

## Reviewer 2 checklist

**Comment:** The article has less explicit statistics in it than most articles from Chance. This doesn't affect its value in general but it seems a bit light.

**Response:** I agree, the article does have less explicit statistics and that shouldn't affect its value. The article is now shortened by about 1/3, perhaps the reduction in length will lessen its light appearance.

**Comment:** I generally sympathize with the author's argument, but I'm not sure there's enough empirical evidence to support it. Specifically: what weights should we give to the various eras? The author gives five possibilities: straight population,  $w_1$ ,  $w_2$ ,  $w_3$ , and  $w_4$ . There are many others that could be chosen, and it's a matter of intuition which one you think is correct.

Speaking for myself, I think none of them. Intuitively, with no evidence – that baseball was played much more frequently, and was a much larger part of the social fabric, in the earlier years of the century. I've heard of kids gathering at the sandlot to play pickup baseball games, but never football, basketball, or hockey (in the US).

Baseball was a much, much bigger deal, compared to other sports, in earlier times, and that's not picked up by the author's metrics.

Consider hockey. The NHL has players from Russia, Sweden, Finland, the USA, and many other hockey-playing countries. But almost 40% of players are from Canada. Of the top 10 players listed on Sportsnet, 4 are Canadian, again 40%. Others are Russian, Swedish, and Slovenian.

There are three Russians and two Swedes – a ratio of 1.5:1 – even though the population ratio is around 14:1. The Canada:Russia ratio is 4:3, with a population ratio of about 1:4.

I theorize it's the culture. Hockey is bigger in Canada than any sport in the USA. Kids are encouraged to play, good players are noted as exceptional in early childhood, and parents dream of their kids making the NHL.

Perhaps you could explain that with weights based on fan interest – maybe Canada does have five times the fan interest of Russia. And maybe Sweden does have twice the fan interest of Canada.

But I doubt the numbers work out that nicely... Even after factoring in that there might be players still in Sweden or Russia that would make top 10 here.

So I don't think there's enough empirical evidence. I would ask that the author come up with a weighting that accurately predicts countries today. Then, treat previous eras as countries, and use the same weighting. Then, the results might be strong enough to show something empirically.

**Response:** Thank you for a well thought out critique of the sensitivity analysis. The purpose of the weights is to best account for the changing popularity of baseball over time. The weighting regimes serve the role of a sensitivity analysis, these weights were designed to address, and in fact, overcompensate for any potential shortcomings of no weighting. I now make this point clear in the paper.

I am not sure that these accounts of the popularity of hockey in Canada relative to other countries translate well to baseball. The claim that hockey is much bigger in Canada than any sport in USA is certainly true and was probably always true. The following is taken from the article <https://www.justlanded.com/english/Canada/Canada-Guide/Culture/Ice-hockey-the-national-sport-of-Canada>:

“In 2004 a poll was taken in Canada to find the 10 greatest Canadians of all time, millions of Canadians chose two hockey players within their list - Wayne Gretzky and Don Cherry. Furthermore, having a hockey scene on the back of the Canadian five dollar note (see below) is just another example of how close to their hearts this sport really is. Some Canadians who feel strongly about the sport, believe that hockey has huge impacts on Canada, so much so that it defines it. There have been books written on the influence and connection between hockey and Canada, such as Jim Prime's book, *How Hockey Explains Canada: The Sport That Defines a Country*.”

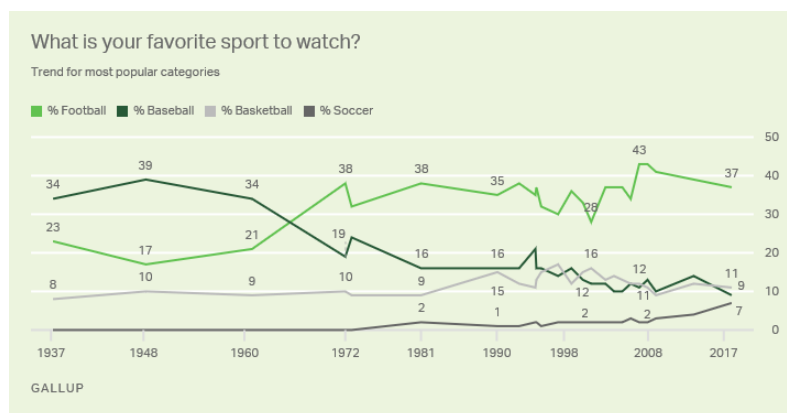


I understand that this 2004 poll is not a random sample. However, these results suggest that hockey in Canada is a much larger part of the culture than any particular sport is in the USA (a non random online poll for the greatest Americans of all time at Ranker lists its first sports figure at 43, see: <https://www.ranker.com/list/greatest-americans-ever/jacariah>).

It may be the case that the weighting methods that I propose might not hold up in the hockey example. It is hard to know for sure since historical polling data for the popularity of sports in countries other than the US is hard to find. It may very well be the case that hockey has five times the fan interest in Canada than it has in Russia. Surveys indicate that football is the preferred sport in Russia (<http://russia.com/activity/football/>). I agree that Sweden probably does not have twice the fan interest of Canada today, although hockey is very popular in Sweden (<https://en.wikipedia.org/wiki/>

Ice\_hockey\_in\_Sweden). The all-time rankings of hockey players are much more favorable to Canadians and they fall in alignment with the narrative presented, the origins of the sport ([https://en.wikipedia.org/wiki/Ice\\_hockey](https://en.wikipedia.org/wiki/Ice_hockey)), and nostalgia (see <https://www.thescore.com/nhl/news/1361102>, <https://seatgeek.com/tba/sports/the-top-10-best-nhl-players-of-all-time/>, <https://www.thetoptens.com/hockey-players/>, and <https://www.nhl.com/fans/nhl-centennial/100-greatest-nhl-players>).

In any event, I do not think that the hockey analogy is an indictment of the weights that I employ as a sensitivity approach within the context of baseball. Polling data on the changing popularity of baseball in the US is easy to obtain and goes back as far as 1937. It is reasonable to suggest that this information can serve as a useful proxy in determining the MLB eligible population. The weighting regime w3 is motivated from the following graph which is taken from Gallup polling data at <https://news.gallup.com/poll/4735/sports.aspx>



This graphic is now added to the text. The weighting regimes w1 and w2 are motivated from the Gallup article at [https://news.gallup.com/poll/6745/Baseball-Fan-Numbers-Steady-De.aspx?g\\_source=baseball%20interest&g\\_medium=search&g\\_campaign=tiles](https://news.gallup.com/poll/6745/Baseball-Fan-Numbers-Steady-De.aspx?g_source=baseball%20interest&g_medium=search&g_campaign=tiles) which notes that general interest in baseball has remained steady from 1937 on. This article is now added to the text. This article and the above graphic suggests that it is a bit hyperbolic to state that baseball was played much more frequently, and was a much larger part of the social fabric, in the earlier years of the century.

I admit that the polling data only goes back to 1937, but I do not think that national interest in baseball was much different before 1937 than it was after. For example as to why I think this, consider the 1927 Yankees which is one of the greatest baseball teams of all time, if not the greatest ([https://en.wikipedia.org/wiki/Murderers%27\\_Row](https://en.wikipedia.org/wiki/Murderers%27_Row)). However, the attendance figures for this great 1927 Yankees team were very modest in comparison to more modern Yankees seasons (<http://www.baseball-almanac.com/teams/yankatte.shtml>) even when taken relative to the population of New York City ([https://en.wikipedia.org/wiki/Demographic\\_history\\_of\\_New\\_York\\_City](https://en.wikipedia.org/wiki/Demographic_history_of_New_York_City)). Bleacher seat tickets at Yankee stadium cost anywhere from 50 to 75 cents in 1927 (<http://baseballguru.com/hfrommer/analysishfrommer80.html>) which is 7.10 to 10.65 in 2019 dollars. I do not think that cost is the explana-

tion for modest attendance figures for the 1927 Yankees. Also note that Yankees attendance is not limited by seating capacity ([http://www.baseball-almanac.com/stadium/yankee\\_stadium.shtml](http://www.baseball-almanac.com/stadium/yankee_stadium.shtml)). Returning to hockey for a moment, in 1927 the Montreal Canadians had a much higher attendance than the Yankees relative to population (see [http://www.hockeydb.com/nhl-attendance/att\\_graph.php?tmi=6929](http://www.hockeydb.com/nhl-attendance/att_graph.php?tmi=6929) and <http://demographia.com/db-cancityhist.htm>). The importance of hockey to Canadians is much greater than that of baseball to Americans.

We are certainly taught that interest in baseball expanded in the roaring 20s. For example, see page 766 in the 8th grade history textbook [https://www.orange.k12.nj.us/cms/lib/NJ01000601/Centricity/Domain/434/United\\_States\\_History\\_Unit\\_8.pdf](https://www.orange.k12.nj.us/cms/lib/NJ01000601/Centricity/Domain/434/United_States_History_Unit_8.pdf) used in Orange Public Schools in New Jersey. My freshman year history class taught the same thing, but I no longer have the textbook. We do see an uptick in Yankees attendance starting in 1920 (this is the Babe Ruth season mentioned in the Introduction of the paper) which supports this narrative, but these figures are still modest in comparison to the attendance figures of more modern eras. Additionally, there were no radio broadcasts of baseball games prior to 1920 ([https://en.wikipedia.org/wiki/Major\\_League\\_Baseball\\_on\\_the\\_radio](https://en.wikipedia.org/wiki/Major_League_Baseball_on_the_radio)). I do not think that interest in baseball could have been much larger before 1920 considering that slugging Babe Ruth and the radio did not exist and attendance of baseball games was lower (<https://www.baseball-reference.com/leagues/MLB/misc.shtml>). Again, it is a bit hyperbolic to state that baseball was played much more frequently, and was a much larger part of the social fabric, in the earlier years of the century.

The anecdotal disappearance of sandlot baseball could partially be explained by the emergence of Little League baseball which started in 1939 and has greatly expanded ever since ([https://en.wikipedia.org/wiki/Little\\_League\\_Baseball](https://en.wikipedia.org/wiki/Little_League_Baseball)).

I think that the empirical evidence does support the use of the weighting regimes in the paper, especially in the manner in which they are used, and the interest in baseball compared to other sports in earlier times is picked up by these metrics. We also can clearly see that the weighting regimes were designed to address, and in fact, overcompensate for any potential shortcomings of no weighting.