

*Chapter 7. A Second Lesson in
Epistemology from Fat Tony: The Soviet-
Harvard Illusion, or How to Out-Argue
Socrates*

*Birds rarely write more than ornithologists – Piety for the
impious – Fat Tony does not drink milk – Why not Harvardify?
– Can Socrates out-argue FT? – Mystagogue philosophaster*

I said earlier that, because of complexity, life and the world are not command-and-control style, but that we tended somehow to think so on the occasion, the wrong occasion. Hence, of course, we fragilize and stifle antifragilities. Let us call it the *error of rationalism*. I will outline it in this chapter and the next one will show its application to the history of medicine.

It is not the error of being rational, but the error of thinking that things always have a *reason* that is accessible to us –that we can comprehend easily. In Fat Tony’s language, that would be what makes us the suckers of all suckers. It is this rationalism that move us away from optionality --which makes us denigrate options and trial-and-error because we think we can figure it out by ourselves.

Consider two types of knowledge. The first type is not exactly “knowledge”; its ambiguous character prevents us from associating it with the strict definitions of knowledge. It a way of doing thing that we cannot really express in clear language, but that we do nevertheless, and do well. The second type is more like what we call “knowledge”; it is what you acquire in school, can get grades for, can codify, what can be explainable, academizable, rationalizable,

formalizable, theoretizable, codifiable, Sovietizable, bureaucratizable, Harvardifiable, provable, etc.

To make things simple, just look at the second type of knowledge as something so stripped of ambiguity that an autistic person (a high functioning autistic person, that is) can easily understand it. So could a computer.

The error of rationalism is, simply, overestimating the role and necessity of the second type, the academic knowledge, in human affairs --and degrading the uncodifiable, more complex, intuitive or experience-based type. It is a severe error because not only a large share of our knowledge is not explainable, academizable, rationalizable, formalizable, theoretizable, codifiable, Sovietizable, bureaucratizable, Harvardifiable, etc., but, further, that the role such explainable knowledge plays in life is so minor that it is not even funny.

We are very likely to believe that skills and ideas that we actually acquired by *doing*, or that came naturally to us (as we already knew by our innate biological instinct) came from books, ideas, and reasoning. We get blinded by it; there may even be something in our brains that makes us suckers for the point. Let us see how.

Clearly we never think that it is thanks to ornithologists that birds learn to fly –and if some people do hold such belief, it would be hard for them to convince the birds. But, let’s anthropomorphize a bit: when replace “birds” with “men”, then the idea that people learn to do things thanks to what they learned during pompous lectures becomes plausible. When it comes to human agency, matters suddenly become confusing to us.

We tend to believe that it is largely thanks to the beautiful rules of grammar that we can speak, that it is thanks to science that we have all this technology, thanks to universities that societies can function, thanks to political scientists and political philosophers that we have a well-functioning political system, and thanks to

economists that we have an economy. Of course we need to add that the belief that it is thanks to government planning and nation states that the world is functioning.

In other words, the denigration of practice. This is a dangerous human disease, a severe sucker problem, to be inclined to think that practice has a debt to theories; that practice is *inferior* to theories, and that theories are necessarily good and better than no-theories^{xv} - -even after the Soviet experiences, even after the literal bankruptcy of the economic establishment, even after the severe failures of the brand of massively destructive thinkers called the neo-conservatives, even after the failure of risk theories in finance that caused the unfettered risk taking, even after fifteen centuries of fiascos in medicine (I will show in Chapter x how the history of medicine as we know it today has been blatantly re-narrated in a way to overestimate the value of reasoning at the detriment of tinkering leading to random discoveries. Academia --like governments--will always tell you what it did for you, never what it did not do).

It may be right on the occasion; there are numerous (valuable) things that came to us thanks to reasoning in the relative or possibly total absence of practical and empirical feedback. The most extreme case of a discovery without any feedback is Einstein's discovery of relativity using pure reasoning about the structure of time, supposedly thanks to a dream. One spectacular case of a discovery with a small number of existing external data is that of the astronomer Le Verrier discovery of the existence of the planet Neptune on the basis of solitary computation, using the behavior of the surrounding planets. When it was actually sited he refused to look at it, so comfortable he was with his result. We are all infatuated with stories of Sherlock Holmes in which, after collecting what facts he needed, facts he shares with his sidekick and roommate Doctor Watson, he sits in his chamber torturing the violin and formulates a conclusion that surprises the reader, and highly impresses Watson, as it is entirely derived from all the facts that he already knows but

was incapable of weaving into a theory. But Sherlock Holmes is not all theories-with-no-feedback: he does some grind work in collected data, smelling grounds like a dog, and noticing numerous details that would escape another person, leading to feedback in searching for other details, before building his reasoning. The greater hero is his patently smarter brother Mycroft who was Sherlock's last resource when the latter hit the wall. Mycroft never left his London gentleman's club; he could solve matters in his head without needs for the trimmings of the messy reality outside his club.

But we got so many dangerous hubris along with this ability to discover by reasoning off other theories, very destructive hubris. So allow my skepticism about the contribution of theories, which I will show throughout this book by looking carefully at the record. Consider the bias about the way information gets to us: there are many more books on birds written by ornithologists than books by birds written on birds; and certainly even fewer books on ornithologists written by birds. Fat Tonys do not write books. University professors, particularly in the disciplines with "science" attached to their designation, will over-represent their share of contribution to knowledge --in their minds what is not explainable, academizable, rationalizable, formalizable, theoretizable, codifiable, Sovietizable, bureaucratizable, Harvardifiable, knowledge is *not* knowledge. Books are typically written by those who write books, not so much by those who do things. So, first, nonFatonys who write books leave you with their side of the story (since they have the books), and, second, as I showed with the metaphor of the birds, we are naturally suckers for the role of ideas; we have this built-in tendency to overestimate the role thinking and formal learning play in life.

THE ERROR OF RATIONALISM

This chapter is about this denigration of practice and the error of *rationalism* of both the overestimation the importance of what we call reason in human affairs, and the normative feeling that we need to be able to articulate the motives and theories behind what we do and, worse, things we understand (but have not done) are more important than things we do but do not appear to understand how they work. If I consider it the largest error ever made by man, it is not without some backing: it is the mother problem behind such matters as: overconfidence, expert problems, expert errors, Soviet experiences, medical mistakes, dogmatism, and much, much more. And we have to do things in life without being the suckers.

The error has the following manifestations.

First, the philosophical: the difference between the two varieties of knowledge is what philosophy is about. Do we need to understand things? What do we *mean* by beliefs?

Second, the psychological: the mistake of reversing the arrow of the formation of knowledge, the illusion of thinking, is part of the larger mental biases that make us underestimate randomness, overestimate the explainability of things, overvalue information, fall for the narrative fallacy, be suckers for the Black Swan, and many more mental biases. But there are other elements I will consider in this book: the very definition of intelligence, intelligence testing, what school grades mean and imply, etc.

Third, the scientific: Does science lead to technology or does technology lead to science? If the first statement were true, if we really need science for technology beyond the ornament, then universities should be able to produce a larger share of the technological discoveries. They haven't, historically, as of the time of writing; the record is clear, clear, clear! Furthermore, technology appears to emerge randomly, making discoveries rely on randomness

far more than design, meaning that the ideal activity of stochastic tinkering can largely dispense with the theoreticians as they can be more of a hindrance than anything --much like regulators increase risks and a Wharton School class in introductory, intermediate, or (especially) advanced economics will stand in your way of understanding the economy.

Finally, the practical: we will discuss our Fat Tony lessons on where the traps and suckers are and how to maneuver.

For now, let us for now see how we got into this mess by going to Athens, 4th Century before our era.

EUTHYPHRO

The first systematic appearance of abstract knowledge, the very notion of *idea*, started with Plato, particularly with his Forms corresponding to the most ideational, abstract definitions, and with the observable as its mere manifestation. Before Plato, even notions that later became abstract, like God, were extremely anthropomorphic and embedded in some tangible character, embodied in legends and mythical narratives. Plato expressed himself chiefly through his use of the person who no doubt became the most influential philosopher in history, Socrates the Athenian, the first philosopher in the modern sense. Socrates left no writing of his own, so we get direct representation of him through Plato and Xenophon, as well as some side ones in plays making fun of him. Just as Fat Tony has, for biographer, this author trying to satisfy his agenda, leading to distortions in his character, and self-serving representation of some of my ideas in his personality, so I am certain that the Socrates of Plato is a more Platonic character than the true Socrates.

In one of Plato's dialogues, *Euthyphro*, Socrates was outside the courthouse, awaiting the trial in which he was eventually put to death, when the eponymous Euthyphro, a religious expert and

prophet of sorts, struck a conversation with him. Socrates explained that for the “activities” that he was charged with by the court (corrupting the youth and introducing new gods at the expense of the older ones), not only he did not charge a fee, but he was in perfect readiness to pay one for people to listen to him.

It turned out that Euthyphro was on his way to charge his father with manslaughter, not bad a conversation starter. So Socrates started out by wondering how charging one’s own father with manslaughter was compatible with Euthyphro’s religious duties.

Socrates’ used two methods in his conversations. The first aimed at seeking, or rather showing ignorance, not knowledge. The cross-questioning the person, called *elenchis*, became famous as today’s cross-examination (what we now call , mistakenly, the Socratic method and teach in law school) by which Socrates made his interlocutor, who started with a thesis, agree on series of statements then proceeded to show him how the statements he agreed on are inconsistent with the original thesis, thus establishing that he has no clue on what he was taking about. Socrates used it mostly to show people how lacking in clarity they were in their thoughts, how little they knew about the concepts they used routinely –and the need for philosophy to elucidate these concepts. He applied it across a few dialogues, Euthyphro being the most representative.

The second method, called *maieutics*, i.e. midwifery, travelled in the opposite direction: One starts with ignorance, then progressively attain knowledge. Like a midwife, Socrates gave birth to the truths that resided in us by nudging the interlocutor into revealing these abstract truths that sat there independent of empirical reality. These truths are typically what we call Platonic representations. The dialogue that has given rise to the most commentary is *Meno*, in which Socrates shows to a slave boy how he already knew, deep-down, the laws of geometry and was helped by the questioner, only helped, to give gestation to these *a priori* truths.

So in the beginning of the *Euthyphro* dialogue, he catches his interlocutor using the word *piety* while characterizing the prosecution of his father as a pious act –and so gave the impression that he was conducting the prosecution on grounds of piety. So Socrates posed the issue : “tell me how you define piety and impiety”. Euthyphro answered: “piety is what I am doing now, prosecuting a wrongdoer with manslaughter.” He showed, in support of what he thought was his definition, that gods did it. For example, Zeus, whom people agree is the most pious of the gods, put his own father in chains for a crime. Socrates pounced on him: “I urged you not to tell me about one or two of these many pious actions, but to describe the actual feature that makes any pious action pious (...) because you said that there is one characteristic that makes a pious action pious”.

“What is pious is loved by the god” appeared to Euthyphro a good such characteristic. Not satisfactory, as Socrates showed him that the gods were not so always in agreement, since there were things liked by some gods, and hated by others. Therefore the same things can be pious and impious, which makes Euthyphro’s definition fail Socrates’ scrutiny.

The conversation appeared to reach some happy resolution when Socrates made Euthyphro agree that what is pious is what is loved by *all* the gods. Until, surprise, Socrates required him to show the causal arrow, whether something is pious because it is loved by the gods, or is if it is loved by the gods because it is pious. From that, he derived that what is pious and what is loved by the gods could not be the same property. So we are back at the very beginning.

When prodded for another definition of what was pious, Euthyphro was honest in his frustration. The poor man felt that he knew what piety was but could not express it; worst, he was now insecure: “I don’t know how to convey to you what I have in mind. Whatever we put forward somehow keeps on shifting its position and refuses to stay where we laid it down”.

The dialogue continued with more definitions (what is “moral rectitude?”), until Euthyphro claimed an urgent engagement and ran away. The dialogue ended abruptly, but the reader is left with the impression that it could have gone on until today, twenty-five centuries later, without it bringing us any closer to anything.

Let us reopen it.

FAT TONY V/S SOCRATES

How would Fat Tony have handled the cross-examination by the relentless Athenian? Now that the reader is acquainted with our hefty character, let us examine, as a thought experiment, an equivalent dialogue between Fat Tony and Socrates, properly translated of course.

Clearly, there are similarities between the two characters. Both had time on their hands and enjoyed unlimited leisure, though, in the case of Tony, free-time was the result of productive insights (and, in a way, the cause of his enrichment as used free time to retain the mental clarity that office idiots usually lack). Both like to argue, and look at rigorous active conversation (instead of TV screen or concert hall passivity) as main source of entertainment, perhaps even as a main reason to live. Both dislike writing: Socrates because he did not like the definitive and immutable character that is associated with the written word when for him answers are never final and should not be fixated. Nothing should be written in stone, even literally: Socrates in the Euthyphro boasts for ancestry the sculptor Daedalus. Daedalus’ statues became alive as soon as the work was completed; and unlike other statues frozen for eternity in a single posture, nobody could observe them in the rigidity of a single position. When you talk to one of Daedalus’ statues, it talks back to you, unlike the ones you see in the Metropolitan Museum of Arts in New York City. Tony, for his part did not like writing for other, no

less respectable reasons: he almost flunked out of high school in East Brooklyn.

But the similarities stop somewhere, which would be good enough for a dialogue. Of course we can expect a bit of a surprise on the part of Fat Tony standing in front of the man described to him by Nero as the greater philosopher of all times: Socrates, we are told, have looks beyond the unprepossessing. For someone with some expectation of what a philosopher would look like, it would be much like an encounter with one of those hippies of the 1960s that we run into forty years too late, when biology, norepinephrine (stress-hormones), mortgage worries, carbohydrates, and the lack of intensity in the bedroom take their toll. Socrates was repeatedly described as having a protruding belly, thin limbs, bulging eyes, a snub nose (to the point that Nietzsche questioned the purity of his race, casting him as a non-Hellene). He looked haggard. He might even have had body odor as he bathed much less than his peers. You can imagine Fat Tony sneering while pointing his finger at the fellow: “Look, Neeero, you want me to talk to ...this”? Or perhaps not: Socrates was said to have a presence, a certain personal confidence and a serenity of mind that made some young men find him “beautiful”, and even fall madly in love with him.

Now assume Fat Tony was asked by Socrates how he defined piety. Fat Tony’s answer would have been most certainly to *get lost* – Fat Tony, aware of Socrates’ statement in the beginning of the Euthyphro dialogue that not only he would debate for free, but that he would be ready to pay for conversation, would have claimed one doesn’t argue with someone who is ready to pay you to just argue with him.

But Fat Tony’s power in life is that he does not let the other person frame the question. He taught Nero that an answer is planted in every question; never respond to a question that makes no sense to you with a straight answer.

FAT TONY: “You are asking me to define what characteristic makes a difference between pious and nonpious. Do I really *need* to be able to tell you what it is to be able to conduct a pious action?”

SOCRATES: “How can you use words like piety without knowing what it means, while pretending to know what it means?”

FAT TONY: “Do I actually have to be able to tell you in plain barbarian nonGreek English, or in pure Greek what it means to know and understand what it means?”

No doubt Fat Tony would have taken Socrates of Athens further down his own road and be the one to doing the framing of the question:

FAT TONY: “tell me, old man. Does a child need to know what mother’s milk is to understand the needs to drink it?”

SOCRATES: “No, he does not need to”.

FAT TONY, using the same repetitive pattern of Socrates in the Plato dialogues: “And my dear Socrates, does a dog need to define what an owner is to be loyal to him?”

SOCRATES, puzzled to have someone ask him questions: “A dog has ... instinct. It does not reflect on its life. We are not dogs.”

Fat Tony: “I agree, my dear Socrates, that a dog has instinct. We are not dogs. But are we humans fundamentally different to be completely stripped of instinct leading us to do things?”

Without waiting for Socrates’s answer (only suckers wait for answers; questions are not made for answers).

FAT TONY: “Then, my good man Socrates, why do you think that we need to define things?”

SOCRATES: “My dear Mega-tony, we need to know what we are talking about when we talk. The entire idea of philosophy is to be able to reflect and understand what we are doing, examine our lives. An unexamined life is not worth living”.

FAT TONY: “If I asked someone on a bicycle riding it just fine to give me the theory behind his bicycle riding, he would fall from it. By bullying and questioning people you confuse them and hurt them.”

Then, looking at him patronizingly, with a smirk, very calmly.

FAT TONY: “My dear Socrates... You know why they are putting you to death? It is because you make people feel stupid blindly following habits, instincts and traditions. You may be occasionally right. But you may confuse them with things they’ve been doing just fine without getting in trouble. You are destroying people’s illusions about themselves. And you have no answer; you have no answer to offer them.”

PRIMACY OF DEFINITIONAL KNOWLEDGE

You can see here that what Fat Tony is hitting here is the very core of philosophy: it is indeed with Socrates that the main questions that became today philosophy were first raised; and questions such as “what is existence?”, “what are morals?”, “what is a proof”, “what is science”, “what is this?” and “what is that?”.

The question we saw in Euthypro occurs in the various dialogues written by Plato. While the question, as we just saw, in the *Euthyphro* was ‘what is piety [*hosiotês*]?’ Other dialogues address: temperance [*sôphrosunê*] (in the *Charmides*); courage [*andreia*] (in the *Laches*’), virtue [*aretê*] in the *Meno* I mentioned earlier. What Socrates is seeking relentlessly are definitions that specify the essential nature of the thing concerned rather than the properties by means of which we can recognize it or the meaning of the term used to designate it.

To place this in a modern context –the great question of the separation between art and science; why they don’t mix, and why practitioners on both sides look down at the other one. Socrates went even as far as questioning the poets and reported that had no more clue than the public about their own works. In Plato’s account

of his trial in the *Apology*, Socrates said how he cross-examined the poets in vain: “I took them some of the most elaborate passages in their own writings, and asked what was the meaning of them. I am almost ashamed to speak of this, but still I must say that there is hardly a person present who wouldn't have talked better about their poetry than they did themselves”.

Some classical scholars call this problem “the Socratic fallacy” this insistence that you do not know examples falling under a concept unless you can express it in logical and propositional form. And here we can use philosophy and logic to hoist Socrates by his own petard, as some philosophers such as Peter Geach have shown in the 1960s: this reasoning on the part of Socrates, the grand reasoner, is circular. I can simplify it as follows: *If you know what thing is, you do not need examples; and if you don't know what it is, providing examples will never get you to the truth.*

And this priority of definitional knowledge lead to Plato's thesis that you cannot know anything unless you know the Forms which are what definitions specify. If we cannot define piety, from working with particulars, then let us start with universals from which these particulars should flow. In other words if you cannot get a map from a territory, build a territory out of the map.

In defense of Socrates, his questions lead to a major result: if they could not allow him to define what something was, at least allowed him to be certain about what a thing was not.

Nietzsche

Fat Tony, of course, had many precursors. Many we will not hear about, because of the primacy of philosophy and the way it got integrated into daily practices by Christianity and Islam. I remind the reader that when I say “philosophy”, I mean theoretical and conceptual knowledge, all knowledge. For, until recently, the term largely meant science –this attempt to rationalize nature.

A vivid modern attack on the point came from the young Friedrich Nietzsche, through dressed up in literary flight on optimism, pessimism, mixed with a hallucination on what “West”, a “typical Hellene”, and the German soul mean. The young Nietzsche wrote his first book, *The Birth of the Tragedy* while in his early twenties. He went after Socrates whom he called the “mystagogue of science” for “making existence appear comprehensible”. This brilliant passage exposes what I call the rationalistic fallacy:

Perhaps —thus he [Socrates] should have asked himself —what is not intelligible to me is not necessarily unintelligent? Perhaps there is a realm of wisdom from which the logician is exiled?

He is also allergic to Socrates' notion of truth, largely motivated by the agenda of the promotion of understanding since one does not knowingly do evil. This is precisely the argument that Nietzsche vituperated against. Knowledge is the panacea; error is evil; hence science is an optimistic enterprise. This scientific optimism irritated Nietzsche: this use of reasoning and knowledge at the service of utopia. Forget the optimism/pessimism business that is addressed when people discuss Nietzsche, as the so-called Nietzschean pessimism distracts from the point: it is the very *goodness* of knowledge that he questioned.

It took me a long time to figure out the central problem that Nietzsche addressed in the *Birth of the Tragedy*. He sees two forces, the Apollonian and the Dionysian. One is measured, balanced, rational, imbued with reason and self-restraint; the other is darker, visceral, wild, untamed, hard to understand, emerging from the inner layers of our selves. Greek culture was a balance of the two, until the influence of Socrates on Euripides gave a larger share to the Apollonian and disrupted the Dionysian, causing this rise of rationalism.

I read the book twice, first as a child when I had been properly exposed to real life. The second time, after a life thinking of randomness, it hit me that Nietzsche understood something that he never said explicitly, but realized very well, that growth in knowledge—or in anything—cannot proceed without the Dionysian. It reveals matters that we can select at some point, given that we have the option. In other words, it can be the source of stochastic tinkering, and the Apollonian can be part of the selection process.

Renan' Truth in the Nuances

As I said, earlier attacks on “philosophy” in the sense of rationalistic knowledge from the Plato and Aristotle traditions came from a variety of people, not necessarily visible in the corpus, and mostly in forgotten or rarely mentioned texts. Why forgotten? because structured learning likes the impoverishment and simplification of rationalism, easy to teach, not the rich texture of empiricism and, as I said, those who attacked academic thinking had little representation (something that we will see, is starkly apparent in the history of medicine). An even more accomplished, and far more open minded, scholar than Nietzsche, the 19th Century French thinker Ernest Renan knew, in addition to the usual Greek and Latin, Hebrew, Aramaic (Syriac), and Arabic. He started his life as a professor of Hebrew (yet he was Roman Catholic, a great disadvantage compared to those who study the scriptures in the text as children in Hebrew School and learn Talmudic Aramaic at the family table); he made his mark as the first biographer of Jesus the man, not the divinity. As a Levantine, I found Renan irresistible as he knew what he was talking about; he was a vastly broader classicist than Nietzsche and understood the lack of boundary between “Hellenism” and the Levant—he was astute enough to realize that European culture has a central component of “Hebrew, Syrian, and Arabic” thought. Unlike the rewarmed classicism of his century (à la

Byron), or the degenerate distinctions you encounter in *The New York Times*, he did not indulge in using this notion of the Greeks as a separate cultural and racial entity that legitimizes Europe and separates it from the Levant and Asia Minor. But while he understood that the Levant was the center of the West, he was quite racist in marking the clear separation of the White man from the African and Asian nations.

Renan spent his life denouncing “*l'horrible manie de la certitude*” the ghastly mania of certainty. It is to him that the expression “truth resides in the nuances” is attributed. In a passage attacking the scholastic teaching in Padua, he writes, around 1852 (when Nietzsche, born in 1844, was 7, not even yet crazy), the most powerful anti-Aristotelian, anti-academic sentence I now:

Le syllogisme excluant toute nuance, et la vérité résidant tout entière dans les nuances, le syllogisme est un instrument inutile pour trouver le vrai dans les sciences morales et politiques^{xvi}. (The syllogism, excluding all nuances, and since the truth resides almost entirely in the nuances, syllogism is therefore a useless instrument for finding Truth in the moral and political sciences.)

Why is this powerful? Because if you accept it, it would cancel much of the relevance of the so-called “analytic” philosophy that prevails today, in which philosophy has been trying to get itself into the simplification that is necessary to ape mathematics. And this not just a problem that applies to philosophy: any claim coming from general principles that is applied on the particular. In other words, that theory is not rich enough for social science.

Let me rephrase: he understood rather quickly an idea that led to my ludic fallacy: ludic is the Latin name for games; what works in a laboratory does not necessarily

what works in an artificial setting, like a casino, does not really replicate life.

Plato not Socrates

In all fairness for the Socratic character, we are dealing with the Socrates of Plato, which, as I said, is acting self-servingly as my own Fat Tony. The other biographer, Xenophon, presents a different picture. The Socrates of the *Memorabilia* is no-nonsense down to earth; he despises sterile knowledge, and the experts who study matters without practical consequence when so many useful and important things are neglected (instead of looking at stars to understand causes, figure out how you can use them to navigate; use geometry to measure land, but no more. Note his definition of usefulness is not just about matters material; it has largely to do with conduct). In Book I, he talks about the (useless) knowledge of heavenly matters in which specialists disagree. In fact, for Cicero it was Socrates who brought down philosophy from the heavens and integrated it in daily life. “he regards the phenomena of the heavens as beyond human understanding and irrelevant to the good life, even when they are understood.”

Tradition

It is clear that Socrates was put to death because he disrupted something that, in the eyes of the Athenian establishment, was working just fine.

Death and martyrdom make good marketing, particularly when one faces destiny while unwavering in his opinions. While most of the accounts we hear of Socrates make him heroic, thanks to his death and his resignation to die in a philosophical way, he had some classical critics who believed that Socrates was destroying the

foundations of society –the way to do things that is transmitted by the elders and that we may not be mature enough to question.

Cato the elder, the man who perhaps is the best embodiment of Republican Rome and everything associated with it – especially the various Roman qualities summarized by the concept of *virtu* – was highly allergic to Socrates. Cato had the bottom-line mind of Fat Tony, but with a much higher civic sense, sense of mission, respect for tradition, and commitment to moral rectitude. He was also allergic to things Greek, as exhibited in his allergy for philosophers and doctors –which we will see in later chapters was remarkably modern. Cato believed in both freedom and the rules of custom. Plutarch quotes him as saying: “Socrates was a mighty babbler who tried to make himself tyrant of his country in order to destroy its customs and entice its citizens into holding views contrary to law and order.”

The Universal and the Particular

What is the Platonic Form? Plato, in *The Republic*, defines it as follows. “For example, there are many beds and tables. ... But there are only two forms of such furniture, one of the bed and one of the table.” A form is the universal. And if I were to present the largest tension we encounter in dealing with knowledge, it would be our forced positioning between the two antagonistic poles: the universal and the particular. Without universals, and universal laws, you do not have science; before Newton’s law, in order to represent reality, you would have needed to count, as Peter Medawar presents it, every apple falling from every tree. With Newton you have the mother process, the generator so to speak. But the problem is that universals might not be sophisticated enough to capture all that is, the properties of an object. A universal turns very easily into a stereotype, into a sucker’s game, into an autistic-style simplification –one size fits all. Are you, reader, generic enough to squeeze your

definition into an equation? And if so, don't you have free will? For what bothers me the most about universals is that by applying it to humans you deprive them of free-will, in principle.

The difference between the universal and the particular affects about everything. First of course, there lies the difference between art and science. Art is about the idiosyncratic, the genuine, and the unique (we scorn artists who imitate others, even when they can "improve"; we would not buy a fake Renoir on grounds that better techniques were used). Science is the exact opposite. Second, there lies the difference between rationalism and empiricism. Most people believe that empiricism implies looking at the world without a theory at all –many of my detractors among the autistacademics have leveled the charge at me, with the "you need a theory to observe". Not at all: empiricism means that you resist generalization as much as possible, by giving respect to the particular, by limiting the *a priori*. You go *bottom up*. We will see with the methods the empirical school of medicine that they resisted making an inference beyond data that is identical, or at least close, to what they have seen in the past. So the difference between the two methods is one of emphasis –in a way trying to overly simplify the distinction makes us fall squarely into the error of rationalism.

Empiricism is about putting the particular first, and the general later, rationalism is about starting with the general, the theoretical, and looking at events you observe as particular cases of something more general. So it is *top down*. So it is a matter to what one defaults to: when in doubt, the empiricist makes no assumptions; when in doubt, the rationalist ignore the particulars of the case.

During the Middle Ages, there was an intellectual opposition between the realists and the nominalists. The realist (a misnomer) believes that only concepts, the abstract generators, the Platonic Forms are "real", and the instantiated objects are not so. The Platonic form of a triangle is real, and what triangles you observe are mere

copies, imperfect of course, of such original. Nominalists believe the exact opposite: that each objects or the predicate of a concept "is beautiful" exists, while the abstract notion, the concept "beautiful", does not exist.

To me, a practitioner, the problem is not whether one should take sides in a debate composed of just words: it is to minimize the effect of the error. We naturally tend towards rationalism; it is the very property of our brain to do so. So the problem is not whether a pure form exists; it is whether we can identify it ourselves. There may be a theory; it is just not easy to discover spontaneously. So we tend to use the wrong theory, the wrong model, the wrong map, rather than accept no map.

The Tacit and the Explicit

I mentioned autism early on in the discussion. I was once discussing the role of autism in research in the office of a physicist, in Canada –she was interested in the subject as many of her colleagues exhibited the traits of acute Asperger syndrome (a name high functioning autism). These traits make the person prone to highly systematized thinking and averse to any form of ambiguity – which fits the mathematized profession quite well. I was alerted to the problems of autism by readers "on the spectrum", i.e., have some degree of these systematizing traits as the traits are not of the all or nothing variety^{xvii}.

I drew the following table, with the two types of knowledge in separate columns. My intention was to connect it to autism, but the conversation drifted into more interesting territory. On the right what is clear and explicit, and on the left the corresponding *sort of* the opposite.

TYPE 1	TYPE 2
Know <i>how</i>	Know <i>what</i>
Fat Tony wisdom, Aristotelian phronesis	Aristotelian logic
Implicit, Tacit	Explicit
Nondemonstrative knowledge	Demonstrative knowledge
Tëchnë	Epistemë
Experiential knowledge	Epistemic base
Heuristic	Propositional knowledge
Figurative	Literal
Tinkering	Directed research
Bricolage	Targeted activity
Empiricism	Rationalism
Practice	Scholarship
Engineering	Mathematics
Tinkering, stochastic tinkering	Directed search
Epilogism (Menodotus of Nicomedia and the school of empirical medicine)	Inductive knowledge, using Aristotle's teleological principles
<i>Historia a sensate cognitio</i>	Causative historiography
<i>Autopsia</i>	Diagnostic
Austrian economics	Neoclassical economics
Bottom up libertarianism	Central Planner
Spirit of the Law	Letter of the Law
Customs	Ideas
Brooklyn, NY or Amioum, (North)	Cambridge, MA, and UK

Lebanon	
Accident, trial and error	Design
Nonautistic	Autistic
Random	Deterministic
Ecological uncertainty, not tractable in textbook	Ludic probability, statistics textbooks
Embedded	Abstract
Parallel processing	Serial processing
Off-model	On-model, model based
Side effect of a drug as engine of discovery	National Institute of Health directed research
Nominalism	Realism
Age as authority	Degrees as authority
Logos	Mythos
Dogma (in the religious sense, the unexplainable)	Kerygma (the explainable and teachable part of religion)
Esoteric theology (Averroes and Spinoza)	Exoteric theology (Averroes and Spinoza)
Regulator as a wise old person with no visible rules	Regulation by clearly specified rules

The person, being very rigorous, noticed the following. All the terms on the right seem to be connected. We can easily explain how *logic (logical)*, *deterministic*, and *abstract* fit together. But the terms on the left did not appear to be logically connected. What connects random, art, accident, implicit, engineering, and figurative? What is the connection between religious dogma and tinkering? There is *something*, but I can't explain it in a compressed form.

I remind the reader that my object here is not the set the boundaries between the first and second type of knowledge, but to focus on the error of overestimating the role of the second type, and denigrating the first type.

The thinkers who are associated with the first type of knowledge are numerous; but as one can understand from the physicist's remarks, they would be expected to have little in common. Indeed they don't resemble each other.

Let me throw some names, without chronology since, unlike the thinkers on the right side, they rarely influenced each other:

Ludwig Wittgenstein, particularly in his later period that some people call "the second Wittgenstein". In the posthumous *Philosophical Investigations* he proposes what I can safely say a true bottom-up open-open-ended philosophy. If he is vague, leading to much interpretations on the part of the Wittgensteinians, it is precisely because he refused the crispness of explicit definitions and did not trust language to yield answers to philosophical problems. For him language is something we use in society for a purpose and cannot deal with problems outside of itself; hence many philosophical problems only exist because of the inapplicability of language.

Michael Polanyi, polymath scientist and methodologist who explicitly made the distinction between tacit and explicit knowledge. However he got the arrow backwards, falling for the *error of rationalism*: he thought that tacit knowledge was the embedding of propositional and theoretical knowledge, but that we mostly made discoveries using science and theories.

Friedrich Hayek, 20th century philosopher and economist who opposed social planning on grounds that the pricing system reveals through transactions the knowledge embedded in society, while explicit planning kills true progress. For him there is the

informational value of transaction that gets stifled by the bureaucratic forces.

Michael Oakeshot, 20th century conservative political philosopher and philosopher of history who believed that traditions provide an aggregation of collective knowledge. He also did not believe that history necessarily led to progress, counter to the Hegelian thinking that prevailed during his time. He may seem to have an intellectual fraternity with Hayek, but no, there is almost nothing explicitly linking them –Hayek believed in progress, but driven by market forces, while Oakeshot believed in habits. In a way Oakeshot treats society the way the Green Party treats nature.

John Gray, contemporary political philosopher and essayist who stands against human hubris and has been fighting the prevailing ideas that enlightenment is a panacea –treating a certain category of thinkers as enlightenment fundamentalists. Furthermore he showed repeatedly how what we call scientific progress can be just a mirage. When he, myself, and the essayist Bryan Appleyard got together for lunch I was mentally prepared to discuss ideas, and advocate my own. I was pleasantly surprised by what turned out the best lunch I ever had in my entire life. There was this smoothness of knowing that the three of us tacitly understood the same point and, instead, went to the second step of discussing applications –something as mundane as replacing our currency holdings by precious metals as these are not owned by governments.

Joseph de Maistre, French royalist and counter-enlightenment thinker who was vocal against the ills of the revolution and believed in the fundamental depravity of men unless checked by some dictatorship. Now try to reconcile that with the ideas of Hayek.

Edmund Burke, Irish statesman, political philosopher, who also countered the French revolution for disrupting the "collected reasons of the ages".

Heidegger, existentialist philosopher. In general continental philosophers develop their ideas in vague terms, as opposed to the school of analytic philosophers who are squarely in the right side of the table, with logical-mathematical precision to their expositions. The vagueness of the ideas of the continental philosophers can be suspicious, owing to this fuzziness that can allow so much nonsense to sneak in. But this does not mean that a that is vague is nonsense, and that vague philosophy is invalid, only that in the absence of some clarity, some systematic virtue, it is hard to figure out whether their ideas are just verbiage, or if there is some deep truth that analytical minds cannot capture.

Karen Armstrong, the scholar of religion has focused on the *apophatic*, what words cannot express. Her idea of religion is that it is a way for humans to go beyond the limit of what language and logic can express^{xviii} --for her religion is what we tend to express what cannot be formatted in a propositional, reduced form, and that it is not about belief in a specified, well explained "God", rather a practice that we cannot quite understand. Rudolf Otto ... and Mircea Eliade in the Sacred and the Profane ...

The anthropologist Claude Lévi-Strauss showed that non-literate peoples had their own “science of the concrete”, a holistic way of thinking about their environment in terms of objects and their “secondary”, sensuous qualities which was not necessarily less coherent than our modern scientific approach.

A FIRST INTRODUCTION TO HEURISTICS

[Where I explain heuristics as operations that do not necessarily correspond to rationalization.]

PART III- LECTURING BIRDS ON HOW TO FLY
