The young Pascal : bourgeois origins, exceptional education, health.

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Abstract

“Pascal, the boy genius” – geometry, social geometry (i.e. sociology), etc. etc.

In Europe, the 17th century was defined by “a clear hierarchy” of social divisions,

“the first consisted of servants of the church, the second of the nobility, the third of commoners”¹.

The word class inspires such tremendous fears in the mind of the Early modern historian that they almost never use it without quotation marks : this one for instance insists “society was more complex”, only to later downplay the usefulness of class as concept to understand this and, it is understood, all other periods of history.

“Trying to make all this fit into a ‘class’ structure is not very helpful”, he opined.

We recognize here the sure signs of the professorial mind at work.²

But, the notion that “class” should have somehow skipped, or been exterior to, or otherwise incompatible with the 17th century is comical at best.

Far from universal, such views of history do not make us forget the passages of *The Communist Manifesto* whose (less naive) philosophy of history starts from the beginning, i.e. Antiquity.

The group (or “estate”) of commoners was itself heterogeneous;

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¹Munck 2001 : 52.

²The “professorial mind”, evoked by Bachelard in the beginning pages of *The formation of the scientific mind*, reflects a certain spiritual quality – dogmatism – that comes among others from repeating the same lectures over and over, he advanced. [Bachelard due to his socio-economic characteristics was best fit to create this, mocking, professorial anthropology.]

I - The Pascal family : bourgeois origins

Being neither nobles nor Churchmen, the Pascal's were part of this other society that would soon become the whole of society, and belonged to its upper ranks — the bourgeoisie.

In England, at the same time, the poor constituted half of society³ :

e.g. “common seamen and soldiers, labourers, servants, cottagers, paupers, and vagrants”

This, on the other hand, was clearly not the sort of demographic that Pascal joined at the time of his birth.

(“The difficulty for the historian lies in being sensitive to changes, but yet not being obsessed by them to the point of forgetting the great forces of inertia”⁴. Or, “whether in Venice or Beauvais”, as Braudel liked to put⁵.)

With little reason to expect any significant differences existing within French society : as pertaining to the century and country of Pascal :

“towns soon had to protect themselves against ... regular invasions, which were not purely by beggars from the surrounding areas but by positive armies of the poor (...)

The attitude of the bourgeois hardened considerably towards the end of the sixteenth century, and even more in the seventeenth.

The problem was to place the poor in a position where they could do no harm.

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³Munck 2001 : 66, based on the statistics established by Gregory King (“*yearly income of 20 pounds or less*”). Critical discussion *ibid.*.

⁴Aries 1975 : 1-2. Contemporary historians triumph in their perception of his mistakes, but could have never come up with his ideas. I.e. *death is inevitable > my death > your death?* Not if they had a thousand lives!

⁵Author of other such sentences like “*A few overfed rich do not alter the rule*” (Bless him!)

In Paris the sick ... had always been directed to the hospitals, and the fit, chained together in pairs, were employed at the hard, exacting and interminable task of cleaning the drains of the town.”⁶

Etienne, father of our philosopher, was president of one of the so-called ‘Court of aids’ that existed at the time, institutions overseeing tax matters.

Said philosopher had also an older sister, called Gilberte, who wrote down her memories : Here is how her biography begins :

“Life of Blaise Pascal

by Mrs. Perier, his sister

My brother was born in Clermont, on the 19th of June of the year

1623. [Mon pere ... Etienne Pascal, president en la cour des aides]”

He occupied, to use perhaps anachronistic terms, an executive role (in the State); this was a comfortable position, and in the Pascal household no one had to worry about food, rent...

The state of medicine at the time was such that death was present all around; from which we do not conclude that all were equal in front of it;

Antoinette, nee Begon, mother of the philosopher, died when he was 3 years old⁷. She was 28 years old herself⁸. (Average life expectancy : 30.)

~ What would have become of Pascal had he been less fortunate? Hyp. 1: clergyman; 2: worker constructing a calculator for someone else; 3: hospital. ~

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⁶Braudel 1985 : 75. Many tables *ibid.*. These developments lead straight to the original work of Michel Foucault.

⁷Gilberte’s biography.

⁸Jacqueline Pascal’s memoir.

II - An exceptional education

Etienne Pascal being able to retire from active life because of his fortune :

The importance of these facts cannot be overstated.

Gilberte, in her writings, linked them directly to Pascal's intensive education; now freed from work Etienne could focus on this task.

*“In the year 1631, my father retired [i.e. left 'active life' i.e. stopped working] to Paris, where he established his residence. ... my brother benefited tremendously from this; in the Province [where he had previously worked] he would have been unable to educate him with the same care.”*⁹

This is in addition to the subsequent move to Paris with his family, where access to culture and society should have been easier than in the province, where they had previously lived.

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Etienne was devoted to his children, this included their education. (A role that otherwise would have been Antoinette's, and was traditionally the domain of women (if homeschooling)?)

This attention was focused in particular on Blaise; a decision based on gender and perceived abilities. This had not escaped his sister Gilberte, who wrote :

*“As he had only this one son, and no other; [said fact] combined with the outstanding intellectual qualities he recognized in this child, awakened in him such great love that he could not bring himself to delegate his education to any other, thus took charge of it himself.”*¹⁰

His son's fame would be such that soon it was understood that under the

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⁹First page.

¹⁰Gilberte's biography.

sole denomination “Pascal”, and “Mr. Pascal”¹¹, only Blaise could be meant.

[We generally write of Pascal in this way.]

III - Education in the 17th c.

The notion of a child’s education’s importance,

“is not a case of isolated observations but of a real doctrine – generally accepted by Jesuits as by Oratorians¹² or Jansenists – which partly accounts for the profusion of educational institutions, colleges, little schools and special establishments ...”¹³

Let us now try to reconstitute the educational landscape, the education of children especially, during that time.

The biggest event in this century, and country, was no doubt the Royal ordinance of 1698¹⁴ which made schooling compulsory : from then on parents would need to send their children to equivalents of now- primary schools, the so-called “petites ecoles” (or lit. ‘small schools’).

However, Pascal was born some seventy years earlier, in 1623, and this raises the question of what happened to children before then.

In his famed history of childhood and family Aries gives the example of a ‘little prodigy’ of the 16th century (H. de Mesmes, lawyer-son-of-a-lawyer, doctor of Law at 18), noting however that :

“Cases of this type were to become rare in the seventeenth century, not only because precocity would strike public opinion as an

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¹¹As the *Pensees* were originally known in full title (“*Quelques pensees de M. Pascal sur...*”)

¹²Oratorians being the likely least well-known of these groups : they were associated with Malebranche, ‘the Oratorian philosopher’ (just as Pascal, Arnauld et al. represented the Jansenists).

¹³Aries 1962 : 114.

¹⁴(by Louis XIV)

anomaly,”¹⁵¹⁶

but because of the transition from an education organized in branches, that could be explored rather freely, to “a continues series of classes”, whose predefined path should be followed (this remains our dominant conception).

Hence “colleges” (e.g. the College de Bourgogne frequented by de Mesmes) were available as form of education, but constituted a possibility rather than a norm.

Likewise for the “petites ecoles” :

e.g. Racine had attended the ones of Port-Royal, homeschooling being out of the question in his case, having lost both parents.¹⁷

From Gilberte’s biography we know that

“this [homeschooling] is everything he [Pascal] had ever learned, n’ayant jamais ete au college”, having never attended a “college”;

Having also never had any masters other than his father.¹⁸

Would Pascal have been happy in a school (had he had a say)? We can speculate.

However, we do not need to speculate on the details :

Pascal’s sister Jacqueline has herself left us a document in which she was asked to explain the rules used inside her school :

This included regulations of hours, content; and some abuse, possibly¹⁹.

“On [the topic of] when Children [should] wake up

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¹⁵Aries 1962 : 195.

¹⁶Note that Jacqueline Pascal and Port-Royal are encountered again in this book (see for example pp. 27; 114; etc.).

¹⁷He would later go on to write a book about Port-Royal.

¹⁸G. Perier, p. 6.

¹⁹Aries has insisted on the disciplinary aspects of these institutions : “... [and] the evolution of school life in the direction of stricter discipline.” (Aries 1962 : 114.)

1. *The oldest get up at four hours [followed by younger children, at the latest at five] and [only] the youngest ones based on their needs and abilities.*

As, you must recall, we have here children whose ages range from 4 to 18.

(...)

Following prayers, they go put their beds in order

(...)

We make sure they remain modest ... keep straight [etc.]” ²⁰

(She was writing a report to a superior.)

But, in the context of his homeschooling Pascal could strive : however Etienne was no average homeschooler, having good knowledge in the mathematics of his time; in addition to studies in law²¹ (law was a prestigious subject then).

IV - Etienne Pascal, the forgotten mathematician

“My father was a learned man in the mathematics”,

Gilberte wrote²².

Mathematician-descending-from-another : Pascal did not escape this sociological rule by which alone large parts of the history of this discipline could be summarized.²³

“Small time” mathematician who was part of various scientific circles and societies, Etienne has been described like so (during this period of his life) :

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²⁰J. Pascal 1657. Pp. 230-239. (a hundred-some pages report!)

²¹M. Perier, first page.

²²G. Perier, p. 3.

²³This should prompt commentators to be more careful when using, and abusing, the word “genius” – in reference to mathematicians at least (“pure”, applied alike). It does not suffice to explain their own accomplishments, but at the very least offers a useful context for them, other than vague notions.

He was cozy with [“il frequentait intimement”] a small society of mathematicians, formed around the Pere Mersenne.

There met Roberval, Desargues, Mydorge, Hardy, the abbot Chambon, Le Pailleur, Bouilliaud. Group meetings, which were weekly, mostly happened at Mersenne’s home, Hotel des Minimes, sometimes at other people’s. (...)

In 1634 he was actively involved in the Morin affair/controversy [who claimed to have made a discovery].

(...) Richelieu calls on 5 inquirers [among which Pascal (the father)...] (...)

It was around 1636 that Fermat initiated contact with the [Mersenne group] ...²⁴

Beyond this, it is worth noting that Etienne Pascal’s skills within mathematics covered geometry, and the construction of triangles²⁵; a fact of interest considering Pascal’s lasting interest in this subject.

Figure 1: Pascal’s early paper

²⁴(cf. Brunschvicg/Boutroux 1923 : 169-ff)

²⁵Ibid.

(Gilberte describes him as playing with various forms of triangles and their properties, as child.)

At the very end of his Essay on cones – what can be considered his first major mathematical work – Pascal, then still quite young, made this modest and memorable statement :

“We have many more theorems and conclusions; but having so little experience, as we do, we would prefer to wait and would like that more knowledgeable/experienced [”adroit”] people first go through our writing : after this, and if it is judged worthy to be resumed, we will, and pursue it as far as God will give us the strength to.”

He was 16 (or 17) :

“Winter of 1639-1640” according to Brunschvicg/Boutroux 1923 : 245, based on G. Perier. Taton gives “nov. ?” 1639 for elaboration and “feb. ?” 1640 for publication dates (Taton 1962).

-When you're in that kind of pain, it's hard to take the world for granted.-

I - Pascal's changing health

The most important testimony on the general development of Pascal's health comes arguably from his sister Gilberte,

*“sa sante ... commenca d’etre alteree des qu’il eut atteint l’age de dix-huit ans.”*²⁶

who places (major) changes in his health intervening during his 18th year.

From Marguerite Perier, Pascal's niece, this episode in the early life of the philosopher is also known :

“at mid-day, coming back from the palace, my grandfather [Etienne] saw the entire household in tears: the child [Pascal] seemed to be lying dead in his cradle.”

It gives us another opportunity to consider medicine during this time, and especially attitudes towards it.

Etienne, this learned man became convinced that his child had been put under a spell (though having first rejected it²⁷);

Because the issues with the infant Pascal persisted (“eleven to twelve months”²⁸), he resorted to para-medical treatments :

a spell-transfer and “a mixture of nine leaves from three different herbs collected by a child of seven years picked before sun-up”²⁹

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²⁶P. 6.

²⁷M. Perier.

²⁸Strowski 1907 : 4.

²⁹Strowski 1907 : 4.

Beyond this, however, there were no more difficulties : “the child was healed”!

We see no coincidence in the fact that Pascal’s so-called ”first conversion” coincides more or less with the worsening of his health state :

The chronological table of Pascal’s life and scientific activities established by Rene Taton gives January-April 1646, and 1647 (without further indication) respectively.³⁰

From this we conclude it is around the ages of ¹⁸~~13-14~~ that first troubles were observed and ²³⁻²⁴~~at 18~~ that we should see a major (lasting) change happening in Pascal where the topic of (his) health is concerned.

II - 17th c. medicine

Austria, a leading clinic in 1842 (Cousin gives his report) :

“27% of women giving birth died in August, 29[20]% in October of that same year, and 33 deaths were counted for every 100 childbirths on average in December...”

I.e. women giving birth here had roughly 1 chance in 3 to die.

The idea that washing hands before medical procedures should help stop the spread of diseases was received as if the most absurd thing in the world. Yet, going from dissecting cadavers to helping in childbirth was normal (e.g. a part of students’ learning).

Such was medicine even into the 19th century.

This was no backwater practice either but the General Hospital of Vienna. The unit lead by the Prof. Dr. Klein (who opposed Semmelweis)³¹³².

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³⁰Taton 1962.

³¹Celine keeps calling him ’Klin’, describes him as a man ”full of assurances and strictly mediocre”, and plainly an imbecile... (“*Semmelweis never loved Vienna*”)

³²Today, in that same hospital, a doctor is in charge of deciding over the fate of transgender

And, now we can imagine a society 200 years before those events – the society in which Pascal and his contemporaries lived; before the facts.

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If the state of hygiene was such as described in the century of Semmelweis (lacking even minimal understanding in medical professionals, and worse much resistance against attempts at reform), the one of the 17th can be expected to be equal or worse :

Celine makes this observation about previous attempts :

“Many other commissions had fallen apart trying to solve this age-old problem. But, among them, the least useless [”inefficace”] was perhaps that instituted by Louis XVI during the puerperal* epidemic of 1774 which ravaged the Hotel-Dieu hospital in Paris”

[*We make this annotation : infections occurring in women during childbirth.]

To understand the catastrophic³³ state of medicine in the 17th century we can start by acknowledging that it was not uncommon for doctors to resort to supernatural explanations as part of their thinking or practices : and sometimes even extraterrestrial ones, as in this case :

“Many medical professors, influenced by the sixteenth-century Paris physician, Jean Fernel (1485-1558), even argued that many qualities, especially those present in the body’s fluids when an individual fell victim to a major disease like the plague, were unknowable and occult, the result of planetary influences.”³⁴

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people : K., gynecologist, (thus) direct descendant of the “dumb” Johann Klein.

³³In the same way that observers in some centuries from now may note the basic state of our own medicine, remarking for instance that we were unable to find vaccines for diseases “as simple as flus”; these judgments of values are relative : yet there is a big step from astrology-medicine to current epidemiology.

³⁴Brockliss 2001 : 150.

This was the *nec plus ultra*, the best of knowledge assembled by some of these professors : A medicine not too far from astrology.

Influenced primarily by (their readings of) the philosophies of St. Augustine and what one could call a “Christianized” Aristotele.

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It is worth noting here that Cornelius Jansen, of Jansenism, (the current with which Pascal identified), is the author of a study on St. Augustinus including his thoughts on health and medicine [de ... sanitate, aegritudine, medicina ...]³⁵.

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Some doctors were brilliant in some areas, and in others failed. Like the royal physician William Harvey³⁶ :

Having described blood circulation, he also linked it with the soul, and, in other matters, viewed semen as so powerful it could fertilize “at a distance”, “without physical contact” ...³⁷

One interesting take on medicine during this time were conceptions of the body as machine :

Galilei and Gassendi³⁸ (who offered an interpretation for Pascal’s barometer experiments) “thought about the body in mechanical terms: ... in Galileo’s terms, an assemblage of small machines. (...) [They] studied the physical principles of ... how the pores secreted, how ... the stomach digested, [and] blood flowed ...”³⁹

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If medicine was powerless, any injury, or illness, could quickly mean death.

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³⁵On Augustine : “His library included clinical textbooks and, while composing his replies to Julian of Eclanum, he studied the best guide to gynaecology.” (Chadwick 2001 : 121).

³⁶(1578-1657).

³⁷Summed up from Wiesner-Hanks 2013 : 295.

³⁸(1592-1655). French.

³⁹Wiesner-Hanks 2013 : 296.

For the period leading up to the times of Pascal, Early modern historians offer these indications : e.g. :

“half of children died before they were ten”⁴⁰

To give an example close to Pascal, we can cite the case of the Arnauld family - “Antoine Arnauld⁴¹ and Catherine Marion had twenty children, of whom ten survived.”⁴²

From opposite perspectives, Racine was a famous orphan (of this century).

“Average life expectancy was shockingly low by modern (Western) standards: barely thirty in the seventeenth century.”⁴³

In Marseille, plague killed half of the population in 1720⁴⁴.

Wilhelm Schickard himself died of the plague.

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Pascal’s own sister, Jacqueline, had her own ideas about medicine too : according to her there was a direct link between spirituality / health :

*“I have first felt how health is more dependent on Jesus Christ than Hippocrates, and how the (proper) government [”regime”] of one’s spirit heals the body, in so far as God wishes to test us and fortify us through our infirmities.”*⁴⁵

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⁴⁰Wiesner-Hanks 2013 : 59.

⁴¹(1560–1619). Father of Jacqueline (“Mother Angelique”) and (the other!) Antoine Arnauld with whom Pascal had an association. (This Arnauld was a bachelor?)

⁴²*Encyclopedia of the Early modern World*, vol. 1.

⁴³*Encyclopedia of the Early modern...* Vol. 2.

⁴⁴*Encyclopedia of the Early modern* 2.

⁴⁵Letter from 19th of Jan. 1655. P. 555.