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Pascal: Vacuum, Void and Emptiness

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Pascal: Vacuum, Void and Emptiness

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I. INTRODUCTION

Why would you want to spend an hour of your time reading about Blaise Pascal.(1623-1662) a 17th century French philosopher about 50 years younger than Montaigne? His issues and thinking are so up to date and relevant to our current political issues that he is worthy of a serious study. It turns out this man had a brilliant career in 3 separate fields and was considered as gifted as Mozart in the first field which captivated him: geometry and calculus where he discovered at age 12 some problems which had remained unsolved since Euclid. He was always in search of explanations for whatever problems he came across. For example in early adolescence he noticed that a fork hitting a valuable porcelain platter would produce a musical sound. This stimulated him to write a complex paper on the nature of musical sound.

After mathematics, his second field of interest was philosophy mostly centered on his *Pensees* (translated as Thoughts or better: 'Reflections') where in addition to religion he discussed issues about the dual nature of man, his humanity and his connection with the universe both big and small which he could explore with his mind always in search of 'La Verite (the truth)'.

The last area of his work centered primarily on religion to which he devoted most of his energy during the last 10 years of his life writing a series of letters 'les Provinciales' devoted in part to clarifying the struggle between the Jesuits and the Jansenists.

II. FRANCE IN THE 17TH CENTURY

A few words about 17th century France will give us a frame for his life. Pascal lived during the end of the reign of Louis XIII and at the beginning of the reign of Louis XIV nicknamed the 'Sun King'. At that time France was a very troubled country recovering from endless wars of religion between catholics, the main religion and the huguenots. Although theoretically a unified country France was divided in a number of 'Duchies'. You may recall that in 1430 Joan of Arc the liberator of France from the English and beloved by the Armagnacs was

captured by the Burgundians and sold to the English who burned her at the stake in Rouen after a mock trial. France was also struggling with armed private groups which stole grains and supplies, raped women and destroyed entire villages without any possible retaliations. Cities were also fortified to keep out invaders and some huguenots cities such as La Rochelle sometimes asked the British for help to fight the catholic government troops which tried unsuccessfully to lay siege and capture the city and its port.

Paris was also the seat of considerable unrest in spite of prime minister Richelieu's attempt to restore order. For him the greatest danger was the nobility which was intriguing against him. The most recent unrest was labeled: 'La Fronde', a violent fight between the government, and nobility largely over taxes imposed by the government to fund endless wars with Spain and the Habsburg monarchies. Also at that time witchcraft was in the air and very much feared and medicine was at a frighteningly primitive state.

There is an amusing story involving Blaise's father, Etienne and his relation to the powerful prime minister, Richelieu. The latter banished him over a disagreement the two had about some taxes Richelieu wanted to impose on the population. Pascal's father had to flee Paris and return to Clermont Ferrand his native city. Purely by chance Pascal's younger sister Marguerite was asked in 1639 at age 14 to perform in a children's play in front of Richelieu. She so captivated him that he immediately pardoned Pascal's father and appointed him commissioner of taxes in Rouen, a city where the tax codes were in chaos because of recent uprisings.

III. EARLY LIFE

In contrast to Montaigne we have unusually rich details about Pascal's early life because of 2 biographies, one written by Gilberte, his older sister and a much more detailed one written by his niece Marguerite with the same name as his younger sister. It is not possible to verify the accuracy of these only two documents we have concerning his early life. Born in 1622 in Clermont Ferrand, a large city in Auvergne, Pascal lost his mother at age 3 shortly after she gave birth to his sister. They had hired a woman to breast feed him in addition to a nurse who came into the household after the mother's death. According to the niece's biography, Pascal developed at age two an undiagnosed unusually severe and puzzling illness



which according to his niece lasted almost the entire year. At one point he felt cold, appeared dead, for several days, with no pulse, no breathing. His grandfather thought he had died but the family delayed burying him. According to the story told by the niece in her biography, Pascal's mother allowed very poor women to enter their home and she would give them a small amount of money. Apparently one of these women had the reputation of being a sorceress. Pascal's parents did not believe in sorceresses and continued to allow the woman free entry. Eventually Pascal's grandfather confronted and threatened this woman who then confessed that she had indeed cast a spell on the baby and that another life would have to be given up to save the child. The family eventually threw a cat out of the window which died upon hitting the ground. The rest is hard to believe but the sorceress said she required a certain cataplasm of 3 different plants to be administered on the infant's belly. The apothecary carried out this request and the cataplasm was placed as ordered. As the family anxiously waited nothing happened and as the woman was about to leave she said she had forgotten to say that the child would only recover that same day after midnight passed. Apparently by 1 AM Pascal did return to life and could drink wine and water first then milk.

From earliest childhood Pascal suffered from severe anxieties. He could not tolerate seeing running water without breaking down nor could he tolerate seeing his parents fondle each other even though he loved being fondled by either. This is suggestive of very early primitive scene anxieties¹.

During his entire life he suffered from severe chronic intestinal pain diarrhea, and debilitating headaches due to an incompletely closed fontanelle. He also had periodic paralysis of his legs. For unclear reasons at age 24 he could no longer swallow liquids except if warm and only drop by drop. He died at age 39. of a burst infected colon. Pascal's attitude towards his frequent pains was that this was a just punishment from God which brought him closer to Christ's sufferings. In a masochistic fashion he also wore a special shirt with pins and spines.

In some of his writings He includes some amusing passages anticipating Moliere #82 p107, 108.

This must have been personally relevant for both Pascal and Moliere as the medical profession at that time was abysmally ignorant, relying on bleeding or enemas or herbs to mismanage most illnesses. Pascal's father, a tax collector unusually knowledgeable in mathematics never remarried and, unusually impressed with the brightness of his children, decided he would educate them himself. As a result they never

¹ I will return to these anxieties so well described by Greenacre(1941) in the second part of her paper on the Predisposition to Anxiety.

attended school and were participants in the father's connection with well known mathematicians.

Before turning to his enormous productions, I will give you a few more details about his life as a young adult. Initially he was very much involved in the world and its pleasures. It is not clear whether he ever engaged in sexual intercourse. Following a few religious episodes which I will describe, he decided after age 30 to turn away from the world and lead an ascetic life. Shortly afterwards to the surprise of his friends and relatives he turned down an offer of marriage to a young woman, Mademoiselle de Mesmes he was actually quite fond of and had in earlier times actually hoped to marry when reaching a proper age. He also befriended Charlotte, the daughter of one of his friends M. de Roannez. She apparently suffered from severe physical pains. Between September and December 1656 he exchanged 12 letters advising her how to deal with this problem offering many suggestions of biblical passages he felt might be helpful in accepting her fate. It is likely that he was also in love with her, otherwise why would he exchange so many letters with a young unmarried woman in such a short period of time? Pascal denounced marriage saying that it is the most dangerous and the lowest of christian conditions He felt it was necessary to break the power of sensual desire in order to connect with true faith.

Following his growing interests in religion he adopted a very ascetic life to the extreme in the last few years of his life, getting rid of any ornaments or tapestries in his house letting his domestics go and eating very simple foods in the kitchen with the cook and also cleaning and washing his dishes and making his own bed.

The Pleiade volume dedicated to his works includes a piece labeled 'Discours sur les passions de l'amour' (Discourse on the Passions of Love) but raises some concerns about whether Pascal actually wrote it. It includes the following paragraph (translated by me): 'Can I convey the delight one experiences when one shapes all of our behavior with the goal of pleasing a person one holds in high esteem?... You strive to find means to reveal yourself, spending as much time on this project as though you were confronting the woman you love.'

IV. SCIENTIFIC WRITINGS

I will now turn to a serious consideration of his writings first scientific, then philosophical and finally religious.

As early as age 16 he focused on geometry dealing with conic sections. He formulated what became known as Pascal's theorem stating that if a hexagon is inserted in a circle the three interaction points of opposite sides lie on a straight line. This work was so skilled that Descartes was convinced that his

father rather than Blaise had devised this solution. It also turned out that Pascal's ideas were so complex that a computer program was named after him in the last century.

At age 19 he was the first to invent a complicated adding machine called 'la Pascaline' which could help his father verify tax accounts. In 1647 at age 25 Pascal became fascinated by the problem of the existence of vacuum. He tried to disprove the belief that both Aristotle and Pascal's contemporary Descartes maintained, that nature abhors a vacuum.

He devised an ingenious method to tackle this problem. He filled a long glass tube closed at one end, with mercury and inverted the filled tube over a pool of liquid mercury, the tube emptied itself partially due to air pressure leaving a void at the top. He also repeated this experiment at various altitude levels, having some friends and relatives of his, climbing the Puy de Dome, the extinct volcano in Auvergne, showing how the mercury became lower as one climbed the mountain with the gradually decreasing air pressure. The question remained: what was left at the top of the inverted tube once the column of mercury settled down emptied of mercury once the tube was inverted? Was it some ethereal substance as Descartes insisted or just a complete void? His adversaries were stunned by his experiments.

V. PHILOSOPHIC WORKS

I will now turn to the meat of my presentations, the section of his writings entitled *les Pensées* or in English 'Thoughts' 'or Reflections' This part of Pascal's literary production, in contrast to Montaigne's essays, were never meant for publication. These were brought together after his death by his nephews and other relatives including his niece Marguerite. As a result a solid interpretation of this work is very problematic. Unlike Montaigne, Pascal did not write delineated essays but rather scribbled on pieces of paper often haphazardly and even on one instance, for an especially important thought, had the piece of paper actually sewn into his clothing, and carefully taking them to a new piece of clothing when appropriate. Time allowing, I will read a few samples of his works. Here are some of its main themes.

- (1) The two natures of man: beast-like, carnal versus the thinking person able to reason and govern himself.
- (2) The relation of man to the universe.
- (3) The problem of probability and the theory of the wager concerning the existence of God.
- (4) The role of what Pascal describes as our emotions and how they will most of the time lead us astray.

Here is one of the key thoughts (#347):

'Man is but a reed, but the most feeble thing in nature; but he is a thinking reed. The entire universe need not

arm itself to create him. A vapor, a drop of water suffices to kill him. But if the universe were to crush him man would still be more noble than that which killed him, because he knows that he dies and the advantage which the universe has over him; the universe knows nothing of this. All our dignity consists, then, in thought. By it we must elevate ourselves, and not by space and time which we cannot fill. Let us endeavor, then to think well; that is the principle of morality.'

There is no doubt that this idealization of thinking was in part an assist to mastering early trauma. Thinking allowed Pascal to master his feelings of defect, physical inferiority and chronic physical suffering. He wrote very beautifully two passages illustrating the contrast between the infinitely large and the infinitely small which from a slightly different perspective could be seen as infinitely large.

Read page #72 pages 100 and 101. His fascination between the infinitely large and the infinitely small can also be found in many passages by Leonardo da Vinci.

Later in the *Pensees* there is a long section labeled 'Emotions'. This section will contain many crucial concepts which would not be clarified until the work of Freud. By the term emotions he includes a number of concepts ranging from fantasies to irrational unchallenged beliefs and biases sometimes utilized by authorities to fool us and make us accept their authority. He writes: *le coeur a ses raisons que la raison ne connaît pas*. This could be translated as: The heart has its reasons which our reasonable self is unaware of. By this he means that our instinctive emotional self is unaware or unconscious about what can motivate us. This is an early description of the power of our unconscious in affecting our feelings. There is another well known passage where Pascal laments the human being who cannot be at peace with himself alone in a room. I will now turn to the role of the Pari, in English, the 'Bet' or the gamble with a point of entry into Pascal's religious thinking. Perhaps his most famous discovery along with the help of Fermat, one of the great mathematicians of the period, was to devise the concept of 'Probability'. In 1654 Pascal developed a system to predict mathematical futures using all available data.

As an example he wondered how many throws would be required if you played with two dice to assure the possibility of having a double six. Using a complex mathematical equation which would form the basis of what would become risk management he concluded that 24 shots would likely end badly whereas 25 throws would vastly increase your chance of winning. He invented the Pascal triangle to figure out the multiple possibilities available and thus to accurately calculate the risk or chance for an event to happen.

Since then the concept of risk management has permeated our modern life including economics, the



stock market, social sciences, insurance companies and in a broader sense the ability to predict the safety of cars and planes. Pascal also used the concept of wager concerning the existence of God to be discussed in the next section devoted to his religious writings.

VI. RELIGIOUS WRITINGS

Very early in his life Pascal saw God and religion as a true rescue from the pettiness and distortions created by our imagination as described above. After having extensively devoted himself to geometry he concluded that basic axioms which are the basis of mathematical reasoning cannot be proven through human methods. These principles he asserted can only be grasped through intuition. For him this underscores the necessity for submitting to God in search for truths. As early as 1638 he composed an introduction to geometry destined to children brought up at Port Royal, the Jansenist convent which came to occupy the center of his life during his last 10 years. He was fascinated by the method of approaching problems of geometry as an example of genuine search for truth. As an introduction to this book he wrote the following:

'There are 3 principal objects in the study of truth; The first is to discover it when seeking after it, the second is to demonstrate it when you possess it and the third is to distinguish it from the false when you examine it. (p 359 Pleiade).'

In 1646 when Pascal was 24 his father broke his hip and was taken care of by 2 physicians who were jansenists and following the work of Augustus introduced Pascal to their view of God and grace.

These were still a small group separate from the bulk of the catholic church and criticized by the pope.

In addition to the above, three incidents influenced Pascal in his adhesion to this group. His younger sister Marguerite her face disfigured by smallpox, chose a religious life in Port Royal in 1652 against the strong opposition of Pascal who was rather emotionally lonely and also very attached to her, feeling that because of his poor health he needed her as much as she needed him. By then his older sister had married and moved away. Some time later his niece named Marguerite developed a lacrimal infection which the doctors could not cure. She went to a church which owned a relic: a spine from Christ's crown of thorns. She then touched the relic to her infected part. She then asserted she was completely cured after this incident. This had a profound effect on Pascal who wrote a number of penses on miracles. On another occasion Pascal listened to a sermon which connected deeply with his soul and determined him to devote himself entirely to the religious cause. He was so impressed by this sermon that he wrote a note to himself concluding "I will not forget thy word. Amen" He seems to have sewn

this note to his clothes and always transferred it when he changed them.

Relevant to these two events there are a few scattered thoughts about the phenomena of miracles. Pascal is torn between relying on the miracles to prove his faith versus being unable to explain them through reason! He writes (my translation #423): 'The miracles and the proofs of our religions are not of such a nature that one could say that they are absolutely convincing but they are of such a nature that one cannot say that it is unreasonable to believe in them! They are fuelled by conviction.

Pascal is the man who could say: 'I own a truth, this is all my strength, if I lose it, I am lost'. But this truth which he possesses is neither abstract nor impersonal as he described early in his career: It is a truth which connects with the heart and fills it after having emptied it of everything else including self love. It provides joy, faith and love including a fusion with God who comes to govern it. The connection with God is eternal and is fuelled by the spirit of charity which is always to be renewed and never ceases. It becomes clear that the truth which Pascal arrives at is beyond reason and cannot be questioned by reason the way a geometric problem could be. One could say that for Pascal, religion and the solid belief in God helped him manage the existence of void and emptiness which played such a big role in his life. It also enabled him to put aside the key role of reason and thought which earlier he praised as distinguishing men from animals. Pascal adds in another piece (#425) 'Our world is not founded on truth. Truth wanders unknown amongst humanity. God has covered it with a veil which prevents those who do not hear its voice to recognize its existence.

I will now turn to his religious writings in the last 8 years of his life after these miracles which had so impressed him. His father had died 3 years before in 1651 affecting him deeply.

VII. THE PROVINCIAL LETTERS

This work consists of nearly two dozen very long letters which are not easy to read and are overburdened with religious arguments. Because of the explosive nature of their main argument, they were published under the name Louis de Montalte. In a humorous fashion Pascal explained that he was in the habit of writing long letters because he did not have the time to write a short one. Struggling with religious differences pretending to take them seriously Pascal loves to poke fun at the priests and sarcastically describes his journey as he wanders from one to the other trying to understand the meaning of 'au pouvoir prochain' difficult to translate in english to capture the subtle nuance of the indeterminate transfer of power (The ambiguity of the unnamed power to come next) He refers

sarcastically to endless discussions by groups of professors in the.

Sorbonne who seem unable to agree about the meaning of key words including also 'grace' This series. roundly criticized the jesuits who believed that all men receive all the grace they need and therefore can behave as they wish and obtain forgiveness of their sins by buying with their money the goodwill and forgiveness of the church, .In contrast the Jansenists believed that grace can only be obtained through proper religious behavior and the belief that it is only God who has the capacity to judge us. They also believed that only a small portion of men would be predestined to be saved by God. Pascal correctly condemned the Jesuits as guilty of casuistry justifying lax behavior This profound disagreement reached the king Louis the XIV who ordered that Pascal's book be shredded and burned. In 1661 Port royal was condemned and closed. Pascal's younger sister died this same year. The dispute went to the pope Alexander VII who first sided with the Jesuits but came to change his mind and was persuaded by a long letter Pascal wrote to him.

I will now turn to the concept of the wager meant to affect those people who were uncertain about the existence of God.

VIII. THE WAGER

This piece was meant for the libertins, those who in the 17th century do not believe in god and place their personal freedom above everything. Pascal started by pointing out that reason alone cannot prove or disprove the existence of God but life forces us to make a choice by its very nature. In a somewhat disingenuous manner Pascal analyzes the choices open to us.

- (1) You must wager (no choice)
- (2) If you side with God existing You can gain all including an eternal life and lose nothing.
- (3) If God does not exist you have lost nothing
- (4) So then wager without hesitation
- (5) Merely by existing in a state of uncertainty we are forced to choose for practical purposes.

What Pascal does not consider is that according to his wager belief in God is not based on true love or faith but is based on a very calculating process of figuring out which is more advantageous. Also if the libertine chooses to believe in God and he does not exist he has actually given up earthly pleasures including sexuality and gotten nothing in return.

A century later Voltaire regarded the wager as indecent and childish. It also assumes that if the person sides with the positive existence of God, he will honor the bet and reward him.

Interestingly after his sister's death in 1661 a year before his own death Pascal inaugurated the first ever bus line called the 'Carrosse a cinq sols' which would travel a predestined route whether or not there

were passengers, thus initiating the idea of public transportation. For unclear reasons this idea did not work out and the line had to be discontinued Shortly afterwards Pascal's health took a turn for the worse and he died in August 1662.

IX. DISCUSSION

A French analyst Didier Anzieu basing himself largely on Marguerite's memoir wrote a very complex paper weaving in the very early traumas of his life and suggesting that Pascal suffered from the 8 month's anaclitic depression described by Spitz and was also saddled by anxieties and phobias about void and emptiness. Anzieu felt that Pascal was able to soothe his inner turmoil by displacing it outside. Because of his precocious intelligence, he could focus on the scientific study of the external world which could be controlled and mastered in contrast to the inner world's unmanageability. Anzieu concluded his paper with the proposition that Pascal's ability to prove the existence of an external vacuum helped him preconsciously to formulate the idea that psychic reality could tolerate a void. That is, unconscious beliefs and fantasies feed our efforts to find meaning in external reality. Once identified this allows us to put together mental and verbal means to locate the unconscious fantasy in its proper psychic reality.

The degree and content of Pascal's anxieties and preoccupations suggests that many of his concerns were far beyond the neurotic level. One could assume that early in life Pascal did not have the presence of a good enough external object and therefore could not tolerate physical absence of those he loved.

Recent developments in psychoanalysis including Andre Green's work on the negative and the work on figurability in France plus the exploration of the void as being related to very early non representation allow us to deepen our understanding of Pascal's mind.

It would have been helpful to have more data about the emotional connection between Pascal and his father. We know about the intense involvement of Etienne in his children's intellectual growth but unfortunately the details of his emotional connection with them is lacking. Did the father in some way compensate for the psychic loss and death of the mother? We shall never know!

In his contribution Levine (2013, p.43) assumes along with Bion that the original Experience, ie an unformulated unrepresented state is in itself traumatic because it cannot be transformed into a represented experience. It is prepsychic and pathological In her paper on the Predisposition to Anxiety (1941) Greenacre accurately describes characterologic anxieties so similar to those Pascal suffered from, that I am including a lengthy quote. She suggests that: 'suffering and frustration occurring during the antenatal and early



postnatal months especially in the period preceding speech development, leaves a heightened organic stamp on the makeup of the child.... It includes a kind of increased indelibility of reaction to experience which heightens the anxiety potential and gives greater resonance to the anxieties of later life.... It also includes 'the increased mirroring tendency arising partly from the imperfect developing sense of reality.... This is the antecedent towards over facile identification of neurotic individuals and in psychotics towards easy projection (p.610). Green has pursued similar ideas in his work on the negative and with his concept of decathexis. I believe that a considerable aspect of Pascal's pathology resides at this primitive level of non representation.

In their book 'The work of Psychic Figurability' The Botellas (2005) I found a quote(Ch1 p.17) by Newton(1642-1726) who lived during part of Pascal's period. In their book which seems to mirror Pascal's view of the universe. Here is the quote:

The universe is an infinite vacuum of which only an infinite small part is filled by objects-, objects that move across the limitless and bottomless void.

The Botellas comment that 'Newton's intuition 'implies the boldness and subtlety of a movement of thought transforming all the data of the moment into one single unity, bridling the immensity of the unrepresentable Vacuum'. They add that this work of figuration is independent of reason. (p.18) I do not know whether Pascal ever read Newton, or whether the Botellas ever read Pascal although they do include one reference to him (p109) in the book. A bit later the Botellas state 'like primitive man, who accepts the inevitability of death acknowledging it and disavowing in the same magical act, memory acknowledges and disavows the reality of loss.

In this context I believe that for Pascal, the faith in God served multiple personal essential unconscious functions: (1) create a meaning which replaces a psychic void including absence of memory and capacity for representation. (2) the assuaging of the anxiety about emptiness (3) reassurance concerning the anxiety about death and the void that follows. (4) the relief that God, a fantasized person-parent ,would look after him in the next world. (5) a compensation for the suffering in this world (6) the belief in miracles emphasize the power of God and make helplessness more tolerable (7) the fulfillment of the idea that the heart has its reasons unknown to reason. Faith cannot be proved by rational mechanisms. This is important as it assuages Pascal's fear that although faith is irrational its validity is not open to question. This allows Pascal to bypass the key concepts of reason and self-awareness which earlier were valued as such a powerful tool in the psychology of a human being, distinguishing him from the animal kingdom.

It would be possible to generalize about the role of catholicism and most other religious systems as fulfilling similar needs in the life of human beings. Freud (1927) has developed these ideas in his paper 'on the Future of an Illusion' stressing the role of God as an ambivalent replacement for the absent father to deal with unmanageable anxieties about life. There is one core issue that our field is not able to tackle, that is the nature and development of genius. We can describe its growth as in Mozart but what makes it possible in the case of Pascal is simply beyond our understanding.

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