

“Madamina, il catalogo è questo”. Did Lorenzo Da Ponte Play with Numbers in Leporello’s Catalogue?

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Abstract

Lorenzo Da Ponte is recognized as one of the greatest librettists of all times. To opera lovers, his name is worldwide related to Mozart’s three immortal Italian operas: *Le Nozze di Figaro*, *Don Giovanni*, *Così Fan Tutte*. In *Le Nozze di Figaro* and in *Don Giovanni*, there is the curious presence of numbers—namely integers—arranged in lists, “catalogues”. I try to answer the question: Were these numbers chosen just by chance and only to fit Mozart’s music, or did they hide some covered message? Because of his Jewish origin and culture, never mentioned in his *Memorie*, Da Ponte was acquainted with Gematria, a numerical coding technique used in the Jewish Torah. By applying the Gematria of the Italian alphabet, I show that a random choice of the integers listed in the two libretti must be excluded, therefore, I conjecture that Da Ponte did play with numbers by hiding them in his names (Emanuele Conegliano, Lesbonico Pegasio, Lorenzo da Ponte), in agreement with his high self-esteem.

Keywords

Lorenzo Da Ponte, Emanuele Conegliano, Lesbonico Pegasio, Gematria, Italian, Opera, Mozart, Libretti, *Le Nozze di Figaro*, *Don Giovanni*

1. “Madamina il catalogo è questo” “My Dear Lady, This Is a Catalogue”

For nearly 150 years after his death the name of Lorenzo Da Ponte (1749-1838) languished in relative obscurity. It was only in the 1980s that he began to be recognized as one of the greatest librettists, maybe the greatest, who ever lived (Bolt, 2006). For most opera lovers, his name is mainly related to Mozart’s three

immortal Italian operas: *Le Nozze di Figaro*, *Don Giovanni*, *Così Fan Tutte* (Steptoe, 1988).

Many scholars (e.g. Moseley, 2016) have noticed the curious presence of numbers—namely integers—in the libretti that Da Ponte wrote for *Le Nozze di Figaro* (first representation, Vienna 1 May 1786) and for *Don Giovanni* (Prague, 29 October 1787).

Right at the beginning of *Le Nozze di Figaro* (Act 1, Scene 1), the servant Figaro counts out, in his footsteps, the dimensions of a room to see how a bed, given by the “Conte di Almaviva” (the Count), fits in the bedroom reserved for him and his spouse, Susanna, for their imminent wedding. The sequence of his measurements is: “Cinque, dieci, venti, trenta/Trentasei, quarantatré¹”, i.e. 5, 10, 20, 30, 36, 43. The only comment done on this sequence is that

$$5 + 10 + 20 + 30 + 36 + 43 = 144 = 12 \times 12.$$

In *Don Giovanni*, Leporello’s Catalogue is worldwide known and celebrated. Don Giovanni’s servant reads—from not a little book (“questo non picciol libro”)—to the incredulous Donna Elvira (Act 1, Scene 5)—a noblewoman seduced and abandoned by his master—the fantastic list of his master’s conquests (“è tutto pieno dei nomi di sue belle”) in five countries (Italy, Germany, France, Turkey and Spain). He invites Donna Elvira to read it with him (“leggete con me”). She discovers that she is little more than an item in a long list of women seduced and abandoned. It is the “Catalogue aria”, one of the most famous arias in all operas, a whirling area that includes a list of items, only numbers in this case, just like many other libretti of the time full with lists, technically known as “catalogues” (Umberto Eco, 2019).

Da Ponte was not very original in introducing a list. His Act 1 of *Don Giovanni* is just the remaking, with very little changes, of the single act of *Don Giovanni* written by Giovanni Bertati (1735-1808), music by Giuseppe Gazzaniga (1743-1818), represented in Venice with great success just few months before (5 February 1787) (Paesani, 2012; Boccardi, 1998; Staffieri, 2014). Leporello replaced Pasquariello, but the two catalogues were quite different, as Table 1 shows. The only number written by Bertati is “cento” (100) while Da Ponte writes five specific numbers in a particular sequence: 640, 231, 100, 91, 1003.

Were these numbers chosen just by chance and only to fit Mozart’s music? For example, why “seicento e quaranta” (640) instead of “trecento e quaranta” (340)? The number of letters and the accent in Italian would be the same. Or “duecento e trentuna” (231) instead of “duecento e ventuna” (221) or “trecento e trentuna” (331)? Or “novantuna” (91) instead of “ottantuna” (81), “settantuna” (71), et cetera? Mozart’s music would not change. Nobody has ever explained the origin and meaning of these particular numbers and their specific sequence.

The purpose of this paper is to show that in *Le Nozze di Figaro* and in *Don Giovanni*, Lorenzo Da Ponte did choose the numbers on purpose, he did play with them, and with a particular object in mind: to hide his name in the lists.

¹To appreciate how these numbers – and also the others mentioned below – fit in Mozart’s music, the reader should read, or sing them as they are written in the libretto, i.e. in Italian.

Table 1. Comparison between the “Catalogue” arias written by Lorenzo Da Ponte (left) and by Giuseppe Bertati (right) in their *Don Giovanni* (Bolt, 2006: p. 174).

| Lorenzo Da Ponte | | Giuseppe Bertati | |
|-------------------------------------|---------------------------------------|-------------------------------|----------------------------|
| Madamina, il catalogo è questo | My dear lady, this is a catalogue | Dell'Italia ed Alemagna | From Italy and Germany |
| Delle belle che amò il padron mio; | Of the beauties that my master has | Ve ne ho scritto cento e | I have listed a hundred or |
| Un catalogo egli è che ho fatt'io; | loved; | tante. | more. |
| Osservate, leggete con me. | A catalogue which I have compiled; | Della Francia e de la | From France and Spain |
| In Italia seicento e quaranta, | Observe, read along with me. | Spagna | I don't know how many. |
| in Lamagna duecento e trentuna, | In Italy six hundred and forty, | Ve ne sono non so quante: ... | |
| Cento in Francia, in Turchia | In Germany two hundred and | ... | |
| novantuna, | thirty-one, | | |
| Ma in Ispagna sono già mille e tre. | A hundred in France, in Turkey | | |
| ... | ninety-one, | | |
| | But in Spain are already one thousand | | |
| | and three. | | |
| | | | |

Da Ponte had studied mathematics and science, besides humanistic subjects which were his favourite (Da Ponte, 2008; in the following I refer to this book as *Memorie*). Moreover, he was also acquainted with a particular numerical coding technique, never mentioned in *Memorie*, as I discuss below. Of course, this is only a conjecture, but the arguments in favor of it are so numerous and compelling, as I will show, that it may turn out to be the truth. Da Ponte seems to have hidden something very important in these numbers: himself, his several names, in agreement with his high self-esteem.

Mozart and Da Ponte were a lot alike, very much talented—and they knew they were—, but often vain, insecure and hugely ambitious. Mozart privately believed that in opera the text should always be subservient to the music, while Da Ponte was convinced that without his poetry even Mozart's music would be an empty vessel, yet their collaboration was harmonious and brilliant (FitzLyon, 1982; Heartz, 1995; Lanapoppi, 1997; Hodges, 2002; Bolt, 2006; Della Cha, 2010).

After this introductory section, Section 2 sketches the early years of Da Ponte, when the Jewish boy Emanuele Conegliano turned out to be the Christian boy Lorenzo Da Ponte. Section 3 presents the coding technique known as Gematria, which Da Ponte allegedly used in the libretti as he knew it because of his Jewish origin. Section 4 discusses Da Ponte's his gematrical exercises in *Le Nozze di Figaro* and in Leporello's Catalogue in *Don Giovanni*. Section 5 calculates some probabilities concerning the choice of the Catalogue's numbers and shows that a random choice of them should be excluded. Section 6 concludes that Da Ponte did not play with numbers.

2. The Early Years: From Emanuele Conegliano to Lorenzo Da Ponte

Lorenzo Da Ponte was born on 10 March 1749 in Ceneda (today, Vittorio Ve-

neto), a small piedmont town at two-day walking distance from Venice (Toffoli, 1988; Lanapoppi, 1997). In his *Memorie* he often speaks of Ceneda, of its beauty and his large family, but he hides a very important detail for his future life. He was not born in a common family, and he was not born with the name he made famous as librettist of many operas, including Mozart's great Italian operas: *Le Nozze di Figaro*, *Don Giovanni*, *Così Fan Tutte*.

In the center of Ceneda, few steps away from the cathedral, there was a small ghetto inhabited by ten Jewish families, including Da Ponte's family. His father's name was Geremia Conegliano, his mother's was Teresa Pincherle and his name, the first-born child of three, was Emanuele. The total silence in his *Memorie*² about the Jewish origin is very puzzling because it was quite known, as is attested by many libelous pamphlets that enemies and rivals hurled at him: "Fucked-up Jew", "Converted to the Christian religion just for trampling on it and deriding it". The years lived with his father and two brothers (his mother died when he was five) under the Mosaic Law must have appeared irrelevant to a man alien to theological disputes—as he was—and so much convinced of the Enlightenment idea that the highest duty of a cultivated man was to be free from constraints of tradition and superstition (Lanapoppi, 1997).

The family converted to the Catholic Church in 1763. The ceremony of the family baptism occurred in Ceneda on 29 August 1763. In the small Ceneda, the four Conegliano emerged for a day from anonymity after months of preparation under the guide of the bishop, in many meetings and lunches at the castle of Ceneda, bishop's residence (Lanapoppi, 1997).

"On the stage" there was the bishop wearing the vestment of great occasions, nobles and well-to-do persons of the surroundings, all the priests of the diocese of Ceneda and an impressive rank of halberdiers, accompanied by mortar salvos and fireworks. At the center of the stage there were Emanuele, 14 years old, his younger two brothers Baruch (Girolamo), 11 and Anania 9, and his father³, 42. There had been five days of preparation, with bells ringing and a famous orchestra called to Ceneda, with oboes, horns, trumpets and violins. The ceremony was considered worthy to be narrated in a printed brochure (Lanapoppi, 1997).

With the baptism there was also a change of the name, according to the custom of the time. The bishop wanted they adopted his family name, belonging to one of the most ancient noble families in Venice and made illustrious by a Doge in the XVI century: Da Ponte. To the first-born child, charming, intelligent, ea-

²"Non iscrivendo io le memorie d'un uomo illustre per nascita, per talenti, per grado, in cui le minime cose giudicare si sogliono importantissime per la importanza del soggetto di cui si scrive, parlerò poco de' miei parenti, della mia patria, de' miei primi anni, come di cose affatto frivole per se stesse o di pochissimo rilievo pe' leggitori." ("Since I am not writing the memoirs of a man illustrious by birth, by talents, by rank, wherein the slightest things are wont to be judged of greatest consequence because of the importance of the subject of which they treat, I shall speak but little of my family, my neighborhood, my early years, as of matters trivial enough in themselves or of scant moment to the reader.")

³Seven days later Geremia, now the Christian Gasparo, remarried with a Christian woman only 17 years old. Very likely, this was the main reason why the Conegliano family converted to the Catholic Church, although other members of the family converted many years earlier.

ger to please, the bishop gave his first name, Lorenzo, almost an adoption. In this magnificent setting, Emanuele Conegliano apparently exited the stage in favor of Lorenzo Da Ponte (Lanapoppi, 1997).

Emanuele/Lorenzo was tall, handsome and very bright, gifted with a fast intelligence and extraordinary memory, practical. Until he was ten, Emanuele could barely read and write, yet he was a lively boy, quick, insatiably curious, always ready with a dancing answer and with bright eyes that grasped what people were saying before they had finished saying it, able to improvise suitable witty retorts. He could memorize books, especially the great Italian poets (Dante, Petrarch, Ariosto, Tasso), who became models for his stylistic imitations. Of the contemporary poets, he loved the lines written by the most important Italian poet, Metastasio⁴ (1698-1782), author of many libretti (Burney, 1973).

In Ceneda, Da Ponte's friends knew him as "the clever dunce", because he displayed a quick mind despite his lack of formal schooling. Later, in the seminary of Portogruaro—where he was studying Latin, a language he could speak very fluently—, he was thinking of deepening the knowledge of Hebrew, a language "che avea ne' primi anni miei molto studiata" ("which I had very much studied in my first years") (*Memorie*).

For several years after the baptism, the family Da Ponte was economically very much supported by the Pia Casa dei Catecumeni (Pius House of the Catechumens), after bishop Da Ponte's recommendation. The Pia Casa was a catholic institution based in Venice, founded mainly to support Jews and Turks who wished to convert. The Pia Casa used to host catechumens for few months until they could find a work place, but for Lorenzo and his brother Girolamo—who were hosted since November 1763—, the Pia Casa spent till December 1774 the incredible sum of 2711 ducats. In his *Memorie*, Da Ponte never mentions this very intense relationship with Pia Casa because he had hidden his Jewish origin. He was ordained a Catholic priest in 1773, a typical career route offered to poor but intelligent boys, even if they had no real vocation to the priesthood (Lanapoppi, 1997).

Although less important, there is, however, another name linked to Lorenzo Da Ponte: Lesbonico Pegasio. While in Gorizia, after running away from Venice, Da Ponte was admitted to the local colony of the Accademia Arcadica of Rome, where he chose a new name for himself, according to the costume of these literary academies: *Lesbonico*, because he loved and defended women; *Pegasio*, because he aspired to fly on the wings of Poetry (Lanapoppi, 1997). With this name he signed many verses. Before moving from Gorizia to Vienna, where the Italian Opera and Italian Libretti were highly regarded and financed by the Emperor Joseph II, he wrote to a friend: "voglio mo' dir che parlano Tedesco/Lingua da far paura a San Francesco" ("Now I want to say they speak German/a tongue

⁴"Li lessi tutti con un'incredibile avidità, ma non rilessi che il poeta cesareo [Metastasio], i cui versi producevano nella mia anima la sensazione stessa che produce la musica." (*Memorie*) ("I read them all with incredible avidity; but the author I read twice was the caesarean poet [Metastasio] whose verses aroused in my soul the very emotions of music itself.")

that frightens San Francis”). Italian was universally regarded the “natural” language for opera.

However, before proposing a possible meaning hidden in the numbers with which Da Ponte may have played in *Le Nozze di Figaro* and in *Don Giovanni*, I recall how numbers may have meaning according to the Jewish Gematria, a science that connects numbers to meaning, well known not only in Jewish tradition but also in Christian tradition, as well. Gematria is, in fact, the key that may explain the numbers and their sequence.

3. Gematria and Sacred Texts

Gematria is a numerical method of studying and interpreting sacred texts tradition in Judaism (Ginsburgh, 1991; Scholem, 1996; Godwin, 1997; Hoffman, 2000; Locks, 1985; Munk, 1998; Hardiman, 2019; Crivelli, 2011). The purpose of Gematria is to obtain a deeper understanding of the texts of the Jewish Bible. According to this tradition, the gematrical value of a biblical text is very close to the ultimate truth of God.

In ancient times this coding was widespread, used also by the Babylonians and the Gnostics of the early Christian era. It appears in the Magi literature and in the literature of interpreters of dreams in Hellenistic Greece. Very likely, we find traces of its use even in the Renaissance, in the painting of the Sistine Chapel’s ceiling (De Campos & Da Costa Oliveira, 2018).

In the Book of Revelation (Apocalypse) there is an amazing large set of integers. The reader is constantly referred to arithmetic and numbers. Numbers dominate the book in such a manner that it could almost be used as a textbook for primary school mathematics, including fractions, applied mathematics and the major arithmetical operations. Several times, the text asks its hearers or readers to perform arithmetical calculations, to calculate the number (Newton, 2020).

The writers of these sacred texts think that numbers have meaning, and, vice versa, meaning can be expressed in numbers. The underlying concept is that the true meaning of the Bible is deeper than what can be read. The text is a composition of letters that are organized and combined to generate words, phrases and sentences. A number is assigned to each letter with a particular code of Gematria. The number of the letters, when combined to form words, phrases and sentences, can be added up to form a gematrical value that can be related to other words, phrases and sentences (Hardiman, 2019).

The mathematical operations that can be done on the gematrical values include summation—the most common—, but also multiplication, division, power elevation and other mathematical functions (Matricciani, 2022).

By comparing two or more words or phrases with the same numerical total, conclusions can be drawn about their relationship (Hardiman, 2019). Of course, the possible relationships are so many that the investigation should be carried out by having in mind a possible meaning and verify it with Gematria, otherwise one gets lost. The literature on Gematria and the possible “decoding” of all words, phrases and sentences contained in the Jewish Bible is immense and it is

not the purpose of this paper to attempt a review.

In the ghetto of Ceneda, the young Emanuele Conegliano did study the Torah and the Hebrew language, as any Jewish boy did (Ravid, 2003), and was aware of Gematria and its rules, a science largely used also in the lay society, as I have briefly recalled. In the next Section, therefore, I show how he applied it in allegedly selecting appropriate numbers and their sequence to hide specific meaning. He seems to have used the gematrical values of the Italian alphabet reported in Table 2.

Before proceeding, let us calculate some gematrical values, useful for the following analyses. The calculations refer to the three names assumed by Da Ponte: Emanuele Conegliano, Lesbonico Pegasio and Lorenzo Da Ponte. Table 3 reports their gematrical values. Now we can proceed to study the list of numbers.

4. Da Ponte's Exercises with Numbers

As recalled in Section 1, at the beginning of *Le Nozze di Figaro* (Act 1, Scene 1), the servant Figaro counts out in his footsteps the dimensions of a bedroom: “Cinque, dieci, venti, trenta/Trentasei, quarantatré” (5, 10, 20, 30, 36, 43). On this list it has only been observed that the sequence adds to 144 and that $144 = 12 \times 12$.

Let us examine the list by assuming that Da Ponte wanted its sum to be 144: after a quasi-regular sequence (5, 10, 20, 30), Da Ponte needed to add 79 to reach 144. For the six-number sequence necessary to accommodate Mozart's music, he needed two more numbers: $n_1 > 30$ and $n_2 > n_1$. He chose $n_1 = 36$ and $n_2 = 43$. Of the nine possible couples of integers which respect the two constraints, he preferred the more balanced sequence $n_1 = 30 + 6$ and $n_2 = n_1 + 7$, with similar increments, and also better suited to the music, because the lines must be written in such a way that the accents of the poetry correspond to those of the music (Heartz, 1995).

Table 2. Gematrical values of the Italian alphabet, allegedly used by Lorenzo Da Ponte in *Le Nozze di Figaro* and in *Don Giovanni*.

| A | B | C | D | E | F | G | H | I | L | M | N | O | P | Q | R | S | T | U | V | Z |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |

Table 3. Possible gematrical values associable to the three names of Lorenzo Da Ponte.

| Name | Initials | Full name |
|------------|----------|---|
| Emanuele | 5 | $5 + 11 + 1 + 12 + 19 + 5 + 10 + 5 = 68 = 14$ |
| Conegliano | 3 | $3 + 13 + 11 + 5 + 77 + 10 + 9 + 1 + 12 + 13 = 84 = 12$ |
| Lesbonico | 10 | $10 + 5 + 17 + 2 + 13 + 12 + 9 + 3 + 13 = 84 = 12$ |
| Pegasio | 14 | $14 + 5 + 7 + 1 + 17 + 9 + 13 = 66 = 12$ |
| Lorenzo | 10 | $10 + 13 + 16 + 5 + 12 + 21 + 13 = 90 = 9$ |
| Da | 4 | $4 + 1 = 5$ |
| Ponte | 14 | $14 + 13 + 12 + 18 + 5 = 62 = 8$ |

But why the total 144? I propose this explanation. As we read in **Table 3**, the gematrical value 12 refers both to Lesbonico and to Pegasio, therefore we can conjecture that Da Ponte wanted to hide in the list his full Arcadian name by “repeating” twice the integer 12, rather than indicating twice his Jewish last name Conegliano, whose gematrical value is also 12 (**Table 3**).

In conclusion, the list seems to have been deliberately designed, Da Ponte did not write it by chance, he did play with numbers. Since its first representation in 1786, Figaro continues measuring his future bedroom by allegedly repeating, on every stage of the world, Da Ponte’s Arcadian name: Lesbonico Pegasio.

Let us now turn to his more complicated alleged gematrical exercise conducted on Leporello’s Catalogue.

As recalled in Section 1, in Act 1 of *Don Giovanni*, Da Ponte just rewrote, with very little changes, what Giovanni Bertati had written in his libretto. The servant Leporello replaced the servant Pasquariello, but the two catalogues were quite different, as shown in **Table 1**. Bertati writes only the number “cento” (100) while Da Ponte writes a particular sequence of five integers: 640, 231, 100, 91, 1003. What do these numbers mean, what do they hide? They do not seem to follow a pattern as those in *Le Nozze di Figaro*.

Let us study and decoding them with the guide of the gematrical values of **Table 3**.

The integers of the Catalogue can be represented as a triangle or, even better, as a bridge (translated “ponte” in Italian), **Figure 1**, whose vertex is 100 and base given by 640 and 1003.

Let us do some simple gematrical manipulations, those that Da Ponte might have done. It is, of course, a conjecture, because there are, so far, no sources that attest it. Let us start with the base of the triangle.

“Seicento e quaranta” (640): The gematrical value of 640 is $6 + 4 = 10$, therefore letter “L” from **Table 2**, the initial of “Lorenzo” or “Lesbonico”. “Mille e tre” (1003): The gematrical value is $1 + 0 + 0 + 3 = 4$, therefore letter “D” from **Table 2**, the initial of “Da”. The sum of the integers at the base of the triangle gives $640 + 1003 = 10 + 4 = 14$, therefore letter “P”, “Ponte”. In other words, the base of the triangle gives the initials of “Lorenzo Da Ponte”.

Now let us make now a complete turnaround the “bridge”: we get the sum $640 + 231 + 100 + 91 + 1003 = 2065$, whose gematrical value is $2 + 0 + 6 + 5 = 13 = 5 + 8$, therefore “Da Ponte” (**Table 3**). Therefore, the triangle stands for “Lorenzo Da Ponte”.

The vertex of the triangle is 100, whose gematrical value is 1. The numbers 1, 100, 1000, all with same gematrical value, in the Jewish tradition represents God (**Hardiman, 2019**), but it could also indicate Da Ponte, in agreement with his great self-esteem.

Let us calculate some symmetrical differences with the vertex 100 and other values, and decode their possible meaning.

$$640 - 231 = 409 = 13 = 5 + 8, \text{ “Da Ponte”};$$

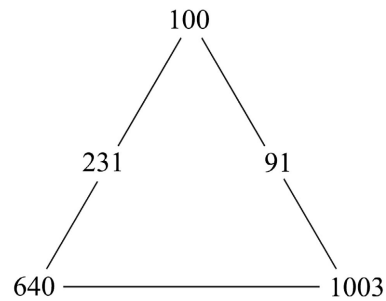


Figure 1. Leporello's Catalogue numbers fit in a triangle.

$1003 - 91 = 12$, "Lesbonico", "Pegasio" (or also "Conegliano").

$640 - 100 = 540 = 9$, "Lorenzo";

$1003 - 100 = 903 = 12$, "Lesbonico", "Pegasio" (or also "Conegliano").

$231 - 100 = 131 = 5$, "Da";

$100 - 91 = 9$, "Lorenzo".

In other words, in these elementary gematrical calculations on the triangle all gematrical values refer to Da Ponte's three possible names.

Other curious results can be obtained by squaring numbers. For example, the sum of squares of the five integers gives $1487251 = 28 = 10$, "Lorenzo".

Taking the difference and the sum of squares:

$640^2 - 231^2 = 356239 = 28 = 10$; $640^2 + 231^2 = 462961 = 28 = 10$, again "Lorenzo".

As observed in Section 1, were Leporello's Catalogue numbers chosen just by chance and only to fit Mozart's music? Let us study possible substitutions and see the resulting gematrical values.

The integer 1003 could be replaced by 103, with the same gematrical value and fit to Mozart's music, but this substitution is not acceptable because the list must end with the largest number: "Ma in Ispagna sono *già* mille e tre".

The integer 640 could be replaced by 340 or by 240 (i.e., by changing "sei" in "tre" or in "due") without changing Mozart's music. But these changes would distort all the gematrical values referring to the names of Da Ponte, because $340 = 7$ and $240 = 6$. The sums and differences of squares would not indicate symmetrical values.

The integer 231 could be replaced by 331, but now the sum of all numbers is $2165 = 14$, which could only indicate "Emanuele", a reference rarely found in all the other gematrical values, which seem to refer only to the new names of Da Ponte: Lesbonico Pegasio and Lorenzo Da Ponte.

The integer 91 could be replaced by 81, 71, 61, 51, 41, 31, 21, without changing Mozart's music. In this case, instead of $100 - 91 = 9$, the differences would be $100 - 81 = 19$, $100 - 71 = 29 = 11$, $100 - 61 = 39 = 12$, $100 - 51 = 49 = 13$, $100 - 41 = 59 = 14$, $100 - 31 = 69 = 15$, $100 - 21 = 79 = 16$. Only $100 - 61 = 39 = 12$ and $100 - 51 = 49 = 13 = 5 + 8$ could lead to Lesbonico/Pegasio/Lorenzo da Ponte, but the other gematrical values would not. However,

for 61 and 51 the sums of the five integers in the triangle are $2035 = 11$ and $2025 = 9$, and only the last value can be associated with Da Ponte.

Of course, there may be other reasons, besides Gematria, why Da Ponte chose 91 instead of 51: Da Ponte wanted to exaggerate Don Giovanni's conquests, therefore he chose the largest possible integer which fulfilled the other constraints, namely 91.

The integer 100 is unchangeable, the list seems centered in 100, the vertex of the triangle. This number represents God in the Jewish Gematria, or maybe Da Ponte himself, as already noted.

In the next Section I calculate some probabilities concerning the five numbers of Leporello's Catalogue to assess whether Da Ponte chose them by chance.

5. Leporello's Catalogue and Its Probability

Some probability calculations on the five numbers contained in Leporello's Catalogue 640, 231, 100, 91, 1003 can help us to assess whether Da Ponte played or not with these numbers.

Let us start with 640. By supposing that Da Ponte needed a number of 3 digits to fit Mozart's musica, whose sum, however, should have been 10, what is the probability of selecting 640 among all possible 3-digit numbers, from 100 to 999, whose digits sum up to 10?

Figure 2 shows the number N of cases versus the sum S_3 of the 3 digits in 3-digit numbers. S_3 can vary from 1 to 27. At $S_3 = 10$ we read $N_3 = 54$. In other words, there 54 different numbers of 3 digits whose digits sum up to 10, and these include, of course, 640. Therefore, the (conditionaal) probability of selecting 640 is $p_3 = 1/54$.

Now, the a-priori probability of selecting any 3-digit number between 100 and 999 is given by $P_3 = 1/(1000 - 100)$, therefore the probability of choosing 640 is $P(640) = P_3 \times p_3 = 1/(900 \times 54) \approx 2.1 \times 10^{-5}$, a value that excludes chance.

Let us consider 1003. By supposing that Da Ponte needed a number of 4 digits to fit Mozart's music, but whose sum was fixed at 4, we must calculate the probability of selecting 1003 among all possible 4-digit numbers, from 1000 to 9999.

Figure 3 shows the number N of cases versus the sum S_4 of 4 digits in 4-digit numbers. S_4 can vary from 1 to 36. At $S_4 = 4$ we read $N_4 = 20$, therefore $p_4 = 1/20$.

The a-priori probability of selecting any 4-digit number between 1000 and 9999 is given by $P_4 = 1/(10000 - 1000)$, therefore the unconditional probability of 1003 is given by $P(1003) = P_4 \times p_4 = 1/(9000 \times 20) \approx 5.6 \times 10^{-6}$, another value that excludes chance.

Now, let us calculate the joint probability of independently selecting the 5 integers of Leporello's Catalogue 640, 231, 100, 91, 1003. Let us consider only the a-priori probability of selecting three 3-digit numbers (640, 231, 100), one 2-digit number (91) and one 4-digit number (1003), therefore obtaining a conservative value, i.e. a value greater than the theoretical total probability calcu-

lated by considering also the conditional probability, as done above for 640 and 1003. We get:

$$P_{cat} = \{900^3 \times 90 \times 9000\}^{-1} = 1.7 \times 10^{-15}$$

This value is practically zero. In conclusions, chance must be excluded because Da Ponte, for whatever reasons, seems to have chosen these particular integers. My conjecture is that he did so for hiding himself in the list.

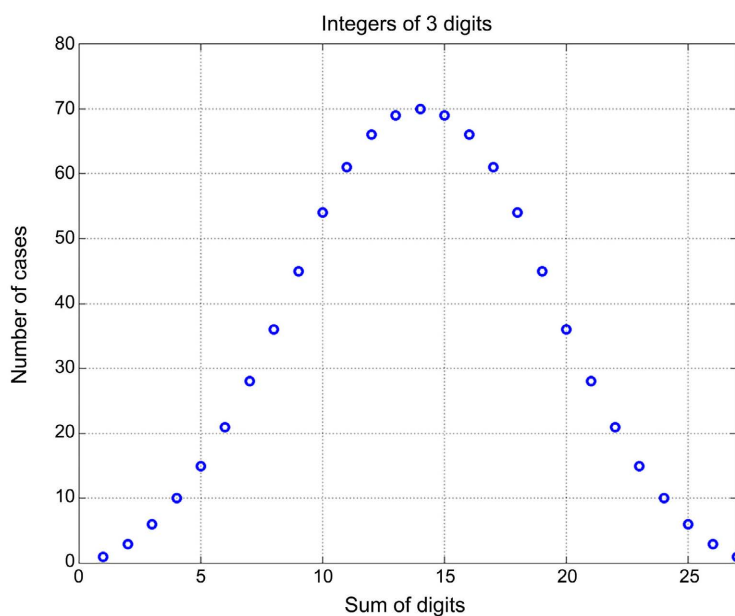


Figure 2. Number N of cases versus the sum S_3 of the digits in 3-digit numbers. At $S_3 = 10$ we read $N_3 = 54$.

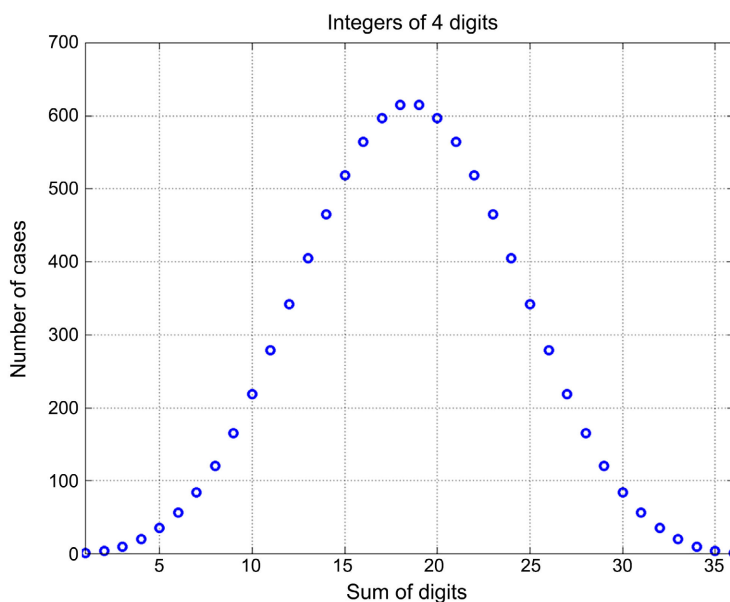


Figure 3. Number N of cases versus the sum S_4 of the digits in 4-digit numbers. At $S_4 = 4$ we read $N_4 = 20$.

6. Conclusion

After 150 years of relative obscurity only in the 1980s Lorenzo Da Ponte began to be recognized as one of the greatest librettists of all times. For opera lovers, his name is worldwide related to Mozart's three immortal Italian operas: *Le Nozze di Figaro*, *Don Giovanni*, *Così fan Tutte*. In *Le Nozze di Figaro* and in *Don Giovanni*, many scholars have noticed the curious presence of numbers—namely integers—arranged in lists, technically known as “catalogues”.

In *Le Nozze di Figaro* the servant Figaro counts out the dimensions of a bedroom in the sequence 5, 10, 20, 30, 36, 43. This list has been commented only to observe that $5 + 10 + 20 + 30 + 36 + 43 = 144 = 12 \times 12$.

In *Don Giovanni*, the servant Leporello's Catalogue is worldwide known and celebrated. Compared to the contemporary libretto of *Don Giovanni* written by Giovanni Bertati, Leporello replaced Pasquariello but the two catalogues were quite different, as **Table 1** has shown. Instead of only the single number written by Bertati, 100, Da Ponte writes the famous five integers 640, 231, 100, 91, 1003.

I have tried to answer the following question: Were these numbers chosen just by chance and only to fit Mozart's music, or did they hide some covert message?

Nobody has ever explained the origin and meaning of these particular numbers and their specific sequence. Because of his Jewish origin, childhood and culture, Da Ponte was acquainted with Gematria, a numerical coding technique largely used in the Jewish Torah, never cited in his *Memorie* because he never mentioned his Jewish origin.

A random choice of the integers listed in *Le Nozze di Figaro* and in *Don Giovanni* should be excluded, for many reasons, including the very low values of probability associated to these integers. Da Ponte, for whatever reasons, did choose these particular integers and my conjecture is that he did so for hiding his names in the lists.

This is only a conjecture, because there are no sources that attest it, but the arguments discussed above in favor of it are so numerous and compelling that it may turn out to be the truth. Da Ponte seems to have hidden something very important in these numbers: himself, in agreement with his high self-esteem.

In conclusion, the lists seem to have been deliberately designed, Da Ponte did not write them by chance, he did play with numbers. Therefore, since 1786, Figaro continues measuring his future bedroom by repeating, on every stage of the world, Da Ponte's Arcadian name Lesbonico Pegasio, and since 1787 Leporello continues listing the numbers of women conquered by Don Giovanni, but also repeating every time Lorenzo Da Ponte.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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