Post-Kantian Western philosophy:

As modern Science founded by Bacon, Galileo, Descartes and Newton surged ahead, and the Scientific methodology of observation/experimentation, formulation of theoretical hypotheses in terms of mathematical equations, predictions and verification eminently succeeded in providing a rational explanation of most of the phenomena encountered in nature and laid the foundation of improved technologies that tremendous applications that improved the living conditions of man, the philosophical attitudes also changed since the philosophers had to take compulsorily note of the Scientific developments some of which were of a very fundamental nature and affected the very basic premises of the prevalent philosophies.

The Copernican revolution in astronomy, by dethroning the earth as the centre of the universe had reduced the importance that was attached to man himself. The sun around which the planet earth revolved was one among billions of stars in the galaxy and later ~~a~~ astronomical observations revealed that the galaxy itself is one among several hundred billion galaxies. The biblical version of the 'Creator' had a severe jolt. The Darwinian theory of evolution that had found acceptability among Scientists, further degraded the importance of man, since according to this theory man was just another animal that emerged in the later stages

of evolution.

- The advent of X-ray Astronomy
  - Rockets - Soft X-rays - 0.1 - 2 kev
  - Balloons - Hard X-rays 20 - 200 kev.
  - Satellites - Focussing Telescopes.

⊙ Brought Focus on:
- Transient phenomena.
- Binary Sources -
- Pulsars.
- AGN's.
- X-ray Bursts

ScoX-1
CygX-1
TauX-1
HerX-1

Neutron Stars
Black Holes
Giant Black Holes.

- Gammaray Astronomy Mev - 30 Gev.

  Gammaray Bursts.

- Tev and Pev astronomies (Ground Based)

  - Supernova Remnants
  - Active Galactic Nuclei
    Giant Black Holes.

  } Sources of Cosmic Rays.

- The Crab Nebula (T)

Particle Physics away from Accelerators.

- Proton Decay
- $N\bar{N}$ oscillations
- ν oscillations
- Double β-decay 2ν, Neutrinoless.
- Kolar Events
- Axions
- Fifth Force
- Wimps
- Monopoles
- Gravitational Waves
- Dark Matter in the Universe
- Stellar Collapses - ν-bursts - ν-masses
- Neutrino - mass, magnetic moment, flavours
- Cyg X-3 Anomalies - Exotic Particles
- Free quarks
- Super Strings

Learn From Everything.

—

- Story From Hasidic Religion :
  quoted by Heisenberg in his Book - Physics and Philosophy.

- There was an old Rabbi, a priest famous for his wisdom to whom
  all people Came for advice.
  A man visited him in despair over all the Changes that went
  around him deploring all the harm done by the so called
  technical progress.
  "Isn't all this technical nuisance Completely worthless
  if one Considers the real values of life?"
  he exclaimed.
  "This may be so" the Rabbi said, "but if one has the
  right attitude one Can learn from everything."
  "No" the visitor rejoined "from such foolish things
  as railways or telephone or telegraph one Can
  learn nothing whatsoever."
  But the Rabbi answered "you are wrong. From
  the railways you Can learn that you may by being
  one instant late miss everything. From the
  telegraph you learn that every word Counts. And
  from the telephone you Can learn that what we
  say here Can be heard there."
  The visitor understood what the Rabbi meant and
  went away.

Since 1900, population increase is a factor of 2.
Water per Capita Consumption is increased by a factor of 6
with similar levels of irrigated agriculture.

more support for desalination research

11,000 desalination plants in 120 nations - 60%
in the Middle East

Shallow wells - Slow - Sand Filtration

Steven Weinberg (20th)

The task of physicist is to see through appearances down to the underlying simple symmetric reality.

Charles Townes (21st Century)

Science is the attempt to understand the structure of our universe and how it works (including ourselves. We try to understand what particular objects are and how they work and so on. Religion is the attempt to understand the purpose and meaning of the universe (including our own lives.

If there is a purpose and meaning to the universe then there must be something to do with the structure and behaviour. So clearly there is a relationship between science and religion that can be important if we study the matter carefully.

How ideas on what Science is have changed over time

- ~~Plato~~ Thales of Miletus (640 - 546 BCE):
  What and in what way the world is made?
  Gain abstraction of facts to build a body of objective knowledge; facts should be independent of of judgement of individuals

- ~~Pythagoras (570 -~~
  Archimedes (87 BCE)
  The ability to observe what happens to understand what is observed and use information to discover new ideas is the heart of the Scientist

- Newton (1642 - 1727 CE)
  Science consists of discovering the frame and operations of nature reducing them as far as may be to general rules or laws - establishing these rules by observations and experiments and then deducing the causes and effects of things

- Feynman (20th Century)
  Nothing is certain or proved beyond doubt.
  It is not that you are finding out the truth, but you are finding out that this or that is more likely

- Richard Dawkins (20th Century)
  Science is simply mute before the ultimate questions of meaning, purpose and value.

(Pto)

(Multiverse | Paradia | Champion of MPJ) latest

Max Tegmark in his book "Our Mathematical Universe: ~~for~~ My quest for the Ultimate Nature of Reality" Allen Lane (2014)

"Reality isn't simply described by mathematics as most physicists readily accept, but it is in fact, mathematical"

"Mathematics of our universe is just one of an infinity of conceivable structures - of this mathematical structure is a universe, why not all the others

~~The~~ This book is proof of fact that the two personalities needed for science - the speculative and skeptic - combined in the ~~[illegible]~~ personality of Tegmark

Following the installations of the 100" and 200" telescopes at Mount Wilson and Mount Palomar, Edward Hubble made two important discoveries (i) the small patches of light in the sky seen by small telescopes were themselves large galaxies with billions of stars and (ii) the galaxies are moving away from each other, the rate of separation being larger than larger the separation. This led to the idea of expanding universe and subsequently the concept of the Big Bang creation of the universe which means all the universe arise out of the explosion of a point universe some 13.4 billion years ago which was worked out on the basis of the separation of the galaxies and their relative distances. The separation of the galaxies was due to the stretching of the fabric(??) of the universe namely the four dimensional space. This Big Bang hypothesis was later confirms(??) in the 1970's by the discovery of the 3° microwave radiation and its structure. Another major discovery in the 1970's was the discovery of x-ray astronomy. This was followed by the discoveries of pulsar (Pulsating Radio Sensor) ---- in Radio Astronomy and subsequently in x-ray astronomy. These led to the confirmation of the ideas of formulation of neutron stars and black holes in the explosion of massive stars, This also led to the idea that the quasars which had been discovered in Radio Astronomy as the most powerful energy studies and which had defined explanation of due to the presence of Giant Black Holes in their .....

Another major discovery was that there was heat energy visible matter in the galaxies to be held together by gravitational force between the constituent stars. This together with ..... of the angular momentum with distance from the centre of the galaxies, led to the position of the existence of "dark matter" from which those was no ..... This dark matter construct almost 20% of the total energy of the universe and dominating over visible matter. Yet another discussing towards the end

1. External World - Information brought through Light (EM Waves), Heat (IR), Sound Waves, Pressure, particles (Smell) etc.

2. Sensory organs - physico-chemical mechanisms of AD Conversion - at Retina, Ear drums, Nasal Membranes, Skin..
The action potentials identical in all cases.
Information in repititive frequency and Spacing between trains of pulses.
ReConversion DA at the terminal ends in the brain.
[Comparison with Electronic Methods]

3. How is the information on Space Configurations and time Sequences ReCorded?
Reference Frames.
Clocks.

4. Perception of (i) three dimensional Space
(ii) Unidirectional Unidimensional flow of time.

Reality according to Relativity is 4 dimensional Space-Time Continuum.
According to ToE : 10 dimensions. → 4 d

5. Descartes - Mind Stuff different from normal matter.

Modern physics - Ultimate Constituents of matter

Molecules → Atoms → Protons, Neutrons, Electrons - quarks and leptons. -
anti-particles. negative energy States -
Quantum Mechanics Vacuum.

Accepted Sources of knowledge:

• Materialists - (Charvakas)	-	Direct Perception.
• Buddhists, Kanadas } Kshanika - vignana vadins.	-	Direct Perception + Inference.
• Samkhyans }		DP + I + testimony of the wise (Apta vakya)
• Naiyayikas } (Gautamikas)		DP + I + T + Upamana
• Mimamsakas } (Prabhakaras)		(" + Arthapatti)
• " } (Bhattas)		" + Anupalabdhi (Abhava)
Vedantins }		all the above Six Sources of knowledge.
Puranikas }		+ Sambhava + Aithihyam (tradition)

—

सा कि, का }
अइयजायत – born.
(evolved from Tapas)

NIAS

असत is Apraketam. (not describable) }

असत् before Sat.

Beyond असत – Apraketa. – (beyond reach knowledge)
Brahma is Vedic [illegible] in Vedas
Brahma comes only in Upanishads.
Universal.

{ आभु = Primordial. – Consciousness. –
Vacuum – Movement. –

Spirits { Hiranya Garbha – another
Om-Nada – yet another School.