with stimulants was a cancer in the body of sport that should be dealt with, but it was almost thirty-five years later before any official action was taken. Why did it take so long? It seems likely that the primary reason the IOC (and some of the sports federations in the Olympic family) took so long to act against doping of any sort is that anabolic steroids—which made many athletes much larger and more muscular, as well as stronger and faster— did not become common until the 1960s. Stimulants only enhanced performance; they did not enhance muscle mass. Steroid-bulked athletes became the elephant in the room, and the IOC finally urged scientists to find a way to test for their use.

The explosive growth of the use of these drugs can be traced to a Maryland physician, Dr. John Ziegler, who learned from the Russian team doctor at the World Weightlifting Championships in 1954 that testosterone was being given to the Soviet weightlifters. Ziegler returned home and began to experiment with the drug himself. He also gave it to several weightlifters in the area until some of the androgenic side-effects convinced him to abandon his efforts to follow the Soviets. In 1958, however, anabolic steroids—which had much less of an androgenic effect—were developed, and in late 1959 or 1960 Ziegler began to give these drugs to three...
nationally ranked weightlifters. He also convinced the three to switch their training to a form of exercise known as isometric contraction—which involved pushing and pulling on a bar, set at different heights, that would not move at all or would move very little. An effort was also made to maintain temporary secrecy. Almost immediately all three began to make unprecedented, seemingly miraculous, gains in strength. What is more, each man gained a substantial amount of muscle while also losing fat. These startling gains quickly became the talk of the sport, and even though articles were written explaining that the increases in size and strength were the result of the radical new training program, the fiction could not be maintained for long because lifters all over the U.S. who tried isometric contraction for themselves failed to approximate the gains made by the three experimental subjects. Soon, the secret leaked out, and lifters throughout the country began to take steroids and to experience the same dramatic changes enjoyed by Ziegler’s three guinea pigs.\footnote{37}

Meanwhile, more and more athletes were turning to the weights as a way to improve themselves in their chosen sports and to build some muscle in the process. Soon, these newcomers to weight training, who often worked out not only at the same gyms as the weightlifters but with the weightlifters, saw for themselves the sometimes shocking transformation made by their fellow “Iron Gamers.” Many of these athletes—throwers in field events, wrestlers, and football players—ravening after a similar bane—were soon using the same drugs, building the same muscle, and increasing their sporting performances in the same way.\footnote{38}

According to a series of articles in \textit{Sports Illustrated} in 1969, world and Olympic champions such as Dallas Long and Randy Matson in the shot put and Harold Connelly in the hammer throw were among the athletes who used anabolic steroids.\footnote{39} Nor was the use of these drugs limited to the throwers. In 1968, Tom Waddell, a U.S. decathlete, surveyed his fellow track and field athletes and reported that approximately one-third had used anabolic steroids as they prepared for the 1968 Olympic Games.\footnote{40} By 1972, according to Jay Sylvester, a record-holding discus thrower from the U.S. who did a survey similar to the one done four years earlier by Waddell, approximately two-thirds of all the men on the U.S. track and field team had used anabolic steroids.\footnote{41} Shortly after the Olympic Games in Seoul, made famous by the positive drug test of the world record-holder in the 100-meter sprint, Ben Johnson, an investigation by a New York Times reporter claimed that “at least half of all the athletes [in the Seoul Games] used anabolic steroids to enhance their performance.”\footnote{42}

Another sport in which the use of anabolic steroids has been used to boost strength and muscle mass is professional football, and it is not an accident that the man considered to have been the first strength coach in the NFL, Al Roy, who was hired by the San Diego Chargers, is also widely believed to have been the first of many NFL strength coaches who recommended anabolic steroids to their players.\footnote{43} Roy later moved to the Kansas City Chiefs, whose success in the late 1960s was said to have been based on their huge, weight-trained offensive and defensive linemen. A decade or so later, the Pittsburgh Steelers enjoyed a long run as the most dominant team in the National Football League, and according to one of their linemen the other linemen not only trained very hard in the weight room—they also relied on anabolic steroids. The Steelers’ line was known throughout the league for its raw physical power, and such success—and the means by which it was achieved—was widely noted throughout the NFL as well as college football.\footnote{44} Many former players have spoken publicly about this, and their estimates are that in the 1970s and 1980s the use of steroids by linemen was between 50\% and 90\%—with the average being approximately 75\%.\footnote{45}

There seems little doubt that the use of such drugs has played a profound role in the startling increase in the size of NFL linemen over the years. In the 1950s, only one man weighed more than three hundred pounds, but by 1987 twenty-seven men were over three hundred. But now, less than twenty years later, this figure has increased more than tenfold—to three hundred and fifty men weighing three hundred pounds and more—with some even topping four hundred pounds.\footnote{46} Although some argue that the drug testing protocols in the NFL insure that the men are gaining this weight in other ways, there are many reasons to be skeptical of such claims. No doubt the testing has had a dampening effect on steroid use—compared to the wide-open 1970s and 1980s—but articles in \textit{Sports Illustrated} and elsewhere suggest that the testing protocol has many loopholes, and that it is often loosely administered or even simply winked at.\footnote{47} One particularly troubling aspect of this unprecedented weight gain among NFL linemen is the health implications of so much excess flesh, whether it’s muscle or fat.\footnote{48} It is sobering that in the 1930s—when most professional football players were neither as heavy
nor as physically strong as many Major League baseball players are today—the average life span of a pro football player was slightly higher than that of an average man in the U.S., whereas the average life span of a pro football player today is only fifty-four years, and spiraling downward.

Nor is the gigantism among linemen (and other players too, to some extent) limited to professional teams. Many university football teams, including that of the University of Texas, have offensive lines that average three-hundred pounds, and even at the high school level boys weighing more than three hundred pounds are increasingly common.\(^52\) It should be added that anabolic steroids are not the only weapon in the modern athlete’s weight-gain armamentarium, and Human Growth Hormone (HGH) has also done its share to bulk up the lines in the NFL. Since cadaver-derived HGH first appeared in the 1970s it has been undetectable by standard drug-testing procedures, and so it has been used with impunity by NFL players. An abnormally high level of HGH can occur naturally, of course, and this condition is known as acromegaly, which is characterized by an increase in general body size—particularly in the hands, feet, and head—and by a tendency toward early death. For some years medical use-HGH was only available through the harvesting of pituitaries from cadavers, but in 1986 Genentech was able to use recombinant DNA technology to mass-produce it in the lab, thus opening another Pandora’s box.\(^53\) No one who has seen an acromegalic man like the late professional wrestler, Andre the Giant, who weighed between 350 and 550 pounds his entire adult life at a height of seven feet, would doubt that a long-term, natural oversupply of HGH could significantly change a person’s physical size and appearance. Seeing Andre in person was like seeing H.G. Wells’ early sci-fi novel, The Food of the Gods, come to life. In that novel, one of Wells’ characters invents a “food” he calls “Herakleophorbia,” which makes children who eat it so large and strong that they are hated and hunted by normal people who fear being overpowered by a race of supermen. Andre the Giant—who died at the age of forty-six—was not only abnormally large; he was also abnormally strong, with no resistance training at all.\(^54\) That such a freakishly large and strong man could theoretically be produced by injections of synthetic HGH would probably have come as no surprise to Wells.

Rumors of such transformations were (and remain) at the heart of the gym gossip that drives young men to find the money to buy HGH and then to take it, and the rumors were fueled in the beginning by a particularly effective form of “advertising.” Perhaps the most effective promotion has been Dan Duchaine’s widely-read Underground Steroid Handbook, in which the late Duchaine declared: “Wow, this is great stuff! It is the best drug for permanent muscle gains…People who use it can expect to gain 30 to 40 lbs. of muscle in 10 weeks…it elongates your chin, feet, and hands…and diabetes is possible with it. GH is the biggest gamble that an athlete can take, as the side effects are irreversible. Even with all that, we LOVE the stuff.”\(^55\) This infatuation with radical physical change mixed with a cavalier attitude regarding possible negative consequences was also evident in a comment made to a reporter by Bishop Dolegiewicz, a Canadian shot putter who later testified at the Dubin Commission following Ben Johnson’s infamous drug positive in 1988. Dolegiewicz told the reporter in 1979 that he was preparing to start a heavy cycle of drug use, adding with a smile, “I’m getting ready to change myself into another life form.”\(^56\)

Much of what spurs young men who are unhappy in their bodies to yearn for a means to remake themselves can be found in the pages of comic books. Superman, Batman, and Captain Marvel all appeared in 1939, and it is instructive to examine the way these superheroes were depicted in the early years of their publication. Although all three were shown to be lean and broad-shouldered, none had bodies that were in any way remarkable. These renderings changed to a modest degree over the next twenty years and became somewhat more physically impressive, but beginning in the late 1960s—after anabolic steroid use had very substantially increased both the body size and the muscularity of the top bodybuilders—the superheroes began to bulk up, too. And how could it be otherwise? How would it look if comic book superheroes were smaller and less “ripped” than living men like Arnold Schwarzenegger? And as the years passed and the winning bodybuilders became not only much heavier than Arnold but much leaner as well, so too did the superheroes. In fact, an examination of the more modern comic book superheroes makes it clear that the artists drawing the superheroes have used the actual poses of advanced bodybuilders as their models.\(^57\) This is significant in that an average little boy looking at Batman in 1939 was physi-
cally much the same as an average little boy looking at Batman in 2007. But the two boys have before them as models two radically different images, and it seems likely that in today’s world an average little boy would be unsatisfied if all he could squeeze out of his genetic gift through training was an approximation of the 1939 Batman. Is it not logical that this young boy would be more willing—in a world of three hundred pound linemen and bodybuilders who weigh three hundred pounds at a height of 5’10” with less than five percent body fat—to listen to the siren song of the local steroid dealer?

The power of comic book and video game superheroes to fire the imaginations of boys and young men is equaled or perhaps surpassed by that of the larger-than-life actors in motion pictures. Early films often featured athletic men in heroic roles—men like Douglas Fairbanks, Sr.—but during the pre-steroid years most of the men who portrayed heroes of one sort or another looked altogether ordinary with their shirts off. Film buffs who remember the original Mighty Joe Young would agree that most of the ten “strongest men in the world” who were assembled to face the captive gorilla Joe Young were just overweight bruisers who would be laughed at today by film-goers. Similarly, the relatively soft bodies of Johnny Weismuller in the role of Tarzan or Victor Mature in the role of Samson would be objects of derision today. This began to change in 1957—when Steve Reeves first appeared as Hercules. With his weight-trained, Mr. America body, Reeves caused young men all around the world to turn to weight training as a means of physical renewal. For perhaps the first time an actor actually looked like a superhero, and for a brief time the Hercules “sword and sandal” films made Reeves the most popular box office attraction in the world.58

Since then, and especially once the steroid era began in the 1960s, the beaches of California have become crowded with men who could take on—at least physically—minor and even major film roles calling for large and defined muscles. The use of weight training—perhaps combined with anabolic steroid use—allowed actors to quickly develop the lean, muscular look that has gradually taken over in Hollywood. The Rocky films, starring Sylvester Stallone, are a case in point. In the first film, the main character goes through a period of rigorous training, develops a solid, but not exceptionally muscular, body and wins the big fight. In the subsequent Rocky films—and also throughout the almost equally successful Rambo films—it is apparent that Stallone has been spending a lot of time training in the weight room, eating carefully, and in general following the lifestyle of a competitive bodybuilder. Even a casual comparison of Stallone’s body in the first Rocky movie with his body in all of his later Rocky and Rambo films suggests that Stallone realized the charismatic impact he would have as an action hero if he could create and maintain the muscularity, if not the total mass, of a bodybuilder.

In much the same way, more and more leading men have—for certain roles—gone partway down the same path in order to be able to take off their shirts with no fear of provoking hoots of laughter from the audience. Consider, for example, the roles played by some of the following men—Sean Connery (a former Mr. Universe competitor) as James Bond, Charles Bronson in
the *The Great Escape* and *The Magnificent Seven*, Harrison Ford in *Raiders of the Lost Ark*, Robert DiNiro in *Raging Bull* and *Cape Fear*, Mel Gibson in *Brave Heart*, Tom Cruise in *Far and Away*, Liam Neeson in *Rob Roy*, Sean Penn in *At Close Range* and *Mystic River*, Brad Pitt in *Fight Club* and *Troy*, and Russell Crowe in *Gladiator*. It seems clear that the bodies of stars in leading roles such as these—not to mention Arnold’s body in his many action-hero roles—have imparadised the minds of some young men and made others feel inadequate. Everywhere, it seems, there are images of hyper-muscular male bodies and images of elite athletes flexing their biceps. Think of Terrell Owens; of the gold medal-winning U.S. sprint relay team in the 2000 Olympic Games; of virtually every pro wrestler; of Ray Lewis; and of Mike Tyson, Evander Holyfield, and every other professional boxer who has struck the “double-biceps” pose at a weigh-in. The ubiquitous images of hypertrophied bodies and the success stories of weight-trained and (often) steroid-using athletes have created an atmosphere in which many young athletes have come to believe that the quickest path to the adulation and riches of a sports star leads not only to the weight room but also to the local black market dealer. Where all this may lead can perhaps be better understood by taking a closer look at baseball, a sport that in recent years has gone through a major steroid trauma of its own.

The transformation of professional baseball by anabolic steroids has now been established beyond any reasonable doubt. There is a broad consensus that steroid use contributed in a significant way to inflating home run totals and enabling pitchers to throw the ball faster for longer periods of time. But persuading the America media and its domestic audience that Major League Baseball (MLB) and its minor league affiliates had a steroid problem took years to accomplish. The revelation in 1998 that the St. Louis Cardinals’ slugger Mark McGwire had been using a relatively weak (and then legal) anabolic steroid known as androstenedione created much controversy but little investigation of anabolic/androgenic drug use, its possible effects on the performance levels of batters and pitchers, or its medical consequences. Over the next several years, public discussion of the steroid issue continued in an episodic and ineffectual way. The journalistic reports and commentaries that appeared during this time could only keep the steroid issue simmering until the Bay Area Laboratory Co-operative (BALCO) “designer steroid” story broke in October 2003. The involvement of federal authorities in the BALCO case intensified during 2004 and eventually turned the BALCO-MLB connection into the first major sports-doping scandal in American history.59

The failure of American sportswriters to report the steroid issue in a more timely fashion is particularly striking in that the transformed bodies of many players had been evident for years. As two sportswriters acknowledged in 2005, “we missed or ignored the signs: the larger biceps, the back acne, the outsize statistics….Years later, we would all confront the deception. Or was it self-deception?”60 By the late 1980s weight-training had become standard practice among MLB teams, and some players, such as Jose Canseco, had added steroid regimens to their weight-training techniques. “To look at him was to know, or to choose not to see.”61 What is more, injuries that had seldom been seen were now putting increasing numbers of players on the disabled list: “patellar tendonitis, strained rib cages, torn hamstrings—the kind of stuff that happened when over-size muscles ripped from bones that could no longer support them.”62 Dr. James Andrews, a prominent sports orthopedist, commented in 2002: “I see so many body changes—one season they’re average, the next season they’re massive—that [steroid use] is obvious.”63 Two years earlier one retired Hall of Fame player had posed a rhetorical question: “Why do you think some of these guys are constantly hurt? Their muscles are too big for their ligaments and tendons. It’s obvious who is on the stuff. You don’t need to be a scientist or a specialist to know. Just look at these guys.”64 But putting widespread steroid use by professional ballplayers on the national agenda would require another two years of journalistic work and the involvement of members of Congress, the Department of Justice, and even President George W. Bush, who spoke out on the steroids issue in his State of the Union message in January 2004.65

In retrospect, it is clear that many professional ballplayers and others who observed their bodies, in the locker room or in the stadium, either knew or strongly suspected that the statuesque physiques being displayed at MLB games were, to a significant degree, of pharmacological origin. Andre Dawson, a retired All-Star outfielder, said in October 2000: “When you see how quickly some of them develop from one year to the next, you know they’re using something.” A general manager commented at this time: “You look at some of these massive bodies you see these days. It’s like middle line-
backers are playing baseball.”

“Have you looked at these guys lately?” asked the *Sports Illustrated* columnist Rick Reilly in August 2000. “More and more, a major league clubhouse looks like backstage at *Monday Night Nitro*”—a steroid-fueled professional wrestling extravaganza. Two years later Tom Verducci of *Sports Illustrated* was describing professional baseball as “a pharmaceutical trade show.” As the pitcher Curt Schilling put it in 2002: “You sit there and look at some of these players and you know what’s going on,” he says. “Guys out there…just don’t look right. They don’t fit. I’m not sure how [steroid use] snuck in so quickly, but it’s become a prominent thing very quietly. It’s widely known in the game.” During the previous season Barry Bonds (San Francisco Giants) had set a gargantuan record by hitting seventy-three home runs, three more than McGwire during his epic season. While Bonds denied that he used steroids, “people familiar with the use of the drug look at the dramatic growth of his body and the shape of his face and hold on to their suspicions.”

One MLB player, the physically unimposing Bret Boone, “appeared to add so much bulk after the 2000 season that his former San Diego teammates had trouble recognizing him last year [2001] during spring training.”

The sport known as America’s “national pastime” was now putting on public display corporeal metamorphoses reminiscent of science fiction or the fantasies of Franz Kafka.

Decades before the Steroid Era baseball had produced an extraordinary physical specimen in the person of the legendary George Herman (“Babe”) Ruth. The sportswriter Paul Gallico spoke of The Babe’s “hulking body,” which defined itself in terms of its insatiable appetites for food and sex and its prodigious ability to hit towering home runs in unprecedented numbers. In 1926, *The New York Times* giddily reported that: “George Herman had shoulders like Atlas, biceps like Thor, a chest like Hercules and a waist that Achilles would not have been ashamed of.”

In the summer of his great hitting streak, the 265-pound McGwire was built more like a weight-trained football player than an “old-school” baseball player.

The career of Arnold Schwarzenegger has played a unique role in creating this hyper-muscular norm—a career that would have been more difficult without the anabolic steroids that helped to produce his charismatic metamorphosis and those of his many imitators around the world ever since. While the supernormal power of Hack Wilson and Josh Gibson represented an anomaly during the pre-steroid era, the hypertrophied sluggers of modern MLB symbolize instead the endless reproducibility of the enhanced bodies as well as the enhanced abilities these bodies possess. Bodybuilding is a technology which, combined with the extraordinary eyes and reflexes required to hit Major League pitching, can create multi-million-dollar careers in MLB. The fact that these bodies at the top of their “sport” are sometimes unhealthy and wracked by injuries counts as the price of doing business in the parts of the sports entertainment industry which require extraordinary muscular power. In this sense, steroid-dependent athletes are simply the most conspicuous workplace dopers in a society that is becoming increasingly dependent on a range of drugs to keep people awake and functioning at an acceptable level of productivity.
Notes


5. ibid., 55.


8. Ibid., 180.


32. Atlas, "Apparatus or Lasting Strength."