

William R. Shea [1] 2003

Designing Experiments and Games of Chance, 2003

On the night of 23 November 1954, when Pascal was thirty-two years old, he had a religious experience that immediately and decisively determined the course of his few remaining years. A record of this experience survives in his own hand. It is a small piece of parchment that was found sewn in the lining of his doublet after his death, and which he carried with him at all times.

The year of grace 1654.

Monday, 23 November, feast of Saint Clement, Pope and Martyr, and of others in the Martyrology.

Eve of Saint Chrysogonus, Martyr and others.

From about half past ten in the evening until half past midnight.

Fire

"God of Abraham, God of Isaac, God of Jacob! [Exodus III. 6], not of philosophers and scholars.

Certainty, certainty, heartfelt joy, peace,

God of Jesus Christ.

God of Jesus Christ

"My God and your God" [John XX. 71].

"Thy God shall be my God" [Ruth I. 16].

The world forgotten, and everything except God.

He can only be found by the ways taught in the Gospels.

Greatness of the human soul.

"O righteous Father, the world had not known thee, but I have

known thee" [John XVII. 25].

Joy, joy, joy, tears of joy.

I have cut myself off from him.

"They have forsaken me, the fountain of living waters" [Jeremiah II.13].

"My God wilt thou forsake me?" [Matthew XXVII. 46].

Let me not be cut off from him for ever!

"And this is life eternal, that they might know thee, the only true

God, and Jesus Christ whom thou hast sent" [John XVII. 3].

Jesus Christ.

Jesus Christ.

I have cut myself off from him, shunned him, denied him, crucified him.

Let me never be cut off from him!

He can only be kept by the ways taught in the Gospel.

Sweet and total renunciation.

Total submission to Jesus Christ and my director. Everlasting joy in return for one day's effort on earth. "I will not forget thy word" [Psalm CXIX. 16]. Amen.[1]

As we can see from the passages in italic, which are all direct quotations from the Bible, Pascal's familiarity with Holy Scripture was such that it became both the source and the medium of his personal experience.

The Real Human Condition

Some time after his conversion, Pascal formed the idea of writing an *Apology* for the Christian Religion but he was not able to complete it. The fragments that were published as the *Pensées* are still bought by thousands of people each year and have assured Pascal's abiding fame. The audience that Pascal had in mind were the sophisticated freethinkers (*libertins*) who preferred polite agnosticism to militant atheism. Their ideal was the gentleman (*l'honnête homine*) whose code of behavior was etiquette rather than ethics. Pascal had admired their wit and liveliness, but he now saw their refined manners as a thin veneer for moral emptiness. What they, and himself before his conversion, took for cleverness was merely the avoidance of the implications of the human condition they claimed to analyze so sharply

The gentleman's manual of right thinking was Montaigne's Essais Pascal himself was not far from considering it a secular bible, and it was his contention that when read with a critical spirit it led straight to the truths of Christian revelation. Montaigne repeatedly stresses the frailty and futility of human life and argues that man's besetting sin is arrogance, based on exaggerated claims made for human reason, but easily confounded since the greatest thinkers throughout the ages were never able to agree among themselves. This shows that truth is not accessible by the light of reason alone and that man should give up all forms of intellectual pride. Pascal agreed with this analysis, but objected to the conclusion drawn by Montaigne, for whom the best policy is to stop worrying, follow our inclinations, and take things as they come. Montaigne gave up too soon. His realization of human weakness should have led him to look for an answer beyond mere humanity, not to concede defeat. For Pascal, weakness does not constitute the whole of the human condition, for it is inseparably, if paradoxically, linked with a greatness that cannot be denied or ignored. Hence the plan of the *Apology*: "First Part: Wretchedness of man without God. Second Part: Happiness of man with God." [2]

As Alban Krailsheimer remarks, "Pascal's reaction to Montaigne's flight to a hammock of ignorance and indolence is to rock it so vigorously that even the bare ground of wretchedness below seems preferable. He uses every device of style to instil in his reader a feeling of desperate insecurity."[3] In a long fragment in a section entitled Contradictions, Pascal moves back and forth between the dogmatists and the sceptics to show that everyone is obliged to take sides because "anyone who imagines he can stay neutral is a sceptic par *excellence*.[4] We are a mystery unto ourselves. We know that we want truth and happiness, but we are unable to attain either. Our intellect is impaired and our emotions are crippled. The answer to this riddle is to be found in the biblical account of the fall of Adam and Eve. However far-fetched and revolting, the doctrine of original sin is the only one that can explain our predicament:

Without doubt nothing is more shocking to our reason than to say that the sin of the first man has implicated in its guilt men so far from the original sin that they seem incapable of sharing it. This flow of guilt does not seem merely impossible to us, but indeed most unjust. What could be more contrary to the rules of our miserable justice than the eternal damnation of a child, incapable of will, for an act in which he seems to have so little part that it was actually committed 6,000 years before he existed? Certainly

nothing jolts us more rudely than this doctrine, and yet, but for this mystery, the most incomprehensible of all, we remain incomprehensible to ourselves. The knot of our condition was twisted and turned in that abyss, so that it is harder to conceive of man without this mystery than for man to conceive of this mystery itself.[5]

The metaphysical and cognitive paradox of original sin is stressed in another fragment:

Original sin is folly in the eyes of men, but it is put forward as such. You should therefore not reproach me for the unreasonable nature of this doctrine, because I put it forward as being unreasonable. But this folly is wiser than all men's wisdom, it is wiser than men. For without it, what are we to say man is? His whole state depends on this imperceptible point. How could he have become aware of it through his reason seeing that it is something contrary to reason, and that his reason far from discovering it by its own methods draws away when faced with it?[6]

According to Pascal, to be truly rational is to recognize that there is an infinity of things beyond reason: "For instance, it is equally incomprehensible that God should exist or that he should not; that the soul should be joined to the body or that we should have no soul; that the world should be created or that it should not; that original sin should exist or that it should not."

[7]

Reliable Witnesses

The origin of man's fruitless search for happiness lies in the past history of mankind, not in that of the individual. Pascal, like most of his contemporaries, was a fundamentalist. He believed that there was a first couple created by God in a state of innocence, and that their act of disobedience corrupted their nature and that of their descendants. God in his mercy promised a Redeemer, foretold in the Old Testament and proclaimed in the New. But the audience of freethinkers that Pascal had in mind did not believe that the Bible is inspired, and he could not get started without first establishing the reliability of Scripture as a source of knowledge. Here he faced a twofold problem: Is the Bible a trustworthy document and, if so, How do we interpret it? The stirrings of modern historical scholarship can be seen in a prior question: Is the Bible one *book* that has the same meaning throughout or is it a *collection of books* in which the words acquire different meanings or take on new colorations? A gifted and subtle writer, Pascal was conscious of the many lives of the same word: "Different arrangements of words make different meanings, and different arrangements of meanings produce different effects."[8] He compared his own dextrous placing of words to well-aimed shots at tennis: "Let no one say that I have said nothing new; the arrangement of the material is new. In tennis both players use the same ball, but one places it better."[9]

As did most Christians of his time, Pascal found in the books of the Bible a fundamental unity of plan and purpose that indicated that they are by one hand. He could not state outright that God is their author since he was writing for agnostics, but he could claim that they were written by a unique people, which both made and was made by the Bible: "There is a great difference between a book made by one person and given to a people, and a book that makes a people."[10] The Jews are the "oldest known people" and "are descended entirely from one individual."[11] They are the only nation with an uninterrupted history and, hence, the ability to bear a continuous testimonial to past events.

When the creation of the world began to recede into the past, God provided a single contemporary historian, and charged an entire people with the custody of this book, so that this should be the most authentic history in the world, and that all men could learn from it something that it was so necessary for

them to know, and which could only be known from it. [12]

One of the reasons why we are not well acquainted with the history of our ancestors is that we hardly knew them. The longevity of the Patriarchs is an argument for the authenticity of biblical accounts, for when men lived so long (Methuselah was credited with 969 years), children had ample time to learn from their forefathers. For Pascal, Adam was known to Lameoh, who was known to Shem who, in turn, had met Jacob who knew people who spoke to Moses. "Therefore," he concludes, "the Flood and the Creation are true." In another fragment, he argues that the ancient Hebrews were interested in what their ancestors had to say because they had no other cultural or scientific interest. "Thus we see that people at that time took particular care to preserve their genealogy." [13]

To be reliable, a witness must be knowledgeable and sincere, and the Jews fulfil both conditions. The first because of the contemporary character of Jewish scriptures, which contrasts with narrations found among other nations:

I am not surprised that the Greeks composed the *Iliad*, nor the Egyptians and Chinese their histories. You have only to see how this came about. These historians of fable were not contemporary with the things they wrote about. Homer composed a tale that was offered and accepted as such: for no one ever doubted that Troy and Agamemnon had ever really existed any more than the golden apple. He never meant to write history but to provide entertainment. He was the only writer of his times, and the beauty of the work made it endure. Everyone learns it and talks about it; it is something that has to be known and everyone knows it off by heart. Four hundred years later the wit nesses of these things are no longer alive; no one knows any longer from his own knowledge whether the work is fable or history. It has simply been learned from earlier generations, and can pass for truth. Any history that is not contemporary is suspect: thus the Sibylline books and those of Trismegistus, and many others which have enjoyed credit in the world are false and have been found to be so in the course of time. [14]

The Jews also fulfilled the second condition, and their sincerity is demonstrated in the way they transmitted unflattering words about themselves:

Lovingly and faithfully they hand on this book in which Moses declares that they have been ungrateful towards God throughout their lives, that he knows they will be still more so after his death, but that calls heaven and earth to witness against them that he told them so often enough. [15]

The Jewish people constitute virtually one personal witness to the genuineness of scriptural promises, and this continuity guarantees invariance and the absence of change.

Hermeneutic Rules

But granted that the Bible is a reliable historical document, how is it to be interpreted? First and foremost, says Pascal, the Bible must be taken as a single work with a coherent structure and a unity of purpose: "Every author has a meaning that reconciles all contradictory passages, or there is no meaning at all."[16] It follows that "to understand Scripture a meaning must be found that reconciles all contradictory passages; it is not enough to have one that fits a number of compatible passages, but one that reconciles even contradictory ones."[17] The only reconciliation possible is the prophetic interpretation of Scripture as pointing to Christ's life, death and resurrection. But not any figurative interpretation will do since this would open the door to the wildest opinions. "Some figures are clear and conclusive, but there are others that seem somewhat strained and only convince those who are already converted."[18] Pascal had in mind



the authors of apocalyptic works, but the problem is much more general and had already been discussed by earlier writers. Saint Augustine had suggested that a non-literal interpretation of a biblical passage is warranted in three circumstances, namely when the literal sense is: (1) incomprehensible, (2) at variance with facts, or (3) in disagreement with what we know from the New Testament. Saint Augustine drew his criteria from the goal of Scripture as he understood it from a Christian standpoint, but Pascal is careful to avoid this committed stance. He tries to argue from what he finds in the text, and he agrees that the literal meaning must sometimes be denied "because the prophets themselves said so." [19] His point is that the Bible itself (and not only Christian apologists) invites the reader to look for a spiritual meaning whenever the literal meaning is unsatisfactory.

In a passage in the Pensées, Pascal says that what we find in Montaigne is in us rather than in Montaigne. [20] The same is true of the Bible. After stating that the passage through the Red Sea, the conquest of Palestine, and the manna from heaven are all figures of redemption, Pascal adds a comment that reveals his underlying assumption:

In these promises each person finds what is at the bottom of his own heart: either temporal or spiritual blessings, God or creatures. But with this difference, that those who are looking for creatures there find them indeed, but with many contradictions: they are forbidden to love them, bidden to worship and to love God alone (which comes to the same thing), and they find that the Messiah did not come for them. But those who are looking for God find him, without any contradictions, and find that they are bidden to love God alone and that a Messiah did come at the time foretold to bring them the blessings for which they ask.[21]

Knowledge can never be severed from experimentation in science or personal experience in religion. In physics, as we have seen, Pascal had devised a number of ways to investigate the space above the mercury in an evacuated tube. He showed that this space was empty of any material that could be lodged there (the candidates were air, water vapor, gases, or Descartes' subtle matter),but he was careful not to go beyond the evidence at hand. Although the facts pointed to a real vacuum, he did not affirm it without reservation. Let us recall how he summarized his position in the New Experiments about the Vacuum: "After having demonstrated that none of the materials which are perceived by our senses, and of which we have any knowledge, fills this apparently empty space, my view will be, until someone shows the existence of some material which might fill it, that it is truly empty and void of all matter."[22] Pascal saw physics as coextensive with actual experimentation and remained open to new and startling evidence.

If a scientist calls upon his eyes to witness the results of experiments, it is on his "heart" that an honest seeker after religious truth relies to discriminate between conflicting creeds. The pitfalls to be avoided in this case are excessive credulity and unreasonable skepticism. The first is exemplified in pagan religions, the second in the radical stance taken by people who are too clever by half. Pascal was familiar with this second attitude among some of his worldly friends. There was the Chevalier de Mere, who prided himself on his rigor in demanding a proof for every axiom in geometry but failed to realize that by doing so he precluded the very possibility of mathematics. [23] Next was a group of political scientists who undermined the customs that they claimed were essential to law and order. Finally, there were the freethinkers who failed to realize that to admit nothing but reason is to be most unreasonable. [24]

Pascal compares the Bible to a cipher that has an apparently plain meaning but is really meant to convey a secret message that has to be decoded:

When we come upon an important letter, whose meaning is clear, but where we are told that the meaning is veiled and obscure, and that it is hidden so that seeing we shall not see and hearing we shall not hear,

what else are we to think but that this is a cipher with a double meaning?[25]

Pascal was so convinced that Christians have the key to virtually every obscure passage of Scripture that he slipped unawares into the very excesses that he denounced when he claimed: "If the Jews had all been converted by Christ we would only have suspect witnesses left; if they had been wiped out we would have none at all."[26] Or again, in another fragment: "If they had taken these spiritual promises to their hearts and kept them free from corruption until the coming of the Messiah, their testimony would have had no validity, because they would have been on his side."[27] This fanciful interpretation works against Pascal's own insistence on the reliability of the Jewish testimonial, for he can hardly claim that they are good witnesses because they were not converted. If this were the case, the testimony of those who acknowledged Christ, like the apostles, would be worthless. The argument is so unsatisfactory that it can be turned round with the same result. Indeed, Pascal does just this in another fragment, when he writes, "What could the Jews, his enemies, do? If they accepted him, they proved him by their acceptance, for it would mean that those entrusted with the Messianic hope were accepting him, and if they rejected him they proved him by their rejection."[28]

Pascal sometimes invokes the goal of Scripture as if he grasped God's design to the point of knowing what God had to do: "To inspire faith in the Messiah, previous prophecies were necessary and these had to be handed down by witnesses above suspicion."[29] Even if allowances are made for the rhetoric of the pulpit, this seems to imply that God could have only one plan of salvation, something Pascal denies elsewhere.

But what is the historical evidence for Jesus' mission? Pascal recognizes that it depends very largely upon the authors of the four Gospels and the apostle Paul. What if they conspired to deceive the first disciples? Pascal considers this totally unlikely:

The hypothesis that the Apostles were rogues is quite absurd. Follow it out to the end and imagine these twelve men meeting after Jesus' death and conspiring to say that he had risen from the dead. This means attacking all the powers that be. The human heart is singularly susceptible to fickleness, to change, to promises, to bribery. One of them had only to deny his story under these inducements, or still more because of possible imprisonment, tortures and death, and they would all have been lost. Follow that out.[30]

This is a traditional argument for the authenticity of the miraculous and prophetic revelation of Jesus, but Pascal's clinching argument is a moral one: the proof that the biblical doctrine is genuine lies in the uplifting experience that accompanies its acceptance. It is a life-giving miracle, and it speaks to the heart before addressing the mind.

Science and Religion

Galileo was condemned in 1633 when Pascal was ten years old and this sent shock-waves throughout the European scientific community, but French Catholics generally regarded the Roman intervention as an administrative rather than a doctrinal matter. When Pascal mentions the Copernican theory for the first time, it is not to brand it as suspect but to point out that it explains the motions of the planets as well as the rival geocentric systems of Ptolemy or Tycho Brahe. But this does not give it greater cogency, because agreement with facts is not enough for a theory to be true. Pascal illustrates the underlying logic with the aid of a homely analogy: if we find a hot stone in the street, we might suppose that it has just been taken by carriage from a house on fire but we cannot affirm this until we examine other possibilities

such as the heat of the midday sun or the friction caused by the rubbing of carriage wheels. Any bright person can come up with a clever hypothesis; the snag is to make it stick.[31]

Humility as well as prudence is required when examining biblical statements about natural events that are not easy to ascertain. In some instances, the last word of science is found to echo old truths from the Bible. Here is Pascal's illustration: "How many things unknown to earlier philosophers have telescopes revealed to us! We boldly took Scripture to task over the great number of stars, saying: "There are only 1,022 of them; we know.' "[32] Pascal had in mind the passage in Genesis 22,7 where God blessed Abraham and promised: "I will multiply your seed as the stars of the heavens, and as the sand that is on the seashore." The source for the number of stars is the Almagest, where Ptolemy lists 1,022 stars: 706 in the Northern Hemisphere (Almagest, bk. VII, ch. 5) and 316 in the southern (bk. VII, ch. 1). In Ptolemy's day, science seemed to go against the biblical estimate of the number of stars, but recent astronomical progress shows that Ptolemy was wrong and the Bible right. Note how Pascal explodes (and ridicules) the pretensions of science by adding two telling words to a matter-of-fact report: "There are only 1,022 of them; we know." As is frequently the case with Pascal, the infinitely large brings to mind the infinitely small, and he continues in the same blend of irony and awe: "There is grass on earth; we can see it. From the Moon it could not be seen. And on this grass there are hairs, and in these hairs little creatures, and beyond that nothing? Presumptuous man!" [33]

Science without Fetters

Between 23 January 1656 and 24 March 1657, Pascal wrote 18 letters in defense of his Jansenist friends who had been accused of heresy by the Jesuits. The last of these letters, which are known as the Provincial Letters, contains a vigorous defense of the autonomy of scientific research.

How then do we learn what the facts are? From our eyes, Father, which are the rightful judges of facts, as reason is of natural and intelligible things, and Faith of things supernatural and revealed. But since you compel me to do so, Father, let me tell you that in the opinion of two of the greatest doctors of the Church, Saint Augustine and Saint Thomas, these three principles of knowledge, the senses, reason and Faith each have separate objects, and are certain within their range. [34]

Faith is so far from destroying the certainty of the senses that it would, on the contrary, destroy Faith to cast doubt on the faithful evidence of the senses. No one, not even the Pope himself, could make decrees that run counter to ascertained facts. Hence the futility of the condemnation of Galileo, for the motion of the earth is a scientific theory that might one day be confirmed:

It was in vain too that you obtained from Rome the decree against Galileo, which condemned his opinion regarding the movement of the Earth. It will take more than that to prove that it keeps still, and if there were consistent observations proving that it is the earth that goes round, all the men in the world put together could not stop it turning, or themselves turning with it. [35]

When a question arises it is therefore essential to know by what principle it is to be judged:

If it is something supernatural, we will judge it neither by our senses nor by reason but by Scripture and the rulings of the Church. If it is something that is not revealed and is adapted to natural reason, then natural reason will be its first judge. And if it is a matter of fact, we will believe the senses by which we naturally know such things.[36]

Facts are God's infallible words, says Pascal, and when a literal interpretation of Scripture is at variance with facts, a new interpretation is called for. Scripture can be interpreted in different ways, "but the testimony of the senses is unequivocal, and we must, in these cases, take as the true interpretation of Scripture the one that agrees with the faithful testimony of the senses."[37] In the first chapter of Genesis, the Moon is said to be as great as all the stars, but since the stars are known to be larger than the Moon, the passage was interpreted by Thomas Aguinas as indicating the size of the Moon as it is relative to us and not as it is in itself.

Pascal was impressed but never convinced by Galileo's arguments for the motion of the Earth. This is partly because he was less interested in cosmological speculation than in the question of our eternal destiny. Rather than dwell on Copernicus' theory, he would have us enquire about the nature of our soul. He may have felt that Galileo had got his priorities wrong, and that while we might know more and more about the universe, we might come to understand less and less about the place we are meant to occupy in it. For Pascal, this would be but an instance of the divertissement that shields us from biblical truth, and keeps us asking who we really are. In order to know this, we have to come to know God, but unless we are gifted with the kind of illumination that Pascal was vouchsafed on the night of the 23 of November 1654, we must follow our reason and develop a rigorous method of reasoning.

- 1 Pensées, fragment 913, trans. by A. J. Krailsheimer (Harmondsworth: Penguin, 1966) pp. 309-310.
- 2 Pensées, fragment 6. See also fragment 695.
- 3 A. Krailsheimer, *Pascal* (Oxford: Oxford University Press, 1980), p. 52.
- 4 Pensées, fragment 131.
- 5 *Ibid*, translation revised.
- 6 Pensées, fragment 131 and fragment 695.
- 7 Pensées, fragment 809.
- 8 Pensées, fragment 784.
- 9_
- 10 Pensées, fragment 436. The crucial passage here is "a book that makes a people." I have amended Kraiisheimer's translation in the light of the second of two contemporary copies of the *Pensées* (both made between 1662 and 1663), following Philippe Sellier in his edition of the *Pensées* (Paris: Mercure de France, 1976), p. 373. The warrant for this reading is textual but there is also a parallel passage in fr. 481, "Difference between a book received by a people and one that fashions a people."
- 11 Pensées, fragment 451.
- 12 Pensées, fragment 474.
- 13 Pensées, fragment 296, and fragment 290.
- 14 Pensées, fragment 436.
- 15 Pensées, fragment 452.
- 16 Pensées, fragment 257.
- 17 Ibidem
- 18_
- 19 Pensées, fragment 272.
- 20 Pensées, fragment 689.
- 21 Pensées, fragment 503.
- 22 Pascal, New Experiments about the Vacuum, translated by Richard H. Popkin in Pascal, Selections (New York: Macmillan 1989), p. 40.
- 23 Antoine Gombaud, Chevalier de Mere, considered himself the epitome of the honnête homme and a paragon of common sense. He marveled at mathematicians who assumed that a straight line could be indefinitely divided, and asked for proof. Pascal tried to make him understand the role of axioms in geometry but gave up in sheer despair (see letter of 29 July 1654 to Pierre Fermat in Ouvres de Pascal,

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- ed. by J. Mesnard [Paris: Desclée de Brouwer, 1964-], II, p. 1142).
- 24 "Two excesses: to exclude reason, to admit nothing but reason" (*Pensées*, fragment 183).
- 25 Pensées, fragment 260.
- 26 Pensées, fragment 592.
- 27 Pensées, fragment 502.
- 28 Pensées, fragment 262.
- 29 Pensées, fragment 572.
- 30 Pensées, fragment 310.
- 31 Letter to Etienne Noël, 29 October 1647, in Pascal, Oeuvres de Pascal, II, p. 524.
- 32 Pensées, fragment 782.
- 33 Pensées, fragment 782.
- <u>34</u> Pascal, *Lettres écrites a un Provincial* (Paris: Gamier Flammarion, 1967), p. 265. Galileo made a similar point in his Letter to Christina of Lorraine, which was written in 1615 but only published by the Elzeviers in 1636
- 35 Ibid., p. 267.
- 36 Ibid., p. 265.
- 37 Ibid., p. 266.

W.R. Shea, Designing Experiments & Games of Chance (Canton, MA: Science History Publications, 2003), pp. 194-207

On Faith and Reason [2]

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