
PART TWO

I was then in Germany, summoned by the ongoing wars there.⁶ As I was returning to the army from the emperor's coronation,⁷ the onset of winter stopped me in a place where—not finding any conversation to divert me and, in addition, by good fortune, not having any cares or passions to trouble me—I spent the entire day closed up alone in a stove-heated room, where I had complete leisure to talk to myself about my thoughts. Among these thoughts, one of the first I noticed was how often there is not as much perfection in works created from several pieces and made by the hands of various masters as there is in those which one person has worked on alone. Thus, we see that the buildings which a single architect has undertaken and completed are usually more beautiful and better ordered than those which several people have tried to refurbish by making use of old walls built for other purposes. That is why those ancient cities which were only small villages at the start and became large towns over time are usually so badly laid out compared to the regular places which an engineer has designed freely on level ground. Even though, considering the buildings in each of them separately, we often find as much beauty in the former town as in the latter, or more, nonetheless, looking at them as they are arranged—here a large one, there a small one—and the way they make the streets crooked and unequal, we would say that chance rather than the will of some people using their reason designed them this way. And if one considers that nonetheless there have always been certain officials charged with seeing that private buildings serve as a public ornament, one will readily see that it is difficult to achieve really fine things by working only with other people's pieces. Thus, I imagined to myself that people who were semi-savages in

6 In 1618 Descartes, who was Catholic, voluntarily joined the Protestant army of Maurice of Nassau, who was active in organizing the forces of the Dutch Republic in its fight against Spain. In 1619, however, he left the Dutch army and traveled to join the army of Maximilian of Bavaria in Germany, which was part of the “Catholic League” fighting Protestant forces in Bohemia and Upper Austria. This conflict was part of the Thirty Years’ War (1618–48), one of the most devastating wars in European history, which ultimately resulted in the deaths of more than eight million people.

7 This was the coronation of the (zealously anti-Protestant) Ferdinand II as Holy Roman Emperor, which took place in Frankfurt in late summer 1619.

earlier times and who became civilized only little by little and created their laws only as they were compelled to by the extent to which crimes and quarrels bothered them, would not be so well regulated as those who, from the moment they first assembled, followed the constitution of some prudent legislator. It is indeed certain that the state of the true religion, whose laws God alone created, must be incomparably better ordered than all the others. And, in terms of human affairs, I believe that if Sparta was in earlier times very prosperous, that was not on account of the goodness of each of its laws in particular, seeing that several were very strange and even contrary to good morals, but because they were devised by only a single man and thus aimed at the same end.⁸ Similarly, I thought that the sciences contained in books—at least those whose reasons are only probable and without any proofs, since they were composed and fashioned little by little out of the opinions of several different people—therefore did not approach the truth as much as the simple reasonings which a person of good sense can make quite naturally concerning matters of their own experience. In the same way, I thought that because we were all children before we were adults and because it was necessary for us to be governed for a long time by our appetites and our supervisors, who were often at odds with each other, with neither of them perhaps advising us always for the best, it is almost impossible for our judgments to be as pure and solid as they would have been had we had the total use of our reason from the moment of our birth and never been led by anything but our reason. 13

It is true that we see little point in demolishing all the houses of a city for the sole purpose of rebuilding them in another way and thus making the streets more beautiful. However, we do see many people demolish their houses in order to rebuild them, and, indeed, sometimes they are compelled to do so, when the houses are in danger of collapsing on their own and when their foundations are unstable. This example persuaded me that there would probably be little point in a particular person drawing up a design to reform a state by changing everything starting with the foundations, and overturning it in order to put it up again, or even in reforming the body of sciences or the order established in the schools for teaching the sciences. But so far as all the opinions which I had received up to that point and which I believed credible were concerned, I convinced myself that the best possible thing for me to do was to undertake to remove them once and for all, so that afterwards I could replace them either by other, better ones or perhaps by the same ones, once I had adjusted them to a 14

8 Sparta was an ancient Greek city-state with social structures and laws designed to emphasize military proficiency. Its laws were supposedly created by a single person, Lycurgus, though there is some uncertainty as to whether he actually existed.

reasonable standard. And I firmly believed that by this means I would be successful in conducting my life much better than if I built only on old foundations and relied only on principles which I had been persuaded to accept in my youth, without ever having examined whether they were true. For, although I recognized various problems with this approach, these were not without remedy and could not compare to those which occur in reforming the least matters concerning the public. It is too difficult to erect those large bodies if they are thrown down or even to keep them once they are weakened, and their collapse cannot be anything but very drastic. Then, as far as the imperfections of large public bodies are concerned, if they have any (and the variety among such bodies alone is enough to assure us that many have some), habit has no doubt considerably softened them and has even managed to avoid some problems or corrected a number of them insensibly, which people's caution could not have managed so well. And finally, the imperfections are almost always easier to bear than changing them would be, in the same way that the major roads which wind among the mountains gradually become so smooth and convenient from being used that it is much better to follow them than to attempt to go more directly by climbing up over the rocks and going down to the very bottom of the precipices.

That is why I cannot approve at all of those muddled and worried temperaments who, being summoned neither by birth nor fortune to the management of public business, never stop proposing some idea for a new reform in it. If I thought that there was the slightest thing in this text which would enable someone to suspect me of this foolishness, I would be very reluctant to allow it to be published. My intention has never been to do more than try to reform my own thoughts and to build on a foundation which is entirely my own. And if my work has pleased me sufficiently to make me show you the model of it here, that is not because I wish to advise anyone to imitate it. Those to whom God has given more of His grace will perhaps have loftier intentions, but I fear that this work may already be too bold for many people. The single resolution to strip away all the opinions which one has previously absorbed into one's beliefs is not an example which everyone should follow. Most of the world is made up of two kinds of minds for whom such a resolution is not suitable. First, there are those who, believing themselves more clever than they are, cannot stop making hasty judgments, without having enough patience to conduct their thoughts in an orderly manner, with the result that, once they have taken the liberty of doubting the principles they have received and of leaving the common road, they will never be able to keep to the path which they must take in order to proceed more directly, and will remain lost all their lives. Then, there are those who, having sufficient reason or modesty to judge that they are less capable of differentiating truth from falsehood than others from whom they

can be instructed, must content themselves with following the opinions of these others rather than searching for better opinions on their own.

As for me, I would have undoubtedly been among those in this latter 16 group if I had only had a single master or if I had known nothing at all about the differences which have always existed among the opinions of the most highly educated people. But I learned from my college days on that one cannot imagine anything so strange and so incredible that it has not been said by some philosopher and, later, in my travels, I recognized that all those who have views very different from our own are not therefore barbarians or savages, but that many of them use as much reason as we do, or more. I also considered how much the same person, with the same mind, raised from infancy on among the French or the Germans, would become different from what they would have been had they always lived among the Chinese or the cannibals, and how, even in our style of dress the same thing which pleased us ten years ago and which will perhaps please us again ten years from today, now seems to us extravagant and ridiculous. Thus we are clearly persuaded more by custom and example than by any certain knowledge. Nonetheless, a plurality of voices is not a proof worth anything for truths which are somewhat difficult to discover, because it is far more probable that one person by themselves would have found them than an entire people. Since I could not select anyone whose opinions it seemed to me one should prefer to those of other people, I found myself, so to speak, compelled to guide myself on my own.

But like a person who proceeds alone and in the shadows, I resolved to go so slowly and to use so much circumspection in all matters that, if I only 17 advanced a very short distance, at least I would take good care not to fall. I did not even wish to begin completely rejecting any of the opinions which could have slipped into my beliefs previously without being introduced by reason, until I had spent enough time drawing up a plan for the work I was undertaking and seeking out the true method for arriving at an understanding of everything my mind was capable of knowing.

When I was younger, among the branches of philosophy, I had studied a little logic and, among the subjects of mathematics, geometrical analysis, and algebra—three arts or sciences which looked as if they ought to contribute something to my project. But in examining them, I was cautious because, so far as logic is concerned, its syllogisms⁹ and most of its other instructions serve to explain to others what one already knows or even, as

9 Syllogisms are the forms of deductive reasoning associated with Aristotle. These each had two premises and one conclusion, e.g., “All men are mortal; Socrates is a man; therefore Socrates is mortal.” In a sense, these do not lead to new knowledge: if you already knew the premises, wouldn’t you also know the conclusion?

in the art of Llull,¹⁰ to speak without judgment of things about which one is ignorant, rather than to learn what they are. Although philosophy does, in fact, contain many really true and excellent precepts, mixed in with them there are always so many injurious or superfluous ones that it is almost as difficult to separate them as to draw a Diana or a Minerva out of a block of marble which has not yet been carved.¹¹ Then, so far as the analysis of the ancients and the algebra of the moderns are concerned, aside from the fact that they deal only with really abstract matters that have no apparent use, the former is always so concentrated on considering numbers that it cannot exercise the understanding without considerably tiring the imagination, and the latter is so subject to certain rules and symbols that it has been turned into a confused and obscure art which clutters up the mind rather than a science which cultivates it. Those were the reasons why I thought I had to look for some other method which included the advantages of these three subjects but was free of their defects. And since a multitude of laws often provides excuses for vices, so that a state is much better ruled when it has only very few laws which are very strictly observed, I thought that, instead of that large number of rules which comprise logic, I would have enough with the four following rules, provided that I maintained a strong and constant resolution never to fail to observe them, not even once.

The first rule was that I would not accept anything as true which I did not clearly know to be true. That is to say, I would carefully avoid being over-hasty or prejudiced, and I would understand nothing by my judgments beyond what presented itself so clearly and distinctly to my mind that I had no occasion to doubt it.¹²

The second was to divide each difficulty which I examined into as many parts as possible and necessary to resolve it better.

10 Ramon Llull (c. 1232 – c. 1315) was a Majorcan philosopher and mathematician who in multiple works developed a system he called “the art,” which was designed to demonstrate the truth of Christianity using logic and visual aids. Llull also developed the first Condorcet method of election.

11 Diana is the ancient Roman goddess of the hunt, Minerva the goddess of wisdom and warfare. Each has been the subject of numerous sculptures.

12 Descartes’s *Principia Philosophiae*, 1:45–46, discusses (in Latin) his use of these terms: “I call an idea clear [*claram*] when it is present and manifest to a mind focusing on it, just as we say we perceive something clearly when it is present to the observing eye, and stimulates it sufficiently strongly and fully. I call an idea distinct [*distinctam*] which, while it is clear, is separated and marked off from everything else in such a way that it consists of absolutely nothing which is not clear.” Descartes may have in mind the clarity and distinctiveness of geometrical propositions.

The third was to conduct my thoughts in an orderly way, beginning with the simplest objects, the ones easiest to know, so that little by little I could gradually climb right up to the knowledge of the most complex, even assuming an order among those things which do not naturally come one after the other. 19

And the last was to make my calculations throughout so complete and my reviews so general that I would be confident of not omitting anything.

Those long chains of reasons, all simple and easy, which geometers have habitually used to reach their most difficult proofs, gave me the opportunity to imagine to myself that everything which could fall under human knowledge would follow in the same way and that, provided only that one refused to accept anything as true which was not, and that one always kept to the order necessary to deduce one thing from another, there could not be anything so distant that one could not finally reach it, nor so hidden that one could not discover it. And I did not have much trouble determining the issues which I had to deal with first, for I already knew that I had to begin with the simplest things, the ones easiest to know. When I thought about how, among all those who had thus far sought truth in the sciences, only the mathematicians had been able to find some proofs—that is to say, some certain and evident reasons—I had no doubt that I should start with the same things which they had examined, although I did not hope for any practical results other than that they would accustom my mind to revelling in the truth and not being satisfied with false reasons. But for all that, I did not plan on trying to learn all the particular sciences which people commonly call mathematical,¹³ as I saw that, even though 20 their objects were different, they were alike in that they all agreed they should consider nothing except the various relationships or proportions among the objects of study found there. Thus I thought it best to examine only these proportions in general, considering them only in the objects that would most readily help to provide me with knowledge of them, but without in this way restricting them whatsoever, so that they could be all the better applied later to every other object for which they might be suitable. Then, because I observed that, in order to understand these things, I would sometimes need to consider each one in particular and sometimes only to remember them or to understand several of them together, I thought that to consider them better separately, I ought to assume that they were like lines, because I knew of nothing simpler, nothing which I could more distinctly represent to my imagination and my senses. But in order to remember them or to understand several of them together, I had to explain them by some formulas as short as possible and in so doing would borrow all the

13 Such as optics, astronomy, mechanics, and music (all of which Descartes did in fact study).

best elements of analytic geometry and algebra and would correct all the defects of one using the other.¹⁴

As a matter of fact, I venture to say that the precise observation of these few precepts which I had selected made it so easy for me to disentangle all the questions which these two sciences cover, that in the two or three months that I used them to examine these questions, having begun with the simplest and the most general and letting each truth I found serve as a rule
 21 which I could use afterwards to find others, not only did I resolve several problems which I had previously judged very difficult, but it also seemed to me towards the end that I could determine, even with those questions where I was ignorant, the way to resolve them and the extent to which such resolution was possible. In saying this, perhaps I will not appear too vain if you consider that, since there is only one truth for each thing, whoever finds it knows as much as one can know about it and that, for example, a child instructed in arithmetic, having made an addition following the rules, can be confident of having found, so far as the sum they are examining is concerned, everything that the human mind can find out. For the method which teaches one to follow the true order, and to count exactly all the relevant details in what one is looking for, contains everything which gives certainty to the rules of arithmetic.

But what pleased me the most with this method was that with it I was confident of using all my reason, if not perfectly, at least as well as was in my power. In addition, I felt, as I applied it, that my mind was accustoming itself gradually to thinking more clearly and distinctly about its objects, and because I had not restricted this method to one matter in particular, I was hopeful that I could apply it just as usefully to difficulties in the other sciences as I had applied it to those in algebra. But for all that, I did not venture to try to immediately examine all those scientific problems which presented themselves, for that would have been contrary to the order which my method prescribed. I noticed that the principles of science all had to
 22 be borrowed from philosophy, a subject in which I no longer found anything certain. So I thought that, before anything else, I should attempt to establish such principles there and that, since this was the most important matter in the world, where one had to be most fearful of overhasty and biased judgments, I would not try to get through it until I had reached an age considerably more mature than I was then at twenty-three and until I had spent a lot more time preparing myself, weeding out of my mind all the bad opinions which I had accepted before that time, as well as collecting many experiences so that later they could be the subject matter of my reasoning, always practicing the method which I had set for myself in order to keep on improving myself in these matters.

14 Descartes here is referring to his discoveries in analytic geometry, in which algebraic equations are used to represent geometric relations.