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# A Test of Numerology: Do Birth Numbers Predict Nobel Prize Winners?

Jeremy Genovese
**Cleveland State University**

This paper tests a claim made by numerologists – the belief that the digits of a person's birth date summed to a single integer, called the birth number, has predictive power. In order to test this claim the birth number was calculated for persons winning Nobel Prizes between the years 1901 and 2010. The distribution of birth numbers for prize winners did not differ significantly from chance ($\chi^2 = 4.92$, $df = 8$, $p = 0.77$). The distribution of birth numbers between winners of different prize categories also did not differ significantly from chance ($\chi^2 = 28.9$, $df = 40$, $p = .90$). These results provide no support for the claims of numerology.

Keywords: Numerology; Nobel Prize

## Introduction

In defense of his investigations of astrology and parapsychology, Eysenck (1986) wrote:

> *"Unlike most of the critics who dismiss astrology and parapsychology altogether, I have taken great care to read the large literature that has accumulated around these topics, with particular reference to experimental studies and methodological and statistical issues arising therefrom. This itself is sometimes criticized, and it is said that one should not waste time on topics which are obviously absurd, and can have no empirical basis. I do not believe myself that a priori judgments of this kind are admissible in science; scientists have been wrong too many times in making explicit statements of this kind to be considered infallible"* (p. 382).

This paper is written in same spirit. It attempts to examine empirically a claim made by numerologists - that the digits of a person's birth date summed to a single integer has predictive power for that individual. The test is simple, I will calculate the birth number of Noble Prize winners to see if the distribution of birth numbers differs from chance. I will also compare the distribution of birth numbers between the various categories of prize winners.

## Numerology

In the broad sense, numerology refers any belief that numbers possess mystical properties. Both modern and ancient people have attached deep psychological significance to numbers. For example,the Pythagoreans believed that numbers possessed gender attributes, with even numbers being female and odd numbers being male. In a series of experiments, Wilkie and Bodenhausen (2011) found that many modern people also project gender onto numbers. Here, however, we are only concerned with numerology as a system of divination.

In this paper, I examine one particular strand of number mysticism, the use of birth dates as system of divination. The method is quite simple, date, month, and year of birth are summed to a single digit. For example, United States President Obama (winner of the Nobel Peace Prize in 2009) was born on 4 August 1961. Since August is the eight month, his number is calculated by adding 4 + 8 + 1961, which equals 1973. Next, these digits are added together 1+9+7+3, yielding 20. Finally, 2 and 0 are added giving a birth number of 2. Numerology books include lists explaining the significance of each of the nine birth numbers. For example, Gibson and Gibson (1968) tell us that

> *"2 reveals a kindly, tactful nature, yet one given to gloom as well as happy moods. This is due to a balance, inherent in this vibration. Persons with 2 as a birth number often recognize both sides of a question to such degree that they shift back and forth, never reaching a true or satisfactory decision"* (p. 243).

Numerologist generally agree on the special significance of the birth number. They do not, however, agree on what to call it. Some texts call it the "birth number" (Gibson & Gibson, 1968), others the "life path number" (Edward, 2007), while other names include the "astral number" (Whitehead, 1921), the "number of destiny," "the fate number," and the "Fadic number" (Katakkar, 2007). In this paper I will use "birth number."

Some numerologists include numbers other than the digits 1 to 9 as significant birth numbers, most commonly 11 and 22. In these systems, if in the process of calculating the birth number you sum to 11 or 22, you must not reduce further, because these numbers have special significance. The problem with this procedure is that the order of addition affects results. Take for example the birth date May 1, 1999, you could add the numbers together as follows:

$5 + 5 + 1 + 9 + 9 + 9 = 38$
$3 + 8 = 11$

Thus, you have arrived at the numerologically significant number of 11. But if you group and add the numbers differently you miss 11 altogether and arrive at 2:

$5 + 5 = 10, 1 + 9 + 9 + 9 = 10$
$1 + 0 = 1, 1 + 0 = 1$
$1 + 1 = 2$

In any event, the use of numbers higher than 9 is not embraced by all numerologists and I will ignore it for this paper.

The origins of the modern numerology are obscure. Dudley (1997) suggests L. Dow Balliett as the possible inventor, although he acknowledges that she may not have been the first. Balliett (1906) wrote a number of influential books on numerology in the early twentieth century and she certainly advocated the use of the birth number for divination. Most modern numerologists, Balliett included, cite Pythagoras as the originator, and the Pythagoreans did assign mystical characteristics to numbers. For example, odd numbers were male while even numbers female (Dudley, 1997). There is, however, no evidence that the Pythagoreans used the same divination techniques used by modern numerologists (Dudley, 1997).

In 1912, Cheiro (a pseudonym for the famous palmist and occultist Count Louis Hamon) claimed an Indian origin for numerology, where he learned it as a young man (Rajsushila, 2007). The fact that some systems of Indian meditation assign a personal mantra using a numerological procedure (Akins & Nurnberg, 1976) might be taken as evidence for this claim.

Explanations of how numerology works are equally vague. Often numbers are claimed to have special agency or to be symbolic of mystical connections between events. For example, Sepharial (1928) writes

> *"…every number has a certain power which is not expressed by the figure of symbol employed to denote quantity only. This power rests in an occult connection between the relations of things and the principles in nature of which they are the expressions"* (p. 5).

Numerologists dispute the idea that the calendar is arbitrary. Instead, they argue that shifts from one calendrical system to another are associated with changes in human consciousness. They point to social upheavals that occur near the time of adoption of new calendars as evidence. For example, the newly formed Soviet Union adopted the Gregorian calendar shortly after the Russian revolution (Bunker & Knowles, 1982).

Many numerologists describe the special powers of vibrations, but fail to define the term. Balliett, 1922), who wrote extensively about vibrations, was married to a homeopathic physician (Balliet, 1968) and in her writing one detects some overlap between numerology and homeopathy. Indeed, homeopathy texts sometimes include vibrations as an important component of their system (e.g., Vithoulkas, 1980).

Jung's concept of synchronicity is sometimes invoked as an explanation for numerology (e.g., Bunker & Knowles, 1982). Jung (1973) uses the word in two senses. Sometimes he uses it to describe psychologically meaningful coincidences, other times he writes of a deep acausal connection between events. In the former case, while meaningful coincidences might be psychologically interesting, by definition the success of any numerological prediction would be coincidental. Similarly, since science seeks causal explanations, to say that events are linked acausally sheds no light on how numerology might work.

Shine (2007) links the birth number with cycles such as "biorhythms" advocated by Fliess (O'Neil & Phillips, 1975). The idea here is that there is a nine day cycle that begins when a person is born and continues throughout life. However, birth numbers do not follow a regular nine day cycle, or more precisely, the cycle is disrupted with the change of month. For example, the birth number for 31 January, 2000 is 7, but the number for the next day, 1 February, 2000 is 5. Moreover, given the lack of evidence for the Fliess biorhythms (Dudley, 1997), linking these two concepts is hardly explanatory.

Many numerologists see close connections between numerology and astrology (e.g., Carter, 1968). But since there is no clear evidence for the validity of astrology (Kelly, 1998) and no known mechanism for its claimed effects, this explanation is not very helpful.

In the end, Edward (2007) writes "the fact is that we don't know exactly how it works, only that hundreds of years of study and observation show that it does" (pg. 1). It is this latter claim that this paper seeks to examine; I am asking the question does numerology work? As far as I am able to tell there are no previously published studies testing the claims of numerology.

## Nobel Prize Winners

Nobel Prize winners are thought to possess "a rare, superior degree of intellectually creative achievement," and "high abilities" (Shavinia, 2004, pg. 243). They have won international recognition for their extraordinary contributions. Given the rarity of their accomplishments, numerology should be able to distinguish Nobel laureates from the rest of the population. Operationally, if numerology is true, then the distribution of birth numbers for Nobel Prize winners should significantly diverge from chance. In addition, we would expect different prize categories (chemistry, economics, literature, medicine, peace, and physics) to call upon different abilities. Thus, we would expect to find differences in the birth number distribution across prize categories.

## Methods

*Nobel Prize Winners*

I obtained a spreadsheet of Nobel Prize winners between 1901 and 2010 from an on line source (http://semanticommunity.info/@api/deki/files/8360/NobelPrizes.xls). A standard reference work was consulted to find missing birthdates (Sherby, 2002). Albert Joun Lutuli, winner of the Peace Prize in 1960, was excluded because his birth date is unknown. Four individuals have won more than one prize (Marie Curie, Linus Pauling, John Bardeen, and Frank Sanger). They were dropped from the analysis because their inclusion would have violated the independence assumption of chi-square test (Gravetter & Wallnau, 2014).

The Peace Prize is sometimes awarded to organizations rather than individuals (e.g., in 1988 to the United Nations Peacekeeping Forces) and these groups were excluded. This left a sample of 806.

*Analysis*

Prize categories and birth dates were entered into a spreadsheet program. Birth number was calculated using a modulo arithmetic function. Two chi-square tests were conducted. One to see if the distribution of birth numbers for all Nobel Prize winners deviated from chance.

The second analysis looked at whether the pattern of birth number distribution between the winners of the six different prizes differed from chance.

Statistical Analysis was carried out in *R* and *Simstat*.

## Results

Table 1 shows that the distribution of birth numbers for all Nobel Prize winners does not deviate significantly from chance. This suggests that Nobel Prize winners as a group have no special pattern of birth numbers.

Table 2 shows that the pattern of birth number distribution between the winners of the six different prizes does not differ from chance expectation.

These results provide no support for numerological claims about birth number.

***Table 1.*** $\chi^2$ *test of the distribution of birth numbers*

| | Birth Numbers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Observed frequencies | 92 | 75 | 98 | 82 | 89 | 98 | 90 | 88 | 94 |

*Note: Expected value = 89.56,* $\chi^2 = 4.92$*, df = 8, p = 0.77*

***Table 2.*** $\chi^2$ *test of Nobel Prize category and birth number.*

| | Birth Numbers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Category | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
| Chemistry | 19 | 15 | 17 | 16 | 16 | 19 | 16 | 13 | 24 | 155 |
| Economics | 9 | 9 | 10 | 7 | 3 | 7 | 6 | 8 | 8 | 67 |
| Literature | 13 | 10 | 10 | 10 | 13 | 15 | 18 | 12 | 6 | 107 |
| Medicine | 26 | 15 | 21 | 21 | 21 | 26 | 23 | 16 | 27 | 196 |
| Peace | 10 | 8 | 12 | 11 | 12 | 11 | 7 | 13 | 11 | 95 |
| Physics | 15 | 18 | 28 | 17 | 24 | 20 | 20 | 26 | 18 | 186 |
| Total | 92 | 75 | 98 | 82 | 89 | 98 | 90 | 88 | 94 | 806 |

*Note:* $\chi^2 = 28.9$, $df = 40$, $p = .90$

## Discussion

Many readers of a serious scientific journal will not be surprised that by the negative results reported here. Indeed, they are likely to ask if such a topic is even worth investigating?

I believe that there are three justifications for studies of this type.

First, pseudosciences are widely believed, sometimes by people in positions of power. For example, the current prime minister of India and at least one president of the United States are known to have consulted astrologers.

Second, understanding the difference between pseudoscience and science, what Popper (1959) called the demarcation problem, contributes to a deeper understanding of science.

Finally, one can never exclude the possibility that some extra-ordinary claim, may turn out to be true and, thus, we must be willing to test unusual propositions.

This study has one major limitation. It is possible that differences that separate Nobel Prize winners from everyone else, and the differences that distinguish between different categories of winners are not captured by the birth number. This study examined only one claim of numerology and, perhaps, there is some other numerological construct that would work, or perhaps birth number might predict some other human distinction. This study cannot rule out that possibility. What we can say is that this investigation provides no positive evidence for numerology.

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