

# 3 - Descartes Revisited

“Rules for the direction of the mind”

# Rule 1 - General Purpose Method

The aim of studies should be to direct the mind so that it makes solid and true judgments about whatever comes its way.

“It is not without reason that we pose this rule to the head of all the others; for nothing distracts us more from the search for truth than directing our efforts towards particular ends, instead of turning them towards that one and general end.

”

## Rule two - Restrict the Scope of the Mind

We should only concern ourselves with objects of which our mind **seems** capable of acquiring certain and unmistakable knowledge.

*Yes, but how do we know what our mind **may be** capable of ?* 😊

“In addition, experience is often misleading; **deduction**, on the contrary, or the operation by which one infers one thing from another, **may not be made, if one does not perceive it**, but is never badly made, even by the least mind accustomed to reasoning.”

## Rule third - (Alhacen's rule)

We must look for the object of our study, **not what others thought about it, nor what we ourselves suspect**, but what we can see clearly and with evidence, or deduce with certainty. This is the only way to get to science.

*Use personal investigation rather than memory*

We will never be mathematicians, even though we know by heart all the demonstrations of others, if we are not able to **solve any kind of problem by ourselves**. [...] We would indeed seem to have learned **not a science, but history**

## Rule third - Intuition

“Let us report here the means by which our understanding can rise to knowledge without fear of being wrong. There are two of them, **intuition** and **deduction**.”

“By **intuition** I mean not the variable testimony of the senses, nor the deceptive judgment of the naturally disordered imagination, but the conception of an attentive mind, so distinct and **so clear that there remains no doubt as to what it understands**”

*How may we be sure that we understand ?* 😊

*Is it just because we have a strong feeling ?* 😊

## Fourth rule - The Long Needed Method and its Bases

Necessity of a method in the search for the truth.

“By method, I mean certain and easy rules, which, rigorously followed, will prevent one from ever supposing what is false, and will do that *without consuming his strength unnecessarily*, and by **gradually** increasing his knowledge, **the mind rises to the exact knowledge of all that he is capable of attaining.**”

*To know what your mind is capable of, the method is simple : just try.* 😊

## Fourth rule - The Long Needed Method and its Bases

“ However, the method cannot go so far as to teach how to do these operations (ie. **intuition and deduction**), because they are the simplest and the first of all; so that if our mind did not know how to do them in advance, it would not understand any of the rules of the method, however easy they might be.”

*In other words, intuition is right because the method requires it to be right..* 😊

“ I was no longer astonished that skilful and learned men abandoned these sciences [Maths, “bagatelles” says Descartes], after having hardly touched them, like puerile and vain knowledge, or, on the other hand, trembled to indulge themselves in them, as in difficult and embarrassed studies. ”

## Fifth rule - Division of labor

The whole method consists in the **order** and the **arrangement** of the objects on which the mind must turn its efforts to arrive at some truth. To follow it, **we must gradually reduce the embarrassed and obscure propositions to simpler ones, and then start from the intuition of the latter to arrive, by the same degrees, at the knowledge of the others.**

*Nothing else than industrial division of labor applied to intellectual operations.*

*Breaking down of what is to be achieved into simple operations and then re-assembly of the results to reach the original target.*

*Top down + Bottom up*



## Fifth rule - Division of labor

” It is in this only point that the perfection of the method consists, and this rule must be kept by whoever wants to enter science, as faithfully as the thread of Theseus by whoever wants to enter the labyrinth ”

*Division of labor is hereby stated to be the core of the method, but...*

“It is against this rule that they all sin; but because the order that is demanded here is sufficiently obscure and embarrassed enough that everyone cannot recognize what it is, it is to be feared that in wanting to follow it one will go astray, unless one observes carefully what will be stated in the following rule”

*The method does not grant an optimal breakdown (ie. division of labor)*

## Sixth rule - In search for simplicity.

“ **To distinguish the simplest things** from those which are enveloped, and to follow this research in order, it is necessary, in each series of objects, where from some truths we have deduced other truths, to **recognize which is the simplest thing**, and how all the others stand away from it more or less, or equally “.

*To find the simplest things, just look for the simplest things...* 😊

*Is there a better approach ?*

” I call absolute everything that is a simple and indecomposable element ”

*Sure, but how do we know that an element is indecomposable ?* 😊

## Sixth rule - Calling the Unconscious for Help

“ Note [...] that we should not begin our study by looking for difficult things; but, before tackling a question, **collect randomly and without choice the first truths that arise**, see if from these we can deduce others, and from these others still, and so on ”

*Let your **unconscious** do the job of making a list of potentially interesting things, then see what you can do out of it*

*In other words, **set surrealism to work***

## Rule seventh - Enumeration

To complete science it is necessary that the thought traverses, of an uninterrupted and followed movement, **all the objects** which belong to the goal which it wants to achieve, and that it then summarizes them in a systematic and sufficient **enumeration.**

“ Here the **enumeration**, or induction, is the careful and accurate research of everything that relates to the proposed question “

*Some similarity with accounting...*

“ It should be further noted that by sufficient **enumeration or induction** we mean what **leads us to the truth more surely than any other** except pure and simple intuition.”

## Rule seventh - *Methodic* Enumeration

“ I added that the enumeration had to be **methodical**, because there is no better way to avoid the faults we have talked about, than to **put our research in order**, and because then **it often happens that if we had to find apart each of the things which relate to the principal object of our study, the whole life of a man will not suffice**, either because of the number of objects, or because frequent repetitions which bring back the same objects before our eyes.”

### *Sort and classify things*

“ But the order to follow in the enumeration can sometimes vary, and depend on individual whim; so, to make it as satisfying as possible, we have to remember what we said in the fifth rule. In the smallest things, **the secret of the method often lies in the successful choice of this order.**”

## Eighth rule - Don't be stubborn

If in the series of questions, there arises one that our mind cannot fully understand, we must stop there, not consider the following, but spare ourselves some superfluous work.

“ **This method imitates those of the mechanical professions**, who do not need the help of others, but who themselves provide the means to build the instruments they need.”

“ And first we will notice that in us only intelligence is capable of knowing, but it can be either prevented or aided by three other faculties, namely, **the imagination, the senses, and the memory.**”

## Rule ninth - Train on simple and unimportant things

You should direct all the strength of your mind to the easiest and least important things, and stop there for a long time, until you have become accustomed to seeing the truth clearly and distinctly.

“ The two operations of intelligence, **intuition** and **deduction**, the only ones that can lead us to knowledge “

## Tenth rule - Do It Yourself

In order for the mind to acquire ease, it must be exercised in **finding things that others have already discovered**, and in **methodically traversing even the most common arts**, especially those which explain or imply order.

*In short, try to find on your own what others have already found*



## Tenth rule - Learn from industry

“ One must not suddenly deal with difficult and arduous things, but **begin with the less important and simpler arts**, those especially where order reigns, such as **the crafts of the weaver, the upholsterer, women who embroider or make lace** ”

“ Almost all human sagacity consists in rigorously observing its sequence. So we have warned that these things must be looked at methodically; but **the method, in these subaltern arts, is nothing other than the constant observation of the order which is found in the thing itself**, or which has been put into it by a **successful** invention “

## Tenth rule - Logic brings nothing new

“ To be more completely convinced that this syllogistic art is of no use in discovering the truth, it should be noted that **the dialecticians cannot form any syllogism which concludes the true, without having had some before the matter**, it is to say without having known in advance the truth that this syllogism develops.”

“ Hence it follows that this form does not give them anything new; that in this way the vulgar dialectic is completely useless to the one who wants to discover the truth, but that **it can only serve to expose more easily to others the truths already known, and thus it must be sent back from philosophy to rhetoric.** ”

## Tenth rule - Learn from industry workers

“ On the contrary, workers who deal with delicate works, and who are accustomed to directing their gaze attentively to each point in particular, acquire, through use, the facility to see the smallest and finest things. ”

## Rule eleventh - Synthesize.

After having perceived by **intuition** a few simple propositions, if we conclude any other, it is useful to follow them without interrupting for a single moment the movement of thought, to think on their mutual relations, and to conceive of them distinctly **in the same time**, as many of them as possible; it is the way to give our science more certainty and our mind more scope.

*The goal is to replace the primary logical step by step of a demonstration and to mitigate the possible weaknesses of the memory by reaching an overall synthesis*

## Twelfth rule - Use All Resources of the Human Mind

Finally, **we must use all the resources of intelligence, imagination, senses, memory, to have an intuition distinct from simple propositions, to properly compare what we are looking for with what we know, and to find the things which should thus be compared with each other; in short, we must not neglect any of the means with which man is provided.**

“ This rule covers everything that has been said above, and generally shows what was first needed to be explained in particular. In order to arrive at knowledge, there are only two things to consider, we who know, and the objects which must be known. There are four faculties within us that we can use to know, **intelligence, imagination, senses and memory** ”

## Thirteenth rule - Break it down and Simplify it

When we fully understand a question, we must **free it from any superfluous conception, reduce it to the simplest, subdivide it as much as possible by means of the enumeration.**

“ Here is the only point where we imitate the dialecticians, in order to teach the forms of syllogisms, they suppose that the terms or the matter is known, so **we require beforehand that the question be perfectly understood.** ”

*The idea here is to identify and list the components, and then sort them so as to identify superfluous items*