

Mankind

The human ~~kind~~^{race} shares with the animal kingdom an urge to survival, both individually and collectively) and when this is secure, ^{they show} a preference for comfort, ^{sport,} pleasure and prosperity. But when these ^{needs} have been moderately satisfied, ~~mankind~~ men and women differ from beasts in pursuit of what they call higher ideals, summarised by philosophers under the convenient headings of goodness, beauty and truth. And these ideals have been pursued not only by individuals but collectively, by societies which have devoted significant material resources to their advancement.

The pursuit of goodness has long been associated with the rise of modern religion. (with the teachings of religion, which have inspired moral behavior are an inspiration) its encouragement to morality and its comfort to misery. ~~And both~~ Religion is supported and promoted by a profession of moralists, philosophers and moral and theologians, priests and priestesses, monks and nuns, who have been maintained by society to various degrees of comfort and prosperity. But support from ~~the~~ ^{modern} States for religion is no longer a significant item of the budget, and there is no great call for its growth.

The sponsors were motivated perhaps by social goals, or by hope of heavenly reward; but those who engage in religious life are expected to devote themselves to religious ideals and holiness, above and beyond all material concerns of their benefactors.

Beauty

The pursuit of beauty has also been strongly promoted by public finance: the public buildings in the cities of ancient Greece and Italy, the art and sculpture of the renaissance, the music of the baroque period were all sponsored by powerful political patrons of the day; and the tradition is maintained ~~on a less significant scale~~ by large banks and insurance companies, ^{for purposes of advertisement} (and to a lesser extent by government subsidy) ~~But~~ in the interests of tourism. Base motives perhaps: but those who receive the subsidy, the artists, musicians and actors, are paid to pursue the ideals of their profession with total dedication, and total indifference to motives of the sponsors or incidental effects or spin-off from their activities.

The pursuit of truth was the aim of the philosophers of the ancient world from before the time of Socrates. The ~~use of experiment and observation~~, pursuit of mathematical truth by means of postulates and theorems has Euclid among its earliest proponents.

The pursuit of scientific understanding by means of experiment and observation ^{certainly dates} ^{more recently} from Aristotle before Aristotle, and has Galileo

among its best-known champions. But until recently ~~the~~ research into physical and biological ~~scientists~~ science has been the part-time activity of clergymen, eccentric problemmen, and those entrusted with the education of young people around the age of twenty. And for that there is good reason. A subject is best taught by a teacher who is passionately interested in it; and a small amount of research is the best way of maintaining that interest.

But now the situation is dramatically changed.

The ~~resources~~ ^{from public and commercial sources} ~~now~~ dedicated to the pursuit of truth ~~probably~~ exceeds by a large factor the total expended on the pursuit of goodness or of beauty not only at the present time but throughout history. ~~We now~~ And the

money has been well spent. ~~We now~~ ^{Physicists} have

developed an ~~astute~~ understanding ^{of} ~~about~~ the

fundamental constituents of the physical

universe at a level of detail unimagined

only fifty years ago; and astronomers ~~have~~

can tell an ~~amazing~~ ^(but convincing) story of the origins of the ^{planets,} stars and galaxies, far more fantastic than those of the ancient mythologies.

~~Each new advance in understanding seems to open up yet another~~ ~~was~~

biologists have a similar understanding of the mechanisms of the living cell.

These discoveries have been made almost by
scientists of great brilliance, ~~conducted~~ ^{discover} ~~motivated~~ ^{uncovered}
whose primary ideal is ~~the~~ ^{the} ~~discovery~~ ^{discovery} ~~of~~ ^{of} truth;
~~and~~ ~~the~~ ~~satisfaction~~ ~~of~~ ~~curiosity~~ ~~by~~
and their vast experiments have been
^{generously} supported by public funds on an
international scale. However ~~But~~ ~~however~~
~~much~~ ~~they~~ ~~discover~~, (each of their brilliant
discoveries seems only to uncover a host
of new and unexpected ^{problems}) (all ~~worthy~~ ^{of} ~~of~~
which cry out for ^(immediate) resolution. In the past,
the inhibiting factor has been the number
of scientists capable of working in the field,
and the delays involved in building experimental
apparatus. But now increasingly ~~the~~ ^{it} is
limitation ~~of~~ public funding that slows down
the ~~pursuit~~ ^{of} the progress of basic science.
And rightly so: why should we not leave
some discoveries for future generations to
enjoy and pay for. Beauty and goodness

are also human ideals, worthy of public support.

But we have no respect for a civilisation that destroys itself by devoting too much of its resource to its religion or to its castles and cathedrals.

Now I come to the moment of disillusionment. The scale of support for scientific research today is far greater than can be explained by the pure pursuit of truth, even when combined with beauty and goodness. In ~~my~~ ^{our} mistakes goes I have even misled you about ~~the~~ ^{our} fundamental human propensities, those that distinguish us from brute animals. After survival and comfort, ~~we see~~ it is not goodness nor beauty nor truth that we seek — it is victory in war. For that we are prepared to sacrifice ~~certainly~~ all our comfort and ~~even~~ risk our survival.

But only a small proportion of modern
(scientific) funding of research is motivated by curiosity.
The pursuit of any ideal so noble as goodness beauty or truth.
In fact indeed the motivation has been
altogether more base — it has been victory
in war.

If there happens to be no war
going on at the moment, then the motive
has been to ensure victory in the next
war. And if the prospect of the next war
is less immediate and dreadful, it is victory in
some other kind of war, the

the international trade war, or ~~even~~ ^{between nations and continents,}
or ^{commercial war} just competition between large industrial
enterprises. But as before, the artist priest and

artist before him, ~~the~~ scientists do not
enquire too closely the motives of those
who pay ~~the~~ their salaries. Their duty is
not to their sponsor ~~to~~ but to science itself;
no matter what the temptation, the truth
must never be compromised; because once that
has happened, not only has science been betrayed,
but so have any longterm interests of the sponsor.