F. R. TENNANT'S TELEOLOGICAL ARGUMENT

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Kant called the teleological argument "the oldest, the clearest, and the most accordant with the common reason of mankind" of the philosophical arguments for the existence of God.[1] If the American people were polled about arguments for the existence of God, I suspect that more would recognize the teleological argument (not necessarily by name) than any other. And it still sees heavy service in the pulpit and in the literature of piety, where it can always be relied on to draw nods of assent from the audience.

Nevertheless, the argument in its traditional form is no longer held in high regard by most philosophers. Hume's criticisms of the argument in the eighteenth century were as powerful then as they are now--which is very powerful indeed. But it was not any philosopher's attacks that undermined the popularity of the argument among the knowledgeable. Rather it was the advances in biology, led by Charles Darwin, that showed the possibility of explaining adaptation of form to function naturalistically, as the result of eons of evolutionary change. As the idea of evolution became known, and the evidence for it mounted, the old appeal to the shape of the teeth of ruminants and predators lost its credibility.

But if the old style of teleological argument must be abandoned, it does not follow that no other sort of teleology is possible. F.R.Tennant, one of the most influential Protestant Christian philosophers and theologians of the first half of the twentieth century, undertook to resurrect the teleological argument.[2] His treatment was based on a fairly sophisticated knowledge of science, and resulted in a form of teleological argument more subtle and informed than the older version. In this paper I will attempt to assess Tennant's views; and I will argue that, despite Tennant's superior scientific understanding, his modified teleological argument has no more force than the traditional one. I will present two main criticisms: first, contrary to his declared intention, Tennant employs God to fill in the gaps of then-current scientific knowledge; and second, he frequently begs the question against naturalism by assuming in advance the impossibility of naturalistic explanation of various phenomena, some of which have in fact been scientifically explained since Tennant wrote.

In primitive thought animism is invoked immediately to explain phenomena of experience like the weather, illness, etc. As the sciences have advanced over the last few centuries, naturalistic explanations have been found for more and more such phenomena; but it has still been widely supposed that, in the end, animism must

come into play. Prior to Darwin, even most philosophers and scientists assumed that the remarkable biological adaptation in plants and animals could only be explained animistically--that is, in terms of the intentions of a supernatural Creator. Thus the naturalistic explanations offered by science were thought to need supplementation by the animistic explanations of theism: nature must be the work of a conscious Creator. This was the conclusion of the traditional teleological argument, as championed by such clergyman-naturalists as William Paley.

But now it became apparent to those who understood the implications of evolution that such adaptation could instead be accounted for naturalistically, in terms of principles observable, at least in outline, in nature and in the laboratory. What had formerly excited religious awe and adoration became rather the object of scientific investigation, and no obvious need for animistic explanation remains.

Tennant recognized this point explicity:

> So long as organisms were believed to have originated, in their present forms and with all their specialized organs 'ready made,' the argument that adaptation of part to whole, of whole to environment, and of organ to function, implied design, was forcible. But its premiss became untenable when Darwin showed that every organic structure had come to be what it is now through a long series of successive and gradual modifications. (p. 84)

So the question that faces us must be, which mode of explanation, naturalistic or animistic, is more successful in accounting for the observed order in the world? The truly primitive option is no longer seriously open to us: we cannot doubt that naturalistic explanations have their place in our world view, for it has been too well established to doubt that natural laws have been found. Our success in sending men to the moon, in open-heart surgery, and in genetic engineering makes it clear that science does tell us a great deal about the world. So our explanations must surely be naturalistic to a degree; the options are, therefore, naturalism plain--i.e., unsupplemented by animism; or naturalism with an admixture of supernaturalism, to explain in some way some thing or things which naturalism allegedly cannot account for. Tennant claims that sound philosophical arguments support the latter position; it is this claim that I intend to dispute.

Tennant thus makes the alternatives quite explicit: they are between "theistic teleology and naturalistic Pyrrhonism (if the doctrine of fortuitousness or ungrounded coincidence may be so

called). . . (p. 107) By the latter he apparently means simply naturalism unsupplement by supernaturalism; terming it "Phyrrhonism" is, so far as I can see, merely gratuitous abuse of his opponent's position.

Thus Tennant poses the problem to himself.

> The empirically minded theologian. . . asks how the world, inclusive of man, is to be explained. He would let the Actual world tell its own story and offer its own suggestions: not silence it while abstractive speculation, setting out with presuppositions possibly irrelevant to Actuality, weaves a system of thought which may prove to conflict with facts. (p. 78)

Tennant is cautious in the claims he makes for his argument. He notes that, ". . .all [the natural theologian] can expect to emerge from his inquiry is grounds for reasonable belief rather than rational and coercive demonstration." (p. 78)

Nor does Tennant offer any hope for the traditional version of the design argument.

> The forcibleness of Nature's suggestion that she is the outcome of intelligent design lies not in particular cases of adaptiveness in the world, nor even in the multiplicity of them. . . .The forcibleness of the world's appeal consists rather in the conspiration of innumerable causes to produce, by their united and reciprocal action, and to maintain, a general order of nature. (p. 79)

Tennant's main claim, then, is that theism offers better explanations than naturalism for the world we observe about us. In order to support this claim, he notes six different, though interrelated, points:

1. the knowability or intelligibility of the world (or the adaptation of thought to things)
2. the internal adaptiveness of organic beings
3. the fitness of the inorganic to minister to life
4. the aesthetic value of Nature
5. the world's instrumentality in the realization of moral ends
6. the progressiveness in the evolutionary process culminating in the emergence of man with his rational and moral status (p. 81)

I will discuss several of these points. As I do so, it is important to recall that the issue is the question, which option, theism or naturalism, can give the more satisfactory explanation of the observable world. Tennant attempts to show that, using purely impartial and empirical reasoning, there can be found probable reasons to believe the world can best be explained as the product of designing intelligence.

Explanation, by its very nature, can never be complete: the most recent explanans can always serve as an explanandum in a further explanation. This is true with or without theism. Every natural law could, in principle, be explained by some more inclusive law. And even if the whole known natural order can be explained animistically by reference to a conscious Creator, then in principle the Creator could be made the subject of further explanation. How far we push our explanatory endeavors depends on both our purposes and our knowledge at any given time.

So we must note that Tennant is wrong when he says, "Further back than a creative Spirit it is neither needful nor possible to go." (p. 113) Rather, it is impossible in principle to know whether further explanation is possible or not, unless we actually discover such an explanation. So we may learn that further explanation <u>is</u> possible, by actually finding an explanation and thus realizing the possibility. But we could never learn that it is <u>not</u> possible. So Tennant here begs the question against naturalism, by supposing in advance of argument that no explanation in naturalistic terms is possible.

With regard to the "adaptation of thought to things," Tennant, writing in the 1920's, categorically rules out the possibility of a naturalistic explanation of intelligence. He is prepared to accept the evolutionary explanation of the human body, but he thinks no such explanation of the human mind is possible. He says that:

> . . .the supposition that even unlimited re-shufflings of matter by mechanical forces can produce minds and personalities. . . conflicts with knowledge. (p. 80)

Thus at the very outset Tennant begs the question against naturalism, by attempting to discredit the possibility of a thoroughgoing naturalism ab initio. Surely, if the task at hand is to adjudicate the dispute between theism and naturalism, it is scarcely legitimate to declare in advance that only theism may be allowed to prevail!

Modern evolutionary thought, moreover, does provide at least an outline of an explanation of the evolution of intelligence as a

result of natural selection--a process which Tennant says he accpets. Roughly this explanation is as follows. About 60 million years ago our ancestors were small, arboreal, "prosimians"--that is, the forerunners of monkeys. Their condition gave high survival value to the ability to cling to branches, and so the prehensile hand evolved.

At the same time, swinging from limb to limb required increased intelligence, to judge distances and the strength of branches. Greater brain size thus evolved, since it had additional survival value--the more intelligent tree-dweller lived longer than the stupid one.

Much later, perhaps 15-20 million years ago, one line of primates descended to the ground--probably as result of the deforestation of their habitat. This put a further premium on intelligence, because they were then more exposed to predators than in the trees.

Upright posture was the next step: the primate which could walk erect for even a short distance freed its hands to manipulate objects, carry food, use tools, etc. Now intelligence becomes even more important, since the intelligent use of tools has great survival value. (At least, it always did have until the twentieth century; nowadays the use of nuclear tools may lead to the extinction of our own and every other species.)

This explanation is substantiated by a study of the sizes of the skulls in fossil primates: from Ramapithecus (c. 15-12 million years ago) to modern man there is a fairly steady increase in brain size, and more especially in brain size relative to body weight. Although brain size is not correlated especially well with intelligence within the human species, when contemporary species are compared with one another there is a rough correlation between brain size and intelligence. Thus the fossil evidence supports the explanation for the emergence of the higher mental faculties.[3]

Tennant's second claim is that adaptation of organisms to their environment offers suggestive evidence of purpose. As we have seen he recognizes that scientific evolution has discredited the earlier versions of the design argument. But he contends nonetheless that adaptiveness indicates design when viewed as a whole.

> . . .if the behaviour of matter be regarded as completely describable in terms of least action, shortest path, dissipation of kinetic energy, and so forth, matter must be regarded also as unable, of itself, to fall into such systems as organisms. (p. 83)

But here again Tennant begs the question against his naturalistic opponent; this flat and unargued assertion that naturalistic explanations must be insufficient to explain the development of life forms ill accords with a spirit of impartial investigation.

And of course contemporary scientific thought suggests that living organisms could develop naturally, under just the conditions that are believed to have existed on the early earth--and that therefore it is a reasonable hypothesis that this is just what did happen.

In the 1920's the Russian biochemist A.I.Oparin put forth the theory that, under the conditions obtaining on the early earth, organic molecules could develop from inorganic matter. In the early 1950's, scientists demonstrated that organic compunds--the basis of life--could be generated from inorganic chemicals. A mixture of methane, water vapor, carbon dioxide, and amonia were placed in a closed container and exposed to an energy source, in this case ultraviolet light. Within just a few days the mixture developed many complex organic compunds. Since then the same phenomenon has been demonstrated with a wide variety of energy sources, always with the same results: the formation of organic molecules. So there is considerable evidence to support the very kind of naturalistic explanation of the origin of life which Tennant so confidently denies.

Tennant also claims that no naturalistic explanation can account for the genetic variability which evolutionary change requires. "The survival of the fittest requires the arrival of the fit, and throws no light thereupon." (p. 85) And he adds, ". . .room is left for the possibility that variation is externally predetermined or guided. . . or divinely controlled." (Ibid)

But recent work in genetics shows that there is a wholly adequate supply of variability in mutation and gene recombination. The chemical analysis of human tissue indicates that human beings are heterozygous at approximately 6.7% of gene loci. [4] This leads to the prediction that 6,700 are heterozygous, and this in turn leads to the calculation that a single human being has the genetic capacity to be the parent of 10 to the 1015th power genetically different persons. Since the present population of human beings on the earth is some 5 times ten to the 9th power, the presence of sufficient variability seems adequately assured.

Tennant's third evidence for design is the fitness of the world to sustain life. This is surely a case of counting only the evidence favorable to his own argument. For only an infinitesimal percentage of the universe is fit to sustain life. This is true even if the belief of many scientists that life probably exists on many planets is correct. For even so, most of the area of the Universe is in the interplanetary and intersteller spaces, and most of the matter is in the stars, neither of which can sustain life.

And even if life does commonly appear wherever conditions are suitable, this fact requires no supernatural explanation. Rather, this is precisely what should be expected, given the operation of known natural laws. Imagine that one of the micro-organisms that cause wood to rot were a philosopher, and argued that the Universe must have a purpose, because it favors the rotting of wood. But before we conclude that the Universe was created to promote the rotting of wood we should look at the frequency and distribution of those conditions. We would find three facts of note:

1. Rot appears in just those places where conditions favor it.
2. Those conditions are relatively rare.
3. The occurrence of those conditions in nature seems to be due to factors that are unrelated to promoting rot: e.g., moisture is absent when an area is well drained and well ventilated.

When we look at the distribution of life itself we make a similar observation:

1. Life apparently occurs just where conditions are favorable (and at any rate does not occur where conditions are not favorable).
2. Life is relatively rare throughout the Universe.
3. The presence or absence of life-favoring conditions seems to be explainable on grounds having nothing to do with the purpose of producing life.

(For example, the temperature of a planet is determined by such factors as its distance from its star, the amount of nuclear heat energy generated by its core, and the reflectivity of its surface and atmosphere.)

Moreover, Tennant again begs the question against naturalism: he says we are "forbidden by psychology" to entertain the notion that man is "an emergent product of cosmic evolution." (p. 101) But that is just what the naturalist--who is said to be Tennant's opponent--thinks man is. To say we are forbidden to entertain the thought that his opponents may be right seems hardly to judge the issue impartially!

Tennant further claims that "no explanation is contained in the assertion that the world is an organic whole and consequently involves adaptiveness." (p. 113) In other words, Tennant claims here that even if the naturalistic account is correct, it does not constitute an explanation.

Here we see a maneuver that prevades Tennant's whole enterprise: where argument fails he falls back on a thinly disguised demand for an animistic explanation. In saying that naturalism could provide no explanation he merely reveals his determination to accept no other sort of explanation. Tennant's position is thus essentially that even if everything his opponent says is true, Tennant is still right and his opponent wrong. But, we have no logically necessary guarantee that any explanation exists--much less just the sort that happens to please us. If we are impartial philosophers we will wish to know the true explanation, whether it conforms to our prejudices or not.

Tennant has already conceded that some degree of naturalism is inevitable if we are to recognize the existence of the contemporary world, since the explanatory successes of science are undeniable. So to refuse to consider a naturalistic explanation a priori is scarcely to evaluate the naturalistic position impartially. Scientists explain sickle-cell anemia as resulting from the homozygous state of a genetic trait that has survival value in the heterozygous state. What would we say of someone who maintained that this constitutes no explanation at all?

Tennant's final point, that evolution is generally progressive, is a serious misreading of the evidence of evolution. Tennant says that there is a general progressiveness in the evolutionary process, which culminates in man. But probably over 99% of all species which have ever existed are now extinct; and many millions of species now exist, of which man is only one, having existed for--it now appears--for only 2-3 million years at most, on a planet some four and a half billion years old. Thus human beings have existed for less than 0.1% of the age of the earth. And, the Universe as a whole is thought to be three to five times the age of the earth, reducing still further the prominence of man in its history.

Moreover, the intelligence which Tennant sees as the goal of evolution is not the only form of adaptation; indeed, it is a relatively rare and recent one. Fecundity is another. An oyster can lay as many as 100 million eggs at a time. Would we be impressed by the argument of a philosophical oyster that the whole panorama of organic evolution should be understood as leading up to this ability? I think not. Tennant's reasoning is equally misconceived. The point is not that human beings are not more advanced in intelligence than any other known organism--of course we are. The point is rather that we have no evidence that the development of life on earth is a process leading inevitably and purposefully toward man. To see in this vast process a progressive trend toward intelligence--as represented by ourselves--is a severe sort of anthropocentrism. Only by wholesale begging of the question can the evidence be read to sustain Tennant's anthropocentric conclusions.

Tennant's "cosmic" teleological argument was put forth to cure the defects he recognized in the classic one. But it is factually and logically flawed. Factually, because Tennant assumed without warrant that naturalistic explanations in many areas were unattainable, some of which explanations have in fact since been found. Logically, because Tennant repeatedly begged the question by supposing that theism is the only tenable explanation of order in the world. I conclude that Tennant's "cosmic" teleological argument has no more force than its predecessors, and that those searching for philosophical support for theism must look elsewhere.

NOTES

1. Critique of Pure Reason, trans. Norman Kemp Smith (London: Macmillan, and New York: St Martin's Press, 1933) p. 520.
2. F.R.Tennant, Philosophical Theology, Cambridge University Press, 1928-30. The major treatment of the teleological argument appears in Vol. II, Chap. IV. "The Empirical Approach to Theism: "Cosmic Teleology," pp. 78-120. Further references to this work will be given as page numbers in brackets in the text.
3. A particularly cogent description of recent thought on the evolution of humankind may be found in Sherwood I. Washburn's "The Evolution of Man," Scientific American, Vol. 239 No. 3 (September, 1978) pp. 194-208. The entire issue is devoted to evolution, and is an especially valuable compendium.
4. F.J.Ayala, "The Mechanisms of Evolution," Scientific American, Op. Cit., p. 63.