1-2017

# Numberlines: Hockey Line Nicknames Based on Jersey Numbers

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# Numberlines:

## Hockey Line Nicknames Based on Jersey Numbers

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**Abstract:** The purpose of this article, in general, is to expound Chernoff's (2016) notion of numberlines, that is, hockey line nicknames based on jersey numbers. The article begins with a brief discussion of the history of hockey line nicknames, which allows for the parsing of numberlines and quasi-numberlines (nicknames based on numbers associated with hockey players). Focusing, next, on jersey number restrictions for the National Hockey League (NHL), a repeated calculation of the number of possible numberlines winnows down the number from a theoretical upper bound to a practical upper bound. Moving beyond the numbers, the names of natural numbers – those with a certain panache (e.g., Untouchable, McNugget, Frugal, Hoax, Narcissistic, Unhappy, Superperfect and Powerul numbers) – act as a gateway to the notion of numberlining, the process of attempting to coin a numberline. Two particular examples, *The Powers Line* and *The Evil Triplets* provide a window into the process of numberlining. Prior to concluding remarks, which explain how numberlines and numberlining fall in line with the NHL's recent embrace of fans' use of social media, the article details how adopting hockey line nicknames based on jersey numbers can be used as a possible venue to rename questionable hockey line nicknames.

*Keywords:* hockey; line; numberlines; numberlining; popularization; quasi-numberlines.

A *line*, in hockey parlance, is a term used to collectively describe the three forward positions, that is, Left Wing (LW), Centre (C) and Right Wing (RW). A hockey line nickname is exactly as it sounds – a nickname for a hockey line. The purpose of this article is to expound on Chernoff's (2015) notion of hockey line nicknames based on jersey numbers, that is, numberlines. (Apologies to my fellow Canadians, but I will be using the term hockey jersey, as opposed to hockey sweater, throughout this article. I know, eh!?) This article begins with a brief discussion of the history of hockey line nicknames, which allows for the parsing of numberlines and quasi-numberlines (nicknames based on numbers associated with hockey players). Focusing, next, on jersey number restrictions for the National Hockey League (NHL), a repeated calculation of the number of possible numberlines winnows down the number from a theoretical upper bound to a practical upper bound. Moving beyond the numbers, the names of natural numbers – those with a certain panache (e.g., Untouchable, McNugget, Frugal, Hoax, Narcissistic, Unhappy, Superperfect and Powerul numbers) – act as a gateway to the notion of numberlining, the process of attempting to coin a numberline. Two particular examples, *The Powers Line* and *The Evil Triplets* provide a window into the process of numberlining. Prior to concluding remarks, which explain how numberlines and numberlining fall in line with the NHL's recent embrace of fans'

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use of social media, the article details how adopting hockey line nicknames based on jersey numbers can be used as a possible venue to rename questionable hockey line nicknames.

### That '70s Line: A Prelude

One of the greatest hockey line nicknames, in my opinion, was coined during the 2014 playing of the National Hockey League's (NHL) Stanley Cup Playoffs. Tanner Pearson (LW), Jeff Carter (C) and Tyler Toffoli (RW), a line for the 2014 Stanley Cup champions, the Los Angeles Kings, was, at some point during the season, given the nickname *That '70s Line*. The nickname, deftly conflates the numbers they wear on their jerseys (#70, #77 and #73, respectively) and the period sitcom, *That '70s Show* (which aired on Fox for nearly a decade). The nickname stuck.

*That '70s Line* definitely has staying power. To be clear, I am referring to the staying power of the line's nickname, not the line, nor the individuals that comprise the line. Yes, individually and collectively, Pearson, Carter and Toffoli, i.e., *That '70s Line,* were integral to the Los Angeles Kings winning the 2014 Stanley Cup Playoffs. In that sense, both the line and also the individuals had a sense of staying power. However, in January of the 2014-2015 NHL Season, a scant few months after winning The Stanley Cup, Tanner Pearson suffered a broken ankle. Just like that, *That '70s Line* was no longer together. The nickname, though, it lives on and is still widely used.

*That '70s Line* became a meme. Hockey commentators and journalists, those on TV, radio and in print, without so much as a hesitation, drop the line's nickname; and, in most instances, use the nickname as if every person watching, listening or reading knows who was on the line, when the line existed, the importance of the line and on and on and on. The meme began to grow. For example, once Dwight King, who wears the number 74 on his jersey, replaced Tanner Pearson, the new line of King (#74), Carter (#77) and Toffoli (#73) was quickly dubbed *That '70s Line 2.0*. The new nickname nicely conflates the numbers they wear on their jerseys, *That '70s Show* and 2.0, which is read as 'two-point-oh'. (Originally, 2.0 was a computer-science-based term for the second version of some-thing, but, more recently, has turned into a marketing based term.) As another example, the Chicago Blackhawks almost got into the action… almost. With Patrick Kane (#88), Marian Hossa (#81), Antoine Vermette (#80) and Teuvo Teravainen (#86) all playing forward for the Blackhawks, the nickname, *That '80s Line* (yes, there was a TV show called *That '80s Show*), was proposed to some of the different line combinations that were playing together (e.g., #80, #81 and #88). *That '80s Line* was quickly squashed by the Hawks' players because of originality and, of course, the rivalry between the Blackhawks and the Kings (which may be known, one day soon if not already, as The Dueling Dynasties). As fans of the game of hockey will know, *That '70s Line* is not the only, and definitely not the first, hockey line nickname to stick.

### Hockey Line Nicknames

There is a nearly 100 year history of line nicknames in the game of hockey[2] (starting with *The A Line* for the New York Rangers in the 1920s). There are, of course, the classics. *The Production*

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[2] I wish to acknowledge, here, the efforts of all the editors (past, present and future) of the "List of ice hockey line nicknames" Wikipedia page, which is currently found at the following link:

*Line* (Gordie Howe, Sid Abel and Ted Lindsay) of the Detroit Red Wings in the 1940s and 1950s, which conflates the production of one of (if not) the greatest scoring lines ever with automobile production in Detroit, The Motor City. *The KLM Line* (Vladimir Krutov, Igor Larionov, Sergei Makarov) of the Soviet National hockey team in the 1980s, which, simply, utilizes the first letters of the last names of each of the players from in a left to right fashion. Beyond the classics, affinity for certain nicknames is a more personal matter.

For me, a self-professed fan of wordplay, I have my own set of "classic" hockey line nicknames. A few of my personal favourites include: *The Mafia Line* of the New York Rangers, whose nickname is based on Tony Esposito representing the 'Godfather' and two 'Dons' (Don Maloney and Don Murdoch); *The ESP Line* of the New Jersey Devils, named after Patrik Elias, Petr Sykora and Zach Parise, which conflates the first initial of their last names with the notion of extrasensory perception or ESP (which is great to have on the ice because one will always know where their linemates are); *The Battery Line* of the New York Rangers (Brandon Dubinsky, Artem Anisimov, Ryan Callahan), which conflates the initials of their names with battery sizes (i.e., D for Dubinsky, AA for Artem Anisimov and C for Callahan); and, *The Mattress Line* of the Vancouver Canucks, which include two 'twins', Daniel Sedin and Henrik Sedin and Jason 'King'. (Worthy of note, many nicknames for lines that include the Sedin twins have been the subject of some controversy, which is addressed later in this article.) As mentioned, I am fan of wordplay, especially in sports (e.g., *The Legion of Boom,* a term once used to describe the defense of the Seattle Seahawks); however, I also enjoy numbers, which brings us to the notion of, what I call, a numberline (which, yes, itself, is a play on words).

## Numberlines

The notion of a numberline is best explicated with examples. The previously discussed, *That '70s Line, That '70s Line 2.0* and (the non-existent) *That '80s Line* are, what I consider, numberlines. Simply put, a *numberline* is a jersey numbers based nickname for a hockey line (Chernoff, 2015). *That '70s Line* and *That '70s Line 2.0* are, obviously, not the only numberlines in the nearly 100-year history of nicknaming hockey lines. There are a scant few others. For example, I also consider the following hockey line nicknames numberlines: *The Deuces Wild Line* consisting of Simon Gagne (#12), Peter Forsberg (#21) and Mike Knuble (#22) who played for the Philadelphia Flyers; *The Crazy Eights Line* of Eric Lindros (#88), Mark Recchi (#8), and Brent Fedyk (#18) who played for the Philadelphia Flyers (note: "crazy" is in reference to the card game with the same name, but further refers the fact that the wingers played on their off wing, which, to me, is not crazy at all); and, *The Lucky 7s Line* of Shawn Bates (#17), Michael Peca (#27) and Mark Parrish (#37) who played for the New York Islanders; and, perhaps the most "on the nose" of all the numberlines, *The 7-8-9 Line* of the Quebec Nordiques where Robbie Ftorek, Marc Tardif and Real Cloutier wore jerseys #7, #8 and #9, respectively. The present list of numberlines, not claimed here to be exhaustive, while small in number, is not to be bolstered with, what I call, quasi-numberlines.

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**Quasi-numberlines**

Quasi-numberlines, as the name suggests, are seemingly like numberlines, but they are not. While quasi-numberlines have their nicknames based on numbers *associated* with the players, the numbers that are used are *not* based on the players' jersey numbers. Instead, the numbers that the nicknames are based on are numbers associated with attributes of the players. In other words, the numbers used are associated with the player, but not the players' jersey numbers. For example, *The Clydesdales Line* for the Chicago Blackhawks (1984–1987), consisting of Curt Fraser, Troy Murray, and Ed Olczyk has their nickname based on the notion that each of the players weighed in at over 200 pounds. Beyond weight, many attributes can be used for a quasi-numberline.

There are more quasi-numberlines than numberlines in the nearly 100 year history of hockey line nicknames. Attributes for quasi-numberlines are based on players': weights (e.g., *The Clydesdales Line*, *The Crash Line*, *The 700 Pound Line*), heights (e.g., *The SkyLine*, *Two and a Half Men*), age (e.g., *The Pappy Line*, *The Peach Fuzz Line*), scoring prowess (e.g. *The Century Line*, a.k.a, *The Bi-Centenial Line*) and earning prowess (e.g., *The Million Dollar Line*). Other Quasi-numberlines include, but are not restricted to: *The Dice Line, The Roaring Twenties Line, The Three Aces, The Three Feathers, The Three Guns, The Three-M Line, Trio-Grande, The Tricky Trio, Triple Crown Line* and a few others (e.g., the possibility of *The Ones Line* of the Edmonton Oilers, which will refer to all players on the line having been picked number one in their draft). As presented, there are, currently, more quasi-numberlines than there are numberlines. Despite the current imbalance, I contend, one day, there may be more numberlines than quasi-numberlines. To bolster this claim, let's run some numbers.

<div style="text-align:center"><b>Possible Numberlines</b></div>

There is a limit to how many different numberlines that are possible – an upper bound, if you will. (Of course, more than one nickname can be given to a particular numberline, which muddies the number of numberlines – a bit.) Within our calculations, we will, roughly, consider certain "limitations" that are associated with the numbers found on hockey jerseys. Case in point, the number(s) 0 and 00 are no longer allowed in the NHL (the number, apparently, was causing glitches with statistical software), were only worn by goalies (e.g., Martin Biron) and a goalie would never be part of a numberline. As such, we are, then, working with the numbers 1 to 99. Well, not exactly. The number 99, worn by Wayne Gretzky, has been retired by the entire league, which means that players are no longer allowed to choose #99 for their jersey. The viable numbers for a NHL jersey are #1 to #98. Ok, *now* let's run those numbers.

Instead of using a formula here, I'm going to try and walk us through the calculation. Let's look at, for example, the position of Left Wing. Based on the jersey number restrictions, there are 98 possible options for the Left Winger. (We will, after the calculation, take into consideration goalie numbers and address other restrictions.) Next, recognizing that two players on the same team will not have the same number, if we now consider the Centre (position), there are only 97 options available. Similarly, the Right Winger will not have the same jersey number as their line mates and, as such, only has 96 options available. With 98 options for LW, 97 for C and 96 for RW, we, based on the fundamental counting principle, multiply the numbers together. When we multiply 98x97x96 we get 912576, but, hold on, that is not, yet, the right answer. We must, in our calculation, take into consideration that the order of the numbers on the jersey does not

matter. In other words, the (hypothetical) line of players whose jerseys are #13, #51 and #67, which can be arranged in six different ways (e.g., 13-51-67, 13-67-51, 51-13-67, 51-67-13, 67-13-51 or 67-51-13) represents the same line (albeit in different positions). To take this into account in our calculation, we must trim down to 1/6 of 98x97x96. So, our calculation, now, is (98x97x96)/6 which equals 152096 possible numberlines.

To recap, for the NHL (e.g., without the numbers #0, #00 or #99 available as a jersey number), there are, at most, 152096 possible numberlines. (If, however, you are interested in distinguishing each of the positions of a forward line for your numberline, that is, LW, C and RW, then are even more possible numberlines at 912576; however, this is not explored further in this article). Now that we have an upper bound, in terms of possible numberlines, it's time to address the other restrictions that exist.

### Jersey Number Restrictions

Jersey number restrictions are not hard and fast rules. While there is nothing stopping a forward from wearing the #1 on their jersey, the number is typically reserved for goaltenders. As such, we need to tweak our previous calculation. Before we do so, let us, first, compile all the possible restrictions that are typically taken into consideration.

In a day long past, the starting goaltender for a team would wear #1, the players, that is defense and forwards, would wear the numbers 2 to 29 and the backup goaltender would wear #30. Taking these traditional restrictions into consideration would greatly reduce how many numberlines would be possible. There would only be (28x27x26)/6 possible numberlines (worth of note: this calculation does not take into consideration the further restriction that the defense would typically wear the lower numbered jerseys, e.g., #2, #3, #4, etc.). In terms of possible numberlines, the jersey situation in the NHL has changed dramatically from (what is known as) the Original Six era.

It would appear, these days, that each and every number, from 1 to 99, is up for grabs in the NHL – especially now that the "higher" numbers have become mainstream. For the most part, higher numbers in the NHL are worn in honour of the player's birth year (e.g., Sidney Crosby, #87) or the year the player was drafted (e.g., Ryan Smyth, #94). Not all numbers are up for grabs. The days of the starting goaltender wearing #1 and the backup goaltender wearing #30 are over, but jersey's donned by goaltenders, for the most part, fall in a range (from about #30 to about #40), which need be taken into consideration for our calculation. Smaller numbers (e.g., 2, 3, 4, etc.) are still predominantly used by the defense man rather than forwards, which also needs to be taken into consideration. Then there are the numbers that cause problems – in terms of optics. Sure, a team may not have a goaltender that is wearing #1, but forwards are not going to (read: should not) don the number #1 as to avoid the inevitable scrutiny associated with "being #1." A player would also be open to ridicule (for reasons that do not need to be elaborated upon here) should they decide to wear #69. And, perhaps because of the "closeness" to the number 99, #98 is one of, if not the least, used jersey numbers. Taking stock of our restrictions, then, our new calculation — which removes the numbers 1, 30-40, 69 and let's say 5 more numbers (e.g., 2, 3, 4, etc.) for the defense who still typically wear the low low numbers — reduces the number of possible jersey numbers by 18. Our new calculation (80x79x78)/6 results in 82160 possible numberlines. Next, in terms of restrictions, we must consider that the number of possible numbers lines will be different for different teams.

Different teams have different jersey number restrictions. You will not find a member of the Minnesota Wild wearing #1 – not even the goaltender. The team retired the number, before the team's first game, in honour of their fans. In fact, retired numbers are the primary reason that different teams will have different numbers of possible numberlines. The Montreal Canadians, with 14, are, currently, the team with the most retired numbers. The numbers that are retired are, for the most part, from a bygone era where, as explained earlier, jersey numbers fell in the range from #1 to #30. Teams with retired jerseys typically correspond with low numbers, which removes low numbers as possible options for players getting into the game. The #9, worn by Gordie Howe, has been retired by five of the Original Six NHL teams.

Just because a number is retired, however, does not mean that it will always stay retired (which, yes, is a matter of debate). Take the Arizona Coyotes, for example, which used to be the Phoenix Coyotes, which used to be the Winnipeg Jets. While retired numbers were preserved in the move from the Winnipeg Jets to the Phoenix Coyotes, all retired numbers were once again available when the Phoenix Coyotes became the Arizona Coyotes. There are similar stories with the relocation of the Quebec Nordiques and the Hartford Whalers. Taking all of the above into consideration, we will, for our next calculation, take my rough average of four and a half retired jerseys for a NHL team, which we'll round to five. As such, there are (75x74x73)/6, which equates to, roughly, 67525 possible numberlines for a team in the NHL.

Having established that there are approximately 70000 possible numberlines for a NHL hockey team, I wish to reiterate my earlier claim that numberlines, that is hockey line nicknames based on the players' jersey numbers, are a potentially fruitful venue for coining hockey line nicknames. I would further contend that the large number of numberlines available for each team fit quite well with current state of hockey line nicknames, which, as has been widely reported for quite some time now, has been on the decline. Reasons for this decline are based, for the most part, on the free agent market where players no longer spend their entire career with one team — let alone on one line. Other reasons include modern day coaches' propensities to shake things up and consistently have certain players moving "up" or "down" a line to play with others players on a different line. Given this current climate, the notion of a line playing together for an extended period of time, as was the case in the past, may not take occur (until a long run in the playoffs as was the case with *That '70s Line*). We should keep in mind, though, that most teams will have approximately 70000 numberlines to work with when trying to establish numberlines. Having worked on the math, it's now time to turn our attention to the nicknames.

## Coining Numberlines: Numberlining

One of the great things about adopting a jersey-numbers-based approach to coining hockey line nicknames is that there are great names associated with certain numbers. Take, as a gateway example into the world of numberlines, prime numbers. There are 25 prime numbers less than 99 (2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97), of which three in any order would make up the line. (Traditionally, prime numbers 31 and 37 are reserved for goaltenders and, as such, should probably be taken out of the mix.)

With the 2300 possible line combinations, there must be a line, somewhere, that is missing a nickname!? Perhaps, once people start paying attention to what type of numbers players have on their jerseys (e.g., Prime, etc.), these lines will be rightfully identified. Perhaps a line coined as *Prime Time* would work well in markets where TV is big (a reminder: "prime time" was, once

upon a time, known as 8pm to 10pm on network television). Perhaps *Prime Time* does not, aesthetically speaking, work for some as hockey line nickname. Fear not, *Prime Time* is but a mere gateway numberline.

There is, for me, a sort of panache about particular names associated with numbers. For example, there are Bell numbers, Octagonal numbers Pentagonal numbers, Catalan numbers, Untouchable numbers, Perfect Square numbers, Semiprime numbers, Mersenne Primes, Aliquot numbers, Frobenious numbers, Frugal numbers, McNugget numbers, Hoax numbers, Kaprekar numbers, Keith numbers. The list, in terms of different types of numbers, goes on: Narcissistic, Odious, Unhappy, Smith, Superperfect, Powerful, Heptanacci, Hexannaci, Fibonacci, Pentatopes, Cunningham and others. Of course, this list is not exhaustive, but, rather, an effort or starting point to demonstrate, to those who may be interested in the nickname potential that exists when considering jersey numbers. We now turn our attention to the process of attempting to coin numberlines.

Correlating a numberline (e.g., *The Untouchable Line* or *The Untouchables*, *The Pythagoreans*, *The Powers Line* and others) with a past, present or future hockey line is also a numbers game. To get a sense of what is involved, or possible, one must run the numbers associated with *numberlining*, the process of attempting to coin a numberline, that is, coining hockey line nicknames based on jersey numbers. Although numberlining will be done differently by different people, I will, in what follows, detail some of the broad strokes and key elements that are associated with the process. As was the case with numberlines, numberlining is best explicated with examples.

## The Powers Line

Let's consider, by way of example, a hypothetical hockey line where the players wear jerseys numbered 16, 55 and 81. Without knowing anything about the hypothetical players donning these particular jerseys, it is still possible to provide the line with a nickname, that is, a numberline. In this case, the number 16 is a power, that is, 16 is a power of 4 (four squared) and, relatedly, 16 is a power of 2 (2 to the power 4). Similarly, 81 is a power of 9, more specifically, nine squared. As demonstrated, this line is comprised of *powers*. Some of you are getting ahead of me at this point. The number 55 is not similar to the previous two examples, that is, 55 is not equal to some natural number that has been squared or cubed.

I do think, though, that the number 55 should be allowed on The Powers Line. Hear me out. Those of you who are fans of the HBO television series *Eastbound and Down* know that the most famous baseball player of all time (according to Kenny Powers) is Kenny Powers. Kenny *Powers* wore number 55 on his jersey. Should you, personally, think that the number 55 does not belong on *The Powers Line*: first, let me disagree; second, you've shown your true colours as a numberline purist (and for that I applaud); and, third, you have nothing to worry about because there are other numbers that could be used to make up *The Powers Line*. In a perfect world, the players wearing numbers 16 and 81 would be named Ken (at least one of them) and then there would be little doubt that that particular line would be known as *The Kenny Powers Line*; actually, there would be no doubt.

The possible numbers that could be used for *The Powers Line* include the powers of 2 (4, 8, 16, 32 and 64), 3 (9, 27, 81), 4 (16, 64), 5 (25), 6 (36), 7 (49), 8(64) and 9 (81). As such, there are 11 possible numbers that could be used to comprise *The Powers Line:* 4, 8, 9, 16, 25, 27, 32,

36, 49, 64, 81 (I've left 55 out for you purists), which equates to [11x10x9]/6 or 165 different possible *The Powers Lines.* Speaking, again, to the purists, there are other possible numbers that could be used for The Powers Line. While I've already made my case for including the number 55, I would be remiss not to mention that the number 1 raised to any power is 1, which means that 1 should be included, but, as presented earlier, 1 is typically reserved for goaltenders. Also along this line of reasoning, each natural number is written to the power of 1 and, as such, we have must include each of the numbers from 1 to 98. Worthy of note, this is why, originally, I chose the nickname as *The Powers Line* instead of *The Power Line*. For the sake of continuing this example, we'll restrict the possible numbers that could be used to the 11 mentioned earlier, which, of course, impacts the number of possible *The Powers Line* possibilities to 165.

Recognizing that there are 165 possible numberline combinations that could be called *The Powers Line* got me to thinking. Perhaps at some point, somewhere, *The Powers Line* was on the ice, skating without a nickname. What a shame! And, to make a point, what if the line was full of, oh, I don't know, power forwards. What a shame, indeed. Instead of just looking back, what if *The Powers Line* exists right now and is skating around without their nickname. This is possible. Perhaps *The Powers Line* did exist and was not named, does exist and is not named or, looking ahead, will exist at some point in the future and, once recognized, appropriately named. With 165 possible lines that could be denoted as *The Powers Line*, there might be a number of different *Powers Lines* out there. As was seen with the *That '70s Line* meme, though, once one line becomes known as *The Powers Line*, other hockey lines, especially in the NHL, will politely decline being known as, for example, *The Powers Line 2.0* (or 3.0). With that said, if a line consisted of numbers that were all powers of two, that is, for example, 25, 49, 64, they might be open to slight tweak to the numberline, such as *The Second Powers Line*. Actually, now that I think about it, they'd probably have to be on the same team as *The Powers Line*. This is all to say, that although there 165 possible *The Powers Lines*, once the first *The Powers Line* is tagged (read: identified), it will, probably, be time to move on to another type of number-based nickname.

Numberlining is a double-edged sword. One has to be conscious of both the name of the numbers, which will become the nickname, and, also, the number of numbers associated with the name. Let me explain. Let's say, for the sake of argument, that *The Powers Line* doesn't have the panache that you're looking for in what will, ultimately, be your nickname for a hockey line. Fine, but, you must keep in mind that 165 possible lines that could be called *The Powers Line*, that is, the number or numbers was pretty good. Let's look at a second example to illustrate this point.

*The Powers Line* just didn't do it for you, for whatever reason. Fine. So, you dig a bit deeper into the world of numbers for a better name. Let's say you dig deep and as you scour the internet, learning about different types of numbers you finally find something that you know, for sure, will work as a numberline. You've decided, after much research, to try to coin a particular numberline called *The Hexagonals.* I like it; but, good luck. It might not be that easy to find a home (read: line) for *The Hexagonals*. The hexagonal numbers available (under 99) are: 1, 6, 15, 28, 45, 66 and 91. As such, with 7 numbers to work with, you're looking at, [7x6x5]/6 or 35 potential combinations of numbers that could be deemed *The Hexagonals*. Who are we kidding here, we're not going to find the number 1, typically reserved for goalies, on a forward, and, for that matter, you'll have a tough time finding players wanting to wear Mario Lemieux's number, 66. Taking this further information into consideration, then, you are left with [5x4x3]/6 or 10

possible combinations. The double-edge sword, mentioned earlier, is the trade off in terms of the name of the number and how many numbers are available for said name. Then comes the even more arduous task of establishing whether those combinations existed or exist (or you start looking to the future). Let's look at the numbers of a few others potential numberlines.

## The Evil Triplets

I both like and also dislike the hockey line nickname given to Ondrej Palat, Tyler Johnson and Nikita Kucharov of the (National Hockey League's) Tampa Bay Lightning: *The Triplets*. I'll explain.

First off, I like that a line that has been together for as long as they have, over a year now (more and more of a rare occurrence in the NHL these days), has been given a nickname and it stuck. Second, I like that the nickname captures the line's seemingly innate ability to know where each other are on the ice at all times, which, of course, is based on the notion that twins (like their coach Cooper's daughters) and multiples are born with a sense of ESP or telepathy (like the Sedin twins over in Vancouver), which may or may not be true. In addition, third, if you will, Ken Campell (writing in *The Hockey News*) recently reported that all three of them actually lived in the same condo complex for a period of time, like to hang out together off the ice, enjoy sushi for lunch and watch game tape together. How could these guys, this line, *not* be called *The Triplets*?!

I dislike the nickname because, to me, it screams boy band. For those of you not in the know, a *boy band* is a group of singers, typically male, who, usually, are in their late teens or their twenties (now they can even be in their thirties and forties) and are stupid-famous with their fans. Famous boy bands include: New Kids on the Block (now known as NKOTB, I think), Menudo, Backstreet Boys, NSYNC (read: in-sync), The Jonas Brothers, One Direction and many, many others. Now, I hate to lump 'The Triplets' in with these boy bands (especially One Direction), but if the shoe fits… Focusing less on popular culture and more on hockey culture, unfortunately, does not sway my dislike for the nickname.

Consider the following two groups of hockey line nicknames[3].

> Group 1: *The Bulldog Line; The Firing Line; The Legion of Doom; The MVP Line; The Production Line*.

> Group 2: *The Bread Line; The Banana Line; The EGG Line; The Huey, Dewey and Louie Line; The Kid Line; The Pony Line; The Scooter Line*.

Those of you who can already tell where I'm going with this line of reasoning know that *The Triplets* does belong not in Group 1, but, rather, in Group 2. The nicknames in Group 1, I argue, have a gravitas to them – one that bespeaks a quiet hockey dignity. The nicknames in Group 2 have a whatever-the-appropraite-anotym-for-gravitas-is, a lack of quiet hockey dignity to them. In essence, *The Triplets*, unfortunately for *The Triplets*, makes a great boy band name, which is not what you're looking for in a nickname for the sport known as professional hockey.

Compounding my dislike, the hockey line nickname *The Triplets* is not, by (my) definition, a numberline. Yes, a triplet is a set of three items, but it is still not a numberline. As described

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[3]The two groups were picked from the "List of ice hockey line nicknames" Wikipedia page, which is found at the following link: https://en.wikipedia.org/wiki/List_of_ice_hockey_line_nicknames

earlier, *The Triplets* is what I call a quasi-numberline. It should be pointed out, quasi-numberlines are not immune from taking players' jersey numbers into consideration. Case in point, let's look at my current proposal to change the nickname of *The Triplets* to *The Evil Triplets*.

As I have presented and hopefully established, I both like and dislike the nickname for *The Triplets*. To be honest though, I dislike the nickname much more than I like the nickname. *The Triplets*, especially at times during the run of the Tampa Bay Lightning during the 2015 Stanley Cup playoffs, were one of if not the most dangerous lines on the ice. Their current nickname does not accurately reflect the fear they instilled in their opponents. This is why I am proposing, here, a slight evolution to their current nickname.

Instead of *The Triplets*, I propose that the line of Left Wing Ondrej Palat (No. 18), Center Tyler Johnson (No. 9) and Right Wing Nikita Kucharov (No. 86) of the Tampa Bay Lightning be known as 'The Evil Triplets'. Before you get ahead of yourself, no, I am not about to delve into some Gonzo Journalism where I report how I saw one of 'The *Evil* Triplets' kicking a puppy when the rest of the world wasn't looking through their cell phone cameras. They are not evil, to the best of my knowledge, but the evil moniker, as I'll show, still applies to their line.

*The Evil Triplets*, as a nickname, not only pays homage to the line's current (soon to be former) nickname, but also to their jersey numbers, which are, in fact, all evil. To be a tad more precise, the jersey numbers worn by Palat (No. 18), Johnson (No. 9) and Kucharov (No. 86) are known as evil numbers. Simply put — but perhaps not simply understood for those who have never worked in bases other than 10 — evil numbers are (nonnegative) integers that have an even number of 1s in their binary expansions (Hudson & Weisstein, n.d.). To get a better handle on this, let's take a look at the binary expansions of the jersey numbers worn by *The Triplets*.

For those of you not interested in delving into the math at this point, here is the list of the evil numbers under 100; and, yes, you can then skip over the next paragraph: 0, 3, 5, 6, 9 [Johnson's jersey number], 10, 12, 15, 17, 18 [Palat's jersey numbers], 20, 23, 24, 27, 29, 30, 33, 34, 36, 39, 40, 43, 45, 46, 48, 51, 53, 54, 57, 58, 60, 63, 65, 66, 68, 71, 72, 75, 77, 78, 80, 83, 85, 86 [Kucharov's jersey numbers], 89, 90, 92, 95, 96, 99. For those you interested in the binary expansions, you have the choice as to whether or not you want to skip over the next paragraph.

Numbers, those that use digits other than 0 and 1 can be converted to an equivalent representation using only 0s and 1s, which are the only two digits that computers use. For example, Palat's jersey number, 18, converted to computer speak is 10010, which, as you can see, has an even number of 1s (two of them) — it's evil. Johnson's jersey number, 9, converted to computer speak becomes 1001, which, as you can see, also has an even number of 1s (two of them) — it's evil. Similarly, Kucharov's jersey number, 86, converted to computer speak is 1010110, which, as you can see, has an even number of 1s (four of them) — it's evil. As shown 18 is an evil number, 9 is an evil number and 86 is an evil number. Taking the Triplet's jersey numbers into consideration for their nickname, more precisely their numberline, we have, of course, evil triplets.

For those of you that skipped the previous paragraph, we established *that* the jersey numbers worn by Palat, Johnson and Kucharov are all evil; and, as such, an appropriate evolution of their current quasi-numberline to a numberline is, clearly, *The Evil Triplets*. On a related note, *evil numbers* is a relatively new term that stems from combinatorial game theory (Bernhardt, 2009). Essentially, "the words 'odious' and 'evil' were chosen because they begin respectively like

'odd' and 'even'" (Allouche, Cloitre & Shevelev, 2014), coupled with the established lore that "mathematicians probably do not like numbers, since for them numbers are necessarily either evil or they are odd!" (Allouche, Cloitre & Shevelev, 2014), means that number culture is found at the root of the use of the term 'evil' (see, for example, Berlekamp, Conway and Guy, 1982, 2003 for further discussion on evil numbers).

It should be pointed out that the "evil" moniker is not restricted to just *The Evil Triplets*. With 50 evil numbers under 100, there are (50x49x48)/6 = 19600 line combinations with evil numbers. Well, not exactly, 19600 is more of an upper bound. Some of the evil numbers found in the list above can't be used. Clearly, No. 99 can't be used because Gretzky's number has been retired across the entire NHL. While other restrictions detailed also apply (for example, goalies' typically wear jersey in the 30s and more recently the 40s, smaller numbers are typically still worn by defensemen and others), there are no hard and fast rules in terms of jersey number restrictions. In other words, there are a lot, a lot of lines that could, potentially, be denoted as evil. When Hawerchuk (No. 10) centered Lemieux (No. 66) and Gretzky (No. 99), that line, with a few minutes to go in the 1987 Canada Cup, from a numberline perspective, was an evil line (given Hawerchuk's hook, definitely evil, from the Russian's perspective).

When using jersey numbers to help coin hockey line nicknames, a number of hockey lines from the past, present and future could be denoted evil. With that said, only one line will, hopefully, one day, be known as 'The Evil Triplets': Ondrej Palat (No. 18), Tyler Johnson (No. 9) and Nikita Kucharov (No. 86) of the NHL's Tampa Bay Lightning.


**The Pythagoreans and The Untouchables**

There are two names that I, personally, think would make great numberlines: *The Pythagoreans* and *The Untouchables*. Loosely defined, Pythagorean Triples are triples that satisfy the Pythagorean Theorem, that is, $a^2 + b^2 = c^2$. Like I said, loosely defined. For example, 3, 4, 5 is a Pythagorean Triple because $3^2 + 4^2 = 9 + 16 = 25 = 5^2$. To me, *The Pythagoreans* would make an excellent numberline. In terms of numbers, there are 50 possible lines that could be named *The Pythagoreans* (e.g., 3-4-5, 6-8-10, … 65-72-97). Fifty different possible lines that could potentially be named *The Pythagoreans* equates to a potential nickname with panache and with some decent numbers.

Moving on, let's take what are known as untouchable numbers (a number, more specifically a positive integer, that isn't the sum of the proper divisors of any number), which includes the following (that are less than 99): 2, 5, 52, 88 or 96. Based on the above, there a (5x4x3)/6 or 10 different possible combinations (order not mattering): 2-5-52, 2-5-88, 2-5-96, 2-52-88, 2-52-96, 2-88-96, 5-52-88, 5-52-96, 5-88-96, 52-88-96. A hockey line consisting of players wearing any of the above jersey combinations has the potential to be known as *The Untouchable Line* or, if you will, *The Untouchables*. A great name for a hockey line, no doubt, but not as many possible combinations compared to, for example, *The Pythagoreans*. In terms of names and number or numbers associated with said name, *The Pythagoreans* sits, for me, in a Goldilocks Zone in terms of numberlines.

Although numberlining is no easy task, I contend that there are certain benefits that stem from the process. Numberlining provides an opportunity to deal with many of the current issues that exist in hockey line nickname ethos. First, with roughly 70000 possible numberlines, numberlining has the potential to address the salary-cap era, steady decline of hockey line

nicknames. Second, numberlining is a venue by which famous forward combinations, those *without* acknowledged nicknames, could be anointed. For example, recently, the New York Rangers have had a line of forwards wearing jerseys numbered Jesper Fast (#19), Chris Kreider (#20) and Derek Stepan (#21) – they are without a nickname. Shifting the focus of hockey line nicknames to jersey numbers, 19, 20 and 21 is crying out for a nickname. We see, even at a cursory glance, that the average of 19, 20 and 21 is 20. No, I don't suggest that they be known as *The Average 20*, but the word mean is synonymous with average, from a mathematical perspective. I'm not sure whether or not *The Mean 20* would take off as a numberline (based on the players on the line), but the point I'm trying to make is that focusing on jersey numbers to coin hockey line nicknames provides us with new opportunities. Third, numberlining allows for alternative names to be given to lines that currently have a nickname. For example, *La ligne 7-8-9* for the Quebec Nordiques, which consisted of Robbie Ftorek, Marc Tardif, Real Cloutier could, as a second nickname, more specifically, a numberline, be known as *The 6 Afraid of 7 Line* because, as any young child will tell you, 6 is afraid of 7 because 7 8 (read: ate) 9. Lastly, numberlining allows the opportunity to address controversy that exists for certain hockey line nicknames

## Navigating a Politically Correct World

Having lived in Vancouver for nearly a decade, I probably heard every undeserved, disparaging comment ever made about the Sedin twins, Daniel Sedin (#22) and Henrik Sedin (#33), who play for the Vancouver Canucks. For some reason, the disparaging tone has made its way into the Sedins hockey line nicknames. For example, when the Sedins played with Jason King (who wore #17 and then #18) in the early aughts they were known as *The Mattress Line*, which originates from mattress sizes, that is, King and Twin(s). However, not as well-known was the more disparaging nicknames for the line: *A King and Two Queens*. In fact, having listened to a variety of morning radio shows, *A King and Two Queens* was used far more frequently than *The Mattress Line*. (Further disparaging connotations associated with the nickname "mattress" were also *de rigueur*.) Numberlining, then, with the numbers 17, 18, 22 and 33 *may* have been a way to address the inherent issues that the line had to deal with at the time.

A similar issue arose when the Sedins started playing with Anson Carter who, as the Internet puts it, "is of Barbadian descent," that is, he is black. All too quickly, the line of the Sedin Twins (#22 and #33) and Carter (#77) became known to the morning talk shows as *Two Sisters and a Brother*; yet another suspect hockey line nickname associated with the Sedins. As claimed, numberlining may have provided a way to deal with the issues that arose. Looking at the number*s 22, 33 and 77*, at a very cursory level mind you, a number of numberlines quickly come to mind. 22, 33 and 77 belong to the class of Angel numbers (because they are divisible by 11). Come to think of it, *The Angel Line* may have made the situation worse rather than better. The number combination of 22, 33 and 77 is also known as fish, eight and triangle, respectively. If you flip the first 3 in the number 33 then you will get an "8" the same way flipping the first 7 in the number 77 results in a triangle. Similarly for the two and a "fish" shape. Again, though, a combination of fish, eight and triangle or "shapes" may have hurt the situation more than helped. Nevertheless, we see that numberlines present opportunities to address, with a catchy moniker, any disparaging nicknames. Making things even easier, 22, 33 and 77 are multiples of 11. As such, the Sedins and Carter, if numberlines had been part of the hockey line nickname ethos back in the day, could have, simply, been know as *The Multiples* (and not *Two Sisters and a Brother*).

*The Multiples* would have worked well on a number of different levels. "Multiple" could have referred to having more than one sibling on the line and "multiple" goals and assists – the year the Sedins played with Carter they were a highly effective line and would often produce multiple points in a game.

Having not lived in Vancouver for a number of years now, I am not privy to all the more recent questionable themed hockey line nicknames the Sedins are dealing with. I do, however, know that they have, more recently, been playing with Radim Vrbata, who wears the number 17. The number 17 is a prime number and, as such, I, here, proactively recommend, as a nickname, *The Twin Prime Line* or, more simply, *Twin Primes*. To be clear, a nickname line *The Twin Prime Line* straddles between numberline and quasi-numberline. This is somewhat new territory here – in that I am using Vrbata's jersey number, the fact that the Sedins are twins and the mathematical notion of Twin Primes, that is, a prime number that differs from another prime number by two (e.g., 5 and 7 or 11 and 13) to come up with the lines nickname. Purists, would argue that a true twin prime line would have to have two jerseys that are prime numbers that differ by two on the line (e.g., 41 and 43 or 59 and 61 or 71 and 73). On the one hand, strictly in terms of numberlines, they're right. On the other hand, though, as was the case with Kenny Powers (#55) and *The Powers Line*, relaxing the purist notion of a numberline does have benefits, as seen here with the necessary, alternative nicknames for the Sedins.

## Concluding Remarks

After numberlining, even if you have a potentially great numberline (e.g., *The Powers Line*, *The Pythagoreans*, *The Untouchables* and others), finding a line with these numbers is a bit like finding a needle in haystack. In line with this reasoning, I contend that numberlining should not be addressed with some sort of technology, but, rather, become a collaborative project of fans of the NHL (akin to, for example, the Great Internet Mersenne Prime Search in mathematics). In fact, a fan reading a few of the examples may already know of a line consisting of the numbers mentioned and, as such, could coin a nickname for a hockey line in the NHL. In other words, that last step of numberlining, actually finding a line for the nickname, should be outsourced to fans of hockey.

Numberlining should be fully supported, embraced, organized, that is, sanctioned, by the NHL. I further contend that the NHL sanctioning numberlining is directly in line with two recent angles the NHL has asked their fans to embrace: social media and mathematics. In an era where fans are asked to turn on second screens to check out win probabilities and other hockey analytics, the NHL is, in essence, asking their fans to embrace mathematics and statistics, more so than they have in the past. Fans are also being encouraged to be more interactive with the NHL; for example, to compete in the NHL Bracket Challenge and to send in videos of themselves watching the Stanley Cup Playoffs (under the hashtag #MyPlayoffsMoment). Numberlining, where fans are challenged to come up with jersey number based hockey line nicknames, that is, numberlines, is a natural extension of the current relationship that the NHL is trying to develop with its fans (see, for example, Figure 1).
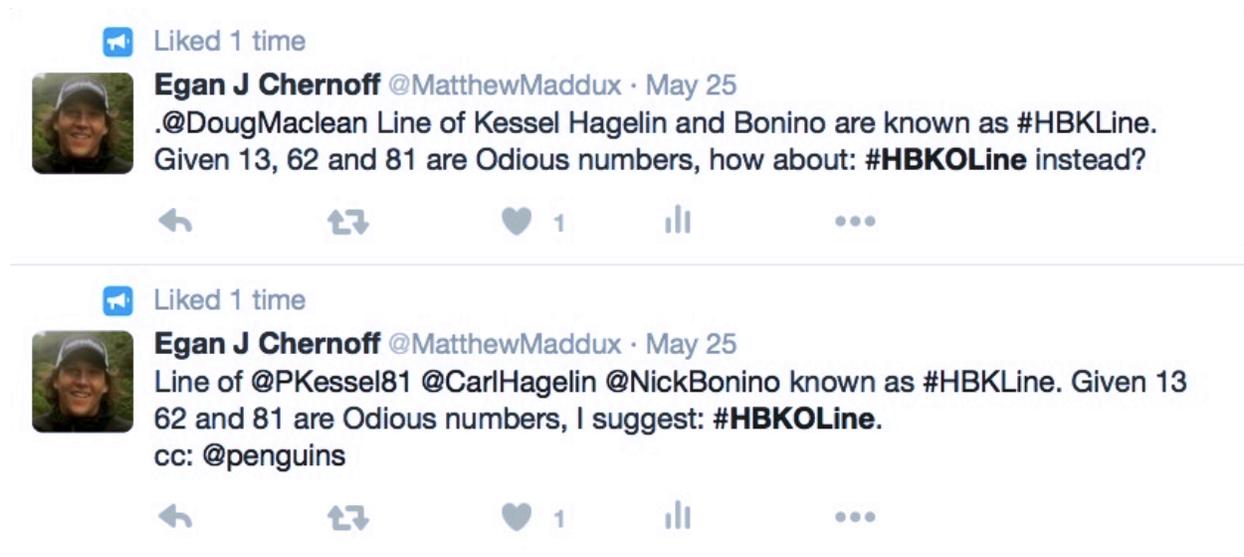
*Figure 1.* A fan proposing a new numberline via social media.

Bringing more mathematics into the game of hockey is no easy task. And, to be honest, hockey commentators and pundits, those who do not hold back, at all, in expressing their disdain for statistics and analytics (e.g., P.J. Stock), are not helping the cause. However, with the adoption of Corsi, Fenwick and other measures becoming more wide spread in the era of big data, the writing is on the wall. This should come as no surprise; after all, hockey is a numbers game.

Hockey, though, is a numbers game in more ways than one. I hope, one day, that numberlining, numberlines and, perhaps, voting on potential numberlines take their rightful place amongst other interactions between the NHL and their fans. After all, while some are interested in posting videos and others are interested in picking the perfect bracket, other individuals may take a quiet pride in knowing that they were the individual (or group of individuals) who coined a numberline, which can be everyone's chance to be part of the game they love. To stop the recent decline in hockey line nicknames (due to the salary cap era or lines not playing together for as long as in the past) I suggest the NHL turn to its greatest resource, it fans, and ask them to start numberlining. With a shift towards looking at the types of numbers hockey players wear on their jersey, perhaps the next catchy jersey-number-based-nickname for a forward trio will also be a numberline.

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