

# BEAUTY, PROVIDENCE AND THE BIOPHILIA HYPOTHESIS

MARK WYNN

*University of Glasgow/Australian Catholic University*

In recent years, there has been a renewal of interest in the spiritual significance of the natural world. This development is evident for instance in certain strands of the environmental movement, and in the growing interest in the religions of indigenous peoples. In this article, I consider one important attempt to give the natural world such significance in terms of the framework of traditional theism, namely F. R. Tennant's argument for design from natural beauty, published in 1930.<sup>1</sup> A re-examination of Tennant's argument is timely, I believe, not only because of these developments in the wider culture, but also in the light of certain newly formulated ideas in the social and biological sciences. These ideas appear to offer striking confirmation of the basic premise of Tennant's argument; but at the same time they pose a challenge to his case, by advancing a purely naturalistic explanation of the phenomena which he wishes to explain in terms of divine agency. Given this new intellectual context, a contemporary discussion of Tennant's argument has a broader relevance, since it invites a more general consideration of human responses to the natural world, be they aesthetic, moral or religious.

The thought that natural beauty in some way signifies divine activity or presence in the world is likely to strike many as a truism, or at any rate as having no need of argumentative support. For instance, Erazim Kohák remarks that:

in lived experience, in the radical brackets of the embers and the stars, the presence of God is so utterly basic, the one theme never absent from all the many configurations of life's rhythm. The most basic trait of the world that confronts a dweller in the radical brackets of the forest clearly is that it is God's world, not 'man's,' and that God is never far.<sup>2</sup>

In speaking of 'radical' brackets Kohák is proposing a bracketing not only of concepts (the familiar tool of phenomenologists) but also of artefacts. In other words, he is suggesting that we can achieve a clearer vision of the world's significance by freeing ourselves in certain respects from our dependence upon technology.<sup>3</sup> If we do this, he maintains, then the

presence of God in the natural world will stand out as an immediate datum of experience.<sup>4</sup>

However, such an association between our experience of natural beauty and the sense of God is likely to strike others as plainly in error. This sort of response reflects a disquiet, on the part of intellectuals, concerning the significance of beauty in general. As T. J. Diffey observes, ‘beauty has disappeared for intellectuals’; in other words, ‘it is not taken as having any intellectual relevance, ... it does not figure in our understanding of anything’.<sup>5</sup> Clearly, this scepticism will need to be addressed in any contemporary presentation of Tennant’s case. In turn, that will mean addressing the principal sources of such scepticism, and in particular the view that aesthetic preferences are shaped decisively by cultural context.

In sum, any modern assessment of Tennant’s argument needs to be sensitive to the fact that it is likely to meet with two very different kinds of response. For such an argument is likely to be seen by some as merely otiose, and by others as obviously contrary to established intellectual principles. In this paper, I hope to show how a middle way may be charted between these two bodies of opinion.

#### I. TENNANT’S ARGUMENT

In this section, I shall set out the main elements of Tennant’s case, and consider its plausibility in the light of some stock objections drawn from Hume. In Sections II and III, I shall offer an appraisal of the argument, taking into account the developments in the social and biological sciences to which I have referred.

In speaking of ‘the beauty of Nature’, Tennant intends something like ‘the beauty of the world in so far as it is free from human influence’.<sup>6</sup> On Tennant’s account, this beauty is basically sensuous, and it is therefore to be distinguished from, for instance, the beauty which physicists detect in the elegance of mathematically formulated natural laws.<sup>7</sup> It is clear moreover that, despite his tendency to refer simply to beauty, Tennant is also interested in what philosophers conventionally call ‘the sublime’.<sup>8</sup> Two claims in particular provide the premise, the *explanandum*, of Tennant’s argument. First of all, there is the thought that beauty is found universally in nature. Thus he speaks of ‘the saturation of Nature with beauty’, and remarks:

On the telescopic and on the microscopic scale, from the starry heavens to the siliceous skeleton of the diatom, in her inward parts (if scientific imagination be veridical) as well as on the surface, in flowers that ‘blush unseen’ and gems that ‘unfathomed caves of ocean bear’, Nature is sublime or beautiful, and the exceptions do but prove the rule. However various be the taste for beauty, and however diverse the levels of its education or degrees of its refinement, Nature elicits aesthetic sentiment from men severally and collectively; and the more fastidious becomes this taste, the more poignantly and lavishly does she gratify it.<sup>9</sup>

For convenience, we might label this idea ‘the universality thesis’. Tennant’s argument rest also upon a further thought: the products of human agency, he suggests, are rarely beautiful, and if a human product is made without any artistic intent, then the chances of its being beautiful are slight indeed.<sup>10</sup>

Drawing upon these two ideas, Tennant’s argument takes the form of a sort of *reductio*. If nature has its origins in forces which are indifferent to aesthetic values, then it is no more likely to exhibit beauty *in general* than are the works of human beings, whenever these works are made without artistic intent. But nature is uniformly beautiful, whereas the products of human beings are rarely beautiful in the absence of artistic intent. So the premise must be denied: we should suppose that most probably nature does not derive from forces which are indifferent to aesthetic values.<sup>11</sup> In turn this suggests that nature is the work of a mind, and more particularly of a mind attuned to aesthetic kinds of fulfilment. So Tennant’s argument rests on the universality thesis and what we might call the ‘difference-of-response’ thesis. According to the argument, these two ideas can be satisfactorily combined only by supposing that nature derives from a cause with an active interest in promoting aesthetic values, and an interest more specifically in promoting beauty.<sup>12</sup>

Despite the frequency of the association between natural beauty and divinity in ordinary religious feeling, there have been relatively few attempts to argue for the connection in recent philosophical writing. One exception to this general tendency is John Haught’s book, *The Cosmic Adventure*.<sup>13</sup> Haught’s approach suggests another way of trying to ground the thought that natural beauty invites explanation. Thus he writes that:

The beautiful is threatened on two sides, by chaos on one side and monotony or triviality on the other. Beauty is a balancing act between the extremes of chaos and banality. It is precarious, and therefore is precious.<sup>14</sup>

Similarly, he writes that:

we value art, literature and music in proportion to the intensity of their balancing nuance into satisfying contrasts. Somehow we sense that the complexity of a great work of art could easily have gotten out of control and undermined any efforts towards harmonising its many facets into an intense unity.<sup>15</sup>

In these passages Haught is considering why we should value beauty, and in brief he answers: on account of its fragility. Clearly, this suggestion carries some force (even if it is doubtful whether fragility is either a sufficient or a necessary condition of beauty). We might wish to develop Haught’s idea by proposing that beauty is improbable *a priori* because, as he suggests, it requires the parts of a thing to be adjusted to one another in a delicate, ‘finely-tuned’ way. Following the Bayesian probability calculus, this assessment of beauty’s *a priori* probability will raise the

likelihood of its having an explanation; and thereby these reflections may contribute to an argument from design, if we can show moreover that naturalistic explanations of natural beauty are deficient in explanatory power.

Such an approach would repay further study, I suggest. However, Tennant's argument may prove more effective than an argument of this kind. It is often objected that arguments from design depend upon a priori judgements of probability and that no such judgements can reasonably be made. Famously, Hume complained that to offer an informed judgement of the probability that our world is designed, it would be necessary to have experience of the origins of a number of worlds, so as to estimate in what proportion of cases a world derives from design.<sup>16</sup> Tennant's approach offers, arguably, a way out of this impasse which does not depend upon disputing the thought that judgements of probability are basically measures of relative frequency. Following Tennant, we may say that the belief that beauty is relatively unlikely to obtain in the absence of artistic intent is very well evidenced empirically, since we have (in the case of human agency) many examples of activity which lack artistic intent, and many examples of activity where artistic intent is present, and can show that, proportionately, things of beauty arise more frequently in the second of these cases.

Of course, this invites the Humean riposte that the powers which have given rise to natural beauty, whatever their ultimate character, must be so different from the powers which human beings exercise that there can be no legitimate basis for extrapolating from one case to the other.<sup>17</sup> But Tennant could reasonably say in reply, I think, that the burden of proof here rests upon the sceptic. We need to be given some reason for thinking that beauty is unlikely to arise in relation to human products in the absence of artistic intent but is likely to arise in nature even without such intent. The relative scale of human products and objects in nature is not obviously a relevant point of difference, in so far as beauty is not in any simple way a function of size.<sup>18</sup>

There is a difference between beauty and mere order which deserves attention in this context. The empirical evidence does not suggest so readily that the production of order requires any intention to bring about such an effect. After all, most states of the world can be considered as ordered in relation to some classificatory scheme, including states produced by human beings independently of any intention to produce order. Thus Tennant's argument is able to appeal to a consideration which is not so clearly available to the version of the design argument which was the primary object of Hume's strictures. And to this extent, his argument will have a better prospect of evading Hume's charge regarding a priori probabilities.

Another familiar Humean objection to the argument from order maintains that order is produced reliably by non-human agents such as animals and vegetables when they reproduce themselves.<sup>19</sup> And it might be

said that animals, and perhaps vegetables, are equally capable of giving rise to beauty, which in turn suggests that beauty does not imply the activity of a designer. But this is to beg the question against the design argument. For the argument claims that natural beauty in general, including animal beauty, is ultimately the product of design. If we are not to beg the question in this way, we must take examples where indisputably aesthetic intent is either absent or present, and this suggests turning to the case of human agency. Notice again that the argument from order cannot appeal to like considerations, or at any rate not without first discriminating between different kinds of order, and demonstrating that certain kinds are reliably produced by human beings only when they intend to do so.

Another standard objection to the design argument, this time motivated more by theological than by philosophical concerns, maintains that the argument sponsors a defective conception of God. Here too, Tennant's argument may have a certain merit by comparison with more conventional versions of the argument. Some historically important forms of the design argument appealed to the regularity of the cosmos, conceived in mechanical terms, and to examples of seeming anatomical contrivance. And the critics may well have been right to suppose that such arguments are more likely to evoke a sense of divine ingenuity rather than anything approximating to reverence. By taking natural beauty as its starting-point, Tennant's argument seems able to address this difficulty. After all, God is said to be beautiful (though not mechanically or anatomically structured), and natural beauty has long been taken as a clue to the inherent character of the divine.<sup>20</sup> So Tennant might reasonably say that if a person has really grasped the premise of his argument, then they must have adopted an evaluative stance towards the world which is closely akin to the sort of stance which is evident in at least some religious responses to the world. If that is so, then it becomes at any rate more difficult to dismiss his argument on grounds of religious irrelevance.

Of course, there are other criticisms of the design argument which seem to apply to all its variants. These criticisms include the idea that evil presents a decisive obstacle to any attempt to discern the work of providence by reference to the empirical facts, and the idea that the prior probability of design is so low, or so indeterminate, that the empirical evidence cannot contribute meaningfully to an assessment of its overall probability. However, a consideration of these issues would take us on to broader issues, and I propose to keep our attention fixed on the distinctive character of Tennant's argument.<sup>21</sup> To this end, I shall now discuss an objection which may be raised in response to Tennant's argument in particular, although analogous criticisms may have some application in relation to other forms of the design argument.

The challenge which is most likely to be raised in reply to Tennant's case concerns the possibility that beauty is not really universal but is

rather a projection on the part of certain individuals or cultures. I shall not consider the idea that the perception of natural beauty is *merely* a matter of individual taste. There seems sufficient agreement within cultures on the aesthetic significance of the natural world to count against this thought. A more serious objection is that responses to nature are in large degree culturally determined. In support of this thesis, one might think for instance of the different ways in which landscapes have been represented in painting, and the diversity of approaches apparent even in modern, Western art.<sup>22</sup> Here surely is strong evidence that the way we perceive the natural world, and the respects in which we find it attractive, if at all, vary significantly with our temporal (and geographical) location.

Two issues need to be distinguished here. First, there is the thought that our perception of the natural world as beautiful reflects our contribution to experience, not nature's. The apparent cultural relativity of aesthetic experience supplies one reason for thinking in these terms. Another reason lies in the thought that sensuous beauty has to do with colours and sounds and the like, and these are merely the mind's way of registering facts concerning the size, motion, and so on of the basic particles which fundamentally or really comprise the material world. (Of course, this is the doctrine that tastes, sounds and the rest are merely 'secondary' qualities.) Tennant is willing to entertain the idea that beauty is mind-dependent, but maintains that this makes no difference to the force of his argument. Thus he writes:

If we minimise phenomenal Nature's gift by denying that her beauty is intrinsic, as is form or colour, we must allow to ontal Nature an intrinsic contribution such that minds can make beauty as well as nomic order out of it.<sup>23</sup>

Here Tennant grants that aesthetic properties may be of the mind's making (and may be so even if we suppose that colours and so on are intrinsic to nature). But his argument is undisturbed by this idea, he thinks, for we can still ask: why should nature be so constituted that the mind is able invariably to find it beautiful, but unable to find the products of human agency beautiful, except in cases of artistic intent?

This reply seems to me to the point, but it leaves a second issue. Tennant may be happy to admit some formulations of the idea that aesthetic properties are imposed by the mind. But he presumably cannot allow that there is variation across cultures in respect of whether or not they do impose aesthetic values on nature. That would count against the universality thesis. Less clear is whether he can allow that there is significant variation across cultures in respect of the kinds of aesthetic appreciation which they encourage in relation to the natural world. It seems to me that as Tennant frames the idea, the universality thesis is also intended to exclude this possibility. However, it may be that he could allow the idea of cultural variability in this respect without weakening his case. After all, even if the character of our appreciation of beauty varies with

culture, we could still ask: why should all cultures find nature beautiful, while being unable to find human products beautiful, except in cases of artistic intent? Doesn't this tell us something about the 'intrinsic contribution' of nature to aesthetic experience, and therefore leave some facet of such experience in need of explanation, even when full account is taken of the contribution of culture?

However, rather than considering the viability of some such reconstruction of the argument, I propose to follow Tennant, and consider the plausibility of the idea that certain affirming responses to the natural world are, at least in large part, culturally invariant. Given recent developments in the social and biological sciences, we can marshal a variety of considerations in support of this claim which were not available to commentators in Tennant's day.

## II. TENNANT'S ARGUMENT AND THE BIOPHILIA HYPOTHESIS

In his book *Biophilia*, E. O. Wilson has argued that there is an innate, that is, genetically based, human tendency to affiliate with other life forms, and that the continued expression of this tendency in relation to a diverse range of species is essential for the ongoing psychological and spiritual well-being of human beings.<sup>24</sup> The basis of Wilson's case is partly empirical, but also reflects his fundamental belief, well-publicized in other contexts, that human beings' behaviour and dispositions to hold various beliefs have their roots in our evolutionary heritage.<sup>25</sup> Interestingly, Wilson and others have used the biophilia hypothesis to justify the preservation of biodiversity on grounds of human self-interest. But more important for our present purposes are attempts to develop the hypothesis so that it can explain not only our interest in other life forms, but our aesthetic responses to the natural world.

We might begin with a relatively uncontroversial example, which details a biophobic rather than a biophilic response to the world. A number of empirical studies have provided support for the idea that human beings are biologically predisposed to respond defensively to stimuli such as snakes and spiders.<sup>26</sup> This idea may prove of some assistance to Tennant's argument, by helping to explain our aversion for certain features of the natural world, a fact to which he makes no reference. In relation to such examples, the proponent of design may argue that aversive responses to nature can have an obvious rationale in terms of protecting human well-being, and to this extent are consistent with the hypothesis of design. More significantly, this research provides some foundation for the idea that not only biophobic but also biophilic responses to the natural environment, including the tendency to find nature beautiful, may be grounded in human nature, rather than deriving from some process of cultural conditioning.

The idea that biophilic responses are biologically based can be further supported by reference to a range of recent cross-cultural studies which have sought to compare human beings' responses to different types of environment. Of particular significance for Tennant's argument are studies which set out to compare responses to urban and natural landscapes. Of course, this comparison lies at the heart of his difference-of-response thesis. The findings of these studies seem dramatically to endorse Tennant's claim that there is such a difference of response, and that the difference is not culturally relative. Thus Ulrich reports that:

A clear-cut finding in this research is a strong tendency for diverse European, North-American, and Asian groups to prefer natural landscape scenes over urban or built views, especially when the latter lack natural content such as vegetation and water. ... Even mediocre natural scenes consistently receive higher ratings than do all but a very small percentage of built settings lacking nature.<sup>27</sup>

One caution should be entered here. I have suggested that in Tennant's usage 'natural' seems to connote 'free from human influence'. (I say this because the difference-of-response thesis depends on the idea that human activity, where it is not guided by artistic intent, makes for an absence of beauty, and even for ugliness, or other forms of aesthetic failure.) However, in these studies, rural scenes, clearly bearing the mark of human activity, are also strongly preferred to urban scenes. Tennant's argument can accommodate this finding easily enough with a little elaboration. We might say that rural scenes, while they have been shaped by human activity, retain a significant presence of natural objects, in the form of trees, grass, and so on, and to this extent are reasonably distinguished from built-up urban environments. On this understanding we can still press the difference-of-response question, while recognizing that there is a distinction between what we might call the rural and the wilderness components of 'Nature'. In fact, Tennant's argument, bearing in mind his location in England, was presumably governed at least implicitly from the start by a contrast between urban and rural as much as by a contrast between urban and wilderness. I suggest that Tennant's argument is strongest when it is framed in terms of this sort of distinction between landscapes, rather than descending to the details of whether we find individual organisms (earth worms? water rats?) of aesthetic interest.<sup>28</sup>

So far, then, modern empirical research seems to lend strong confirmation to Tennant's basic proposal, in contrast to what might have been expected. In brief, the universality thesis and, more strikingly, the difference-of-response thesis can both be grounded in the social scientific data. However, proponents of the biophilic response to nature have wanted of course to insert these findings within some naturalistic explanatory framework. By seeking out such a framework, they are, evidently, acknowledging the force of the considerations to which Tennant appealed. As Tennant argued, if there is such a difference in our response to natural

and urban environments, we have good reason to ask what accounts for it. At this point, the question we need to consider is not so much whether this difference of response exists or calls for explanation, but whether a naturalistic worldview can account for it adequately.

The theory of evolution is, from a naturalistic point of view, the most obvious explanatory resource in this context. When propounding the biophilia hypothesis in its more general form, Wilson argued that if human beings evolved in a world of diverse life forms, then in all likelihood they will have retained a genetically encoded preference for biodiversity. And in the same way, it has been argued that our felt affinity for natural environments is explicable in terms of the role such environments played in our evolution. For instance, it is said that our preference for natural over urban environments is more exactly a preference for those kinds of natural environment which would have proved advantageous in our evolutionary history, most notably settings marked by water and spatial openness.<sup>29</sup> These features, it is observed, are precisely those which obtain in savannah, the preferred habitat of early human communities. Appleton presents a summary of the state of debate in this area in these terms:

in the opinion of most authorities, if there is a type of environment which we as a species can recognise as our natural habitat, it has to be the savannah, that type of plant association which takes a variety of forms in different parts of the world but consists essentially of trees spaced widely enough to permit the growth of grasses between and underneath them. This is now generally agreed by the anthropologists to be the kind of environment in which the first recognizable hominids made their home.

Like Wilson, Appleton supposes that this pattern of preference will have persisted beyond the conditions of its initial appropriateness. Thus he continues:

the power of attraction, what its *modus operandi*, which drew [the first hominids] towards this favorable kind of landscape, has not been eliminated from our genetic make-up but has survived – in Jungian terminology – as an archetype, whose influence is still to be seen in many ways, not least in the widespread attraction which people feel towards ‘parkland’, an idealized contrived arrangement of well-spaced trees within a tidily groomed grassland.<sup>30</sup>

As well as arguments of this kind, to the effect that the types of natural environment which human beings prefer are those which would have had greatest survival value for early human communities, in terms of providing security and an abundant source of food, it is also suggested that experiences of nature have a measurable effect on stress levels. For example, patterns of electrical activity in the brain apparently point to the restorative effect of exposure to natural scenes.<sup>31</sup> (Of course, a great deal of anecdotal evidence could also be cited in support of this general idea.) This suggests a further way in which we could connect human

beings' preference for natural environments and the thought that such environments confer an evolutionary advantage, assuming that relief from long-term stress will enhance the well-being of an organism. Again, studies in this field lend some support to the idea that these stress-relieving effects are greatest in relation to landscapes of the savannah type.<sup>32</sup>

In summary, the biophilia proposal together with associated research seems to bear on Tennant's argument at two points. First of all, such research offers empirical support for the central premise of Tennant's argument, namely the thesis that there is a differential response to natural and urban environments which is not culturally induced. Prior to the publication of these studies, it seems likely that objections to Tennant's argument would have taken this difference-of-response thesis, and the idea of cultural invariability, as their primary target. On this point then, Tennant's argument looks today perhaps more robust than it did when first proposed. Secondly, such research points towards an understanding of the difference-of-response thesis which appeals not to design, but to the advantage conferred upon human societies in pre-historic times by certain kinds of natural environment. To this extent, the biophilia proposal apparently poses a challenge to Tennant's argument, by furnishing an explanation of its basic premise which requires only the normal functioning of Darwinian kinds of selection mechanism. In the next section, I want to reach some sort of verdict on the overall viability of Tennant's argument given these developments.

### III. TENNANT'S ARGUMENT RE-ASSESSED

Naturally, in trying to reach a verdict on these matters, we should turn first of all to Tennant's text, to see whether he anticipates this sort of evolutionary explanation of our appreciation of natural beauty. He was of course familiar enough with Darwinian-inspired attempts to overturn other forms of the design argument, such as Paley's. Suggestively, Tennant objects to attempts to treat 'the beauty of Nature as Paley treated organic adaptations'. But the weakness of such arguments, he goes on to say, lies in their supposition that 'since in human art a beautiful or sublime production is the outcome of human design, similar effects must everywhere be due to design'.<sup>33</sup> His own argument meets this difficulty, he notes, by recognizing that it cannot purport to be a 'proof'. Later, he turns explicitly to the issue of evolutionary explanations, and responds dismissively to the thought that our valuing of the natural world in aesthetic terms might have some adaptive value. Thus he writes:

in the organic world aesthetic pleasingness of colour, etc., seems to possess survival-value on but a limited scale, and then it is not to be identified with the complex and intellectualised sentiments of humanity, which apparently have no survival-value.<sup>34</sup>

A recent study of the idea that natural beauty affords evidence for design is similarly sceptical of the power of evolutionary explanations to account for the phenomena. With the exception of our propensity to find other human beings beautiful, Peter Forrest suggests, our tendency to find beauty in the world resists explanation in terms of Darwinian considerations. Thus he writes:

I suspect that naturalists will have to say that the appreciation of beauty is a by-product of something else for which there is a more direct naturalistic explanation such as the ability to see something as a whole and not just as a collection of parts. But such an explanation cannot begin to explain the special quality of appreciating beauty or why there is such an abundance of both sensuous and non-sensuous beauty.<sup>35</sup>

Clearly, Forrest and Tennant alike fail to address the specific proposals of the biophilia hypothesis. However, we shall see that their suggestions can be incorporated constructively within an approach which takes explicit account of the hypothesis.

In general, the contemporary advocate of Tennant's kind of argument has three options. She can dismiss, or downplay, the biophilia hypothesis in relation to the particular range of phenomena it is intended to explain. Or she can argue that while the hypothesis has application in this context, it fails to account for further phenomena which invite explanation in terms of design. Or she can argue that while the hypothesis succeeds, the naturalistic explanation it offers in turn suggests design. The first of these responses has found advocates in the field of art criticism, where attempts to introduce evolutionary theory to explain canons of aesthetic judgement have encountered determined resistance. For instance, one commentator has offered this assessment:

I do not doubt that as part of nature we intuit strong links between its processes and forms and those of our bodies ... But such intuitions are so transformed, overlain and mediated by social, cultural and economic as well as personal meanings historically, that to trace the biophysiological bases of environmental ... response seems largely futile at best, and at worst pandering to the most dangerously ideological interpretation of 'human nature'.<sup>36</sup>

Evidently, human beings' aesthetic responses to nature are indeed informed to a significant degree by their cultural setting and by their personal histories, and careful exponents of the biophilia hypothesis must surely grant this. Speaking of such matters as alcoholism and mathematical aptitude, as well as responses to nature, one advocate of the biophilia hypothesis sums up the scholarly consensus in these terms:

the debate has shifted from bipolar nature/nurture distinctions to discussion of eclectic perspectives that recognize the crucial roles of both learning and genetics. In several key areas, the main question is no longer whether genetic factors play a

role. Rather the mainstream theoretical and research debate increasingly accepts the role of genetics but asks: is the genetic contribution 20 percent or 50 percent?<sup>37</sup>

Clearly, this assessment of the strength of biophilic kinds of explanation leaves ample room for the operation of other factors, such as culture and personal history, in our valuation of the natural world. Following this line, an advocate of Tennant's view could grant that evolutionary considerations account in some measure for our affirming response to certain kinds of landscape, but argue that these factors are not enough to explain the sheer 'abundance' of the beauty we find in such environments. This sort of response is implicit in Tennant's claim that it is the 'saturation' of nature with beauty which provides his case with its impetus. On this approach, we are still free to press Tennant's difference-of-response thesis, drawing upon the social scientific data to show that this difference is not merely a function of culture, and to claim that our tendency to favour natural settings in the degree that we do is not wholly explicable in terms of the operation of biophilic considerations. In other words, we can recognize the role of personal and cultural factors but maintain, first, that there remains even so a universal predisposition to find nature attractive, and second, that this predisposition cannot be fully explained by reference to evolutionary kinds of argument. This is a logically consistent set of proposals, and one which seems consonant with the basic structure of Tennant's argument. Moreover, it respects the social scientific data and standard appraisals of the explanatory power of evolutionary forms of explanation in this sort of context. We may reasonably conjecture that were Tennant writing today, his response to the biophilia hypothesis would, in part, take this form.

Another kind of response would not seek to question the explanatory power of the biophilia hypothesis within its own sphere of application, but to point to other phenomena which escape its consideration. Here too, Tennant's argument provides some indication of how we might proceed. We have seen how the biophilia hypothesis may be developed in relation to our appreciation of natural landscapes, and how it can arguably account for our sense of affinity with other life forms. But even granting its effectiveness in these domains, there are further phenomena which fall within the purview of Tennant's argument but remain to be examined. For instance, our aesthetic appreciation of a starry sky can hardly be understood, by analogy with the savannah kind of example, as a matter of showing an affinity for an environment to which we are well suited for evolutionary reasons. Perhaps it will be said that the stars have formed part of human beings' environment from the earliest days of the species, so that their presence engages our imagination for the same kinds of reason as the presence of diverse life forms. But while an interest in the functioning of other life forms may have clear survival related advantages, a fascination with the aesthetic qualities of the night

sky does not in itself confer any obvious evolutionary benefit. Moreover, this response is not easily rooted in other human capabilities which carry a more obvious adaptive rationale, such as the capacity for order recognition. Our appreciation of the night sky, while it is in part a matter of order recognition, is surely not reducible to this sort of intellectual operation. There is some reason to suppose, therefore, that the biophilia hypothesis bears only marginally upon the aesthetic appeal of the world in this respect.

Some of Tennant's other examples suggest a similar conclusion. The beauty of things which have only been disclosed since the invention of the microscope cannot be explained as the direct consequence of some evolutionary selection mechanism. At most, as Forrest suggests, the 'naturalist' will need to appeal to the thought that our appreciation of such things is a by-product of some straightforwardly useful capacity. But again, it is not clear that the aesthetic appreciation in question is fully reducible to order recognition, or to some other form of awareness whose evolutionary rationale is evident.

This sort of response to the biophilia proposal, considered as an explanation of our appreciation of natural beauty, could be pushed further if it could be argued that we have a tendency to value aesthetically landscapes which are basically hostile to human well-being, or at any rate far removed qualitatively from the savannah type of natural environment. The obvious candidates are desert and ice landscapes. Here again, we must acknowledge the contribution of culture in shaping our reactions to our surroundings. Think for example of the way in which the response of the desert fathers to their environment was conditioned by what the desert represented to them socially and theologically.<sup>38</sup> However, the descriptions given by explorers of such places provide perhaps some basis for the thought that we are predisposed to respond to them favourably. As Yi-Fu Tuan writes, drawing upon the experiences of Fridtjof Nansen, Richard Byrd and others, 'explorers of desert and ice may be said to be half in love with piercing beauty and half in love with death'.<sup>39</sup> The experience of explorers is particularly significant in so far as neither their personal nor their species histories have prepared them for an encounter with such landscapes. The case here can be reinforced by noting the oddity of the expression 'How *ugly* the desert (or the snowfield) was!' The certainty of our sense about which kinds of aesthetic response are admissible in this sort of context is evident from the fact that we are likely to find such expressions not merely odd but unintelligible. By contrast, the expression 'How beautiful the desert was!', while hardly required from a visitor to desert regions, has an obvious sense and appropriateness.<sup>40</sup>

So in these various ways, Tennant's argument can make appeal to the aesthetic value of phenomena which are not easily subsumed within the biophilia framework. Here again, it is the 'saturation' of nature with

beauty which drives the argument. In this case, the richness of our aesthetic experience is all the more significant, from the point of view of Tennant's hypothesis, in so far as biophilic kinds of consideration seem to have little if any role to play in explaining the phenomena.

That leaves one further kind of response, where we grant the force of evolutionary explanations of our aesthetic sensibility in relation to the natural environment, and seek to explain the evolutionary process in turn by reference to design. This way of responding to Darwinian criticisms of the idea of design will be familiar from other contexts.<sup>41</sup> However, in the absence of a reason for thinking that aesthetic considerations will lend something distinctive to this sort of project, I shall not pursue this option here.

In sum, I suggest that Tennant's argument remains, in large part, cogent, even when the ideas recorded in the biophilia hypothesis have been given due weight. This is, first of all, because biophilic mechanisms seem not to account for the depth of our aesthetic response to natural phenomena even in relation to those phenomena which fall most directly within the theory's scope.<sup>42</sup> Tennant's argument retains its persuasiveness moreover because there are further facets of our appreciation of the natural world which are not considered by the biophilia hypothesis, and which extend no clear evolutionary benefit. The empirical data, in so far as they establish a preference for savannah types of natural environment over other forms of natural environment, suggest that this second sort of case is less compelling than the first. But against this fact must be set the thought that biophilic considerations apply less clearly in this second case, so leaving a larger role for design.

#### CONCLUSIONS

In this article I have argued that despite the relative neglect of the topic in recent philosophical literature, there remain good grounds for taking our experience of natural beauty as a clue to the providential significance of the world. I have made this case above all by reference to F. R. Tennant's presentation of the issues. In particular, I have tried to show how Tennant's case can resist two kinds of criticism. First of all, I have urged that his argument can meet certain long-established objections to the argument from design, to do with the argument's reliance on a priori measures of probability, and its association with a religiously deficient concept of God. Secondly, I have made a case for the idea that recent developments in sociobiology, which Tennant did not anticipate, can be accommodated within the framework of his argument. This is because sociobiological explanations run neither deeply nor broadly enough to account for all the data. In other words, such explanations fail to account in full for the phenomena which fall within their scope, and they leave other aspects of our aesthetic experience out of account altogether.

We might ask whether these considerations are enough to raise the probability of design to the point where the hypothesis is more probable than not, or whether they merely raise it. Assuming that the evidential form of the problem of evil can be resolved without reference to the idea of divine inscrutability (and without appeal to the very considerations which Tennant cites), then Tennant's argument will, I suggest, contribute powerfully to the rationality of belief in design.<sup>43</sup> In my view, under these conditions, the argument would ensure that such belief is overall rationally tenable, though not perhaps rationally obligatory, on evidential grounds.<sup>44</sup>

Finally, what of the connection between this discussion and the divergent interpretations of beauty to which I referred at the outset? I hope this discussion provides a way of mediating between the 'ordinary believer', as represented by Kohák, and 'intellectuals' in two respects. First of all, I suggest, it provides a context for the idea that the religious-cum-aesthetic response to the world which Kohák describes is indeed deeply ingrained in human nature. I have concentrated on the way in which aesthetic responses to nature seem to be invariant across cultures, in part for evolutionary reasons. But these arguments could be generalized, I suggest, to include religious responses to the natural world, since the two are, surely, closely related.<sup>45</sup> To this extent, our discussion has met Kohák's plea for a recognition of the deeply rooted and spontaneous character of our sense that divinity is made known in nature.

Secondly, to acknowledge in turn the 'intellectual' perspective, we now have reasons which we did not have even twenty years ago for thinking that human beings' aesthetic responses to the world are not merely a function of culture. For instance, we have a body of social scientific research which favours the idea that our aesthetic sensibilities cannot be understood merely in these terms. To this extent, the intellectual's concerns about the cultural relativity of aesthetic values have been met on their own ground, by reference to scientific studies employing quantitative methods. Moreover, the approach I have advocated offers a further concession to the intellectual perspective in so far as it gives proper acknowledgement to the role of argument in these matters, and does not accord any final authority to the kinds of intuition which writers like Kohák take as their starting-point. Such an approach, I have argued, provides a sound intellectual basis for re-considering the significance of natural beauty for our understanding of the world and its meaning.

#### Notes

1 *Philosophical Theology*, Volume II, *The World, The Soul and God* (Cambridge: Cambridge University Press, 1930).

2 *The Embers and the Stars. A Philosophical Inquiry Into the Moral Sense of Nature* (Chicago: Chicago University Press, 1984), p. 182. Kohák argues that our sense of the divine presence is bound up with a sense of the contingency and order of the world, and with a sense of its belonging

to someone: pp. 188–90. At the same time, his descriptions of nature indicate that its aesthetic qualities are also integral to its religious significance: see for instance the concluding words of the book on p. 218.

3 Op. cit., pp. 22–4. I say ‘in certain respects’ because Kohák is not advocating the abolition of technology, but rather seeing ‘through it to the human meaning which justifies it and directs its use’: p. 24.

4 Clearly, this proposal receives a measure of support from anthropological considerations, given the pervasive tendency of primal religions to associate divinity and nature. Thus Robert Redfield remarks that: ‘In the primary condition of humanity man looked out on a cosmos partaking at once of the qualities of man, nature and God’: *The Primitive World and its Transformations* (Ithaca: Cornell Paperbacks, 1965), pp. 103–4.

5 ‘Natural Beauty Without Metaphysics’ in S. Kemal and I. Gaskell (eds.), *Landscape, Natural Beauty and the Arts* (Cambridge: Cambridge University Press, 1993), p. 56.

6 His commitment to this idea is evident in his contrast between nature and the products of human agency, which I discuss shortly. It is not clear that the expression ‘natural beauty’ is ordinarily understood to imply such a contrast. Thus T. J. Diffey remarks: ‘In virtually all instances of natural beauty, certainly in Britain and perhaps in most of the world, it is false to take “natural” as meaning the absence or exclusion of human agency. It has often been noted that particularly in small, heavily populated countries such as Britain today it is very difficult to find “unspoiled” tracts of nature’: art. cit., p. 48.

7 Peter Forrest in his recent formulation of the argument from beauty takes an interest in both kinds of beauty. See his *God Without the Supernatural. A Defense of Scientific Theism* (Ithaca: Cornell University Press, 1996), p. 134.

8 Their usage is based more or less precisely on Kant who writes: ‘in what we are wont to call sublime in nature there is such an absence of anything leading to particular objective principles and corresponding forms of nature, that it is rather in its chaos, or in its wildest and most irregular distortion and desolation, provided it gives signs of magnitude and power, that nature chiefly excites ideas of the sublime’: *Critique of Judgement*, trans. James Creed Meredith (Oxford: Clarendon Press, 1911), p. 92.

9 Op. cit., p. 91.

10 Ibid., pp. 91–2.

11 Tennant speaks here of ‘alogical probability’, meaning that the argument falls short of absolute proof, and does not provide a precisely quantifiable measure of probability. See his discussion of probability in Chapter XI of Volume I.

12 Tennant does not draw attention to the distinction between aesthetic value and the value of beauty. But evidently there is a distinction. For instance, many contemporary works of art have renounced any interest in beauty, but without surrendering all concern for aesthetic values.

13 Ramsey, N.J.: Paulist Press, 1984.

14 Ibid., p. 102.

15 Ibid., p. 105.

16 *Dialogues Concerning Natural Religion*, ed. Martin Bell (Harmondsworth: Penguin, 1990), p. 60.

17 Ibid., p. 58, for example.

18 However, the case of the sublime seems to be different, if understood in Kantian terms: see note 8 above.

19 Ibid., pp. 86–91.

20 Patrick Sherry has discussed some of the ways in which our sense of mundane beauty may inform our sense of divine beauty. See his *Spirit and Beauty. An Introduction to Theological Aesthetics* (Oxford: Clarendon, 1992), for instance p. 152.

21 Clearly, there is a huge literature relating to the problem of evil. For differing views on the prior probability of theism, see for instance Graham Priest, ‘The Argument from Design’, *Australasian Journal of Philosophy*, 51 (1981), pp. 422–31, and George Schlesinger, *New Perspectives on Old-time Religion* (Oxford: Clarendon Press, 1988), Chapter 5. Tennant addresses the issues in op. cit., pp. 88–9.

22 For detailed documentation, see Simon Schama, *Landscape and Memory* (London: Fontana, 1996).

23 Op. cit., p. 90.

24 Cambridge, Mass.: Harvard University Press, 1984.

25 Thus he writes: ‘Were there no evidence of biophilia at all, the hypothesis of its existence would still be demanded by pure evolutionary logic’: ‘Biophilia and the Conservation Ethic’, in

Stephen Kellert and Edward Wilson (eds.), *The Biophilia Hypothesis* (Washington D.C.: Island Press, 1993), p. 32.

26 In fact, the evidence proves to be somewhat complicated. In particular, there is more evidence to show that we are biologically predisposed to retain such self-protective responses rather than to acquire them in the first place. For a summary of such research, see Roger Ulrich, 'Biophilia, Biophobia, and Natural Landscapes' in Kellert and Wilson (eds.), op. cit., pp. 76–86.

27 Ibid., p. 94.

28 At the same time, we need to give due weight to the ways in which the presence of living things can affect our appreciation of landscapes. Thus Aldo Leopold remarks: 'Everybody knows, for example, that the autumn landscape in the north woods is the land plus a red maple, plus a ruffed grouse. In terms of conventional physics, the grouse represents only a millionth of either the mass or the energy of an acre. Yet subtract the grouse and the whole thing is dead. An enormous amount of some kind of motive power has been lost': *A Sand County Almanac* (Oxford: Oxford University Press, 1987), p. 137.

29 See Ulrich, art. cit., pp. 89–92.

30 *The Symbolism of Habitat. An Interpretation of Landscape in the Arts* (Seattle: University of Washington Press, 1990), p. 15.

31 Ulrich, art. cit., p. 103.

32 Ulrich offers an overview of this research: *ibid.*, pp. 98–106. Of course, the tendency of certain kinds of natural setting to offer relief from stress may in turn point to their evolutionary significance as a source of food and security.

33 Op. cit., p. 90.

34 Ibid., p. 92.

35 Op. cit., p. 135.

36 Denis Cosgrove, cited by Appleton, op. cit., p. 10.

37 Ulrich, art. cit., p. 126.

38 Yi-Fu Tuan offers some interesting remarks on this topic and related issues in 'Desert and Ice: Ambivalent Aesthetics' in Kemal and Gaskall (eds.), op. cit. See for instance p. 114.

39 Ibid., p. 155.

40 Here I have adapted an example from Forrest: op. cit., p. 133.

41 See for example John Haldane's contribution in J. J. C. Smart and J. J. Haldane, *Atheism and Theism* (Oxford: Blackwell, 1996), for instance p. 119.

42 This point could be related to Peter Forrest's proposal that naturalist explanations of natural beauty fail to recognize that we have a 'resilient sense of the transcendent character of beautiful things': op. cit., p. 135. In other words, we have a sense that they point beyond themselves to some supremely beautiful reality, which is not itself an object within the world.

43 The evidential form of the problem of evil advances the thought that evil disconfirms theism in some degree. While the idea of divine inscrutability may offer a response to this problem, it seems likely to undermine any form of the design argument, in so far as such arguments depend upon identifying, however approximately, the divine purposes which are served by various features of the world.

44 Of course, in terms of the 'basic belief' proposal, some philosophers of religion have tried to sever the connection between rational belief and the availability of evidence. It seems to me that religious belief can be properly basic for many in a religious community, but not for everyone: at least some individuals will need to be able to cite evidence on behalf of the belief if the belief of the community as a whole is to be properly justified. It is in this way that I take the provision of evidence to be relevant to the rationality of religious belief. See Stephen Wykstra, 'Toward a Sensible Evidentialism: On the Notion of "Needing Evidence"' in William Rowe and William Wainwright (eds.), *Philosophy of Religion. Selected Readings* (San Diego: Harcourt Brace Jovanovich, second edition 1989), pp. 426–37.

45 Wilson alludes to the possibility of extending the biophilia proposal in this way when he writes that, given the hypothesis, 'the necessary conditions are in place to cut the historical channels of art and religious belief': art. cit., p. 33. This offers an understanding of religious beliefs which is rather different from Wilson's better known proposal that such beliefs are important for the cohesion of a society. For the latter view, see his *On Human Nature* (Cambridge, Mass.: Harvard University Press, 1978), Chapter 8.