

The Personalities of Numbers

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As mathematician Ramanujan famously said, a mathematical equation has no meaning unless it expresses a thought of God. Mathematics is the underlying basis of the physical universe, and anything that is physical can be put into numbers and measurements. Of course, modern physics has also uncovered the brilliant truth that all of subatomic particles and their interactions, and thus the entire universe arises from a geometric basis, that of the Lie Groups.

However, to look at the meanings behind equations is to dig deeper into the numbers, which are expressions of Divine Thought, which we know and experience in our lives as God's Will. From a simple understanding about the nature of reality, and our purpose in this world, as seen by Advaita, sheds light on one important fact: God's Will is extremely simple; it is directed toward only one purpose - our liberation from delusion and eternal abidance in blissful reality. This goal, and the process to achieve it are largely expressed as change in mindset as one gets closer and closer to liberation, and the numbers denote the various facets of Divine Will that guide us thence.

The starting point of understanding the numbers is to ascertain their basis. Though mathematics will not be affected by the choice of any basis system - such as binary, octal etc, nature culminating in human evolution indeed seems to have a preference for the decimal system with base 10, as seen by our 10 fingers and toes. The nature of the numbers is also reflected in the nine most influential celestial bodies, that are called Navagrahas.

Each number however big, has a personality, which it brings into equations and other aspects of nature where it is involved. However, there are only nine definable fundamental aspects of the Divine Will. For this reason, one must look every number as a manifestation of one of these nine.

Even the nine are not mathematically fundamental. One can start with just the number 1, and a single operation, addition, and both used in combination many yield all possible numbers. This shows the common basis of all the numbers, and ability to mix and mash some numbers to obtain other numbers.

As a starting step, below is a character sketch of the numbers 1 to 9, as aspects of the Divine Will.

- 1: Surya: Sun. Divinity (external wrt mind), converts knowledge to wisdom, free will to Divine Will and Karma to Kriya.
- 2: Chandra: Moon. Mind with likes and dislikes, Vasanas, dislikes generally reduce one's activity and worldly indulgence.
- 3: Brihaspathi: Jupiter. Alignment towards what should be done, focus. Also alignment towards detachment, vairagya.
- 4: Rahu: Eclipse Nodes. Inward turning of mind, passive.
- 5: Budha: Mercury. Understanding through analysis.
- 6: Shukra: Venus. Harmony from the heart, work towards satiating unsatisfied areas.
- 7: Kethu: Comets. Reduction of physical activity, surrender.

8: Shani: Saturn. Time, exposure to circumstances, experience. Brings out latent Vasanas through temptations, makes one do good or bad accordingly, and also suffer reward or punishment, so that those Vasanas may be removed.
9: Angaraka: Mars. Auspiciousness, completion, perfection.

With this, one can proceed to addition of two numbers, which are nothing but juxtaposing their effects sequentially in time. For example, $1+3=4$. This can be explained as, the dawn of wisdom (Surya) followed by an alignment towards detachment (Brihaspathi), internalizes the obtained wisdom, with the net effect of the mind turning inward, which is a manifestation of Rahu, which is the resulting sum 4.

There is further significance to this understanding of addition. Numbers greater than nine, composed of multiple digits, may be seen as additions of other numbers. For example, 13 is obtained as $10+3$. 10 itself denotes the same as 1, but in the tens place instead of units. Thus, the character of 13 may be obtained from those of 10 and 3, which is in essence 1 and 3, the digits that make up 13. Thus, 13 is a manifestation of 4, but one formed by 2 Grahas, 1 and 3 in combination, rather than by 4 directly. For this reason, 13 is a less potent manifestation of Rahu than 4 itself. The more the number of digits, the lesser the potency. A few two digit numbers are thus described below as examples.

- 13. Externally guided introversion.
- 19. Perfection of Divine Wisdom.
- 22. Turning away from outside by adding more dislikes to mind.

Subtraction can easily be understood as the inverse operation, and thus for example $7-4=3$ denotes the question: among the processes that result in physical passiveness (7), what must be preceded or succeeded by introversion of the mind (4)? The answer is detachment (3), since an introverted mind should be guided by detachment from sensual world, rather than addicted to one's sensual temptations and hallucinations, neither of which can give proper physical passivity.

One can observe from examples that there is an interesting role to 9, as one of multiple digits of numbers. Specifically, any number added to nine makes it a manifestation of itself. Thus 49 is a manifestation of 4, 69 of 6, and 93 of 3. In this capacity, 9 plays a role resembling 0, and may be used in place of 0 as far as computing net digit sum goes. One can use this for understanding negative numbers. For example, -8 may be seen as $0-8$, or alternatively as $9-8$, which gives 1. Thus, -8 is a manifestation of 1, just like other manifestations such as 19, 28 or 46. However, while 28 shows 2 and 8 coming together to produce the effect of 1, -8 shows taking away the feature of 8 from nothingness, to get 1. Paradoxically here, 0 and 9 represent the same role, showing how in Advaita, completeness Poorna and emptiness Shoonya are but the same. Therefore, taking 8 away from nothingness means taking the nature of 8, which is experience producing time, away from perfection. In other words, what precedes or succeeds this time treasure of experience (8) to give perfection (9)? The answer of course is the change of knowledge that one gets through experience, to wisdom (1), which is why -8 is indeed a form of 1.

- 1. Time that gives experience, at the end of which one gets knowledge converted to wisdom.
- 22. Understanding which following dislike induced introversion gives perfection.

With additive operations understood, one proceeds to multiplication, which is nothing but repeated addition for a specific number of times, ie. 2×3 is 2 added to itself 3 times. This means, the product, in this case, 6 contains traces of the characteristics of both 2 and 3. Specifically, multiplication refers to product (6) obtained as one of the processes (2) influencing the other (3), with both happening simultaneously, unlike addition. While 3 refers to alignment, ie determining goals and focus directions, it is influenced by 2, ie by one's likes and dislikes. The result is that one's work becomes focused to satisfy likes and dislikes. This gives harmony, fulfilling all unsatisfied points, which is nothing but the characteristic of 6.

Just like 0, and to an extent 9, acted as the additive identity, 1 is the multiplicative identity. Multiplying any number X by 1 implies that 1 is influencing the process of X. 1 is simply the Divinity, and since all processes are ultimately Divine Will alone, 1 influencing any process is already implied in the process happening in the first place. Thus, $1 \times X = X$.

In numbers with more than one digit, multiplication refers to alternate routes by which one may arrive at the number at hand. For example, $7 \times 5 = 35$. 35 itself is a manifestation of experience 8, obtained through reasoning and understanding (5) followed by alignment toward good (3). However, the same may be achieved through tuning one's process of reclusion and passivity (7) through understanding (5) of why one must go passive. In this manner, what experience and time may teach over a duration of time, can be achieved much faster by proactive effort.

Division is the inverse of multiplication. For example, $6/3=2$, is equivalent to asking the question: from harmony and satisfaction of desires (6), if one takes away the aligning and effort based fulfilling component (3), what is one left with? The answer of course is the very desires that one started with, but sticking out as unsatisfied (2).

With this, one can easily proceed to imperfect division, where one gets a quotient and remainder. Specifically, if A/B results in a quotient D and Remainder E, this means that $(D \times B) + E = A$. This means that B influencing D's process can result in A, but only with the addition, ie necessity of E's process external to the D and B combination, either before or after it in time. For example, 61 represents acquiring wisdom (1), and when it creates a disruption in status quo in the mind, one works to satisfy (6), ie to internalize and align one's mind, body and actions to the wisdom, the net result being reduction of physical activity (7). $61/7$ asks the question: in what way must we modify the physical passiveness process to get physical activity reduction induced by harmonizing wisdom? In this case, it is the harmonizing part that causes reduction of physical activity, and the only other component is the wisdom part, for which we need alternate processes. This is of course possible through time and experience. However, this alone is not sufficient, since time can only give the experiences needed for this. One must put effort into reaping the fruits of this, just as one harvests fruit grown over time. This is done with intellectual understanding (5). Thus, to achieve that passiveness that one gets by harmonizing wisdom (61), one must influence the process of physical passivity (7) through the experiential aspect of time (8), followed by a period of understanding (5) all that one experienced.

Thus, with the operations discussed above, one can cover the set of natural and whole numbers, positive and negative integers, as well as rational numbers. The next logical extension is of course the irrational numbers, which cannot be described as fractions. This means, by their very nature, irrational numbers have an infinite digits following the decimal point. Capturing them with complete accuracy is impossible, by human or computer, since there will always be a memory restriction imposed. These numbers are always used only as approximations, which would then make them rational. The only question is how big the numbers can go while describing them as ratios, and how accurate they can get. While approximating irrational numbers with number fractions involving many digits tends to be more precise, we must also note that more the digits added to represent a number, the lesser its potency. Thus, one must strike an optimal balance between potency and accuracy. When thus represented, these numbers just become a case of imperfect division, which can then be interpreted to study the personalities of the irrational numbers. In this category, one finds the most powerful mathematical constants, such as pi, which has innumerable applications.

19/7: e. (Tailoring activity using) likes and dislikes plus theoretical understanding.

22/7: pi. External wisdom followed by Introverted alignment (throughout period of physical passivity). Pi finds extensive use in nature, most popularly in describing the ratio between the diameter and circumference of a circle. As is well known, circles, and by extension, spheres, have the lowest surface area to volume ratio, and requires least energy to maintain its shape. This is the implication of physical passivity (7). Thus, starting with a unidimensional shape, ie a line (1), continuously rotating it about its centre, ie continuously changing its alignment (3) with an objective of maintaining least energy (7), results in a circle. This is the meaning of pi.

13/8: phi. Initial external guidance (applied over time and experience to give necessary introversion) plus understanding.

It only involves a simple extension of multiplication to get to higher powers such as squares, which are nothing but repeated multiplications. For example the square of A giving B, is nothing but $A \times A = B$. This means multiplying A by itself ie, influencing A's process by itself and thus fine tuning it, or in other words, adding A to itself A times. Thus, B is obtained through a single process, that of A, by fine tuning it continuously, without the interference of any other process. This is the meaning of square, and thus by extension, the square root. The same logic does not apply to cubes or to higher powers, since $A \times A \times A$ giving A cubed, can be understood as A x A multiplying A, ie B, a number different from A, multiplying, and thus influencing the process of A.

As an example, the root of 25 is 5. 25 is passivity obtained through developing dislikes reducing mental involvement (2) and then understanding them intellectually (5). If one were to approach the same result using a single process, it is possible through reasoning alone (5), which would anyway make one physically passive. By extension, one can compute imperfect square roots, just as in the case of imperfect division. So too, one can extend this principle to higher powers too, understanding them as special cases of multiplication.

The operations described thus far completely cover the set of all real numbers. Also, with negative numbers and square roots in place, one is now equipped to understand the imaginary number i, which is nothing but the square root of -1. As seen earlier, -1 is a manifestation of 8, which is nothing but

time that gives experiential understanding, which may then be converted to wisdom to give perfection.

Further, it is known that the square root of -1 is not a real number. That means, there is no known process using any number or combinations of numbers, that can result in the time effect of -1 . Seeking a process that leads to -1 is nothing but seeking a process that leads to creation of time, which is not possible by any aspect of human mind, but only by time itself. Thus, i as the root of -1 , represents time.

One of course understands about i from calculus, and signals theory. Specifically, one can represent any time varying quantity as a sum of sinusoidal signals, called sine waves. Integrating or differentiating a sine is seen to be equivalent to multiplying it by a product of i and the signal frequency. Furthermore, one also sees that integrating or differentiating sine gives a cosine, which is known to be nothing but a sine with either a time advance or a delay. Thus, one can by extension, confirm the role of i to be connected with the progress of time, just as interpreted earlier.

Numbers denoted by multiples of i , such as $4i$ or $-7i$ become imaginary numbers, while adding real and imaginary numbers yields complex numbers such as $4+7i$. Since i cannot be expressed as a real number, i does not lie on the one dimensional number line. Rather, i introduces the addition of a new dimension, a second number line, orthogonal to the real number line, and complex numbers can be described as points on this two dimensional plane. Also, in Poincare-Minkowski-Einstein formulations of space time, time is denoted as an imaginary coordinate. Thus, complex numbers introduce a new dimensional framework for describing numbers; however, in the context of interpreting numbers, the above mentioned discussion holds, whether seeing them as standalone real numbers, or as coefficients of i .

With this, one completes the understanding and interpretation of all classes numbers from basic natural numbers to complex numbers, and this brings to fruition one's attempt to understand equations as Ramanujan famously stated. An important component of understanding equations is in understanding the constants that underlie them, such as π , or e , or golden ratio ϕ , or speed of light c , or gravitational constant. The guidelines to understanding these have been outlined in the above discussion.