“Champions aren't made in the gyms. Champions are made from something they have deep inside them -a desire, a dream, a vision”

- Muhammad Ali

USAIN BOLT VS 100 M OR 100 M VS USAIN BOLT

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Introduction

The Champion is the real Champion when he was in school and college. Bolt is the ever champion which coated him exactly not only based on W.R. and O.R. He is the first man in history to break both records at one Olympics and the first man to win both the 100 and 200 meters events at the same Olympics since Carl Lewis in 1984 and who is focusing four golds in London 2012. Though Usain bolt does extraordinary performances in 200 meters in the World youth Championships, World junior Championships, Pan American junior Championships and senior men World Championship for thrice but he is more popular when he broke record in 100m. According to the British Amateur Athletic Board’s Director of Coaching, Frank W.Dick in his Sprints and Relays, the most depressing piece of coaching news is that **“Sprinters are born –not made”.** It is only because of gift of god and desire running technique allows him to use his genetic potential, natural gifts to the fullest and to develop his psycho emotional and mental abilities to the highest level.

CRITISM AGAINST BOLT

IOC president Jacques Rogge also condemned the Jamaican's actions as disrespectful. Bolt denied that this was the purpose of his celebration by saying, "I wasn't bragging. When I saw I wasn't covered, I was just happy". Lamine Diack president of the IAAF supported Bolt and said that his celebration was appropriate given the circumstances of his victory. Jamaican government minister Edmund Bartlett also defended Bolt's actions, stating, "We have to see it in the glory of their moment and give it to them. We have to allow the personality of youth to express itself".

DOPE V/S SPRINTERS V/S USAIN BOLT

Bolt's record-setting runs caused commentators not only to praise his achievements but also to speculate about his potential to become one of the most successful sprinters ever. Critics hailed his Olympic success as a new beginning for a sport that had long suffered through high-profile drug scandals. Previous history shows that most of the elite sprinters caught in the BALCO Scandal such as **Tim Montgomery, Justin Gatlin and Marion Jones** all these athletes were disqualified from athletics after tested positive.

Many questions and suspicion were raised against Bolt’s stunning performances in Beijing and Berlin. The accusations of drug use were vehemently rejected by **Glen Mills** (Bolt's coach) and Herb Elliott (the Jamaican athletics team doctor). Elliott, a member of the IAAF anti-doping commission, urged those concerned about the issue to "come down and see our programme, come down and see our testing, we have nothing to hide". Mills had been equally ardent that Bolt was a clean athlete, declaring to the. "We will test any time, any day, and any part of the body... Bolt doesn't even like to take vitamins". Bolt stated that he had been tested four times prior to the Olympics, and all had tested negative for banned substances. He also welcomed anti-doping authorities to test him to prove that he was clean, stating, "We work hard and we perform well and we now we're clean"

WE BELIVE AND RESPECT THE WORDS OF BOLT, FUTURE ! FUTURE ?

How fast can Usain Bolt or human run?

Mathematical view: Most of the research studies and experts views are that Usain bolt could run even faster .Mathematical models have always existed in sports, especially athletics .Their prediction is that this remarkable performance of 9.58 sec in Berlin not possible for another next 50 years. Before Bolt's stunning performance in Berlin, the so-called experts had suggested the natural limit for the human body was anywhere between 9.60 and 9.26secs.

Another esteemed mathematician, **Reza Noubary** calculated the "ultimate record" for the 100m was 9.44secs. It was a conception of coaches and athletes that no one can break the mathematical record but all were dumber after the thundering race of Bolt. Indeed, the boffins only use existing data to extrapolate what might happen in the future, rather than examining the potential changes in human physiology or likely biological improvements. In his book "**The Perfection Point**", sports scientist **John Brenkus** calculated the ultimate 100m would be run in 8.99 sec and that at the 55-metre mark the sprinter would be moving at **29.4mph**. "Unless the species changes," he suggests, "it's the fastest a human will ever run."

A futuristic view, from biostatistician: **Peter Weyand** who is best known for his studies of animal movement and performance, is that a five-second 100m record is not impossible. It sounds crazy but Weyand believes humans will soon have the ability to modify and greatly enhance muscle fibre strength. He also believes that it is impossible for mathematicians to predict the magnitude of the "freakiness of athletic talent at the extreme margins of humanity. Usain Bolt being a classic example." Weyand describes Bolt as **"an outlier" someone** who combines the mechanical advantages of taller men and the fast-twitch fibres of smaller men.

Biomechanical view : expert **John Hutchinson** says that "It's a kind of arms race between the regulators of the sport and the people trying to push the technology to the limits. At some point there must be a détente, where technology can't push us any further and the rules will restrict it."

Humans have not yet broken the 30mph barrier, but that does not appear to be far off. When Jesse Owens broke the world record in the 1930s, he hit a top speed of 21.7mph, whereas Bolt's world record has him at close to 28mph. So, fifty years from now, could we be seeing a seven-foot version of Usain Bolt, his DNA tweaked with that of a cheetah, running at speeds of over 40mph?

It is all scientifically possible. Weyand does not believe that one day a human could outrun a cheetah, but our understanding of what the human body can endure, in terms of the speed of the muscles and the force of the legs and feet hitting the ground, is certainly being redefined.

Animal locomotion view: Expert McNeill Alexander says our main disadvantage is the size of our limbs. "We're still suffering from having evolved from apes with big feet and plenty of muscle all the way up the leg." For a long time, experts assumed that our speed was limited by the maximum force our feet could generate against the ground. But recent research suggested that the body could sustain more force but simply needed to move quicker, with the feet spending less time on the ground, which took them back to how fast the muscles could work.

Anthropological view : "When people run they are essentially bouncing through the air from one leg to another," says Daniel Lieberman, a professor of biological anthropology at Harvard University. "What determines how fast people go is their stride length, a function of how long the legs are, how powerfully they push into a stride, how far forward the body jumps and their stride rate, which is how fast they can propel their legs forward.'

All of which points to the reasons behind Usain Bolt's success, because he uses longer strides and during a 100m race his feet remain on the ground less than his rivals. In Beijing Bolt covered the 100m in between 40 and 41 strides, whereas the average for the other finalists was 47. His stride length was measured at about a foot longer than the other sprinters.

So what about changing our muscle fibre composition to upgrade to more fast- twitch fibres? Or, as one scientist put it, just splice some hummingbird genes into our own DNA? "It would certainly make us radically faster," says SMU's Peter Weyand. "If somebody manages the technical trick of having really fast animal fibres introduced, then all bets are off. Really crazy things would happen."

So at the Olympic Games of 2036 – 100 years after Jesse Owens – we could be witnessing some extraordinary times if the scientists get their way. It may sound like a bad plot for a kids' cartoon but if the history of the fastest men on earth has taught us anything, then it's always to expect the unexpected.

Finally, there is the racial factor.

It is an amazing fact that not one single white man has ever run 100m, certified, in less than ten seconds. For nearly half a century, every men's sprint record has been held by blacks and it is a racing certainty that no non-black will win a major 100m or 200m title or set a record in these events again. The last white sprinter to win Olympic Gold was the Briton Alan Wells, in the 1980 Moscow Olympics, which the Americans had boycotted. Well's time - 10.25 seconds - was the slowest winning time since 1956. But it isn't Usain Bolt's skin colour that is important; it is where precisely his ancestors originated. All the world's fastest men are not only black, but are almost always of ultimately West African origin: meaning actual West Africans, Americans (who may be the descendents of slaves from that part of Africa), Caribbeans or black Britons.

William Aiken, a Jamaican doctor, has stated that the fact Jamaicans in particular excel at sprinting is a legacy of them being descended from the 'fittest of the fit slaves'. Last year, a Stanford University specialist in animal locomotion, Mark Denny, published a study in The Journal of Experimental Biology in which he compared the running performance of humans and that of two other species: dogs and horses (which, like us, also take part in races).

He found that speeds among the top racing greyhounds and equine thoroughbreds plateau in the Forties through to the Seventies, whereas human males continued to get faster, possibly as a simple result of population increase. He believes that male sprint performance will level off at about 9.48 seconds. No one will ever run as fast as a cheetah, but the achievements of our elite athletes will continue to astonish us. Sooner or later, though probably in the next three decades, expect to wait longer and longer for records to fall. Usain Bolt's time will be beaten - probably by himself. But most experts doubt anyone will run 100m in much under nine-and-a-half seconds.

Sprint performance

This is mainly based on two factors mainly such as stride length and stride frequency. Sprinters are font of having bulky and muscular in nature. Every athlete having considerable stride length naturally a person who dominates vertically and having longer limbs. Strength, technique, flexibility and co-ordination play a dominant role in sprinters performance. Bolt's stride length and stride frequency are higher than the other athletes who cover 100 m in 41 strides and rest 44 and above.

Sprint performance

⇩

Stride length

⇩

Stride frequency

⇩

Strength, Technique, Flexibility and Coordination

AVERAGE HEIGHT, WEIGHT AND STRIDE RATE OF TOP SPRINTERS

	TIME	HEIGHT	WEIGHT	NO OF STRIDES
Usain Bolt	9.58sec	196cm	94kg	41
Carl Lewis	9.92sec	191cm	81kg	43.5
Tyson Gay	9.69	170cm	75kg	45.5
Asafa Powell	9.77	190cm	88kg	44

SPLIT TIME 0F WORLD'S BEST ATHLETES

	BEN JOHNSON	USAIN BOLT	ASAFA POWELL
REACTION	0.132	O.146	0.134
10m	1.83	1.89	1.87
20m	2.87	2.88	2.90
30m	3.80	3.78	3.82
40m	4.66	4.64	4.70
50m	5.50	5.47	5.55
60m	6.33	6.29	6.39
70m	7.17	7.10	7.23
80m	8.02	7.92	8.08
90m	8.89	8.75	8.94
100m	9.79	**9.58**	9.84

REACTION TIME AND TIME INTERVAL OF 10 M

	Ben'88	**Carl'88**	**Mo'99**	**Mo'01**	**Tim'02**	**Asafa'05**	**Bolt'08**	**Bolt'09**
RT	0.132	0.136	0.162	0.132	0.104	0.150	0.165	0.146
0-10m	1.83	1.89	1.86	1.83	1.89	1.89	1.85	1.89
10-20m	1.04	1.07	1.03	1.00	1.03	1.02	1.02	0.99
20-30m	0.93	0.94	0.92	0.92	0.91	0.92	0.91	0.90
30-40m	0.86	0.89	0.88.	0.89	0.87	0.86	0.87	0.86
40-50m	0.84	0.86	0.88	0.86	0.84	0.85	0.85	0.83
50-60m	0.83	0.83	0.83	0.83	0.83	0.85	**0.82**	**0.82**
60-70m	0.84	0.85	0.83	0.83	0.84	0.84	**0.82**	**0.82**
70-80m	0.85	0.85	0.86	0.86	0.84	0.84	**0.82**	**0.81**
80-90m	0.87	0.86	0.85	0.89	0.85	0.85	**0.83**	**0.82**
90-100m	0.90	0.88	0.85	0.91	0.88	0.85	**0.90**	**0.83**
TIME	9.79	9.92	9.79	9.82	9.78	9.77	**9.69**	**9.58**

AVERAGE SPEED

AVERAGE VELOCITIES AT DIFFERENT INTERVAL

	V10	V2O	V30	V40	V50	V60	V70	V80	V90	V100	BEST
USAIN BOLT	5.29	10,10	11,11	11,63	12,05	12,20	12,35	12,20	12,05	12,05	**9.58**
ASAFA POWELL	5.35	9,71	10,87	11,36	11,76	11,90	11,90	11,76	11,63	11,11	9.84
BEN JOHNSON	5.46	9.62	10.75	11.63	11.90	12.05	11.90	11.76	11.49	11.11	9.79

Vmax is the maximal velocity of 12,27m/s, reached at 65m
V99 is 99% of the maximal velocity, reached at 48,18m

Vmax	**at m**	**V99%**	**at m**
12.27	**65.03**	**12.15**	**48.18**

SPEED MAINTENANCE OF TOP SPRINTERS

Name	**1st 50m**	**2nd 50m**	**Difference**	**Time**
USAIN BOLT	5.47	4.11	1.36	9.58
ASAFA POWELL	5.54	4.23	1.31	9.77
BEN JOHNSON	5.50	4.29	1.21	9.79
Timogometry	5.54	4.24	1.30	9.78
CARL LEWIS	5.65	4.27	1.38	9.92

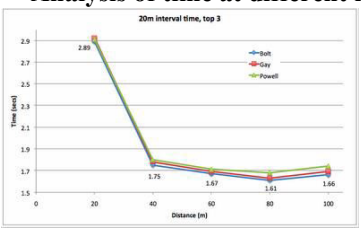
EVERY BREATH OF USAIN BOLT

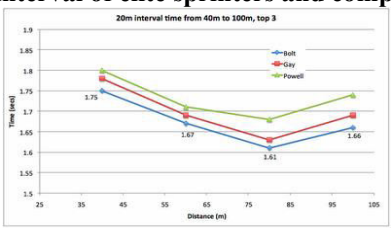
STEPS	**TOUCH DOWN TIME(SEC)**	**DISTANCE COVERED (m)**	**SPEED (km/h)**	**SEC**	**SPEED (mph)**
1	**4.15**	**1.52**	**14.94**	**0.58**	**9.29**
2	**5.78**	**3.20**	**20.82**	**0.87**	**12.94**
3	**6.65**	**4.48**	**23.93**	**1.10**	**14.87**
4	**7.34**	**5.85**	**26.42**	**1.31**	**16.42**

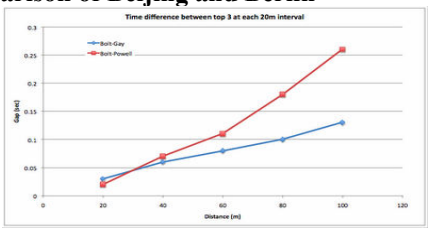
5	**7.82**	**7.04**	**28.14**	**1.48**	**17.49**
6	**8.41**	**8.52**	**30.27**	**1.69**	**18.81**
7	**9.06**	**10.41**	**32.62**	**1.94**	**20.27**
8	**9.56**	**13.71**	**34.40**	**2.26**	**21.38**
9	**9.84**	**15.57**	**35.41**	**2.44**	**22.00**
10	**10.24**	**18.25**	**36.85**	**2.70**	**22.90**
11	**10.57**	**20.65**	**38.03**	**2.94**	**23.63**
12	**10.78**	**22.83**	**38.82**	**3.14**	**24.12**
13	**11.04**	**25.43**	**39.76**	**3.38**	**24.70**
14	**11.26**	**27.61**	**40.54**	**3.58**	**25.19**
15	**11.43**	**29.35**	**41.17**	**3.74**	**25.58**
16	**11.54**	**33.25**	**41.55**	**4.07**	**25.82**
17	**11.57**	**35.30**	**41.65**	**4.24**	**25.88**
18	**11.60**	**37.47**	**41.75**	**4.42**	**25.94**
19	**11.62**	**39.40**	**41.84**	**4.58**	**26.00**
20	**11.78**	**43.52**	**42.39**	4.93	**26.34**
21	**11.89**	**46.40**	**42.80**	**5.16**	**26.60**
22	**12.00**	**48.85**	**43.18**	**5.37**	**26.83**
23	**12.07**	**51.64**	**43.46**	**5.60**	**27.01**
24	**12.11**	**53.94**	**43.59**	**5.79**	**27.08**
25	**12.16**	**57.21**	**43.77**	**6.06**	**27.20**
26	**12.20**	**59.88**	**43.91**	**6.28**	**27.29**
27	**12.23**	**62.59**	**44.05**	**6.50**	**27.37**
28	**12.27**	**64.94**	**44.16**	**6.69**	**27.44**
29	**12.34**	**66.91**	**44.28**	**6.86**	**27.51**
30	**12.42**	**69.14**	**44.41**	**7.04**	**27.60**
31	**12.29**	**73.83**	**44.11**	**7.42**	**27.41**
32	**12.20**	**79.54**	**43.87**	**7.67**	**27.26**
33	**12.12**	**79.01**	**43.65**	**7.84**	**27.12**
34	**12.10**	**80.98**	**43.54**	**8.00**	**27.06**

35	**12.09**	**82.93**	**43.51**	**8.16**	**27.00**
36	**12.07**	**85.61**	**43.46**	**8.38**	**27.00**
37	**12.05**	**87.80**	**43.42**	**8.56**	**26.98**
38	**12.05**	**89.76**	**43.38**	**8.73**	**26.96**
39	**12.14**	**92.41**	**43.40**	**8.95**	**27.15**
40	**12.09**	**95.78**	**43.51**	**9.23**	**27.04**
41	**11.88**	**98.80**	**42.77**	**9.48**	**26.58**
42	**11.80**	**100.00**	**42.48km/h**	**9.58**	**26.60mph**

Analysis of time at different interval of elite sprinters and comparison of Beijing and Berlin







Speed of Animals v/s Usain bolt

Most of the following measurements are for maximum speeds over approximate quarter-mile distances. Exceptions—which are included to give a wide range of animals—are the lion and elephant, whose speeds were clocked in the act of charging; the whippet, which was timed over a 200-yard course; the cheetah over a 100-yard distance; humans for a 15-yard segment of a 100-yard run; and the black mamba snake, six-lined race runner, spider, giant tortoise, three-toed sloth, and garden snail, which were measured over various small distances.

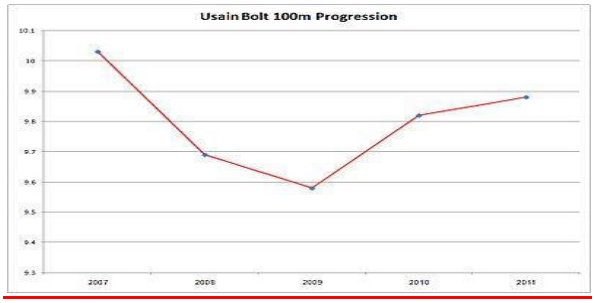
Animal	**Speed mile/hour**	**Animal**	**Speed mile/ hour**
Peregrine falcon	200.00+	Giraffe	32.00
Cheetah	70.00	Reindeer	32.00
Pronghorn antelope	61.00	Cat (domestic)	30.00
Lion	50.00	Kangaroo	30.00
Thomson's gazelle	50.00	Grizzly bear	30.00
Wildebeest	50.00	Wart hog	30.00
Quarter horse	47.50	White-tailed deer	30.00
Cape hunting dog	45.00	**Human**	**27.89 BOLT29.00**
Elk	45.00	Elephant	25.00

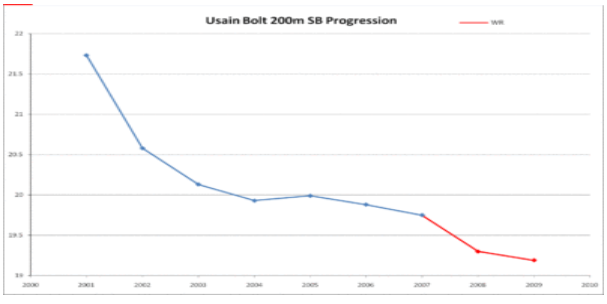
Coyote	43.00	Black mamba snake	20.00
Gray fox	42.00	Six-lined race runner	18.00
Hyena	40.00	Squirrel	12.00
Ostrich	40.00	Pig (domestic)	11.00
Zebra	40.00	Chicken	9.00
Mongolian wild ass	40.00	House mouse	8.00
Greyhound	39.35	Spider *(Tegenearia atrica)*	1.17
Whippet	35.50	Giant tortoise	0.17
Jackal	35.00	Three-toed sloth	0.15
Mule deer	35.00	Garden snail	0.03
Rabbit (domestic)	35.00		

***Source: Natural History* Magazine, March 1974, copyright 1974; The American Museum of Natural History; and James G. Doherty, general curator, The Wildlife Conservation Society.**

In an Olympics of all animal species, Usain Bolt would come in 28th, ahead of the elephant. The cheetah would win the gold.

PROGRESSION OF USAIN IN 100 AND 200M





World's fastest timings below 9.7sec

Bolt's personal best of **9.58** seconds in the 100 metres is the fastest ever legal time and who also holds the second fastest time of **9.69** seconds the current Olympic record. **Tyson gay** recorded a time of **9.68** s at the 2008 US Olympic Trials, but was aided with a tail wind of 4.1 m/s, exceeding the legal limit of 2.0 m/s set by the and IAAF nullifying its inclusion as a world record **ObadeleThompson's** run of **9.69** s in 1996 is also not recognised as it was aided by a 5.0 m/s tail wind.

PERSONAL BESTS

Event	Time (seconds)	Venue	Date	Records	
100mts	9.58	Berlin, Germany	16 Aug 2009	WR OR	
150 mts	14.35	Manchester, United Kingdom	17 May 2009	**WORLD'S BEST**	
200mts	19.19	Berlin, Germany	20 Aug 2009	WR OR	
300mts	30.97	Ostrava, Czech Republic	27 May 2010	**Second fastest next to Michael Johnson**	
400mts	45.2	Kingston, Jamaica	5 May 2007	–	
4x100mts relay	37.04	Daegu, South Korea	04 Sep 2011	WR	Shared with Yohan Blake,Micheal Frater and Nesta Carter

He also holds the 150 metres world best set in 2009, during which he ran the last 100 metres in 8.70 seconds, the quickest timed 100 metres ever. This would equal an average speed of 41.38 km/h. Bolt also hold the 200 mts world teenage best results for the age categories 15(20.58sec), 16(20.13s world youth record), 17(19.93 sec) and 18 (19.93 sec world junior record). He also holds the 150 mts world best set in 2009.

DISTINCTIVE CHARACTERISTICS OF USAIN BOLT'S RUNNING TECHNIQUE

Physically with his height of 6'5 Bolt is practically the tallest athlete in the World's history of sprinting. In the final heat on 100m in World Championship in Berlin Bolt made 41 steps with an average length of 2.44m. His closest competitor Tyson Gay (height 5'11'') made 45.45 steps with the average length of 2.20. Simply speaking, in his running he uses rotation of the body around the point of support under the action of gravitational torque, which in essence is a free falling of the body forward. The key running pose, favourable for performing falling forward and allowing us to integrate all participating forces into one system moving a runner forward, is the Running Pose at mid stance or vertical position. An average data of angles of falling of Usain Bolt and Tyson Gay in the final 100m of World Championship in Berlin. Bolt's calculated average angle in 100m with the time 9.58 seconds was 18.5 degrees with the average step frequency (cadence) 4.28 steps per second (257 steps per minute), and Gay's, with the time 9.71 seconds – 18.4 degrees, and step frequency (cadence) 4.68 steps per second (281 steps per minute).

At the fastest 20m segment of the distance between 60-80m, where Bolt had the highest speed 12.42 m/s with the step frequency (cadence) 4.4 steps per second (264 steps per minute), his angle of falling was reaching 21.4 degrees, the same as Gay's with the average speed 12.27 m/s and the step frequency 4.8 step per second (288 steps per minute). It is only because of gift of god and this technique allows him to use his genetic potential, natural gifts to the fullest and to develop his psycho emotional and mental abilities to the highest level.

If he manages to increase his average step frequency of running to the level of his rivals, just to something around 4.5 steps per second (270 steps per minute) having the same average angle of falling, **his result on 100m could be 9.11 seconds**. Isn't it impressive? But he, so far, is dreaming "only" about 9.4 seconds! in London 2012.

Michael Johnson and Mike Powell's documentary of Usain Bolt

"Usain Bolt The fastest man who has ever lived" and his statement was that Bolt could have created record in 400 m and its doubtful to get four gold's in London 2012 and at the same time Mike Powell record holder in Long Jump also stated that Bolt have a capacity to reach 9 and above in Horizontal jump.

Conclusion

If Bolt manages to increase his average step frequency of running to the level of his rivals, just to something around 4.5 steps per second (270 steps per minute) having the same average angle of falling, **his result on 100m could be 9.11 seconds**. Isn't it impressive? But he, so far, is dreaming "only" about 9.4 seconds! In London 2012.Every body expects some miracle or thundering race in the London .The 100 mts record have been maintained from 1912 on words. Of course the world might have seen many heroes (fastest man in the earth) for the past 100 years and every hero dominated certain periods then it's a birth of another heroes. But Bolt is the special whose name might be thundering for another 10 to 20 years. Champion is the real champion and he could be the **"Champions of Champion".** 100 m is the special event and mostly the people recognise and thrill to see the finals at any levels. Sometimes Champions are recognised based on the event. Champions are glamouring and even sometimes give birth to such an event and sport. This shows that either100 m became popular nor Usain bolt. It is a fact that Usain bolt cannot compare with human being in terms of performance that's why whose velocity is compared with species.