

Is the Fastest Human Ever Already Alive?

by Chuck Klosterman

Allow me to spare you the hyperbole: Usain Bolt is fast.

He is, as far as we can tell, the fastest human who's ever lived – in 2009, at a race in Berlin, he ran the 100-meter dash in 9.58 seconds. This translates to an average speed of just over 23 mph (with a top speed closer to 30 mph). His '09 performance in Germany was .11 quicker than the 9.69 he ran at the 2008 Beijing Olympics, the fattest chunk ever taken off a world record at that distance. Considering the unadulterated simplicity of his vocation and the historic magnitude of his dominance, it's easy to argue that Bolt has been the world's greatest athlete of the past five years. And yet there's an even easier argument to make than that one: within the next 10 years, Bolt's achievements as a sprinter will be completely annihilated.

This is not *guaranteed*, of course, but it's certainly more plausible than speculative – for the past 30 years, the men's record in the 100-meter dash has been assaulted so continually that many of its former record holders don't even qualify as difficult answers to trivia questions. This was not always the case: Jim Hines broke the 10.0 barrier with a 9.95 at the (high-altitude) 1968 Olympics; that mark stood for 15 years before Calvin Smith ran a 9.93 (also at altitude) in Colorado Springs. But since 1983, the record has been shattered more than a dozen times. Ben Johnson's steroid-fueled 9.83 in '87 was the first massive blow, but eight others have chipped away at the record with increasing regularity (Bolt just happened to use a sledgehammer).

The big-picture upshot to all this measured subtraction is simple: over the past 40 years, man has improved his ability to run 100 meters by .37 of a second. That's a rough average of .01 a year, but that kind of math is deceptively understated – though the year-to-year improvement isn't exponential, it also isn't gradual. The rate of change keeps accelerating. As of June 2011, 17 men had already run sub-10.0 100 meter dashes, the most ever in the span of a year (with six months still on the calendar). Were he to get in the same physical condition he was in 2009, most track experts concede that the 25-year-old Bolt has the potential to breach the 9.50 barrier at any moment. And this raises the central question fans of track and field have always wanted to know: is there a ceiling to how fast a man can run? Will there be a day – maybe in 50 years, or maybe in 500 – when someone runs the 100-meter dash in 8.99 seconds?

“In order to answer this question, you have to think like a sprinter. And sprinters believe that – someday – somebody will run the 100 meters and the clock will read 0.00.” Ato Boldon tells me this over the telephone. Boldon is now known as a track analyst for NBC and CBS, but he's also a four-time Olympic medalist and the fastest man the island of Trinidad has ever produced (in 1998, he ran the 100 in 9.86). “And when a sprinter thinks like that, he's not trying to trick himself. It's how you have to think. This idea of human limitation is exactly what we're competing against. It's thinking about running a 8.99 that gets you down to 9.58. That's how it works.”

Obviously, it's impossible to talk about sprinting records and human potentiality without mentioning steroids. It's more than the rhino in the room; it's possibly the reason the world record in the 100 didn't move for 15 years and then started falling like an air conditioner shoved out an open window. But for the sake of this specific discussion, PEDs don't really matter. It isn't a moral (or even

competitive) issue. The question is not what speed a man *should* run; the question is how fast a man *could* run, through any means necessary. Steroids tend to be a secondary issue for track fans, principally for two reasons:

1. Though nobody will ever talk about it on the record, PEDs have become an integral part of sprinting. It's pretty much like cycling: There's just an unspoken "everybody does it" concession. There are sanctioned rules, and athletes get penalized if they get caught breaking them. But nobody really worries about this, simply because...
2. People who love track want to see guys run fast. That's the whole game. There is nothing else. The sport is not built on personal rivalries or constructed purity or nationalism or the import of tradition; the sport is solely driven by the excitement of people doing what no one has done before. In this one specific instance, the ends truly do justify the means. And unlike other sports, there's no rhetoric or concern about steroids warping statistics, because the only stat that matters is who's fastest *right now*. Once a record has been broken, it instantly becomes meaningless. Not even track historians use comparative times as a way to establish greatness. Easy example: Which of these men was the greatest sprinter – Jesse Owens (who won the 1936 Olympics with a time of 10.3), Carl Lewis (whose career best in the 100 was 9.86), or Leroy Burrell (who ran a 9.85)? Track and field is about running fast *today*. It's a bottom-line endeavor.

This is not to say that steroids don't make debates about human speed complex, because they do. Around the same time Ben Johnson ran his (then unthinkable) 9.83, Florence Griffith-Joyner destroyed the women's 100-meter mark with a 10.49, and that record has not been seriously challenged in the 23 years since. Was something happening with PEDs in the late 1980s that has since been removed from the sport? Why do men keep getting faster, but women do not? These are questions that science cannot seem to answer (or even guess at).

"Bolt's 9.58 is so low that perhaps no one gets close to it for a very long time, just like Flo-Jo's record," says Boldon. "But scientists are always wrong about this stuff. Scientists once believed that if a man ran a four-minute mile, his lungs would explode."

"The scientific understanding of sprinting is pretty immature," concedes Peter Weyand, and – since Weyand has become the de facto American expert on the science of sprinting – that tells you just how mysterious this phenomenon is. A physiologist and biomechanist at Southern Methodist University, Weyand specializes in terrestrial locomotion; while at Harvard in the '90s, he directed experiments at Concord Field Station, a facility where researchers regularly placed animals such as cheetahs¹, wolverines, and kangaroos on treadmills to understand the mechanics of movement. Now 50, Weyand was also a fairly swift runner in his younger days, having run the 100-yard dash in 10.8 as a high school student. "The one thing about sprinting we all understand is that speed comes from how hard the runner's foot hits the ground. Someone like Bolt is hitting the ground with 1,000 pounds of force, and we just don't how he does that. For example, we have a very accurate

¹ "To be honest, I missed the cheetah experiments," Weyand admits with some regret. "That happened before I got there."

understanding of how much weight someone can lift – we can take a person’s frame and his muscle mass and accurately estimate how much weight he’ll be able to bench press. But world-class sprinters deliver twice as much force as our estimates indicate, and we don’t know why.”

With Bolt, there’s also a second component: height. While most world-class sprinters are short, Bolt is 6-foot-5 and his stride is an insane 2.44 meters long. When Bolt ran 9.58 in Berlin, he needed only 41 strides to traverse those 100 meters; the man who placed second, 5-foot-11-inch Tyson Gay (who still managed an incredible 9.71), needed 44½ strides. This has led to a popular pet theory about the future of sprinting: Bolt has the proportions and mechanics of a conventional sprinter, but he comes with an inordinately long skeleton. So what would happen if an even taller man were able to move with this kind of fluidity? What if someone with Kevin Garnett’s 7-foot frame moved as naturally as Bolt does at 6-foot-5? Would this hypothetical supersprinter be able to travel 100 meters in only 33 strides? Might sprinting become dominated by sleek, long-stepping giants?

Perhaps. But probably not.

“Being tall is really a disadvantage,” says Weyand. “Bolt is just a freak. Generally, the smaller you are, the stronger you are in relation to your weight. Bolt defies the laws of biology in terms of his start. He’s good out of the blocks, and he shouldn’t be. It’s so strange because Tyson Gay is basically as fast as Bolt once they hit full speed.”

The idea that Bolt’s height is his not-so-secret weapon makes sense geometrically, but not in practicality – he seems to be the only person who somehow benefits from this “disadvantage.” Francis Obikwelu (the 2004 Olympic silver medalist for Portugal) is almost 6-5 himself, and he once ran an impressive 9.86 – but he simply can’t turn his legs over² as quickly as Bolt. His length gets in the way. For whatever the reason, Bolt is flat-out superior at every aspect of high-speed locomotion – stride length, stride power, and the amount of time it takes to reach his top speed. It’s almost like he was designed to do this by a track-obsessed God.

Joe Strummer argued that the future is unwritten, and he’ll be correct about that forever. But that doesn’t mean we can’t try. Is there an irrefutable dead end to the 100-meter dash? Is there a speed at which a human body would just break down and disintegrate, no different than a machine pushed beyond the capacity of its individual components? Some have been arguing “yes” for years. Reza Noubary, a professor of mathematics, computer science, and statistics at Bloomsburg University in Pennsylvania, has estimated “with 95 percent confidence” that the ultimate time for the 100-meter dash is 9.44. That number seems as good a guess as anything else. But if Noubary is correct, it would force us to accept a depressing, unreliable notion – it would essentially mean we’re about 25 years away from the pinnacle of human performance. It would mean that most of us will see the fastest man *that could ever exist* within our own lifetimes. And something about that just seems unlikely. Beyond the (pretty clear) evidence that people are getting bigger, faster, and stronger at the same time, there’s also been a massive uptick in cultural motivation: There has never

² This is a term that describes the time it takes to make a stride with your left leg after completing the previous stride with your right (or vice versa). Basically, it just means how fast your legs are moving in succession. It’s what “running” is.

been a time when being the fastest man in the world³ was worth so much money (particularly in the 100 meters, where the difference in notoriety between who's no. 1 and no. 2 is especially vast).

"I wouldn't take 9.0 off the table," says Weyand. "Scientists don't like making these kinds of predictions, and for good reason. A world record is the most extreme fringe of performance, and weird things happen at those fringes. I need to take off my scientist hat to make that statement and just speak as the Average Joe. But my gut feeling is that it will probably happen in our lifetime, and that feeling is driven by the incentives of modern sports."

Boldon is less confident than Weyand; he says he'd bet against a man running 9.0 in the next 40 years, based on the premise that "a pen is harder to refine than a tractor." The race is short and the moving parts are minimal – at some point, you simply run out of details to improve upon. For a more personal perspective, I e-mailed Tyson Gay (who was nice enough to return my e-mail on the same day he underwent surgery for a torn hip labrum). Gay is the fastest American of all time, having run a 9.69 in the 100 (he's also the first man to break all three magic barriers within the sprints – he's run under 10 seconds in the 100, under 20 seconds in the 200, and under 45 seconds in the 400). I posed him two simple questions: (1) If you ran a perfect race under perfect conditions, what time do you think you'd run, and (2) when you're an old man, how low do you think the world record in the 100 meters will be? His response was rather curious:

I think with everything perfect I possibly could run 9.4, hahahaha. I know that sounds crazy but just being honest. I think the record will be in the 9.4 to 9.3 [range]. Maybe 9.2 range, and that's only if people can grasp and believe that's possible. All about the mind.

What's so interesting about this answer is the dissonance between Gay's self-perception and his perception of the world at large. He believes he could run almost .3 of a second faster than he ever has – yet he also assumes that specific time is almost the top of the mountain, even 50 years from now. When I read this e-mail to Boldon, he laughed with an immediate sense of recognition. "Typical sprinter narcissism," said Boldon. "I could run a 9.4, but *nobody* could run a 9.2." Even sprinters don't understand what they do (or how they do it). In an era in which science is able to explain and predict almost everything, it's amazing how little we know about the potential of rudimentary movement. Sprinting has represented half of the "fight or flight" instinct for the totality of human existence, yet we still have no idea of our true limitations...which explains why track and field will always matter, even if no one in America seems to care.

³ Contradictory side note: we should not overlook the large contingent of long-distance runners who find the whole question of "the fastest man alive" patently ridiculous, simply because humans are all relatively slow (at least compared to most other major mammals). Humans are designed for distance running. Christopher McDougall, author of the best-selling book *Born to Run*, actually thinks this debate is borderline sexist. "My bedrock feeling about sprinting is that we only get excited about it because boys are better than girls. Men set the entertainment agenda, so we pick the events that give us an edge over women. As a species, we're awful sprinters. Really bad. The average amputee dog can hold his own against any high school track star...It takes a really prosperous, secure society to perfect frivolous pursuits. In a way, our quest for speed isn't far removed from (the MTV show) *Jackass*. But I'm a grouch." Daniel Lieberman at Harvard (who, coincidentally, was Weyland's anatomy instructor) makes a similar point, albeit for different reasons: "It's useful to keep in mind that we should not be too impressed by Bolt and other speedsters. By mammalian standards, they are comparatively slow. Most decent quadrupeds out there – dogs, horses, zebras, lions – can run about 20 meters per second, twice as fast as Bolt, and they can do so for much longer (up to a few minutes). No Olympic sprinter could ever outrun a lion. We humans gave up the ability to run fast by mammalian standards many millions of years ago when we became bipeds and lost the ability to gallop. Instead, what humans excel at is endurance, especially on a hot day." Of course, if we took all these arguments at face value, the Olympics would be pretty bizarre.