Rationality

This topic underpins all the topics you would study at University. It is a topic that is core to intellectual activity in any form. So, pay close attention.

Rationality (Part 1)

It is NOT the same as

Rationalization: reorganize for more effectiveness

Rationale: justification

Ratiocination: adherence to logical rules

Rational/irrational: making sense

Although all of these have some relationship to 'rationality', the term has a meaning that is all its own.

Rationality

- What did the ancients think about the term? How did they make the distinctions that were special to the meaning of the term? What ideas did they promote with the term?
- We shall come to these questions. But for the sake of teaching and learning it is appropriate at this point to give a general meaning to the term.

- **And it is this**: *all efforts to ensure, through the exercise of intellectual rigour, that the relationship between the antecedent and the consequent (or the premise and the conclusion) in an argument is sanctioned by the laws of logic.*

Rationality- meaning?

- *All efforts to ensure, through the exercise of intellectual rigour, that the relationship between the antecedent and the consequent (or the premise and the conclusion) in an argument is sanctioned by the laws of logic.*
- *Simply put: whenever you say,'because …', or 'so …' or 'therefore…' ; you are claiming a correct relationship between the two sides of your argument. Eg. He never misses school; therefore, he is at school today.*
- You are also saying that your judgment is not arbitrary, subjective, or based upon obeah.

Rationality - Antecedent and Consequent?

- Antecedent and Consequence; Premises and Conclusion belong to the realm of argumentation.
- The realm of argumentation?!
- Simply means any set of statements that are organised along the lines of – "a,b,and c, therefore x." Sometimes, it takes the form of, for example, 1/2 +1/2 = 1

Rationality and Argumentation

- Argumentation basically seeks to establish a logical relationship between the two sides of an 'equation' in mathematics or the two sides of the 'therefore' in an argument! Just understand that any equation is another form of argument.
- It is that simple.
- Now, let us go on!

End of Introduction (Part One)

Now, Part Two.

This part will deal with the History of the term Rationality.

Rationality – Historical background.

- In the Western World, the beginnings of rational knowledge are traced to the Milesian philosophers in the town of Miletus.
- The earliest awakening of rational discourse is attributed to one Thales who lived in Miletus in the 6th Century BC.

The Milesians

- Thales was the first of the Milesians. The others were Anaximander and Anaximenes.
- The Milesians were also a part of the category of thinkers known in the Western World as "The Pre-Socratic Philosophers".
- The Milesians started the journey for scientific thought by being the first to break away from thinking that placed Gods at the centre of all narratives concerned with the origins of the universe.
- These were the first steps taken by 'Rationality.'

From Cosmogonies to Cosmologies

- Cosmogonies and theogonies attempted to explain the origins of the universe with concepts and ideas that are religious i.e., they were based upon FAITH.
- Cosmologies on the other hand are based upon explanations that use natural causes mainly or exclusively, i.e. they are SCIENTIFIC.

- *Cosmologies were not fully blown science; they were more like embroynic science!!! So, they were 'embroynic rationality'!!!!!!*

Milesian Cosmologies.

- Thales: Everything is water.
- Anaximander: Everything originated from a certain combination of natural laws and materials that he called "the apeiron."
- Anaximenes: Everything originated from principles of nature that ensured balance between hot/cold and dry/wet.

- As you can see; these scholars attempted to explain the origins of the universe in natural (not religious) terms!

After the Milesians

- After the Milesians came the classical period in Greek intellectual attainments with Socrates, Plato and Aristotle at the centre.
- But between the Milesians and Socrates were numerous scholars who deepened and extended the use of rational/scientific thinking.
- Some of these thinkers were: Heraclitus, Parmenedes, Pythagoras and the Pythagoreans (you must have heard of Pythagoras), etc.

Rational-Scientific thinking

- What our historical digression has shown so far is that initially, 'rationality' was seen as separation from 'faith'.
- The value systems that support faith are: reverence, hope, prayer, belief, authority obedience, etc.
- The value systems that support rationality are: proof, evidence, logic, precision, etc.

Rationality – Part 3.

- The modern view of rationality

Rationality – Modern notion.

- Today, the word connotes and denotes all that go with scientific method.
- Philosophers of Science – like Popper, Lakatos and Kuhn – are some of the main thinkers who have helped to pin down the modern conception of rationality.

Rational-Scientific thinking: Popper's view

1. The propositions of science must in principle be capable of being proved to be true or false.
2. The method of science is based upon the Modus Tollens rule which states that confirming the truth of a general statement is not enough; one must show that a single contradictory instance cannot be found in nature.
3. Scientific hypotheses are rich (expansive) in their claims.
4. (Now, let us show by examples what Popper meant)

Rational-Scientific thinking: The Lakatos View

- **Imre Lakatos** (November 9, 1922 - February 2, 1974) was a philosopher of mathematics and science, known for his thesis of the fallibility of mathematics and its 'methodology of proofs and refutations' in its pre-axiomatic stages of development, and also for introducing the concept of the 'research programme' in his methodology of scientific research programmes.

- What Imre Lakatos tried to establish was that no theorem of informal mathematics is final or perfect. This means that we should not think that a theorem is ultimately true, only that no counterexample has yet been found. Once a counterexample, i.e. an entity contradicting/not explained by the theorem is found, we adjust the theorem, possibly extending the domain of its validity. This is a continuous way our knowledge accumulates, through the logic and process of proofs and refutations. (If axioms are given for a branch of mathematics, however, Lakatos claimed that proofs from those axioms were tautological, i.e. logically true.)

- Sourced from Wikipedia.

Rationality -

- The final aspect of the term is its relationship to logic and logical reasoning.
- Rationality is another term for logical validity
- Logical validity means 'in conformity with the laws of logical reasoning.'
- There are hundreds of logical laws. We cannot show all of them here.

Rationality as avoidance of formal fallacies.

Fallacies are arguments that infringe upon particular logical laws. There are two kinds of fallacies: formal and material fallacies.

1. Examples of Formal Fallacies.

a) If p implies q.

Not p

Not q.

Rationality as avoidance of material fallacies.

Examples of material fallacies:

1. Argument from authority
2. Fallacy of Division
3. Fallacy of Composition
4. Ad hominem fallacies
5. Arguing in a circle

END

Thank You!!!!!