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Theory of Major and Minor Numerical Progressions

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Abstract

The study presents an assertion and explanation that major and minor numerical progressions occur that depend on the representation contained in physical space. In general cases, larger numbers are multiples and smaller numbers are simple, because multiple numbers contain more numbers in many physical spaces than simple numbers. In specific cases, they depend on the statement of what the specific representation is, and different realities from general cases may occur. Also, the theory explains the change in the number of prime numbers.

Keywords: Bigger numbers; Smaller numbers; Varied numbers; Simple numbers

1. Introduction

The theory of major and minor numerical progressions aims to affirm and explain the reasons that make the numerical progression larger or smaller depending on the characteristics of the simple or varied representation. Single representation numbers in the general case have a smaller progression than multi- representation numbers which have a larger progression. In specific cases, the progression can be greater or less depending on whether the representation is simple or varied that is, specific cases can be different from general cases. The study presented is consistent, as it is based on observations and the meaning of mathematics, thus making it possible to reach a scientific conclusion.

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2. Math Sense

The knowledge of mathematics today is not the same as it was at the beginning of the history of mathematics, because in the trajectory of thousands of years ago there was evolution in the knowledge of mathematics, as well as in the future of mathematics of thousands of years its knowledge will continue to evolve, with the aim of describing the world with rigor and precision.

The first signs of knowledge of mathematics occurred due to the need to represent elements, giving rise to mathematics that emerged in Ancient Egypt and the Babylonian Empire, around 3500 BC. However, in prehistory, human beings already used the concepts of counting and measuring. An example of the first elements to represent was the stones and the sheep, where each stone represented a sheep.

An example if there were 15 stones and because there were also 15 sheep, in this case two stones are missing during the count and because there are also two sheep missing. This need to represent the elements in the case of sheep arose with the aim of avoiding losses of sheep, that is, to avoid losses.

The emergence of the representation of elements aims to describe the world with rigor and precision. So many people benefit from mathematics because mathematics makes life easier for everyone, as is the case with the sheep counter who, because of mathematics, was unharmed. Therefore, based on the meaning of mathematics, it is possible to state that mathematics is related to physical spaces [1].

3. Detailed Examples of the Use of Mathematics

Example 01: A group of friends made up of 8 people will eat at a pizzeria, where they buy 2 pizzas with 8 slices each, that is, 16 slices in total. When the two pizzas arrive, one of the friends tries to make everyone eat the same amount of slices, so the calculation of the division was made: if the total is 16 slices and there are 8 people to eat, each person can eat 2 slices equally.

In this case, the division is calculated so that none of the 8 friends eats more or less than any other member of the group, the division arises to maintain equality.

Example 02: In research, there is a significant reliance on mathematics. For example, the objective of a survey is to understand the profile of criminality in Brazil, including its characteristics. The numbers reveal the crime situation in Brazil: the poorest regions suffer more violence, while the richest regions suffer less violence.

In these cases, it is up to public policies to act in the poorest regions, offering opportunities for people to break free from poverty. This is all because numbers provide information from which solutions can be deduced.

Example 03: Mathematics is strongly linked to health, as numbers indicate information that may be contained in food products or medical tests. The information, through numbers, can tell the ideal amount of consumption or not of a food. In addition, medical tests can diagnose an illness. If so, numbers can help humanity stay healthy.

Example 04: Numbers play a crucial role in ensuring the safety of individuals, especially when setting limits for various means of transport, such as elevators, boats, planes and cars. These limits are determined through numerical studies. In addition, the numbers provide information about speed limits for different modes of transport.

Example 05: The existence of the trade depends on mathematics, as the product that the trade sells has a value, but the value can be changed as you seek the ideal profit from the product.

In this case, knowledge of the number is fundamental to know the value of a product, to obtain the desired profit. In general, mathematics is present in everything, that is, in any physical space, because it arose from the need to describe the world with rigor and precision [2].

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4. The Use of Mathematics in Everything

Also, mathematics is used in many things such as probability, which looks at the possibility of an event occurring. The percentage is used to compare quantities, profits, discounts, and losses. Geometry is present in road signs, houses and buildings. The quadratic or 2-degree function is used to calculate projectile launches and motions. In trigonometry it is possible to determine the height of a certain building and measure the distance between the Earth and the Moon. The proportion has application in decreasing or increasing quantities; an example would be the amount of food. Set theory helps determine the number of respondents and their groups. The exponential function explains radioactive decay, ecological and sociological growth [3].

5. The Various Physical Spaces

The physical spaces that exist in the world are different from each other, as each physical space has its own characteristics that are different from other physical spaces. For example: The volcanic space is different from the ice characteristics of Antarctica, that is, the temperature of the volcano is between 800°C and 1200°C, while in Antarctica it is -89°C, in addition to other characteristics that differentiate these spaces. Therefore, the various physical spaces constitute facts or specific elements detached from all physical spaces by their characteristics. In this sense, the numbers are related to the physical spaces and due to the differences between the spaces, the numbers present greater or lesser progressions [4].

6. Relationship of Space with Numbers

If the space had a characteristic that did not allow the progress of the element or fact, in this way, the progressions are only bigger in the smaller ones, the variation of bigger or smaller ones depends on the space and the element or fact **(Table 1)**.

Table 1. Imagination of varied physical spaces.

1	2	3	4.....

Source: Prepared by the author.

Let's imagine that 1, 2, 3 and 4... Represent the physical spaces that make up the universe, space 1 is the city of Belem, space 2 is Rio de Janeiro, space 3 represents some spaces outside of planet earth, and space 4. Represent other physical spaces.

- Thus, stating that animals are infinite is a mistake, as animals only fill some spaces and therefore can only have greater and lesser progressions depending on what the comparison is.
- Space 1 and space 2 allow the existence of an animal element, space 3 and space 4 may not allow the existence of an animal element; thus, the variation of space promotes variation of element or fact.

7. Progression Depends on Physical Space

Mathematics aims to describe the real world from representations that involve the physical space, thus, the progression depends on the physical space and the simple or varied characteristic. The physical space allows a

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certain numerical progression that varies according to the physical space, so that the number is limited in parts or totally, with only larger and smaller numerical progressions occurring [5].

8. Representations of Simple and Varied Numbers

In general cases, simple numbers include fewer numerical progressions than varied numbers, which include more representations of different types. For example:

- The numerical count of the fruits can be higher or lower depending on the event used, if there is a count of apples that is of simple numbers compared to the count of all types of fruits that is of varied numbers, the greater progression will be of varied numbers.
- When comparing a simple count of apples with an assorted set of bananas and apples, it becomes evident that the count of apples with only one type represented is lower. On the other hand, counting bananas and apples with more than just apples exceeds counting bananas.
- When comparing the Pit Bull dog count to the count of all types of dogs, the greatest variation in counts is seen among all types of dogs, including the highest level of progression.

In specific cases, the largest and smallest number depend on the indication of which representation is used; this way the varied number can be greater than the simple numbers or the simple numbers can be greater than the varied number, the varied number x can be greater than the varied number y depending on what x and y are, the simple numbers x can be greater than the simple numbers y depending on what x and y are. For example:

- Among animals in general, humans are smaller than all animals, therefore varied are greater than simple.
- A set of assorted animals from five endangered species relative to humans that is simple, in this sense the simple progression is greater than the varied one.
- The count of the varied set of insects is greater than that of mammals of all types; therefore, the varied progression of insects is greater than the varied progression of mammals varied progression of insects is greater than the varied progression of mammals.
- Human animals are greater than the progression of the maned wolf animal in counting, so the progression of simple numbers can be greater than the progression of other simple numbers.

Therefore, both the progression in general cases and the progression in specific cases are higher or lower depending on the characteristics of the scenario used.

9. Examples of Major and Minor Numerical Progressions

Numerical representation x (1, 2, 3, 4, 5, 6)

Numeric representation y (1, 2, 3)

In the case of x there are only six numerical representations contained in physical space, so there is no neighbor that is seven. In case y there are only three units contained in the physical space, so the successor four does not occur.

10. Specific Examples of Progression Set Theory

- In an in class poll assessing which color is preferred between blue and pink, 8 chose blue and 5

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answered pink, so the total is 13. But the poll later decided to include the color green, having 4 people for the color green; with this, the possibilities of new choices are increased, thus, the varied numbers are greater than the simple numbers.

- In an interview to find out about her desire to travel between Paris, Berlin and Rome. Nine chose Paris, 2 Berlin and 4 Rome; the others did not participate in the interview. But then another survey was carried out between Belem, Moscow and Rio de Janeiro. Ten chose Belem, 5 preferred Moscow and 8 chose Rio de Janeiro, so a varied number x can be greater than a varied number y.
- In the marble collector set, 2 blue marbles. In another set of cars, 8 are black cars, so the simple x numbers are greater than the simple y numbers.
- In the group about liking three types of fruit, 2 like apples, 5 like grapes and 2 like bananas. Compared to the gaming group, 13 like shooting and 15 like racing, so simple numbers are greater than mixed numbers.

11. General Examples of Progressive Set Theory

Case 1:

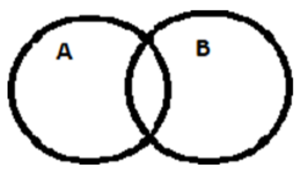

Figure 1. Sets of diseases A and B. Source: Elaborated by the author.

Case 2:

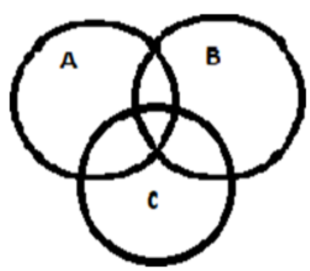

Figure 2. Groups of diseases A, B and C. Source: Elaborated by the author.

In general cases, the varied numbers are larger than the simple numbers, because the varied numbers have one more set. An example is case 1 and case 2 of the presented figures. If set A has 28 patients and set B has 12 patients. Any number of patients in set C will make case 2 larger than case 1 in **figures 1 and 2**.

12. The Real World Violation

Science serves the purpose of explaining and describing the natural world. Therefore, claiming that numbers are infinite just because it is possible to count to infinity on paper and with a pen is inconsistent practice. This is because

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such an approach does not consider concepts related to physical space. Furthermore, it is important to recognize the interrelationship between mathematics and physics. Consequently, concluding that numbers are infinite in the realm of pen and paper violates real-world principles.

For example: The XY element would only be infinite if there were conditions in all physical spaces to receive the XY element; moreover, the XY element to be infinite must occupy all physical spaces; furthermore, the physical spaces must be infinite. Therefore, the coherent count depends on the element and the physical space.

13. Change of Prime Numbers in Progression

The prime number takes on a fractional function that is not divisible into parts, while the composite number allows division into parts. With that, the number of prime numbers is different between major and minor progressions, as the major progression tends to have spaces already formed for division into parts, however, the minor progressions are still being formed; that is, it is difficult to divide into parts, as they are still gaining parts.

The theory related to the progression of prime numbers must be understood from the idea of gains in space; when more progress occurs, the use of the previous divisible parts is preserved; therefore, a larger progression has more parts to share, because smaller progressions still get parts to share.

However, prime numbers do not have infinite progression due to the idea of the meaning of mathematics, which allowed us to understand that mathematics interacts with physical spaces. In addition, by observation, it is possible to understand that there are varied spaces that do not allow for the infinity of prime numbers, so only larger and smaller progressions of primes occur [6].

14. Representation and its Relations

$IC\ X \rightarrow EF\ X \neq IC\ Y \rightarrow EF\ Y \therefore \exists \lim \rightarrow EF\ X \neq EF\ Y \therefore EF\ X > EF\ Y \vee EF\ Y > EF\ X$

IC X = intensity of the specific physical concept

x EF X = element or fact x

IC Y = intensity of the specific physical concept y

EF Y = element or fact y

Note that the intensities of the physical concept specify influences elements or facts. In this sense, due to the variety of intensity of the specific physical concept in the universe, a variety of unrelated elements or facts are likely. In other words, a progression tends to be greater or lesser.

15. Conclusion

So, in mathematics there are major and minor progressions depending on what the representation is. Variable numbers are usually larger than simple numbers. In specific cases, the variable x can be greater than the variable y, the simple number x can be greater than the simple y, the variable can be greater than the simple, and the simple can be greater than the variable. In parts or completely there is no infinite progression, that is, only major and minor progressions occur. The theory applies both to the element in general and to some or all of the facts, as both pertains to physical space. In addition, the study presents relations with progressions of prime numbers.

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