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- [August](#)
- [Article](#)

Nature | News: Explainer

Why great Olympic feats raise suspicions

'Performance profiling' could help to catch cheaters in sport.

- [Ewen Callaway](#)

01 August 2012



Chinese swimmer Ye Shiwen broke the world record for the women's 400-metre individual medley event at the Olympic Games on 28 July.

L. Neal /AFP / Getty Images

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At the Olympics, how fast is too fast? That question has dogged Chinese swimmer Ye Shiwen after the 16-year-old shattered the world record in the women's 400-metre individual medley (400 IM) on Saturday. In the wake of that race, some swimming experts wondered whether Ye's win was aided by performance-enhancing drugs. She has never tested positive for a banned substance and the International Olympic Committee on Tuesday declared that her post-race test was clean. The resulting debate has been tinged with racial and political undertones, but little science. *Nature* examines whether and how an athlete's performance history and the limits of human physiology could be used to catch dopers.

Was Ye's performance anomalous?

Yes. Her time in the 400 IM was more than 7 seconds faster than her time in the same event at a major meet in July. But what really raised eyebrows was her showing in the last 50 metres, which she swam faster than US swimmer Ryan Lochte did when he won gold in the men's 400 IM on Saturday, with the second-fastest time ever for that event.

Doesn't a clean drug test during competition rule out the possibility of doping?

No, says Ross Tucker, an exercise physiologist at the University of Cape Town in South Africa. Athletes are much more likely to dope while in training, when drug testing tends to be less rigorous. "Everyone will pass at the Olympic games. Hardly anyone fails in competition testing," Tucker says.

Out-of-competition tests are more likely to catch dopers, he says, but it is not feasible to test every elite athlete regularly year-round. Tracking an athlete over time and flagging anomalous performances would help anti-doping authorities to make better use of resources, says Yorck Olaf Schumacher, an exercise physiologist at the Medical University of Freiburg in Germany, who co-authored a 2009 paper proposing that performance profiling be used as an anti-doping tool¹. "I think it's a good way and a cheap way to narrow down a large group of athletes to suspicious ones, because after all, the result of any doping is higher performance," Schumacher says.

The 'biological passport', which measures characteristics of an athlete's blood to look for physiological evidence of doping, works in a similar way to performance profiling (see '[Racing just to keep up](#)'). After it was introduced in 2008, cycling authorities flagged irregularities in the blood characteristics of Antonio Colom, a Spanish cyclist, and targeted drug tests turned up evidence of the banned blood-boosting hormone erythropoietin (EPO) in 2009.

How would performance be used to nab dopers?

Anti-doping authorities need a better way of flagging anomalous performances or patterns of results, says Schumacher. To do this, sports scientists need to create databases that — sport by sport and event by event — record how athletes improve with age and experience. Longitudinal records of athletes'

performances would then be fed into statistical models to determine the likelihood that they ran or swam too fast, given their past results and the limits of human physiology.

The Olympic biathlon, a winter sport that combines cross-country skiing and target shooting, has dabbled in performance profiling. In a pilot project, scientists at the International Biathlon Union in Salzburg, Austria, and the University of Ferrara in Italy, developed a software program that retroactively analysed blood and performance data from 180 biathletes over six years to identify those most likely to have doped². The biathlon federation now uses the software to target its athletes for drug testing.

Could an athlete then be disciplined simply for performing too well?

“That would be unfair,” says Tucker. “The final verdict is only ever going to be reached by testing. It has to be.” In recent years, cycling authorities have successfully prosecuted athletes for having anomalous blood profiles, even when banned substances such as EPO could not be found. But performance is too far removed from taking a banned substance and influenced by too many outside factors to convict someone of doping, Tucker says. “When we look at this young swimmer from China who breaks a world record, that’s not proof of anything. It asks a question or two.”

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References

1. Shumacher, Y. O. & Pottgiesser, T. *Int. J. Sport. Physiol. Perform.* 4, 129–133 (2009).
2. Manfredini, A. F. *et al. J. Sport. Med. Phys. Fit.* 51, 153–159 (2011).
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Author information

Author details

• Ewen Callaway

Ewen joined *Nature* in August 2010, after 2 years at *New Scientist* as Boston-based biomedical reporter. He attended the science-writing programme at the University of California, Santa Cruz, and earned a master's degree in microbiology at the University of Washington. He spends his free time learning...

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Comments

1. 2012-08-01 12:58 PM

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YJ Kung said:

Did it not concur to anyone that the use of Polyurethane Suits employed by the swimmers could have contributed to the results? Since Y2010, the rules allow Polyurethane "jammers" from the kneecap to navel for men, and from the knee to shoulder for women. The Greater surface area of women's wear vs men's along with the "proper" techniques to optimise the suit's performance could have explained the "limits of human physiology" argument, as well as explain how she could have outperformed and broke the seemingly "gender bias" in performance.

2. 2012-08-01 01:47 AM

[Report this comment](#) | [#47438](#)

YJ Kung said:

"The resulting debate has been tinged with racial and political undertones, but little science."

The little paragraph aptly sums up this article.

Reading between the lines, its not too difficult to see the thinly veiled but almost foredrawn conclusion :

_"Nature examines whether and how an athlete's performance history and the limits of

human physiology could be used to **catch dopers**", _

_"Was Ye's performance anomalous? - **Yes**", _

"Doesn't a clean drug test during competition rule out the possibility of doping? - *No*"

Summing up "that's not proof of anything. It asks a question or two."

I too ask a question or two about this article -

1. how much science is there (or rather has this article been unbiased in its treatment) ?
2. "has it been tinged (subconsciously) with racial and political undertones" ?

3. 2012-08-01 02:07 AM

[Report this comment](#) | [#47439](#)

Zhenxi Zhang said:

I just want to add this: Phelps improved 4+ seconds in his 200 fly between 14-15 years old. Ian Thorpe also had a similar performance improvement. Ye is now 16. She was 160 cm in height and now 170 cm. Human biology also play a role – she gets stronger and bigger naturally. Yes she can make up 5 seconds (NOT 7 seconds in the article) in a 400 IM that has more room for improvement, with good training she got in Australia.

In both the 400 IM and 200 IM finals, Ye were behind until freestyle. Well I guess there is "drug" that just enhances freestyle, but not the backstroke, breast, and fly. Does that make sense? Also, it is not professional to only mention that 'her showing in the last 50 metres, which she swam faster than US swimmer Ryan Lochte did when he won gold in the men's 400 IM'. The whole fact is that Ye is more than 23 second slower than Lochte in 400 IM. Plus, Freestyle isn't Lochte's best leg, but it is Shiwen's best leg. Lochte had a huge lead on the field, and almost coasted to the finish. He wasn't pressured by the field to go all out that last few meters.

And before we get into the fact there's no way a woman should be able to come close to man's time for a final leg of 50m. May I present the following: Kate Ziegler set a WR in the 1500m freestyle. In the last 50m of her race she had a split of 29.27, which is ONLY 0.17s slower than Lochte final 50m. This was after she swam for 1100m longer than Lochte!

I feel the author would probably not write such a piece if Ye is an American or British. Neither country is clean from athletes caught by doping (See http://en.wikipedia.org/wiki/Use_of_performance-enhancing_drugs_in_the_Olympic_Games). Let's try not to use double standards on the great performance from countries other than US and European countries.

4. 2012-08-01 08:10 AM

[Report this comment](#) | [#47452](#)

Cheun Jye Yow said:

Zhenxi Zhang, thanks for the details. Good analysis.

5. 2012-08-02 02:18 AM

[Report this comment](#) | [#47487](#)

Lai Jiang said:

It is a shame to see Nature, which nearly all scientists, including myself, regard as the one of the most prestigious and influential physical science magazines to publish a thinly-veiled biased article like this. Granted, this is not a peer-reviewed scientific article and did not go through the scrutiny of picking referees. But to serve as a channel for the general populous to be in touch with and appreciate sciences, the authors and editors should at least present the readers with

facts within proper context, which they failed to do blatantly.

First, to compare a player's performance increase, the author used Ye's 400m IM time and her performance at the World championship 2011, which are 4:28.43 and 4:35.15 respectively, and reached the conclusion that she has got an "anomalous" increase by ~7 sec (6.72 sec). In fact she's previous personal best was 4:33.79 at Asian Games 2010¹. This leads to a 5.38 sec increase. In a sport event that 0.1 sec can be the difference between the gold and silver medal, I see no reason that 5.38 sec can be treated as 7 sec.

Second, as previously pointed out, Ye is only 16 years old and her body is still developing. Bettering oneself by 5 sec over two years may seem impossible for an adult swimmer, but certainly happens among youngsters. Ian Thorpe's interview revealed that his 400m freestyle time increased 5 sec between the age of 15 and 16². For regular people including the author it may be hard to imagine what an elite swimmer can achieve as he or she matures, combined with scientific and persistent training. But jumping to a conclusion that it is "anomalous" based on "Oh that's so tough I can not imagine it is real" is hardly sound.

Third, to compare Ryan Lochte's last 50m to Ye's is a textbook example of what we call to cherry pick your data. Yes, Lochte is slower than Ye in the last 50m, but (as pointed out by Zhenxi) Lochte has a huge lead in the first 300m so that he chose to not push himself too hard to conserve energy for latter events (whether this conforms to the Olympic spirit and the "use one's best efforts to win a match" requirement that the BWF has recently invoked to disqualify four badminton pairs is another topic worth discussing, probably not in Nature, though). On the contrary, Ye is trailing behind after the first 300m and relies on freestyle, which she has an edge, to win the game. Failing to mention this strategic difference, as well as the fact that Lochte is 23.25 sec faster (4:05.18) over all than Ye creates the illusion that a woman swam faster than the best man in the same sport, which sounds impossible. Put aside the gender argument, I believe this is still a leading question that implies the reader that something fishy is going on.

Fourth, another example of cherry picking. In the same event there are four male swimmers that swam faster than both Lochter (29.10 sec)³ and Ye (28.93 sec)⁴: Hagino (28.52 sec), Phelps (28.44 sec), Horiata (27.87 sec) and Fraser-Holmes (28.35 sec). As it turns out if we are just talking about the last 50m in a 400m IM, Lochter would not have been the example to use if I were the author. What kind of scientific rigorousness that author is trying to demonstrate here? Is it logical that if Lochter is the champion, we should assume he leads in every split? That would be a terrible way to teach the public how science works.

Fifth, which is the one I oppose the most. The author quotes Tucks and implies that a drug test can not rule out the possibility of doping. Is this kind of agnosticism what Nature really wants to educate its readers? By that standard I estimate that at least half of the peer-reviewed scientific papers in Nature should be retracted. How can one convince the editors and reviewers that their proposed theory works for every possible case? One cannot. One chooses to apply the theory to typical examples and demonstrate that in (hopefully) all scenarios considered the theory works to a degree, and that should warrant a publication, until a counterexample is found. I could imagine that the author has a skeptical mind which is critical to scientific thinking, but that would be put into better use if he can write a real peer-reviewed paper that discusses the odds of Ye doping on a highly advanced non-detectable drug that the Chinese has come up within the last 4 years (they obviously did not have it in Beijing, otherwise why not to use it and woo the audience at home?), based on data and rational derivation. This paper, however, can be interpreted as saying that all athletes are doping, and the authorities are just not good enough to catch them. That may be true, logically, but definitely will not make the case if there is ever a hearing by FINA to determine if Ye has doped. To ask the question that if it is **possible** to false negative in a drug test looks like a rigged question to me. Of course it is, other than the drug that the test is not designed to detect, anyone who has taken Quantum 101 will tell you that everything is probabilistic in nature, and there is a probability for the drug in an athlete's system

to tunnel out right at the moment of the test. A slight change as it may be, should we disregard all test results because of it? Let's be practical and reasonable. And accept WADA is competent at its job. Her urine sample is stored for 8 years following the contest for future testing as technology advances. Innocent until proven guilty, shouldn't it be?

Sixth, and the last point I would like to make, is that the out-of-competition drug test is already in effect, which the author failed to mention. Per WADA president's press release⁵, drug testing for olympians began at least 6 months prior to the opening of the London Olympic. Furthermore there are 107 athletes who are banned from this Olympic for doping. That maybe the reason that "everyone will pass at the Olympic games. Hardly anyone fails in competition testing? Because those who did dope are already sanctioned? The author is free to suggest that a player could have doped beforehand and fool the test at the game, but this possibility certainly is ruled out for Ye.

Over all, even though the author did not falsify any data, he did (intentionally or not) cherry pick data that is far too suggestive to be fair and unbiased, in my view. If you want to cover a story of a suspected doping from a scientific point of view, be impartial and provide all the facts for the reader to judge. You are entitled to your interpretation of the facts, and the expression thereof in your piece, explicitly or otherwise, but only showing evidences which favor your argument is hardly good science or journalism. Such an article in a journal like Nature is not an appropriate example of how scientific research or report should be done.

¹http://www.fina.org/H2O/index.php?option=com_wrapper&view=wrapper&Itemid=1241

²<http://www.youtube.com/watch?v=8ETPUKIOwV4>

³<http://www.london2012.com/swimming/event/men-400m-individual-medley/phase=sww054100/index.html>

⁴<http://www.london2012.com/swimming/event/women-400m-individual-medley/phase=sww054100/index.html>

⁵http://playtrue.wada-ama.org/news/wada-presidents-addresses-london-2012-press-conference/?utm_source=rss&utm_medium=rss&utm_campaign=wada-presidents-addresses-london-2012-press-conference

6. 2012-08-02 03:56 AM

[Report this comment](#) | [#47492](#)

kevin young said:

Shame on you, Ewen! You ignorant contemptible wretch with a biased ugly heart !
Shame on you, Nature! You allow such a bullshit on your website!

7. 2012-08-02 04:01 AM

[Report this comment](#) | [#47495](#)

Alias Lin said:

All of the editor joined in the research should get a score of F for their Statistics course

8. 2012-08-02 04:09 AM

[Report this comment](#) | [#47497](#)

zhiping wang said:

Wow, I can't believe Nature published something like this. So basically the point is that anybody

whose performance improves too fast should be considered as cheaters. The above replies have pointed out Phelps and Thorpes, who are arguably two greatest talents in the past 20 years, had similar performance improvement when they were young. Did anybody question their performance and think they were doping? The greatest soccer player Leo Messi scored more than 80 goals this past season. Nobody could have ever done something like this before. According to the standard of this article, he should definitely be considered as a doper, right?

9. 2012-08-02 04:13 AM

[Report this comment](#) | [#47499](#)

John Bigman said:

What a shame to see Nature publishes this in which there are so many mistakes in citing and analyzing data by the author (intentionally or not as pointed out by Lai Jiang). It is just using science's name to express their prejudice and discrimination (this UK-based journal and the author, editors). What a bunch of losers! You lose my respect from today, Nature!

10. 2012-08-02 04:21 AM

[Report this comment](#) | [#47501](#)

Huaping Xu said:

I read Nature very often since scientifically it is a very prestigious journal. I am extremely disappointed about Nature to let such a biased comment published. Basically a scientific journal will ask for conclusion to be well supported by data. I can not see this point in Ewen Callaway's article. I would like to ask for Ewen Callaway to address a point-to-point reply to Lai Jiang's reply.

11. 2012-08-02 04:37 AM

[Report this comment](#) | [#47502](#)

Jason OBoyle said:

It's ironic that the media are appalled that an 18-year old UK athlete is subjected to an offensive tweet but comfortable openly discussing whether a 16-year old Chinese athlete is a drug cheat or not – despite the absence of any evidence or even a direct allegation. Neither athlete has done anything wrong at all and yet both find themselves as front page headlines. For LOCOG and the British it is better to support her now (and risk looking naive later) than to host a games where allegation and insinuation along Nationalistic lines are allowed to go unchecked.

The USA need to accept that this young girl, Shiwen Ye from China is a World Record Breaking Olympian. That is what these games are about, the unexpected, the surprises, the new and the best talent, and the sad ending of many sporting careers for others.

The young lady deserves nothing but the utmost respect and all people involved in sabotaging her win should be ashamed and apologize. If Britain had won this medal in a World Record Breaking time, no questions would have been asked. The girl has been tested, and we all know how strict that testing is. Commend her, applaud her, and learn from her, she is a true Champion.

12. 2012-08-02 04:37 AM

[Report this comment](#) | [#47504](#)

hua hua said:

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13. 2012-08-02 04:40 AM

[Report this comment](#) | [#47506](#)

Jason OBoyle said:

Whilst anyone qualified in sporting coaching, improvements of this nature are not uncommon and I can testify to that, YE's improvement, in percentage terms, was less than Ruta's, as of yet nobody has questioned this (but as she beat an american, perhaps by comment might be too early) .

14. 2012-08-02 04:44 AM

[Report this comment](#) | [#47508](#)

hua hua said:

Nature, your mum asks you to have dinner!! What a shame!!

15. 2012-08-02 04:45 AM

[Report this comment](#) | [#47509](#)

Jason OBoyle said:

Ye is not guilty only if she is not Chinese :D but if she is Chinese then she would be blamed on by god knows who? The author selects to ignorant the fact that Ye is slower than US men in the same distance by a wide margin. Her final boost is a strategy used by many athletes who makes up their physical disadvantage by using strategy, take New Zealand rowing, they leave the race until the last 500 meters in which they jump in front and takes a win

16. 2012-08-02 04:55 AM

[Report this comment](#) | [#47510](#)

Jason OBoyle said:

London 2012 Olympic slogan "Inspire a generation", I'm pretty sure if the kinds of nonsense article inspires a generation of people then the world might as well stop the Olympics right now.

17. 2012-08-02 04:56 AM

[Report this comment](#) | [#47511](#)

Jason OBoyle said:

London 2012 Olympic slogan "Inspire a generation", I'm pretty sure if this kind of nonsense article inspires a generation of people then the world might as well stop the Olympics right now.

18. 2012-08-02 05:30 AM

[Report this comment](#) | [#47517](#)

Charles Wang said:

If you cannot do this, train yourself to beat her. Fair play.

19. 2012-08-02 05:30 AM

[Report this comment](#) | [#47519](#)

Charles Wang said:

If you cannot do this and still want to beat her, train yourself. Fair play.

20. 2012-08-02 05:40 AM

[Report this comment](#) | [#47523](#)

ZHANG Guo-you said:

What a shame thing to Nature. It is jealousy that China is challenging the UK or western country dominance of sports like swimming in a major way.

21. 2012-08-02 06:11 AM

[Report this comment](#) | [#47525](#)

John Millwood said:

I do want to put the whole events--both the astonishing achievements (I'm not to telling whether it is a feat or a cheat) and the corresponding comments (not telling it is natural question or sour grapes)--onto the observations of modern historians. Surely it is an live episode showed in the great drama of a rising new power, especially when the leading actor is taken as underdog for a long time. It is a good subject of 'social psychology' research too, as more and more people in every corner of the globe come to feel the impact of this transformation. It is the responsibility of researchers to tell the public what is happening now and how to make sure the transformation do meet the wellbeing of human kind.

Finally, I want to say the Chinese people should have expected all such things (I mean 'biased' questioning indicted by many commenters) happens. It is the leading actors role to face any challenges and make the people and seated ones believe in him. The means he takes depends on the types of the movie. I prefer adventure and comedy.

22. 2012-08-02 06:16 AM

[Report this comment](#) | [#47526](#)

Brian Owens said:

We appreciate that the case of Ye Shiwen is a sensitive one for some readers. However, I would like to point out that this story was not intended to insinuate that Ye is guilty of anything. As we point out in the first paragraph, she has never failed a drug test and so is the rightful Olympic champion.

We wanted to use the controversy as a way to highlight what science can and can't tell us with respect to athletes' performance. We have done similar stories before, for example in the case of South African runner [Caster Semenya](#)

Congratulations to Ye Shiwen on her incredible win!

Brian Owens
Online news editor

23. 2012-08-02 06:19 AM

[Report this comment](#) | [#47527](#)

Wei Shao said:

'Performance profiling'?

Basically the point from the author is, anybody whose performance improves "too fast" should be considered as cheaters. What a shame, Nature!!! Is that a respected scientific journal??? OK, based on the same logic, you will be considered as potential cheaters if you just published your first paper on Nature. Since how could you have "1" Nature paper if you do not have any previous experience in publishing a Nature article? Ewen Callaway, it is the time for you to "retract" the report!

24. 2012-08-02 06:21 AM

[Report this comment](#) | [#47528](#)

Wei Shao said:

'Performance profiling'? Basically the point from the author is, anybody whose performance improves "too fast" should be considered as cheaters. What a shame, Nature!!! Is that a respected scientific journal??? OK, based on the same logic, you will be considered as potential cheaters if you just published your first paper on Nature. Since how could you have "1" Nature paper if you do not have any previous experience in publishing a Nature article?

Ewen Callaway, it is the time for you to "retract" the report!

25. 2012-08-02 06:24 AM

[Report this comment](#) | [#47529](#)

Wendell Parker said:

Research of human is too much for a master degree in microbiology?
There are many similar cases as to Ye's.

Elizabeth Beisel, (born August 18, 1992)

2006: 4:50.31

2007: 4:44.87 -5s!

2008: 4:32.87 -12s!

26. 2012-08-02 06:25 AM

[Report this comment](#) | [#47530](#)

Wendell Parker said:

Research of human is too much for a master degree in microbiology?
There are many similar cases as to Ye's.

Elizabeth Beisel, (born August 18, 1992)

2006: 4:50.31

2007: 4:44.87 -5s!

2008: 4:32.87 -12s!

27. 2012-08-02 06:29 AM

[Report this comment](#) | [#47531](#)

Jason OBoyle said:

To Brian Owens:

All the British are murders even we cannot prove it now. You know, there are always ahead of the law.

We appreciate that accusing British people as murders is a sensitive one for some readers. However, I would like to point out that this story was not intended to insinuate that British are guilty of anything. As I point out in the first paragraph, many British has never failed a criminal charge and so is they are innocent.

I wanted to use the controversy as a way to highlight what science can and can't tell us with respect to a person's criminal record. We have done similar stories before, for example in the case of a non-British nation.

28. 2012-08-02 06:38 AM

[Report this comment](#) | [#47532](#)

Wendell Parker said:

To Jason OBoyle:

Please use "editor" instead of "British people". You can disagree the editors' comment, but you should not offend other people in the world.

29. 2012-08-02 06:39 AM

[Report this comment](#) | [#47533](#)

Wendell Parker said:

To Jason OBoyle:

Please use "editor" instead of "British people". You can disagree the editors' comment, but you should not offend other people in the world.

30. 2012-08-02 06:40 AM

[Report this comment](#) | [#47534](#)

Sandy Fang said:

Wow, I thought Nature was all about science and research. This article just proved how wrong I was! Since when did Nature join the business of rumor and second-guess? Maybe someday I will find Nature next to some celebrity gossip magazine when checkout at a grocery store :)

31. 2012-08-02 06:40 AM

[Report this comment](#) | [#47535](#)

Jason OBoyle said:

Lochte had the race won and didn't need a sensation freestyle leg.

Ye in both the 400 & 200 IM depended on her freestyle and that is obviously her strong suit. The circumstance of her 100 freestyle are totally different to Lochte and can only be compared if they were in the same race.

I am surprised that no reporter has mentioned that since Ye burst on to the scene in 2010 with incredible times at the Asian games she has grown in height from 160cm to 175cm. A teenager growing that fast is pretty common and that much extra leverage is going to help any swimmer loads.

32. 2012-08-02 06:41 AM

[Report this comment](#) | [#47536](#)

Xiaosong Liu said:

I personally appreciate the comments from Mr. Brian Owens. I hope, as a Nature Online News editor, you could consider to publish the comment from Lai Jiang as an article on Nature. Mr. Jiang's comments not only provide the public more information, more importantly, show the readers of Nature how REAL scientists analyze a problem in a more logical way.

33. 2012-08-02 06:41 AM

[Report this comment](#) | [#47537](#)

Jason OBoyle said:

To Wendell Parker,

Thank you. I agree that I should use "editor". Sorry.

34. 2012-08-02 06:51 AM

[Report this comment](#) | [#47538](#)

Liang SUN said:

The author is an Journalist only with a degree of writing;. He is far from a scientist. We all know what a journalist like to do. Take it as a joke. While, Nature, you succeed to convince me singing up an account, congratulation!

35. 2012-08-02 06:52 AM

[Report this comment](#) | [#47539](#)

Jason OBoyle said:

To Brian Owens:

If you are a responsible editor, you should consider to summarize the comments and publish them online along with this article. It is a good example showing how an article can mislead readers by only looking at selected data.

36. 2012-08-02 07:10 AM

[Report this comment](#) | [#47541](#)

Zhao Zhang said:

Performance profiling, as the base for accusation of an individual?! This is crazy!

37. 2012-08-02 07:25 AM

[Report this comment](#) | [#47542](#)

Bond Shinra said:

if China does has such drug that can not be found they will certainly use it for football athletes. They care this much more than caring swimming.

38. 2012-08-02 07:48 AM

[Report this comment](#) | [#47543](#)

Yan Shen said:

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39. 2012-08-02 07:49 AM

[Report this comment](#) | [#47544](#)

Kc Xiao said:

I cannot believe in this. Nature, such a top research journal publish speculations attacking a young girl without any evidence! The author express nothing but only narrow mind and barely racial discrimination. What a shame for nature. Such a biased article doesn't embarrass the young Chinese girl, but embarrass the author himself, and humiliate the honor of Nature.

40. 2012-08-02 07:51 AM

[Report this comment](#) | [#47545](#)

Xinhua Lin said:

Thank you, Mr. Callaway for a fine example of scientific reporting. I know I can always count on Nature for a fun article for our Friday journal club.

41. 2012-08-02 08:06 AM

[Report this comment](#) | [#47547](#)

Guokr Ent said:

Zhenxi Zhang and Lai Jiang made some great comments!
A few more points:
1 Ryan Lochte was very fast for the first 300m but really too slow for the last 50m. 300-350m took him 29.55s, and 350-400m 29.10s, while Phelps used 28.94s and 27.85s in Beijing 2008.
2 In swimming, the differences between female and male are not that big. Female athletes have more body fat, which is actually not that bad for a swimmer, since they could use the extra buoyancy.
3 Different swimming styles require very different technique. And different people are good at different styles.

42. 2012-08-02 08:13 AM

[Report this comment](#) | [#47548](#)

C Jin said:

To Wendell Parker

Elizabeth Beisel, born August 18, 1992

2006: 4:50.31

2007: 4:44.87 -5s!

2008: 4:32.87 -12s!"

18s! instead of 12s

43. 2012-08-02 08:33 AM

[Report this comment](#) | [#47550](#)

CK Zhang said:

To Nature Editors,

In light of the excellent analysis provided in the post by Lai Jiang (#47487) and others, it is evident that the author/reporter did not do his homework and cherry-picked data to support his false claim that Ye's performance was anomalous.

"Everyone charged with a criminal offense shall be presumed innocent until proved guilty according to law." It was a pity that the Press poured out doubts on the achievement of an excellent young athlete. What a shame that Nature published this piece of junk AFTER the IOC had proved that Ye was innocent.

Nature should seriously consider retracting this news from its website.

44. 2012-08-02 08:38 AM

[Report this comment](#) | [#47552](#)

Tim Raynold said:

SHAME ON Nature, it's barely a media tool for racial and political purpose rather than anything close to science.

45. 2012-08-02 08:43 AM

[Report this comment](#) | [#47553](#)

Xuchen Liu said:

I thought that nature is a serious scientific journal, Who can tell me if I am on a wrong site?

46. 2012-08-02 08:51 AM

[Report this comment](#) | [#47554](#)

CK Zhang said:

"Performance profiling". Are you CRAZY, Nature?

What about racial profiling?

What about intelligent profiling?

Einstein did not have a doctorate, it is so surreal that he could wrote The theory of Relativity.

47. 2012-08-02 08:53 AM

[Report this comment](#) | [#47555](#)

Zhenbin Niu said:

I don't know why the editors of Nature put such a ridiculous jerk on their website. Just "suspicion", "guess"... without evidence. Why do you guys don't suspect other great swimmer from other countries without evidence. Putting such a jerk on nature's website, I think, is a shame for Nature.

48. 2012-08-02 08:54 AM

[Report this comment](#) | [#47556](#)

Tong Lu said:

I know exactly what kind of "drug" Ye used in the match. It's called Chinese dream! It runs in almost every Chinese people's blood. Before the sour-grape theorists can come up with "test" to rule that out, we will keeping kicking asses.

And I doubt whether it's worth even trying to create such a test. Because by the time the test is done, we will have dreamed more ambitious dreams!

49. 2012-08-02 09:06 AM

[Report this comment](#) | [#47557](#)

Ye-Miao Chen said:

Shame on you, Nature!
Are you really a journal on Biology?

50. 2012-08-02 09:06 AM

[Report this comment](#) | [#47558](#)

Jeff Doug said:

This is the most biased and discriminative article on a journal self inflated as leader in academic. I am shocked Nature editors would allow such article to be published. What a shame.

51. 2012-08-02 09:14 AM

[Report this comment](#) | [#47559](#)

Zhichao Tan said:

Does anyone can answer one question for me: if Ye is the British girl, what BBC and CNN will say now? Nature you should always keep in mind you are Nature, How you can allow this kinds

of thing appear in your website? Disappointed!!!!!!

52. 2012-08-02 09:15 AM

[Report this comment](#) | [#47560](#)

Zhichao Tan said:

Does anyone can answer one question for me: if Ye is the British girl, what BBC and CNN will say now? Nature you should always keep in mind you are Nature, How you can allow this kinds of thing appear in your website? Disappointed!!!!!!

53. 2012-08-02 09:26 AM

[Report this comment](#) | [#47561](#)

liange shi said:

i have an idea, not a rumor, if someone writes a paper to appeal this one, he/she could become a lucky dog for publishing on Nature naturally.

54. 2012-08-02 09:26 AM

[Report this comment](#) | [#47562](#)

Jason Light said:

I just can not believe that Nature, the top scientific journal in the world, publish such an article online. I don't need to add any more argument since other people have already listed robust ones.

If this article showed up in other sources, such as "Scientific American", it would be sort of acceptable since those magazines are more for people's fun. However, this is "Nature", whose professional team is supposed to be well-trained scientists themselves, and whose every single piece of article or even news has a DOI number for the whole scientific research community to follow. Arguments in this article are making "cherry picking" mistake, which is a typical strategy in politics to mislead audience without proper context.

Employees in Nature should be more professional.

55. 2012-08-02 09:27 AM

[Report this comment](#) | [#47563](#)

Guo Yu said:

Shame on you, Nature, for publishing such biased article. This article demonstrate nothing, but how an article on a scientific journal can cheat. And thank you Lai Jiang for the analysis.

56. 2012-08-02 09:27 AM

[Report this comment](#) | [#47564](#)

Cheng Zhong said:

We deem Nature as one of the top scientific journals in the world, but it is really a shame to see this biased report. Regrettably, this will hurt not only Chinese readers but also those who enjoy the 2012 Olympic in a fair way and mood.

Hope the editor(s) will take care of this issue. Thanks.

57. 2012-08-02 09:38 AM

[Report this comment](#) | [#47565](#)

Nick Doolin said:

Since when has Nature become a tabloid?

58. 2012-08-02 09:40 AM

[Report this comment](#) | [#47566](#)

Qi Cheng said:

I dropped my jaw when reading this "scientific" article! Shame on the author, who obviously lacks the essential merit of an honest person, not to mention the merit of a real scientist. Shame on Nature, a top scientific journal, who promotes rumors and bias against a 16-year-old girl simply because she is a Chinese athlete.

I suggest that the editor publish all the comments along with this article so readers know that most scientific people don't lose their judgement.

59. 2012-08-02 09:40 AM

[Report this comment](#) | [#47567](#)

Jessie Chen said:

Shame on YOU, Nature!!! As a researcher in the biomedical field, I can't not believe there is such an article published here. Now I have many reasons to doubt the reputation of this magazine. I will not buy any of this magazine any more. Going to cancel my order.

60. 2012-08-02 09:40 AM

[Report this comment](#) | [#47568](#)

Nick Doolin said:

Don't you think it is a disgrace for Nature to publish BS like this?

61. 2012-08-02 09:41 AM

[Report this comment](#) | [#47569](#)

Da-Zhi Lai said:

Nature put a Chinese girl's picture next to the title "Why great Olympic feats raise suspicions - 'Performance profiling' could help to catch cheaters in sport." What are you implying?

What would you think we publish an article titled "Why England nurtures football rogues? - 'Mind profiling' could help to catch who is behind the scene." and put the Queen's picture next to it?

62. 2012-08-02 09:53 AM

[Report this comment](#) | [#47570](#)

Nick Doolin said:

Since when has it become a tabloid???

63. 2012-08-02 09:54 AM

[Report this comment](#) | [#47571](#)

dave xu said:

It turned out that since Owens at the 1936 Berlin Olympics to create 10 seconds of one hundred meters short circuit record, the medical profession asserts, the the sprinter limits of not less than 10 seconds. But, Hines did not believe this conclusion, he ran 50 kilometers every day with the fastest speed, he is convinced can not train a hundred meters champion in the 100 meters on the track. To obtain a good score of 9.95 seconds at the Mexico Olympics, he felt that 10 seconds the door is not locked but ajar, Flanagan sideways like the end of the rope. The above example tells us that the view of medicine has limitations. Therefore, the nature of the problem is whether Ye Shiwen taken the drugs or not, but discrimination. The so-called drugs, the so-called violation of physiological knowledge, is the only excuse for discrimination. So, ask yourself, what is impossible. The heart of discrimination can not be eliminated, or physiological limit can not be achieved!! support the Ye Shiwen !

64. 2012-08-02 10:02 AM

[Report this comment](#) | [#47572](#)

Le Zhang said:

Although most of the comments were made by Chinese to show their anger over the misleading report and their disappointment towards Nature, I am glad to see that many comments were filled with facts, data and analysis rather than pale complains. It means that we still respect and fully understand that Nature is a magazine with the basic justice, objective, independent and reliable just as it said in its guideline for authors as "Nature does not employ an editorial board of senior scientists, nor is it affiliated to a scientific society or institution, thus its decisions are independent, unbiased by scientific or national prejudices of particular individuals." We still want to tell the truth in a reasonable way and ask Nature to recognize its serious mistakes.

We hope that Nature would act as it said, cherish its reputation and make an apology to Ye and the readers. We scientists say everything on the basis of facts not irresponsible speculations. To respect others itself is the best way to respect yourself. We have been trying hard without little rest to come to what we are today.

65. 2012-08-02 10:02 AM

[Report this comment](#) | [#47573](#)

Venti Awake said:

Oh Boy! Just when you think the whole thing has quiet down, it all started again. And this time, it has to be nature---the most prestigious journal in the scientific world! Nature, and the editors, if you cannot stand the idea that the Americans can be mediocre sometimes, dress up like Captain America may help you feel better. Well done, you have shown the world that Nature can be a prestigious comedy magazine. You do not need to toot your own horn anymore.

66. 2012-08-02 10:06 AM

[Report this comment](#) | [#47574](#)

Yi Wang said:

Dear Mr. Callaway, I don't blame you for your shallow knowledge of statistics, since you are just holding a master degree, and westerners are usually not good in math anyway. But I do want to blame for your narrow mind and arrogant racial discrimination. I would also remind you that you and Nature will bear all possible legal consequences for coming up with such a disgusting article.

67. 2012-08-02 10:06 AM

[Report this comment](#) | [#47575](#)

Lin Zhou said:

I will not be surprised to see such an article on CNN, BBC, NBC ... But it is a BIG surprise to see it in Nature, a top-notch scientific journal for scientists like me. I almost never post any comments online, but the publication of this one on Nature is so disturbing and disgusting. SHAME ON YOU, NATURE!

68. 2012-08-02 10:06 AM

[Report this comment](#) | [#47576](#)

Joe Bao said:

I did not know why a famous scientific journal, Nature, degenerated into Suns with tons of hearsay. I suspect that current editors contributed a lot. Could I?

69. 2012-08-02 10:07 AM

[Report this comment](#) | [#47577](#)

davine Liu said:

This is the most biased and discriminative article on a journal self inflated as leader in academic. I am shocked Nature editors would allow such article to be published. What a shame. Shame on you fucking Ewen Callaway

70. 2012-08-02 10:08 AM

[Report this comment](#) | [#47578](#)

JIAN WU said:

Come on Nature! Are you a gossip magazine like "xxx super star" or "XX entertainment"? What a shame! You disgracefully ruined yourself.

71. 2012-08-02 10:11 AM

[Report this comment](#) | [#47579](#)

Yanan Chen said:

How come a top journal become so biased? You sound like a gossip magazine now! SHAME ON YOU, NATURE!

72. 2012-08-02 10:14 AM

[Report this comment](#) | [#47580](#)

peng zhang said:

What a shame for the "editor" to even consider putting something like this on the Nature website manipulating the data with the conclusion (discrimination) already in his mind. what a model to publish scientific papers??? I am just wondering what would be the authors response to all the comments?

73. 2012-08-02 10:16 AM

[Report this comment](#) | [#47581](#)

peng zhang said:

What a shame for the "editor" to even consider putting something like this on the Nature website manipulating the data with the conclusion (discrimination) already in his mind. what a model to publish scientific papers??? I am just wondering what would be the authors response to all the comments?

74. 2012-08-02 10:17 AM

[Report this comment](#) | [#47582](#)

HUA XIA said:

What a shame! Nature! I really feel you are insulting nature and science. And I have to change my mind to submit my original paper to other journals, you really make me down.

75. 2012-08-02 10:17 AM

[Report this comment](#) | [#47583](#)

Xuchen Liu said:

A side note of this – no doubt The 2012 British Olympics is the most successful one ever in the history from the perspective of revealing arrogance, ignorance and prejudice accumulated over a hundred years in the mind some people, in just a few nights

76. 2012-08-02 10:19 AM

[Report this comment](#) | [#47584](#)

Laura Kleiman said:

I am sending emails to the Editor-in-Chief and Executive Editor and all other editors I can find. Very soon Nature will be changed into a gossip tabloid. At the same time, I would seriously suggest that Mr. Callaway and Mr. Owens changing their career paths. Trust me, science is not for you guys. You should send our your resumes right now before bringing more humiliation to the scientific community. Rupert Murdoch may give you higher salaries.

Laura, Ph.D, even though I have no publication on Nature, I am a real scientist and I am proud of both facts.

77. 2012-08-02 10:19 AM

[Report this comment](#) | [#47585](#)

xigui Huang said:

I have thought Nature is one of the best scientific journal in the world. Now seems I have to

change my idea. This article is just a plain comment full of hatred, made up by imagination and vicious logic. I am so surprised Nature has released it. What does Nature intend to tell the world? Chinese does not deserve champion or what? Shame on you Nature.

78. 2012-08-02 10:21 AM

[Report this comment](#) | [#47586](#)

Qi Cheng said:

Thank Lai Jiang for the analysis and many others for their fair comments. I watched Olympic games many times. This one in British opened my eyes – so many dramas! Even Nature is eager to jump into the mess, so funny!

Brian Owens said:

We appreciate that the case of Ye Shiwen is a sensitive one for some readers. However, I would like to point out that this story was not intended to insinuate that Ye is guilty of anything (of course you cannot without any evidence, otherwise you will bring lawsuit for your magazine). As we (you and the author? All stuffs of Nature?) point out in the first paragraph, she has never failed a drug test and so is the rightful Olympic champion (just like many other athletes, then why you pick her up?). We wanted to use the controversy (which controversy? She won but she's a Chinese female? You are sure she doped but she passed the test?) as a way to highlight what science can and can't tell us with respect to athletes' performance (is there any science in this jerk?). We have done similar stories before, for example in the case of South African runner Caster Semenya Congratulations to Ye Shiwen on her incredible (incredible means not credible, hard to believe. The fact IS hard to you, Mr. Owens and Mr. Callaway, I understand) win! Brian Owens Online news editor

79. 2012-08-02 10:22 AM

[Report this comment](#) | [#47587](#)

Laura Kleiman said:

We see intentionally fabrication (7 sec) and cherry picking right here. What a shame.

80. 2012-08-02 10:24 AM

[Report this comment](#) | [#47588](#)

Qi Cheng said:

Thank Lai Jiang for the analysis and many others for their fair comments. I watched Olympic games many times. This one in British opened my eyes – so many dramas! Even Nature is eager to jump into the mess, so funny!

Brian Owens said:

We appreciate that the case of Ye Shiwen is a sensitive one for some readers. However, I would like to point out that this story was not intended to insinuate that Ye is guilty of anything (of course you cannot without any evidence, otherwise you will bring lawsuit for your magazine). As we (you and the author? All stuffs of Nature?) point out in the first paragraph, she has never failed a drug test and so is the rightful Olympic champion (just like many other athletes, then why you pick her up?). We wanted to use the controversy (which controversy? She won but she's a Chinese female? You are sure she doped but she passed the test?) as a way to highlight what science can and can't tell us with respect to athletes' performance (is there any science in this jerk?). We have done similar stories before, for example in the case of South African runner

Caster Semenya Congratulations to Ye Shiwen on her incredible (incredible means not credible, hard to believe. The fact IS hard to you, Mr. Owens and Mr. Callaway, I understand) win! Brian Owens Online news editor

81. 2012-08-02 10:27 AM

[Report this comment](#) | [#47589](#)

rong gao said:

I'm very disappointed to see Nature, the world-leading scientific journal, to publish such a biased article lacking basic scientific rigor. As the editor mentioned in his comment that this is to highlight the role of science in judging athletes' performance, but it is appalling to see the author hastening the conclusion without rigorous scientific reasoning. Apparently there is no systematic statistic analysis of swimming athletes' performances, otherwise the article would not promote the performance profiling method. Yet the author reached a quick assessment that Ye's performance is anomalous. As the comments from Lai Jiang, Jason OBoyle and many more pointed out, the author's claim is based on a few examples of cherry-picked data. With the limited data, we are not at a position to reach such conclusions. In my mind, this would be an ideal chance to educate the general public of scientific methods yet the article failed to deliver due to the bias and pre-formed opinions influenced by the mass media. It sets a very bad example of scientific publishing.

82. 2012-08-02 10:28 AM

[Report this comment](#) | [#47590](#)

Ryan J said:

Is this article professional?

No, actually a big NOOO! for Nature, which always boasts itself as a well respected sciences-authority. The first paragraph failed to introduce certain important facts (such as Ye's height difference, etc. as covered in other comments).

Was Brian Owens on drugs when he chose to publish this article, or is he a science-amateur to begin with?

We appreciate that Mr. Owens claims this story was not intended to insinuate that Ye is guilty of anything. However, knowing his intentions we can only conclude either he lacks the professional qualities required to work in Nature as an editor, or he was on dopes. Or both. The only other option, that he tried to imply and hint, was ruled out by himself. Oh wait, maybe he is liar... Whatever, in either case he should not work here anymore.

83. 2012-08-02 10:28 AM

[Report this comment](#) | [#47591](#)

Adam Wang said:

Sometimes people always question magazines, websites or newspaper, because they may use false reports. Now we know where those false reports came from:) Gr8

84. 2012-08-02 10:31 AM

[Report this comment](#) | [#47592](#)

Richard Sun said:

Dear Mr. Callaway:

Your standards of scientific rigor and journalism can at best satisfy The National Enquirer. It is a shame that you even have any authority to address the masses.

85. 2012-08-02 10:33 AM

[Report this comment](#) | [#47593](#)

Piggy Brain Human Head said:

You guys are so fun. Well said. Now Nature owns SiWen an apology

86. 2012-08-02 10:35 AM

[Report this comment](#) | [#47594](#)

am tf said:

We didn't question about Phelps's 8 gold medals in one olympics game, we didn't question any incredible world recorder made by western young players, why do we have this kind of stupid question to these Chinese girl?

Just like Ian Thorpe said, if Ye is a UK girl she wouldn't receive any kind of question like that.

Shame on UK guys!

Shame on this so terrible olympics game, horrible organization, lots of mistakes, too many scandals.

87. 2012-08-02 10:35 AM

[Report this comment](#) | [#47595](#)

James Bolts said:

Holly molly, how nature allows such crap full of bias get published? Trashing others would not improve your status.

88. 2012-08-02 10:38 AM

[Report this comment](#) | [#47597](#)

Human Genetics said:

Actually I am glad to see such biased and fabricated article published by the best scientific journal of Britain.

It gives me another proof that this country is indeed going down.

89. 2012-08-02 10:38 AM

[Report this comment](#) | [#47598](#)

Ying Liu said:

Nature owes Ye an official apology. This is no kind of news ANY SCIENTIFIC journal should post out or even quote. Shame on Nature, with such bias and ugly racism, you would not even qualify for a science fiction journal

90. 2012-08-02 10:42 AM

[Report this comment](#) | [#47599](#)

Yuxuan Huang said:

This article explains nothing with little and unconvincing data. It makes Nature more like a gossip magazine with no difference with Play Boy. What a shame!

91. 2012-08-02 10:43 AM

[Report this comment](#) | [#47600](#)

Harry Du said:

From an objective perspective, whether Ye in fact doped is actually secondary. Aside from the mounting evidence that she did not, it is just bias, borderline bigotry, to suggest someone is doping purely based on a fantastic performance and her ethnicity. By asking the question alone, the doubter exposes his own bias and discrimination. When Phelps got eight gold, why there was no suspicion? Nature successfully drags down its own stature by publishing this article. Huge shame on Nature!

92. 2012-08-02 10:43 AM

[Report this comment](#) | [#47601](#)

Yuxuan Huang said:

This article explains nothing with little and unconvincing data. It makes Nature more like a gossip magazine with no difference with Play Boy. What a shame!

93. 2012-08-02 10:46 AM

[Report this comment](#) | [#47602](#)

Opium Dealer said:

This article is crap. The author is crap also. Add up, nature becoming crap. Digusting western media rejects what inside you dealer!!!

94. 2012-08-02 10:47 AM

[Report this comment](#) | [#47603](#)

Ning MA said:

Shame on you, Ewen Callaway. And also shame on Nature magazine. The westerns still has two rules to evaluate the world as always. All your westerns with this feature should self-examination.

95. 2012-08-02 10:48 AM

[Report this comment](#) | [#47604](#)

Opium Dealer said:

The great ugly kingkong!!!

96. 2012-08-02 10:48 AM

[Report this comment](#) | [#47605](#)

Yanni Ding said:

I could not believe Nature, one of the world top science journal, would allow such a biased paper published. Are you sure you guys know anything about statistics? And do you know Nature was the dream journal for all the scientists in the world? You're ruining your reputation now! And you should apologize to Ms. Ye! The sooner, the better.

97. 2012-08-02 10:50 AM

[Report this comment](#) | [#47606](#)

Zhenmin Hong said:

Shame on you! Nature! You just published something without any evidence!

“Was Ye’s performance anomalous?”

As Wendell Parker pointed out, there are quite a few cases that are similar to Ye's, some of them are even more surprising, for example, the US Elizabeth Beisel case that Wendell Parker gave. Ye is 5 seconds faster than her best in 2011. However, she is a young athlete and still growing. Her body NATURALLY becomes stronger as other young athlete. This was NOT anomalous at all.

“Doesn’t a clean drug test during competition rule out the possibility of doping?”
Scientifically, one could always answer no. However, one could always question this to everything except a few cases. Like, one could always question theory of relativity, question quantum mechanism. However, there is no any evidence showing that they are false. However, it is extremely unfair and of prejudice to question a single athlete, but no others. It would be fair to question ALL athletes. Unfortunately, this is not the case that this report trying to do.

“How would performance be used to nab dopers?”

Ye is not the only case showing such a big improvement in such a period. Either Ye or other athletes who had the some performance profile has been convicted to be doping. There is no any evidence or hint I, as many other people can see that the performance profile can be used to nab dopers. So the answer is NO.

“Could an athlete then be disciplined simply for performing too well?”

NO! We should celebrate that the record has been broken, with regardless who he/she is, where he/she comes from, etc. It is really a shame to question an athlete who broke the record with any evidence showing he/she did that in an banned manner! There is no question at all.

Nature, please stop publishing craps like this!

98. 2012-08-02 10:50 AM

[Report this comment](#) | [#47607](#)

Opium Dealer said:

Anyone want some doping, contact me.

99. 2012-08-02 10:51 AM

[Report this comment](#) | [#47608](#)

Opium Dealer said:

crap crap crap crap crap

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